Amsterdam-Noord

The development of and the liveability in the north side of Amsterdam

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Amsterdam-Noord

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Preface
This booklet is my final work of my graduation year about Amsterdam-Noord. I want to thank my tutors Francisco Colombo and Luisa Calabrese. Especially Francisco has put a lot of effort into it seeing me almost every week and guiding me through the process and Luisa helped me every now and then to help me think out of the box. I am delighted with the knowledge I gained about Amsterdam and Amsterdam-Noord in particularly and about the practical approach I handled.

The first part of this booklet is about the scientific underpinning such as the methodology, theoretical framework and relevance. Then first Amsterdam and later Amsterdam-Noord are elaborated. This results in a prognosis, hypothesis and questions. Then Buikslotermeer is analysed and elaborated resulting in a design.

Motivation
I am born and raised in Amsterdam and lived there all my live so far. In my youth I came in all city districts. I lived in the east side, my high school was in the south, I went for shopping and for fun to the city centre, I visited the Bijlmer to see Ajax playing and for parties I cycled to the West. However I never went to the northern part of the city. It was like it was not part of it. Since some years one is discovering this secluded part of the city because of gentrification and new functions that are implemented there.

I am really interested in Amsterdam and want to know as much as possible. My bachelor thesis was about the segregation in the western part of the city and I did an internship at the spatial development department of the Municipality. I want to use this graduation project to discover the part of Amsterdam which I did not know well before hand.

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Motivation & Index
Worldwide people are moving towards urban areas. Amsterdam is a fast-growing and attractive city. For about a decade the city is becoming more popular (figure 1). The population of 834.713 (OIS Amsterdam, 2016) is growing quickly at an average of 11.000 inhabitants per year (Gemeente Amsterdam, 2016a), prognoses of governmental institutions foresee a growth of 18% by 2030 (PBL & CBS, 2016), the city will cross the 1-million-inhabitants-border by 2034 (Het Parool, 2016) and some people even argue that the city needs to grow to 2 million inhabitants, like Zef Hemel in his new book (Hemel, 2016). This sets an enormous challenge for the city to house all these people and to keep the city liveable. Besides the pressure of new inhabitants the city is a beloved touristic destination which will increase the pressure on the city as well, especially with the predicted growth of tourism (Gemeente Amsterdam, 2015a). The municipality has set two important goals to cope with the crowdedness in the city, which are elaborated in two policy documents. In the Koers 2025 (Gemeente Amsterdam, 2016a) the city wants to build 5.000 new houses per year and in Balans in de stad (Gemeente Amsterdam, 2015a) they want to enlarge the city and its centre to spread tourism. Those policies will be explored in the chapter policy analysis.

Amsterdam-Noord, the north side of Amsterdam, is an interesting research area because of the potentials it has to support the city in its immense growth nowadays. It has a low density, is close to the city centre and has industrial areas that can be transformed, analysis of the area are illustrated and explained in the chapter Amsterdam-Noord.

Still Amsterdam-Noord suffers from multiple problems. The area is doing weak in the Leefbaarometer (figure 2), a governmental instrument which monitors the liveability in the Netherlands. It has low scores in the categories of housing, inhabitants, safety and the physical environment, the only positive score is in the facilities category (Ministerie van Binnenlandse Zaken en Koninkrijkrelaties, n.d.). While in the north side of the city a lot can be improved, Amsterdam itself is high ranked as eleventh on the world wide sustainable city index because of the high score in the liveability category (Arcadis, 2016). This sets chances to make the north side of the city take advantage of the success of Amsterdam and to provide the city space to relieve the pressure on the city.

A problem for the development of Amsterdam-Noord is the conservative and xenophobic attitude of some original locals. They are afraid for the arrival of new residents and new building projects because they want to maintain the rural and small town atmosphere, but is this maintainable in a fast growing city? Interesting is how the development of Noord can be done in such a way that it will lead to a mixed city district on multiple levels, which is well accessible and integrated with the rest of the city. Challenging will be how original and new inhabitants can live together.
Social relevance
Amsterdam is growing rapidly in number of inhabitants. Due to the financial- and real estate crisis the housing construction and-market almost came to a complete stop. Now that the economy revives, people have more money and confidence to buy and sell houses. The problem is that due to the lack of new built real estate and the popularity of the city, there is not enough housing for everybody. This creates an overheating market, which has insufficient supply for the demand. Real estate prices are going through the roof and people have to wait for at least 8,7 years in the region of Amsterdam (Kromhout, Kessel, Wilt, & Zeelenberg, 2016) to be in the running for social housing and within the city borders even longer. The rising prices and waiting lists make the city inaccessible for certain people, especially in the middle class. They earn too much for social housing and cannot afford the rising real estate prices.

Furthermore the shortage of affordable housing will create a gap in the housing market for starters. While the city is already in shortage of affordable housing in the middle segment for both owner-occupied- and rented houses (Gemeente Amsterdam, 2016a). This brings the city in need to build new houses to enlarge the supply to reduce prices. So densifying the city is of big social relevance to keep the city accessible for different kinds of people.

Scientific relevance
Other cities that are growing rapidly will often face the same problems as Amsterdam. In large cities such as Paris and London the problems Amsterdam is facing are already visible. London’s city centre has extreme real estate prices, where only rich and often foreign investors invest in. In Paris the segregation is extremely present, where the people in the outskirts often literally hate the ones from within the city centre. In smaller cities these problems often exist less, which is one of their strengths. However with the growth of these cities large cities’ problems will drop in. It is important to see how fast growing smaller cities can take advantage of the new incoming people who boost the economy and gentrify areas, but also pay attention to the accessibility of the city and its housing market. To find a way to keep the city divers and to see how higher classes can live together with lower classes.

Ethical paragraph
The development of the north side of Amsterdam goes quickly. The northern IJ bank is transforming rapidly and with new attracting functions and new residential areas it is becoming busier and more popular. The city needs to develop to keep up with the demands of the growing population. The banks of the river IJ will be quite easy to develop because of the proximity of the city centre at the other side of the river, but what will happen to the area behind this new developed waterfront and what will the relation be?
The methodology (figure 3) describes the process of my graduation process. It goes from the starting research of sources, literature and the location towards a design.
THEORETICAL FRAMEWORK

To support my research I have used the following theoretical terms: liveability, density & liveability, area identity and trends. In this chapter those terms will be defined and explored.

**Liveability**
Residing is the main goal of cities, cities cannot operate without their residents. However liveability is a key characteristic of well performing cities. Liveability is a difficult phenomenon. What is liveability and what makes a city liveable?

“Liveable: 1. Suitable to spend as life, (...) suitable to live in or live with (...) 2. Vital, viable” (Van Dale, 2005b). In this research it is about the liveability of cities so liveable is used as suitable to live in.

According to Giap, They, & Aw (2014) there is no established theoretical framework laying out a uniform definition of liveability. They quote Vuchic (1999) who defines urban liveability as “… generally understood to encompass those elements of home, neighborhood, and metropolitan area that contribute to safety, economic opportunities and welfare, health, convenience, mobility, and recreation”. “The concept of livability is clearly more a qualitative construct representing a set of characteristics that relate to the attractiveness of an area as a ‘desirable’ place to live, work, invest, and conduct business. Liveability in many ways could be viewed as encompassing a wide range of issues relating to overall ‘quality of life and well-being’” (Giap et al., 2014).

In the sustainability index of cities the basic standard of quality of life are described as access to “water and food, a dwelling, education and health and a sense of opportunity” (Arcadis, 2016).

The Dutch Ministry of Internal Affairs developed an instrument to track and report the liveability in the country, called *Leefbaarometer*. This instrument uses more than hundred indicators divided into 5 dimensions:
- Living
- Residents
- Services
- Security
- Physical environment

Each dimension and each indicator within the dimensions have a different influence on the output. The influence of the dimension of services has the biggest impact with 25% (Leidelmeijer, Marlet, Ponds, Schulenberg, & Woerkens, 2015).

Concluding: Things like working, trading, well-being, sporting, enjoying, learning, meeting, loving, recreating, eating and so one are elements which make a city popular and liveable. Liveability is a collective name for elements that describes the quality of life and well-being of people. It contains various components of economic, social, safety and health.

**Density & liveability**
Density and liveability are two important notions concerning cities. What is the relation between those to concepts?

“Density: The degree of mutual proximity of the parts” (Van Dale, 2005). In this research it is about the mutual proximity of people, houses and functions in the city.

“Densification, restructuring and transformation within the existing urban area can play a role in the realisation of government targets in the field of accessibility, quality of the living environment and economy. Densification and clustering of living- and work locations at train stations and nodes can be an important strategy to improve the accessibility. In addition densification, restructuring and transformation offer opportunities to strengthen the accessibility and attractiveness of urban areas. Furthermore improving the accessibility and liveability can contribute to a strengthening of the urban economy” (PBL, 2015). So densifying within the city offers opportunities to achieve different goals. Densification near traffic nodes will increase the accessibility and it will strengthen the liveability and attractiveness whereby the economy will improve. These important factors of cities are all interrelated.
THEORETICAL FRAMEWORK

Area identity
Creating identity is important in to give significance to a certain area and to give it a certain image.

“Identity: 1. Unity of being, total accordance (...) 2. Individual character, characteristic of a person or a group (...) 3. (maths) equality which is valid for all values within common variables” (Van Dale, 2005a). In this research it is about the individual character of an area.

Blueprint planning, standardisation and rationalisation in spatial development have equalized the land for the past fifty years. Large housing areas of the period 1950-2000 had big impact, often not in a positive way. Many of these areas look like each other. When areas are going to look the same, so if they are not rooted in the history or oddities of that place, they become anonymous (Puylaert & Werksma, 2011).

In the past years there is a growing interest in local qualities and history. People are looking for their own roots and the roots of an area in counter-reaction to the trends of globalisation. Local forces put the processes of globalisation back in the perspective of unique site-specific shapes. Processes of globalisation and localisation are in this context not each other’s opposites, but are both part of the same development (Simon, 2004).

In spatial development it is important to create identity by linking the qualities and the story of the area to construct unique and recognizable areas. Due to the combination of appearances, present activities and history those areas have the potential to bind people and to offer qualities, that will last. Users of authentic areas are mentally owners and are therefore willing to invest in the future qualities of their area. By definition areas with identity will have a higher value in terms of use, experience and for the future. (Puylaert & Werksma, 2011).

New concepts for areas which are increasingly based on the identity of that area is one of the most important trends in current area development, said Agnes Franzen in a speech. She also argued that a concept will catch on better if it is not made up, but based on the characteristic and historical features of the area, the people who live there and what they think is important (Manshanden, 2016).

Trends
The city and society are always changing. When intervening in the urban fabric it is important to be aware of the current trends and movements. “Trends: 1. The general course which figures show for a period (...). 2. Inclination, tendency, line of development.” (Van Dale, 2005c). In this research trend is used as the line of development in a certain direction. In this case trends that are going on in the city of Amsterdam and which are applicable for this research.

The trends are elaborated in the chapter Identity because they are determined after analysis of the area, to created a well founded identity which is based on spatial features and relevant trends.
AMSTERDAM

TRENDS IN THE CITY

Rising popularity for living
The main trend in the city of Amsterdam is its rising popularity. For about a decade the population is growing quite constantly with about 11 thousand new inhabitants per year (figure 4) (OIS Amsterdam, 2016). Prognosis show that this growth will continue (figure 5) (Gemeente Amsterdam, 2015a) and that around 2035 the population of Amsterdam will become more than a million (Het Parool, 2016).

This, by Dutch standards, huge growth of the Amsterdam population results in a great pressure on the city. On the one hand the increasing pressure on the housing market. Now that the economic crisis is over, the rise of the Amsterdam housing prices goes much faster compared to the rest of the Netherlands (Lonica, 2016) (figure 6). The waiting lists for social housing in the city region grows as well, nowadays the waiting period takes almost 9 years (Groot & Veer, 2016). Within the city itself even more.

Rising popularity for visiting
Besides all the new inhabitants the city is also getting more popular for tourists. The hotel visitors grew immensely and will grow even further to 10 million in 2020 (figure 8) (Gemeente Amsterdam, 2015a). In this stats the Airbnb is not even taken into account. The rise of the supply of houses that can be rent from this popular online housing rental platform is immens (figure 9). The pressure of the amount of tourists on the city centre is huge (figure 10). This pressure on the inner city is caused due to all cultural- and touristic hotspots that accumulate there (Hoog, 2012). It results in crowded public spaces, nuisance of tourists and other problems. In 2015 17,6 million national and international tourists visited the city on a population of just 835.000 inhabitants (Gemeente Amsterdam, 2015a).
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**TRENDS IN THE CITY**

figure 8 *Prognosis of the rise of hotel visitors in Amsterdam (Gemeente Amsterdam, 2015a)*

figure 9 *The immense growth of Airbnb location in Amsterdam (Thole n.d.)*

figure 10 *Crowdedness in the city centre (MAX Vandaag, 2016, Hart van Nederland, 2016)*

figure 11 *Accumulation of cultural- and touristic hotspots (Hoog, 2012)*
Due to the increasing pressure on the city, the municipality made two policies. Koers 2025 (Gemeente Amsterdam, 2016a) to cope with the pressure on the housing market and Stad in balans (Gemeente Amsterdam, 2015a) to cope with the crowdedness in the city.

**Koers 2025**
Recently the municipality set out its plans for housing construction. Het college van burgemeester en wethouders (The Mayor and Executive Board) wants to relieve pressure on the housing market by making plans for 50,000 new houses within the city limits till 2025. These plans are elaborated in the Koers 2025 (Gemeente Amsterdam, 2016a) where all ongoing project are listed and mapped and where strategic areas for new developments are appointed in which decisions still need to be made.

In figure 12 all plans are shown and set into time. They are mostly located in the zone around the ring road, outside the ring road and above the river IJ. The plans for the short term (figure 14) are located in the ring road zone and in the central axe of Amsterdam-Noord. The plans for the longer term (figure 15) are to the east, south and west more to the outskirts of the city, in the north they are at the banks of the river IJ.

In the constructions plans for the longer terms choice have to be made. Where will the city invest in? The most cost efficient is investing in just one area, but to improve the overall liveability in the city it is better to spread investments.
Figure 14: Short term building plans in Amsterdam

Figure 15: Long term building plans in Amsterdam
Amsterdam gets busier by the day. As shown in figure 8 not only the amount of inhabitants will increase but the number of registered overnight hotel visitors will rise even faster. This results in an enormous pressure on the city centre where many cultural and touristic elements accumulate (figure 11). Recently even the major of Amsterdam stated that the problems of the crowded city must be tackled (Van der Laan, 2016). This is striking because the municipality always stimulated the economic benefits of tourism, however they currently acknowledge the urgency of the problems that occur. In Stad in balans (Gemeente Amsterdam, 2015a) plans are unfolded how the city could handle the pressure better. One of the plans is to enlarge the attractive area of the city by rolling out the city centre (figure 16).

Goals of the city
These policy documents of the municipality come to the two main goals of the city of Amsterdam. The first is to densify and to transform areas in the city, to deal with the pressure on the housing market. The second is to spread tourism over the city and even the region to relief the inner city.
This research project is about Amsterdam-Noord because it has potentials to support the city in its immense growth and crowdedness nowadays. In this chapter Amsterdam-Noord is analysed. First its relation to the city as a whole, then the history and construction, thereafter the plans and developments and finally the current situation and impact of impact of the new metroline.

Amsterdam-Noord is the northern city district of Amsterdam (figure 18). It is always been isolated and secluded from the rest of Amsterdam due to the barrier formed by the river IJ. This is one of the reasons it got behind in development whereby the area was unpopular and even seen as not a part of the city by some (figure 19) (Kok, 2016).

The urban part of Amsterdam-Noord has many issues like socio-economic problems and its liveability is weaker than the surrounding areas, especially the other areas within the ring road (figure 20). This disadvantage on the rest of the city is caused by the barrier and because the municipality and the market focused on the development of other parts in the city (Roemer, 2003).
AMSTERDAM-NOORD
IN RELATION TO THE CITY

Legend

figure 19 Barrier formed by the river IJ

figure 20 Liveability in Amsterdam (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, n.d.)
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IN RELATION TO THE CITY

For being part of a city the northern part of Amsterdam has a low density, especially being part of the area within the ring road of Amsterdam. It has about the same density as neighbourhoods outside the ring road which are relatively far away from the city centre (figure 21).

The municipality of Amsterdam is realizing a new metro-line which will connect the CAN-area in Amsterdam-Noord via the city centre and the museum district to the business district of the city (figure 22).

This new metro-line connects the northside of the city to the existing metro network of the city and to the (inter) national train network (figure 23). For the impact of this major infrastructural project see page X.

figure 21 Housing density in Amsterdam (Gemeente Amsterdam, 2010)
AMSTERDAM-NOORD
IN RELATION TO THE CITY

Figure 22: Position of Noord towards the city

Figure 23: The new metro line and the existing metro network
Already for centuries the area north of the river IJ was protected by a long dike, where in the course of time little dike villages arose with some small villages within the diked area (figure 24). The northern IJ-bank was appointed heavy industry and shipbuilding zone by the municipality after the construction of the North Sea Canal in 1876 (figure 25). At first the municipality did not want to build residential areas because they were afraid a bridge across the busy waterway was needed, but due to the increasing labour residential areas were needed and were built as garden villages along the dike (figure 26). During the reconstruction after WWII north was left behind and Amsterdam expended to the west. It took till the 1960’s before the municipality built in Amsterdam-Noord again. Late modernistic neighbourhoods arose north of the garden villages (figure 27).

Due to the barrier formed by the river IJ, the presence of heavy industry and the lack of political will to develop the northern part of the city, Amsterdam-Noord is less developed than other city districts.
The garden villages

The '60s-'70s areas

Rural area
Dike
Dike village
Industrial area
Garden village
Borders of Amsterdam Noord

Legend

figure 26 The garden villages

figure 27 The '60s-'70s areas
As a result of the historic structure Amsterdam-Noord can be divided in four parts (figure 28). The industrial-, the garden village- and the ‘60-‘70- and the rural section. All four have different challenges and opportunities for the development of Noord.

The rural area must be maintained because of its natural value, however the recreational function should be more exploited (figure 29), the ‘60s-‘70s section can be densified because of its late modern lay-out (figure 30), the garden village part must be conserved and maintained because of its cultural- and historical value (figure 31) and the industrial area can be transformed because of the moving industry (figure 32).
figure 29 The rural area

figure 30 The ’60s-’70s area

figure 31 The garden village area

figure 32 The industrial area
The lag in development of the area has location-based and political reasons. Amsterdam-Noord is split in two equally large areas: Urban North and Rural North (figure 33). The rural area of Noord is holy and protected, it consist of small old towns in an rural wet landscape called Waterland. The urban side of Amsterdam is an area which is lagging behind in development compared to other areas in the city, however it has perfect qualities to get more involved and integrated. The area is well located. It is near the lively city centre and close to the rustic area of Waterland (figure 34). On top of that it has a large area that can be transformed from an industrial area to a mixed use zone (figure 35).

figure 33 The urban and rural part of Amsterdam-Noord
**AMSTERDAM-NOORD**

POTENTIALS

**Figure 34** The potentials of the urban part of Amsterdam-Noord

**Figure 35** Transformable area along the river IJ
**DEVELOPMENTS**

*Developments*
Many developments are ongoing in the northern part of Amsterdam. As mentioned before the municipality of Amsterdam is realizing a new metro line, the Noord/Zuidlijn, which will run from the north side of the city to the south side. According to plan the opening will be in June 2018, after years of delay. The new metro line will improve the connection by public transport of Amsterdam-Noord to the city. It will run from the CAN-area in Noord via Amsterdam Central Station towards Amsterdam Zuid (figure 36). Many of the planned housing construction in the Koers 2025 (Gemeente Amsterdam, 2016a) are situated in the urban part of Amsterdam-Noord. Figure 37 illustrates the status of these plans. It shows that the plans are mostly along the water in the transformation section and close to the new metro station. The plans closer to the city are generally more elaborated. The plans close to the metro station are in all different phases.

The Overhoeks area, across the Central station, is developing quickly. In the last years public attractions like museum and cinema EYE and the 24/7 multifunctional A’DAM tower popped up and many new houses are or will be built (figure 38). Due to all developments the movements of commuters and tourists are increasing rapidly across the IJ. The ferries, which provide the jump across the river for pedestrians and cyclists, are reaching their limits. Thereby the municipality recently decided to make a bridge across the IJ (figure 39), to intensify the ferry connection and to investigate the possibility of a new metro station and a pedestrian tunnel (Weezel, 2017).
figure 38 Artist impression Overhoeks (vanrossembv.nl, overhoeks.nl)

figure 39 Artis impressions of bridges across the river IJ (Gemeente Amsterdam, 2015d)
**Amsterdam-Noord**

**Structure**

*Mosaic*
As shown in figure 28, Amsterdam-Noord can be generally divided in four sections. However, the three sections within the urban part of the city district consist of a mosaic of areas within these sections (figure 40). It is a patchwork which is both held together and separated by the framework of water, green areas and infrastructure.

*Water*
Holland, Amsterdam and Amsterdam-Noord are famous for their water. Figure 41 shows it all. A part of the tamed sea, the canals and the countless ditches of the rural area of Amsterdam-Noord. Within the urban area of Noord many canals and waterways go through the area.

*Green areas*
Amsterdam-Noord is known for its green and rural atmosphere. Figure 42 shows the large green area outside the ring road, like fingers the greenery infiltrates in the urban area.

*Infrastructure*
An important physical element in the landscape of Noord is the dike which goes along the water outside the ring road and straight through the area of Amsterdam-Noord within the ring road (figure 43).

The urban part of the area is encircled by the ring road whereby the northern part of the area is well connected to the Dutch highway system. A north-south oriented access road goes right through the area connecting Waterland and the city centre.
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STRUCTURE

Legend
- Green area
- Borders of Amsterdam-Noord

figure 42 Green areas

Legend
- Highway
- City axe
- City street
- Metro line
- Dike
- Borders of Amsterdam-Noord

figure 43 Infrastructure
**Districts**
The districts within the area have different conditions (figure 44). Some are recently built or restructured, others still need to be taken care of. The areas which are most urgent to be dealt with are the red ones. These are the Molenwijk and the western part of Buikslootmeer.

**Shopping areas**
Amsterdam-Noord has many systematically developed shopping areas, which are primarily aimed at inhabitants of its city district. Except for shopping centre Boven ‘t Y which fulfils a regional function (Gemeente Amsterdam, 2012) (figure 45).

Just like the districts, shopping areas have different conditions as well (figure 46). All larger shopping areas have recently been built or are just renewed except Boven ‘t Y which is the largest of them all.

**Main green structure**
A large part of Noord is located within the main green structure of Amsterdam (figure 47). This implies that is a protected green area.
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STATUS OF AREAS

Figure 46: Status of shopping areas in Noord

Figure 47: Protected area by the main green structure
Public transport structure
In current from the public transport system of Amsterdam functions as spider web. Nearly public transport leaves at and goes to Amsterdam Central Station and it goes to all directions of the city. Busses cover the part north of the river IJ while trams and metro cover the rest of the city (figure 48).

Noord/Zuidlijn
The nearly finished new metro line will change the whole structure of the Amsterdam public transport system. The spider web structure will be exchanged for a so called fishbone structure in which the Noord/Zuidlijn will function as spine (GVB, 2016). All tram and busses routes will be re-routed to relieve the busy Central Station (figure 49).

Regional public transport
In the current situation all regional busses coming from villages and cities north of Amsterdam stop at the Central Station, from where commuters transfer to other public transport like trams or metro. In the new situation (figure 50) almost all busses will stop at the beginning/end of the Noord/Zuidlijn from where the passengers will go further into the city by metro. Hereby the northern stop of the metro line, called Noord, will function as a major transfer point.
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figure 50 Incoming regional busses at station Noord when Noord/Zuidlijn is completed
**Cars**
In figure 51 the plus- and main road network is visualised. Striking is the low presence of these roads in the northern city district.

**Public transport**
In figure 52 the plus- and main public transport network is shown. The difference between the way of public transport above and beneath the river is clearly visible with in Noord only busses and south mainly trams.

**Busses in Noord**
figure 53 shows how the busses will go through the area when the Noord/Zuidlijn is finished. The busses will drive around the city district and go to the new metro stations instead of going to Central Station.
Prognosis
The transformable zone has a privileged position to be developed. Positive elements are (figure 54):
- The strategic location. It is close to the city centre, near the water and the rural area is nearby.
- The popularity of mixed use in reused industrial areas, due to the desire for urbanity, identity and identification (Baum & Christiaanse, 2012).
- The realisation of better connections across the water (Weezel, 2017).
- The enormous pressure on the housing market of Amsterdam and the corresponding building boom (Eerenbeemt, 2016).
- Due to these factors it is most likely that the transformable areas along the water will be developed quite smoothly. The areas behind this gentrifying wall, the area around the last metro stop and the ‘60s-’70s zone, will be harder to develop while there are many opportunities (figure 55).

Hypothesis
The liveability in Amsterdam-Noord will improve due to densification at strategic locations, with preservation and strengthening of the area’s important current qualities and even with the addition of new qualities.

Research questions
Main research question:
- How can the area above the transformation zone in Amsterdam-Noord contribute to the building- and crowd control goals of the municipality whereby the liveability of the area will increase?

Sub research questions:
- What is the best location to intervene in?
- How can the intervention contribute to the goals of the city?
- What identity fits the area where the intervention takes place?
- How can the liveability of the area north of the transformation zone increase?
**Buikslootermee**

The Noord/Zuidlijn connects clear areas like the business zone of the Zuidas, the cultural zone of the Museumplein with its famous Rijksmuseum and the city centre, but the identity of the northern part across the gentrification wall is a question mark (figure 56). How can this Buikslootermee area contribute to the city?

The area has much potential because of the completion of the Noord/Zuidlijn whereby it will become an important transfer point. The shopping zone is outdated, but has great potential to become a shopping area for Amsterdam, its region and of course Noord itself. There are densification opportunities. New residential areas are planned. And there is a vacant sewage treatment plant (figure 57).
**Criteria & principles**

The idea of the project is to create a strong identity for the Buikslotermeer in order to make optimum use of the chances and opportunities the popularity of Amsterdam and the completion of the Noord/Zuidlijn offer. In order to improve the liveability of the neighbourhood, to contribute to the current goals of the city and to integrate Noord with the rest of the city. Resulting in a vibrant centre for Noord and a crowd-puller for people from Amsterdam and the region above Amsterdam.

Listed the criteria and principles are:

**For Noord as a whole:**
- Make use of the chances and opportunities the new Noord/Zuidlijn offer
- Integrate Noord with the rest of the city
- Make use of the chances and opportunities the popularity of Amsterdam offer
- Contribute to the goals of the city

**For Buikslotermeer specific:**
- Become a gate of the city
- Create a strong identity
- Become a vibrant centre for Noord and a crowd-puller for the city district, the city and the region.
History
The Buikslotermeer is a neighbourhood in Amsterdam-Noord. It is a drained lake which used to be 340 hectares in size and about 3 to 4 meters deep before it was drained in 1627 (ftp.ruimtelijkeplannen.amsterdam.nl, n.d.).

Figure 60 shows Waterland in its rough appearance before one controlled the water. Within the circle the lake Buikslotermeer is situated.

In the beginning of the prosperous 17th century the lake was drained together with the Belmermeer and Broekermee. In figure 61 the polder is clearly visible with its so called ringvaart, a surrounding canal where the drained water is being discharged.

In 1921 the Buikslotermeerpolder got annexed by Amsterdam in a large annexation proces in which Amsterdam got property rights of large parts of its surrounding land in order to expend. This resulted in the city district Amsterdam-Noord is today (figure 62).

For more about the history of Amsterdam-Noord see the attached paper *The fall and rise of Amsterdam Noord: The history of the northern district of Amsterdam in the appendix.*
Like Noord as a whole, Buikslotermeer consists of a patchwork of areas (figure 63).

Which is separated and held together with the water-, green- and infrastructure. (figure 64, 65 & 66)
Status
The status of the areas differ. Quite a large part is protected by the main green structure. In the west part of the Buikslotermeer new building plans are located. The east part consists of late modernistic residential areas which can be densified and it consists of the Boven’t Y shopping area (figure 67).

Building plans
In the area are three building areas. Noorderkwartier, Station area and Elzenhagen Zuid. Noorderkwartier and the station area are concrete plans, Elzenhagen Zuid not yet (figure 68).

Cinema
A new cinema is planned with 12 cinema screens (figure 68).
Elevated infrastructure

The Buikslotermeer is a drained lake whereby the ground level lies around 4 meters below sea level. The surrounding area outside the ring road lies 2 meter below sea level, the surrounding area within the ring road just above sea level (figure 69).

The Buikslotermeer is a polder divided in parts by elevated infrastructure with wide street profiles, because of the late modernistic zeitgeist. These infrastructural barriers are important access routes to Amsterdam-Noord and the city of Amsterdam (figure 70). The red lines are the ring road A10 (1) and the Nieuwe Leeuwarderweg (2). The orange lines are the IJdoornlaan (3), the Waddenweg (4) and the Nieuwe Purmerweg (5).

These elevated road result in a divided polder whereby they are not properly interrelated. In figure 71 the altitude difference in combination with the wide structure is shown in the street profiles.

The worst example is the waddenweg Viaduct (figure 72)
Spatial continuity
The elevated infrastructure causes a lack in spatial continuity within the polder of the Buikslotermeer. These later modernistic infrastructural barriers all have their own objectives.

The Nieuwe Leeuwarderweg (figure 74, 75, 76, 77 & 78) is a provincial road which runs from the city centre at the other side of the river IJ via the IJtunnel through Noord to the region north of Amsterdam. It has the track of the Noord/Zuidlijn in between the two driving directions. The maximum speed is 70 km/h. The street profiles differ. South of the Buikslotermeer, at the height of the Noorderpark, it runs below the ground. Within the Buikslotermeer it is elevated and runs through the metro station and crosses the ring road A10 where after it runs along at ground level.

The Waddenweg (figure 79 & 80) runs parallel to the Nieuwe Leeuwarderweg. Due to this large infrastructural element the Waddenweg loses its importance to be as large scaled as it is nowadays. Moreover the Waddenweg viaduct (figure 80) forms a large barrier between the metro station and the shopping mall.

The IJdoornlaan (figure 81 & 82) is the most important east west connection of the northern part of Amsterdam-Noord. It is elevated and because of a missing urban facade the lane misses a relation with the area it crosses. The large parking lots in the shopping area reinforces this.

The ring road A10 (83, 84, 85 & 86) is the highway which surrounds the city and which makes it accessible. However due to the elevation of this infrastructural element it results in a barriers between the so called within the ring road and outside. At the height of the Nieuwe Leeuwarderweg the A10 goes to ground level and dives through the provincial road.
The area of Buikslotermeer has some typical characteristics as can be seen in figure 87. It is part of a small piece of the Amsterdam’s rural area whereby the rest of this idyllic Waterland is nearby. Buikslotermeer forms a gateway between the surrounding countryside and the city. The hospital BovenIJ is at its borders. And there are sport facilities in and around the Buikslotermeer.

On the basis of these spatial features ongoing trends are examined (figure 88) to come to a viable identity for the area. This is a contribution to the theoretical framework.

**Trends 1: green places**
Green in and around cities have a future. It contributes to a pleasant living environment. Citizens are placing more importance to their environment and are using the green spaces in their surrounding more often and more diverse (Heer, Egmond, & Jorritsma, n.d.). The amount of visitors of the surrounding green areas of Amsterdam is growing. They like to go to close by green areas instead of growing to recreational areas which are further away, like the dunes and the coast (Gemeente Amsterdam, 2015c).

**Trend 3: healthy food**
According to an American research Generation Z, youth born in or after 1990, wants more healthy and fresh ingredients (NPD, 2014). Seeing the endless online blogs of people who share their way of cooking and eating, one can conclude that this is also the case in the Netherlands. Healthy food is popular. This generation is growing in number and they are growing up whereby they become part of the economy. According to trend analyst Silvia Na ber consumers will be more aware of food, because some hard truths came out of the industry whereby they were mislead (Luimstra, 2017).

**Trend 4: urban farming**
Circular economy is a hot topic nowadays. We have to use our raw materials in a more economical way (Zoelen, 2016). Urban farming is creating smaller distances from producers to users and with current developments high-tech vertical farming is becoming reality (Oskam, Lange, & Thissen, 2013). Moreover it is becoming popular because of the first and the second trend. People want to be more in the open air and want to know where their food comes from. Almost all Dutch municipalities have urban farming initiatives, on a small scale but also larger professional food production on the outskirts of the city. (Dijkshoorn-Dekker & Blaeij, 2015).

**Trend 5: pressure on sport facilities**
The municipality of Amsterdam wants to invest in sports. Participate in sports is important for its residents and a growing number of people are doing sports or want to do sports. On top of that the population is increasing, this will result in a higher pressure on the sport accommodations. In Amsterdam-Noord the pressure on many sport accommodations is still underutilized, but with the growing number of inhabitants the pressure will increase here as well. The number of residents doing sports grows most rapidly in the city district Noord and Oost (Gemeente Amsterdam, 2015b).

Amsterdam gets increasingly busy and dense. The use of and the need for green areas will increase. The citizens of today are using the rural land to recreate, to work, to buy food and to find peace. The rural-urban fringe is an interesting area that should facilitate in the interaction between city and rural land.

Many products come from the northern surrounding area of Amsterdam where animal husbandries are located and cities are which are amongst other things famous for their dairy product. Healthy and local food is a chance to use.
Creating identity is important to give significance to a certain area and to give it a certain image as is elaborated in the theoretical framework. Because of the mentioned spatial features and current trends, the new identity of Buikslootemeer will be health. This identity of health will be divided in three factors: healthcare, food and sport. These three elements are important for the well-being of people. Giving attention to them will, in combination with other factors, improve the liveability of the area. Moreover these elements will create an unique selling point for Amsterdam whereby it will become an area with value for the city as a whole.
With the thematical framework possibilities to a specific program for the identity of health are elaborated below.

**Human**

**Sport**
- Present:
  - Sports hall
  - Football fields
  - Track and field for athletics
  - Sport venue for children and youth with a physical or mental disability
  - Golf fields
- Possibilities:
  - More different types of sport

**Living**
- Housing
- Facilities
- Accessibility

**Healthcare**
- Present:
  - Hospital
- Possibilities:
  - Specialized healthcare
  - Sports related healthcare/recovery

**Escape the city**
- Way-finding and routing
- Connection with hinterland
- Exploiting recreation

**Environment**

**Landscape**
- Connection with city
- Visible from the city

**Food**
- Local products
- Healthy products

**Urban farming**
- Community farming
- Vertical farming

**Production**
- Selling products from the region

**Economy**

**Knowledge/Education**
- Sport
- Agricultural
- Food
- Nature

**Hotel and catering industry**
- Local products
- Healthy

**Agricultural**
- Connection with hinterland
- Knowledge

**Medical**
- Healthcare

**Market**
- Extend and improve market
To optimize the identity, to become an area with significance for the city and to contribute to the goals of spreading tourism over the city Buiksloot-
meer needs crowd-pullers. Potential crowd-pullers concerning the identity of health are presented in a word spin in figure 90.

Interesting are the following developments:

- At the Jaap Edenbaan, the in Amsterdam located skating track, substantial investments must be made in the indoor ice rink. The munici-
pality wants to consider a relocation on behalf of housing construction Gemeente Amsterdam, 2016a). This is an excellent opportunity for Buiksloot-
meer.
- A group of promoters is trying to realize a Mu-
seum of Our Food in Amsterdam (Foodmuseum 3.0 in Amsterdam: MOOF, 2016). Concerning the identity this would be perfectly situated in the Buikslootmeer.

figure 90 Crowd-pullers
**Status quo**
The sub areas within the Buikslootemeer have different challenges and opportunities (figure 91). The to-maintain-area consist of new living areas, green area and important infrastructure that need to be preserved. The to-densify-part are the ‘60s-'70s neighbourhoods where there are possibilities for densification because of the modernistic wide layout. The concrete-building-plans-section consist of the plans of the municipality to create a very urban area around the metro station and a living area north of it. Southwest of the metro station lies a former sport area of 26.6 ha which is been made ready for development. The urban plan of the municipality is not approved yet and thereby part of the soft-building-plan-area. Just outside the ring road a vacant sewage treatment plant which lies within the protected main green structure, but is not part of it. The to-restructure-part is the Boven ’t Y shopping area which is waiting for development for years, but because of different real estate owners and other difficulties the attempts failed.

**Area to intervene in**
The area to intervene in is shown as the plan-area in figure 92. The BovenIJ hospital has been added because it will be part of the identity. The modernistic neighbourhoods are appointed as possible to densify. The emphasis will be on the plan-area because the centre needs to function well before the area can be densified further.

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**Legend**
- **To maintain**
- **To densify**
- **Concrete building plans**
- **Soft building plans**
- **Vacant**
- **To restructure**
- **Borders of Buikslootemeer**

**Figure 91 Challenges and opportunities**

**Figure 92 Area to intervene in**
Starting point

Figure 93 shows the base of the developments in the Buikslotermeer. The new centre of the Buikslotermeer will be the already planned central-station-area. It will become a large traffic junction and transfer point with, beside houses, regional functions like offices, hotels and shops.

East of this central point the outdated shopping mall is situated. Restructuring and re-determining this area into a multifunctional living and leisure area give this area new élan.

West of the central-station-area the station connects to the hospital through a living and health program. This will strengthen the identity of the area. Via existing connections the area will be connected to Waterland. The developed plan area needs to connect precisely to these connections to create a strong relation.

High density central area

The axis that will exist of the living and leisure area and the living and health area will become a high density development (figure 94). Due to the increased transport value and the ambition to become a significant part of the city of Amsterdam this is achievable and desirable.
Surrounding green
The neighbourhood Buikslotermeer is surrounded by green areas. North lies Waterland, at the eastern side Baanakkerpark, to the west the Noordhollandsch Kanaal and southwest Noorderpark (figure 95).

Central axis
The intended high density axis crosses the Buikslotermeer, touching and/or crossing the surrounding green structure (figure 96).

New connections
Due to the intended identity and because of the green characteristics of Amsterdam-Noord a strong connection of the axis with the surrounding green is highly desirable (figure 97). These connections will connect the station, the heart of the central axis, to the green structure whereby the rest of Amsterdam can reach the surrounding rural land of the city easier.
Program

The analysis, the challenges and opportunities (figure 91), the area to intervene in (figure 92) and the starting point (figure 93) divide the area in subareas which have a different program (figure 98).

The areas will each be elaborated in the next chapter.

1. Central Area
   - Highly urbanised
     - a. Education
     - b. Hotels
     - c. Offices (new style)
     - d. Living

2. City Street
   - Urban
     - a. Hotels
     - b. Offices (new style)
     - c. Living

3. Leisure Area
   - Highly urbanised close to station, urban to the east
     - a. Shops
     - b. Living in high density
     - c. Crowdpullers
       - I. Cinema
       - II. Restaurants/Bars
       - III. Market

4. Health area
   - Highly urbanised close to station, urban to the west
     - a. Expension healthcare
       - I. Hospital
       - II. Specialist care
     - b. Living in high density

5. Living & sport area
   - Green urban
     - a. Living in medium density
     - b. Sport facilities
     - c. A park

6. Vacant sewage plant
   - Green
     - a. Sport facilities
     - b. Urban farming
     - c. Wellness centre
     - d. Hotel
     - e. Restaurants/Bars

7. Buikslotermeer Noord
   - Densification
     - a. Living
     - b. Facilities

8. Plan van Gool
   - Densification
     - a. Living
     - b. Facilities

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Subareas

1. Central Area
   - Highly urbanised
     - a. Education
     - b. Hotels
     - c. Offices (new style)
     - d. Living

2. City Street
   - Urban
     - a. Hotels
     - b. Offices (new style)
     - c. Living

3. Leisure Area
   - Highly urbanised close to station, urban to the east
     - a. Shops
     - b. Living in high density
     - c. Crowdpullers
       - I. Cinema
       - II. Restaurants/Bars
       - III. Market

4. Health area
   - Highly urbanised close to station, urban to the west
     - a. Expension healthcare
       - I. Hospital
       - II. Specialist care
     - b. Living in high density

5. Living & sport area
   - Green urban
     - a. Living in medium density
     - b. Sport facilities
     - c. A park

6. Vacant sewage plant
   - Green
     - a. Sport facilities
     - b. Urban farming
     - c. Wellness centre
     - d. Hotel
     - e. Restaurants/Bars

7. Buikslotermeer Noord
   - Densification
     - a. Living
     - b. Facilities

8. Plan van Gool
   - Densification
     - a. Living
     - b. Facilities

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The areas will each be elaborated in the next chapter.
Subarea 1 Central Area
Already for at least 15 years there are plans for this area, when Sjoerd Soeters presented his plan for the CAN-area in 2003 (Soeters van Elsdonk Ponec architecten, 2003). Due to multiple factors the plan and the metro line have been delayed for years. Since the end of the real estate crisis the plans got revitalised and are been built at high pace at the moment. Some are already built or under construction. The plan will be executed as shown in figure 99.

Subarea 2 City Street
The Nieuwe Leeuwarderweg is an important gateway between the city below the river IJ, Amsterdam-Noord and Waterland. It contains four car lanes and two metro rails (figure 100). On the eastside large apartment flats are situated which provide an urban facade, but on the west there is open land. The Buikslotermeer will function as gate between the city and its rural hinterland. Therefore this important access road need to have an urban allure with present facades, to make the travellers aware of this transition (figure 101).

Subarea 3 Leisure Area
Boven ’t Y is an outdated shopping mall built in the ’60s (figure 102). It is monofunctional, turned inward, surrounded by large parking lots and almost all buildings have just one floor. The area needs to be restructured to become multifunctional and more dense to contribute to the goals which the city is facing. Most buildings have to be demolished to make space for development. Some will be maintained because they are built more recent and/or already contribute to a mixed area (figure 103).

Subarea 4+5 Health- and Living and Sport area
Subarea 4 and 5 are drawn together because they are part of one large site Elzenhagen Zuid (figure 104). It used to be a sports complex, which will be moved to create a new urban area. The municipality recently published its plan and submitted it for a consultation process for inhabitants (figure 105). Urbanizing the site contributes to the goals of the city and will create a more liveable environment. However the increased transport value, all public space
around the location in the parks, Waterland and the modernistic areas give the opportunity to create a more urban and dense area with more functions and services. Furthermore it will create a large unclear public space which will be handled in the next chapter. The area has a view on the windmill at the star on figure 104.

Subarea 6 Vacant Sewage Plant
Just outside the ring road is a vacant sewage treatment plant which lost its function years ago. IN 2012 Het Parool (2012) published that it would become a wellness and spa which would be completed in 2015. Now, five years later nothing has happened. The site is located on an interesting spot. Surrounded by the highway and the protected main green structure (figure 106). It will become a large crowd puller which will strengthen the identity of the area with a wellness, urban farming, sport and hospitality program.
Subarea 7 + 8 Buikslotermeer Noord and Plan van Gool
Buikslotermeer Noord and Plan van Gool are typical late modern neighbourhoods with spacious layouts. This gives opportunities to densify, however this typical way of urbanism should be maintained as well. The municipality made a map upon which the late modernistic areas of the city are rated on architectural and urban layout, typology and public space. They are subdivided into four orders. The first order contains monumental or monument worthy buildings or structures, the second exist of high rated buildings or structures, the third of medium rated buildings or structures and the basic order of low rated buildings or structures (figure 107 and 109). The areas indicated in figure 108 and 110 are the location where densification can be realised via restructuring of these sites, because they have a low rating and a low density. The developments of subarea 1 till 6 are more important for the Buikslotermeer as a whole because they function less well then area 7 and 8 at the moment. Therefore area 7 and 8 are just appointed as possible to density, but they need to be elaborated after the completion of subarea 1 till 6.

Figure 107: Rating map of subarea 7 (Gemeente Amsterdam, n.d.)
Figure 108: Possible location to densify
Figure 109: Rating map of subarea 8 (Gemeente Amsterdam, n.d.)
Figure 110: Possible location to densify
Municipal plan Elzenhagen Zuid
As mentioned before the municipality recently published its urban plan for Elzenhagen Zuid which is located in subarea 4 and 5 (figure 111).

It contains a park, a water, a running track, some closed building blocks and an urban villa park.

Program
Besides residential buildings other function are implemented in the municipal plan as well (figure 112). However this extra program should be enlarged to create the urbanity which suits the transportation value of the area, moreover the area needs a more extensive program to contribute to the ambitions of the city and to the intended identity for the area.
Building block structure
The structure of the buildings in the villa park is not a high urban typology and is not typical for Amsterdam (figure 113).

Infrastructure
The municipality is aiming to reduce car traffic by repulse the cars to two main streets. Thereby large parts of the area will not be easily to access and the public space will overflow of pedestrian space (figure 114).
Green structure
As mentioned before in the analyses, the Buikslotermeer area is surrounded by green structures and by late modern areas in which much green space exists. A point of criticism towards the late modern areas is that the public green spaces are unclear without hierarchy. The structure of the municipal plan will create a neighbourhood with green public areas surrounding the buildings (figure 115) while larger green structures like parks and Waterland are nearby. Therefore this plan will be a green area, within a green area within a green area while the developments should contribute to a more urban area.

The park along the dike is an interesting aspect because it will connect to important green areas.

Public space structure
The green area around the villa’s together with the park results in a large continues public space (figure 116), while there is already much public space in the surrounding area. The ambition to create an urban area does not go together with this villa layout. Thereby the basis of the design for the area will be closed building blocks to create a clear hierarchy in public space and to provide a feeling of safe for the residents and visitors.
Building blocks
Amsterdam has a tradition of closed building blocks, however large city expansions were planned in the late modernistic zeitgeist in the post-war era. This results in an inner city with an urban allure with hierarchical public space, surrounded by garden-city-like neighbourhoods with much unclear public space.

While the city developed and grew further, the demand for urban areas is getting more urgent while the city cannot expend further nowadays. Thereby the city needs to densify within the existing borders, whereby areas have to be more urbanised.

The plan area in the Buikslotermeer is surrounded by green structures and late modernistic neighbourhoods. This makes it more relevant to create a centre with a clear and dense structure. The closed building block structure is eminently suitable for this objective.

Sluisbuurt
Interesting is the recent discussion about the development of the Sluisbuurt, a neighbourhood along the south bank of the river IJ, quite close to the Buikslotermeer. The municipality published an urban plan with much high-rise up till 148 meter, which will be the highest of the city. The municipality states that this results in a neighbourhood with a lot of public space despite the high density and provides houses with a view which are currently popular (Gemeente Amsterdam, 2016b) (figure 117 and 118).
Dutch architect Sjoerd Soeters claims he can create a neighbourhood with the same high density in a closed block structure of seven layers (figure 119 and 120) in which the area will get a clearer public space and less wind that would have been caused by the high-rise. Soeters explains that high-rise is inefficient, expensive, wind causing and segregating because the rich will live on top and the poor below in the shadow of the high-rise (Boon, 2017).

Buikslootmeer
To create a liveable, dense and clear urban design the strong points of these two plans for the Sluisbuurt will be used in the plan for the Buikslootmeer. It will become a closed block structure with high-rise accents within the block structure.
Amsterdam building block structures
To get to know the principles of building block structures in Amsterdam four neighbourhoods are used as a case study, De Pijp, IJburg Java-eiland, Plan Zuid and Van der Pekbuurt. It are different areas concerning typology and zeitgeist but they all have closed building blocks. The areas have been researched in terms of the composition of building blocks (figure 121, 125, 129, 134 and 137), infrastructural grid (figure 122, 126, 130, 134 and 138), green structures (figure 123, 127, 131, 135 and 139) and public space (figure 124, 128, 132, 136 and 140).

De Pijp
De Pijp is a typical cheap built neighbourhood of 19th century. The houses where small and the area was dense to house many people to make it more profitable for the developers. So the standard where not height in this area. Over a century the neighbourhood changed drastically because of renovations and merging of apartments. The area was one of the first in Amsterdam where gentrification took place. Nowadays it is an expensive lively neighbourhood where many young professionals live.

The area has a closed block structure with private inner gardens (figure 123). People meet each other in the Sarphatipark and in the squares which are left out in the building structure (figure 124). It is a hierarchical structure.
IJburg

IJburg is the city’s newest acquisition to the water. It is a man-made island in the IJmeer. It has a grid structure with building blocks with semi-public inner spaces. Some are accessible and some are private. The water and green areas offer a feeling of openness.

A disadvantage of the grid structure at this specific location is that it is not blocking the strong wind coming from the Markeermeer whereby IJburg is nearly always windy.
Java-Eiland
Java-eiland is a former harbour area transformed into a residential area in the 90's.

The area consist of open building blocks with cycle routes within and car routes along the blocks. One block misses the south part, creating a park at the water (figure 131). This park is heavily used by youth from all over the city when the weather is nice.
Plan Zuid
Plan Zuid is a neighborhood designed by famous architect and urban planner Berlage. It was built between the first and second World Wars. The houses are designed by followers of the Amsterdam School resulting in detailed and special architecture.

The structure consists of closed building blocks with private inner gardens. The neighborhood is accessible via two main crossing streets (figure 134). The public space is left out in the structure of the buildings and the infrastructure resulting in nice squares and small parks (figure 135 & 136).
Van der Pekbuurt
The Van der Pekbuurt is a typical garden village in Amsterdam-Noord. It was one of the first garden villages finished in 1926. It consists of small houses of two and three levels with front- and back yards (figure 139). It consists of one main street (figure 138). Within the structure some places are left out to function as public space in the form of a square or small park (figure 139 & 140).
### Case Study - Density

#### De Pijp

- **Surface area:** 56 ha
- **Total number of addresses:** 10,013 (178.8/ha)
  - Residential addresses: 9,041 (161.4/ha)
  - Non residential addresses: 890 (15.9/ha)
  - Unclear addresses: 82 (1.5/ha)
  - Rental housing addresses: 6,854 (122.4/ha)
  - Owner-occupied addresses: 2,187 (39.1/ha)

- **Residential surface:** 552,708 m²
- **Non residential surface:** 131,907 m²
- **Unclear surface:** 8,271 m²
- **Surface Sarphati park:** 4.4 ha

#### IJburg

- **Surface area:** 56 ha
- **Total number of addresses:** 2,725 (48.7/ha)
  - Residential addresses: 2,463 (44.0/ha)
  - Non residential addresses: 260 (4.6/ha)
  - Unclear addresses: 2 (0.03/ha)
  - Rental housing addresses: 1,376 (24.6/ha)
  - Owner-occupied addresses: 1,087 (19.4/ha)

- **Residential surface:** 264,335 m²
- **Non residential surface:** 57,361 m²
- **Unclear surface:** 201 m²
- **Surface water:** 17.5 ha
- **Surface surrounding water:** 13 ha
- **Surface houseboats:** 1.0 ha

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*Figure 141 Van der Pekbuurt*

*Figure 142 IJburg*
CASE STUDY - DENSITY

Java-eiland

- The whole area: 56 ha
- Part of Java-eiland: 12 ha

- Total number of addresses: 2,101 (37,5/ha)
- Residential addresses: 1,841 (32,9/ha)
- Non residential addresses: 259 (4,6/ha)
- Unclear addresses: 1 (0,02/ha)
- Rental housing addresses: 1,259 (22,5/ha)
- Owner-occupied addresses: 582 (10,4/ha)

- Residential surface: 172,154 m²
- Non residential surface: 57,267 m²
- Unclear surface: 81 m²
- Surface water: 35 ha

Plan Zuid

- The whole area: 56 ha
- Part of Java-eiland: 12 ha

- Total number of addresses: 6,023 (107,6/ha)
- Residential addresses: 5,703 (101,8/ha)
- Non residential addresses: 247 (4,4/ha)
- Unclear addresses: 73 (1,3/ha)
- Rental housing addresses: 4,565 (81,5/ha)
- Owner-occupied addresses: 1,138 (20,3/ha)

- Residential surface: 401,178 m²
- Non residential surface: 73,367 m²
- Unclear surface: 5,467 m²
- Surface Amstelkanaal: 1,5 ha
Van der Pekbuurt

Density

The closed building block structures which are used as case studies differ quite a lot in their density.

De Pijp (figure 141) has the highest density of 161.4 residential addresses per hectare. This is due to the tightness of the streets and the height of the building block which consist of about 5 layers. This tightness is one of the reasons it feels like a cosy neighbourhood whereby it is so popular.

Java-eiland and Plan Zuid (figure 143 & 144) are quite similar with densities of about 100 residential areas per hectare. In both plans this is caused by the amount of public space within the areas.

The Van der Pekbuurt (figure 145) has a density of 84.7 residential houses. This is because of the height of the buildings which are 3 layers maximum and because of the amount of public space.

IJburg (figure 142) has the lowest density with 61.9 residential apartments per hectare. The streets and the public space have large scales which results in the low density despite the quite high building blocks.

For new urban developments consisting a closed building block structure it is important to find the right balance between public and private.
**Building blocks**
To see how building blocks function on their own building blocks are analysed separately in IJburg (figure 146 and 148), the Houthavens (figure 147), Olympisch Kwartier (figure 149) and the Vara Strook (figure 150).

**CASE STUDY BLOCKS**

**figure 146** IJburg block 3b. 3 layers, parking within the block

**figure 147** Houthavens lot 3d. 5 layers

**figure 148** IJburg solid 18. 5 layers including sports hall and commercial spaces

**figure 149** Olympisch Kwartier. 5/6 layers including commercial spaces

**figure 150** Vara Strook. 5/7 layers including commercial spaces
**Spatial continuity**
The analyses show that the polder of the Buikslotermeer has been crossed by three elevated infrastructural elements, which cut the area in six elements (figure 151). These elements are lacking a proper spatial continuity. The elevated elements are not accessible for non-motorised traffic and the roads look like a tangle at some places.

Restructuring parts of the polder give the opportunity to improve the spatial continuity of the area.

**Breakthroughs**
The elevated infrastructure has many breakthroughs (figure 152), however the infrastructure is not well adapted to these passages on some places.

The area to intervene in (figure 92) covers a large part of the area, with a clever design the existing breakthroughs will be enough to improve the connectivity and accessibility of the separate parts making them more unified.

So starting point for the infrastructural interventions is to connect via the existing breakthroughs.
**Motorised traffic interventions**
The main connections that have to be made for motorised traffic are shown in figure 153. In Elzenhagen Zuid (subarea 4+5) connections between the exit of the Nieuwe Leeuwarderweg, the station and the dike have to be made. In Boven ‘t Y (subarea 3) cross connections have to be made to create a less inward shopping area and to make it easier to supply goods to the shops. The Waddenweg viaduct will be demolished to create more connectivity between the station area and the shopping area.

**Non-motorised traffic interventions**
The main connections that have to be realised for non-motorised traffic are shown in figure 154. Most important are the routes towards Waterland, the route from the BovenIJ hospital to the end of the shopping area (form subarea 3 to 4) and the new routes through Elzenhagen Zuid (subarea 4+5). The new routes must connect to the existing passages in the elevated infrastructure.

**Central axis**
The central axis will contribute to the spatial continuity (figure 155) because it stretches from one end of the polder to another. Via program end non-motorised routes it will connect the hospital and Elzenhagen Zuid to the shopping area. Moreover the axis will provide in connections between the northern part of the IJdoornlaan and the southern part. The routes from the axis to Waterland make the area behind the ring road accessible in a pleasant way.
The urban plan (figure 156) for subarea 1 till 5 will be explained on the basis of the program, and the block-, infra-, green- and the public space structure.
The station area is a mixed area with different functions (figure 157). The health program is located at the route from the station to the hospital. The shopping program lies along a route which crosses three squares. The western part contains sport facilities and two schools which are situated at a square.
**Block structure**
The choice for the closed building blocks is elaborated in the chapter about closed building blocks. The urban plan consist of closed blocks (figure 158) of 4 till 7 layers with high-rise accents on strategic points. The high urban axis (figure 94) contains the highest density concentrated at the station area.

**Infrastructure**
The location is accessible by car via the Nieuwe Leeuwarderweg and the IJdoornlaan which are connected to the rest of Noord, the city south of the river IJ and the Dutch highway system. Elzenhagen Zuid (subarea 4+5) is reachable by two main streets, one runs along the canal and the other runs from the station to the dike (figure 159). In the shopping area (subarea 3) the Waddenweg viaduct will be demolished and replaced by a more quite road which can easily be crossed by visitors of the shopping area. The street parallel to the IJdoornlaan will make the rest of the area accessible. Perpendicular on this road two street will run to the other side of the shopping area. Across the Noordhollansch Kanaal a bridge connects the hospital to the plan area for pedestrians and cyclists. A slow traffic route meanders via the station through the shopping area connecting the high urban axis.
**Green structure**
The area is surrounded by public accessible green. Thereby the urban plan consists of closed building blocks with private collective inner gardens (figure 160). One of the blocks is accessible and contains an athletics track which is open for public use and used by a sports club.

To connect the Noorderpark, south of the area, to Waterland, north of the area, a park runs along the dike. The route through the park is connected to the bridge to the hospital and to the meandering route through the high density axis. This non-motorised route has a green atmosphere and connects the surrounding green areas.

The canal in subarea 7 (figure 160) is extended into the shopping area to strengthen the spatial continuity and to make a clear route towards Waterland.

**Public space structure**
The closed block structure creates a clear public space with a strong hierarchy (figure 161). Within the block structure five squares are cut out to create openness on specific point where the density of the area is relieved. The park on the westside of the area creates a large open space along the water of the Noordhollandsch Kanaal with a wide view on the windmill.
**Cross sections**

The cross sections show the relation between the high-rise and the building blocks. Cross section A-A’ (figure 162) shows the peak of high-rise close to the metro station. Parking will be mainly in semi-underground parking garages.
figure 168 Detail section A-A' of the canal

figure 169 Detail section B-B' of the square

figure 170 Detail section C-C' of a building block

figure 171 Detail section D-D' of a block against the elevated infrastructure
**Block 7+9**

Block 7+9 (figure 172) are two blocks with collective inner gardens. Along the canal it has three high-rise accents. Two accentuate the streets running into the square west of the blocks. A gate in the houses refers to the typical garden villages in Amsterdam-Noord, framing the view over the square towards the windmill.

At the side of the station the blocks contain a fitness centre and at the side of the squares small shops of restaurants can settle (figure 173). The entrances of the houses are on the outside of the block (figure 174).
Block 11
Block 11 (figure 175) is a public accessible block which contains a athletics track with a sport canteen in the corner (figure 176). In the north corner a playground will provide entertainment for children. The block opens towards the park. The grounded houses have their entrance on the outside of the block at the streets and the park. The apartments have their entrances at the inside of the block creating social control of both sides of the block (figure 177).
**Birdview of plan**

Figure 178 and 179 show the area from a birdview perspective. In the figures the new buildings are separated by the existing by colour.

The new buildings are divided in: planned by the municipality, new plan 1st phase and new plan 2nd phase. The 1st and 2nd phase will be elaborated on page 90 and 91.
Comparing municipal plan and new plan

The municipality presented an urban plan for the Elzenhage Zuid area (figure 180). Based on the analyses and the aim for an identity of health this plan had been changed. Some elements are maintained (figure 181).

Program

The municipal plan has a relatively small non-living program for its transportation value, its location and the challenges the municipality faces as a whole (figure 182).

The new plan connects the hospital with the station via a comparable health program, hereby the health part of the high density axis emerges. In the rest of the area non-living program is concentrated at a square. It houses two educational functions, a sporthal and at ground floor space for small shops or restaurants. This will create a square with a lively atmosphere (figure 183).
**Block structure**
The urban villa typology (figure 184) is exchanged for a closed block structure which provides a hierarchical public space and a pleasant and diverse living environment (figure 185).

**Infrastructure**
The infrastructure of the municipal- and new plan are quite similar, with two crossing main streets, and mainly slow traffic at the side of the park (figure 186 and 187).
The water in the new plan is put along the main street as a canal. This results in a more urban atmosphere than the water in the municipal plan.
Green structure
The park along the dike connects two important structures and is therefore adopted with some adjustments. The park contributes to the green healthy identity.

The unclear urban villa park (figure 188) has been replaced for private or collective inner gardens. The athletics track is placed within a housing block to create liveliness within the block and social control for the track (figure 189).

Public space structure
Because of the closed block structure the new plan has a more clear and hierarchical public space (figure 191) compared to the endless public space of the municipal plan (figure 190).
**DESIGN**

**VACANT SEWAGE TREATMENT PLANT**

*Treatment plant*

The vacant area of the sewage treatment plant will become an important factor for the identity of the area (figure 192). It will contain large buildings with functions concerning health. So for example wellness and fitness centres, urban farming, restaurants and other sport facilities in a green environment.

At the Jaap Edenbaan, the in Amsterdam located skating track, substantial investments must be made in the indoor ice rink. The municipality wants to consider a relocation on behalf of housing construction Gemeente Amsterdam, 2016a). This area would be perfect because it is well accessible by car and public transport and there is plenty space.

A group of promoters is trying to realize a Museum of Our Food in Amsterdam (Foodmuseum 3.0 in Amsterdam: MOOF, 2016). This would perfectly fit in this intended green area with a strong health program. Near the traffic junction the building will be a landmark for entering and exiting the city.
Elzenhagen Zuid

Surface area:
24 ha park including
20.5 ha without park

Non residential functions:
- Healthcare: 8850 m²
- Sports hall: 2680 m²
- Highschool: 5700 m²
- Primary school: 4560 m²
- Residential or bar/rest.: 4028 m²
- Shop or bar/rest.: 1907 m²
- Offices: 36907 m²
- Hotel: 16341 m²
- Sports gym: 1230 m²
- Kantine athletics club: 1540 m²
- Athletics track: 14743 m² (public space, not included in total)

Total residential surface: 462228 m²
Total houses (75 m² per house): 6163
Total houses (100 m² per house): 4622
Density (75 m² per house): 257/ha (including park) 300/ha (without park)
Density (100 m² per house): 192/ha (including park) 225/ha (without park)

Buikslotermeerplein

Surface area:
19 ha

Non residential functions:
- Shop or bar/rest.: 6486 m²
- Hotel: 13662 m²
- Foodplaza: 2676 m²
- Offices: 27132 m²

Total residential surface: 372244 m² (new)
Total houses (75 m² per house): 4963 (+ 109 already existing) = 5072
Total houses (100 m² per house): 3722 (+ 109 already existing) = 3831
Density (75 m² per house): 267/ha
Density (100 m² per house): 195/ha
Density of the design
The aim of the project was to create a high density surrounding the new metro station with strengthening of the liveability. With amongst others accessible green and new functions the liveability will increase, while it will become a area of high density. As shown below figure 195 the average density will be around 200 houses per hectare, counting 100 m$^2$ gross floor area per house. This results in apartments with a floor area of 75 m$^2$ on average. This will be divided in many smaller houses for starters and students and some houses for families and wealthier people. This will be divided according to the newest policy of the municipality 40% social housing, 40% middle rental and 20% for the free market. This will result in a neighbourhood which will be accessible for many people.

Surface area: 43 ha

Non residential functions: 133,354 m$^2$

Total residential surface: 834,472 m$^2$ (new)
Total houses (75 m$^2$ per house): 11,126 (+ 109 already existing) = 11,235
Total houses (100 m$^2$ per house): 8344 (+ 109 already existing) = 8453
Density (75 m$^2$ per house): 261/ha
Density (100 m$^2$ per house): 197/ha
Street profile meandering route
The meandering route connecting the hospital via the station to the shopping area will have a green atmosphere with trees and green street furniture (figure 196).

The street furniture (figure 198) will be placed playfully along the street resulting in little places where people can rest, enjoy the shopping people or enjoy the weather (figure 197).

The street will be shared space for pedestrians and cyclists. However due to the lay out of the street furniture it will not be the fast route for cyclist whereby they will go along well together. For cyclist in a hurry the streets north and south of the meandering street will be suitable.
Phase 1
The developments in the Buikslotermeer will be realised in two main phases. The first is phase 1 shown in figure 199.

Of course this phase will be divided in sub phases, starting with the areas closest to the metro station.

Phase 1 will foresee in a new mixed living environment with connections towards the surrounding green and with a new park along the dike. The sewage treatment plant can be transformed anytime because of the vacancy of the area. An important factor for this part is the movement of the Jaap Eden ice skating rink.
Phase 2

As shown in figure 108 and 110 the subareas 7 and 8 have densification possibilities as well. In figure 200 these areas are restructured to a close block structure to provide a better connection with the area of phase 1. The northern part consist of green interventions as well to strengthen the connections with the surrounding green.
figure 201 Urban design
Green structure
The spatial continuity of the Buikslotermeer polder will be strengthened by the green structure which connects the subparts of the area and it connects the area with its surrounding green. Due to the new metro station this surrounding green will not only be easier to reach from within the area, but from the rest of the city as well.
Morphology structure
In the morphology structure the difference between the late modernistic open structure and the closed building block structure pops out. However because the get interwoven by the restructuring of phase 2 (figure 200) this will contribute to a better spatial continuity in the area. Besides the closed block structure provides in a more clear public space structure as earlier mentioned.
Infrastructure
Due to the lowering of the Waddenweg and because the infrastructure will better match each other via the existing breakthrough in the barriers the infrastructure contributes to a better spatial continuity as well, despite it causes the lack of spatial continuity itself.
Figure 205 shows the whole area of the Buikslotermeer polder. It shows the high density of the area and the difference of the open and closed building blocks.

Figure 206 shows the area of Elzenhagen Zuid. The park along the water can be seen just as the green route along the dike all the way to Waterland.
In figure 207 the new urban entrance via the Nieuwe Leeuwarderweg is shown. The new identity and the new transportation value deserve an urban facade to show the contrast between the city and the rural Waterland which lies behind.

Figure 208 shows the new green north south which connects Plan van Gool, via the high density axis towards the rural hinterland. This green route relieves the density in the high density axis and connects it to its surrounding.
Figure 209 shows the high density access and its connections via green routes with its surrounding hinterland. It also shows the higher density around the metro station.

Figure 210 shows the meandering green route through the high density axis.
In figure 211 shows one of the three squares along the meandering route. The square consist shopping and hospitality functions. On the square bars and/or restaurants can have sidewalk cafes to increase the liveliness.

Figure 212 shows the square in the middle of Elzenhagen Zuid. Two schools are located at the square. It will consist playing areas for the schools and for the children living in the area.
The methodology I composed at the start of the graduation project more or less work out as I imagined. Some elements I skipped during the process because they were not as relevant as I thought they would be and some were added because they got my attention during research. However the end product is what I expected at the beginning. Comparing the methodology I made at the start with the methodology I made at the end reveals the differences (figure 213 & 214). Over the year some elements in both the literature and resources as the steps changed due to new insights, these changes were already taken into account because such a project cannot be precisely planned in advance. The changes I made in the methodology improved the outcome. I wanted to design an intervention somewhere in Amsterdam-Noord which would be underpinned by a well-considered research contributing to both local as regional goals. Despite some changes in the methodology the outcome is what I aimed for, however I did not exactly know what it would look like of course.

In figure 2 the arrows show the way I went through the methodology, as shown at some point it was kind of chaotic but that is part of my way of working and even part of a creative process. However the methodology helped me with planning and time managing which are not my strongest points. I think this methodology worked out for me and for my project because it showed a linear process, but I already knew that it would not work out that linear whereby I was able to go back in steps sometimes and that I was able to add or skip some elements.

The relationship between research and design
There is a strong relationship between research and design in my graduation project because the design is a result of in depth research. The location for the interventions and the design assignment where determined during the process. The only thing I choose beforehand was to explore the city district of Amsterdam-Noord, because I wanted to learn about this upcoming part of my hometown which I did not know well.

The research had different layers, the most important
Methodology at the end of the process

Subjects: the problems and goals of Amsterdam in policy documents, the history and structure of Amsterdam-Noord, a theoretical underpinning of multiple concepts and research of Amsterdam-Noord and Buikslotermeer. The outcome of the various studies influenced each other and moreover formed the basis for choices in the formation of the identity, the program and the design. The design is further underpinned by case studies, trend studies and current new Amsterdam urban designs.

The relationship between the theme of the graduation lab and the subject/case study chosen by the student within this framework

The relation between my graduation theme and the graduation lab Complex Cities is the complexity of the growth of cities. In my case the city of Amsterdam. The globalisation problems of the region of Amsterdam are scoped into a small neighbourhood in the north side of Amsterdam, where a new identity gives inhabitants the possibility to identify themselves with the area. In the past years there is a growing interest in local qualities and history. People are looking for their own roots and the roots of an area in counter-reaction to the trends of globalisation. Local forces put the processes of globalisation back in the perspective of unique site-specific shapes.

At the start of this graduation year my idea was to get from researching the regional problems into an intervention on a smaller scale. This worked out well, my design influences the region and contributes to the goals of the municipality as a whole. As shown in figure 215 I worked from Amsterdam via Amsterdam-Noord to the Buikslotermeer.

The relationship between the methodical line of approach of the graduation lab and the method chosen by the student in this framework

The methodical line of approach of the graduation lab corresponds to my approach at some point, but differs as well. The approach of the graduation lab is about trans-disciplinary approaches, internationalisation and planning methods and tools. I will now compare my project to these elements.

I used various disciplines during my graduation process. I looked into the history of the city and the city-district, I used political input in terms of policy
documents, I used data and a social and economic input to create an interdisciplinary project. In terms of using and investigating urbanisation and urbanism in regions around the globe, I mainly focussed on case studies within Amsterdam because I wanted to create a strong Amsterdam identity. So I mainly focussed on regional and even local elements instead of international elements, in my project this was to strengthen the identity.

I used planning methods and tools in my project, I always kept the feasibility of the project in mind and tried to work in line with the policies of the government. However this could be more elaborated, I am still working on the phasing of the urban plan which is an important planning method which will be present in the final booklet.

The relationship between the project and the wider social context

Amsterdam is growing rapidly in number of inhabitants. Due to the financial- and real estate crisis the housing construction and-market almost came to a complete stop. Now that the economy revives, people have more money and confidence to buy and sell houses. The problem is that due to the lack of new built real estate and the popularity of the city, there is not enough housing for everybody. This creates an overheating market, which has insufficient supply for the demand. Real estate prices are going through the roof and people have to wait for almost ten years in the region of Amsterdam to be in the running for social housing and within the city borders even longer. The rising prices and waiting lists make the city inaccessible for certain people, especially in the middle class. They earn too much for social housing and cannot afford the rising real estate prices.

Furthermore the shortage of affordable housing will create a gap in the housing market for starters. While the city is already in shortage of affordable housing in the middle segment for both owner-occupied- and rented houses. This brings the city in need to build new houses to enlarge the supply to reduce prices. So densifying the city is of big social relevance to keep the city accessible for different kinds of people.
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The fall and rise of Amsterdam-Noord
The history of the northern district of Amsterdam

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Abstract – The northern part of Amsterdam, Amsterdam-Noord, used to be an unpopular part of the city. The area north of the river IJ was often seen as another part then Amsterdam south of the river IJ. It was the area for labourers in heavy industry like the shipbuilding- and oil sector. The area has a low density because the development of the municipality and market focussed elsewhere in the city. Nowadays the northern part of the city is gaining popularity. There are plenty public attraction that revive the area and make the people of the south side of the river visit the north, which gives the area much potential to develop in the future. To make measured and balanced strategies and intervention for the future development one should now the history. In this article the history of this interesting city district is described. From the gallows field it used to be, via the heavy industry era to the clash of the creative industry and the original inhabitants due to gentrification nowadays.

Key words – History – Amsterdam-Noord – Gentrification – Transformation – Social

1 Introduction
Amsterdam-Noord or short Noord, the northern city district of Amsterdam, was never really part of the city. Inhabitants used to see this area north of the river IJ as far away and as “the other side” (Roemer, 2003). The area has been lagging behind in development, has deprived parts and is not well connected to and integrated with the rest of the city. These disadvantages have historical, political and location based backgrounds. The popularity of Amsterdam is enormous nowadays, which has its effects on the city as a whole. Outskirts are becoming more popular and gentrified. The mayor said in a speech that this period could be the beginning of the third Golden Age of the city of Amsterdam (Van der Laan, 2016). How did Amsterdam-Noord became the area it is today and what will the future bring for this interesting part of the Dutch capital city? In this paper the history of the area north of the river IJ, the current situation and a prediction of what the near future will bring will be elaborated.

2 The beginning of Noord
The surface north of the IJ was formed on peat soil, which was reclaimed in the 7th century. One made little peat dykes with a ditch behind it for drainage. Due to the reclamation the peat ground subsided heavily and already sank three meters in 1250. Inland and outland lakes became increasingly threatening, in stormy weather the waves swallowed up parts of the reclaimed land. More dykes were built and they kept being heightened. Around the year of 1300 these dykes finally formed the Waterlandse Zeedijk, due to dyke breaches it moved a little north through the ages, but it is still present nowadays. South of the dyke lay a natural formed headland called Volewijck which was dyked separately (Stadsdeel Noord, 2013).

Figure 1 Fragment of a map of Noord-Holland in 1575. Showing Amsterdam-Noord (Bakker & Huissen).
trade and fishery, they started to settle along the dyke in houses which were built in a ribbon. Small dyke villages arose. The dyke formed the most important transport route over land, but water was the most used infrastructure. Within the dykes the fine-grained water system of Waterland and outside the dykes via the river IJ and the inland sea Zuiderzee (Stadsdeel Noord, 2013). Behind the Waterlandse Zeedijk small villages arose like Ransdorp, Zunderdorp, Buiksloot, and Oostzaan. Buiksloot was already mentioned in 1275 (Roemer, 2003). The same year Amsterdam was mentioned for the first time as Amstelledamme in a toll privilege of the Count of Holland, which is seen as the birth of the city of Amsterdam (Mak, 1995).

2.1 The first annexation
Amsterdam has its origins south of the river IJ where the city started to grow around a dam in the river mouth of the river Amstel, where the city is named after. Already in 1393 the first annexation of land north of the river IJ took place. By decree of the Count of Holland headland Volewijck was added to Amsterdam. First without jurisdiction but some years later the right to do judgements in this area was given as well. One of the consequences was that the Volewijck became a gallows field where convicts who were executed were hanged. They were killed in the city by medieval death sentences like the breaking wheel and were brought by boat to the gallows field where they became a horrible warning for sailors and other newcomers who arrived via the IJ (Figure 3) (Roemer, 2003). As can be seen in two of Rembrandt’s drawings (Figure 2). In 1664 the famous Dutch painter rowed to the Volewijck to draw the recently hanged young woman Elsje Christiaens who was punished for the murder of her employer (Shorto, 2014).

2.2 The ferry
The oldest ferry across the river IJ between Amsterdam and Waterland is the Buiksloterveer, which was already mentioned in 1308 and is probably even older. The first centuries it sailed along the headland Volewijck to Buiksloot (Bakker, 2011). In 1660 Amsterdam, Edam, Hoorn, Monnickendam and Purmerend conclude an agreement to place the ferry line like it, more or less, still is today. The landing for the ferryboat was moved to the nearest point of the headland. A canal was dug from this point to the in 1627 reclaimed Buikslootmeer. To cover the costs Amsterdam introduced toll. In 1662 the toll house was opened. At night the city gates were closed. Latecomers could get something to eat and shelter at the toll house which became an important inn. The villages in Waterland flourished because of the powerful city of Amsterdam (Roemer, 2003).
3 From rural land to heavy industry
In the beginning of the 19th century the fairways in the Zuiderzee silted, the larger ships were not able to reach the harbour of Amsterdam anymore. To make Amsterdam accessible for the heavy warships and the ships who sailed to the Dutch East Indies a canal was dug between Amsterdam and Den Helder, which was finished in 1824 (Regiocanons, n.d.). The meandering waterway goes right through the province of Noord-Holland and the nowadays called city district of Amsterdam-Noord. Due to the rapid development in shipbuilding and the economic growth worldwide a more decisive connection with the North Sea was needed to keep up the fast changing world in the 19th century. In 1876 the North Sea Canal was completed, which runs from the river IJ straight to sea (Moes, 2000).

The North Sea Canal brought the area north of the river IJ back in Amsterdam’s interest. Ground was needed for industry and the construction of houses. The water on both sides of the Volewijck was drained and became, after some hassles, part of Amsterdam. The industrial revolution was in full swing and the municipality appointed the ground of the northern IJ bank suitable for heavy industry. Large shipyards and oil companies settled down and provided employment for the city.

3.1 The emerging of garden villages
The factory workers needed places to stay so new residential areas were needed north of the river IJ (Roemer, 2003). Due to the enormous migration from rural areas to the city there was a huge housing shortage and the housing conditions where pitiful (Swart, 2002). Between 1915 and 1930 new neighbourhoods where built to the ideas of Ebenezer Howard, who invented the concept of the garden city in which labourers could live much better than in the filthy old cities. Before the WWI houses near Spreeuwenpark were built and after a break because of the war the Vogel-, Van der Pek and Bloemenbuurt, the garden villages Oostzaan, Nieuwendam and Blauwe Zand (Roemer, 2003). Until 1921 the Waterlandse Zeedijk more or less formed the northern border of the city of Amsterdam. Due to a large annexation a lot of surrounding ground became part of the city. Large parts across the dyke became Amsterdam’s property whereby the garden villages were built on both sides. During the Great Depression of the 1930s many cuts were implemented. This created of Amsterdam-Noord a city district where people could live and work, but with a shortage of public transport, medical care, secondary schools and amusement. It became a deprived area (Roemer, 2003).

3.2 Late modern urbanism
In the Algemeen Uitbreidingsplan (Amsterdam’s general expansion plan) of 1932 the urban expansion north of the river IJ was seen as an urban planning error. The plan provided for major expansion plans in the west and south part of the city. The Great Depression and WWII caused that the plan was carried out in the reconstruction era after the war. The large housing shortage made that some houses were built, but it took till the end of the 1950s until the municipality started to make large housing construction plans for the northern part of the IJ again. A modification in the Algemeen Uitbreidingsplan made it possible to expend the north side of the city from 50,000 inhabitants up to 100,000. To realize these plans parts of Landsmeer and Oostzaan were added to Amsterdam-Noord. These new residential areas were built in the spirit of the late modernistic ideology.
Housing corporations built particularly large apartment buildings, which are typical for the 1960s and 1970s. In the 1960s the development of new functions and infrastructure in Amsterdam-Noord went really fast. The Coen- and IJtunnel were completed and the city district got a department store, schools, nursing homes for elderly and a hospital (Roemer, 2003).

4 From workers district to deprived area and towards gentrification

The garden villages of the 1920s were sixty years later dominated by urban renewal. People had to move out of their houses and many moved to Almere, Alkmaar, Hoorn and Purmerend (Roemer, 2003). Moving out of the city was the spirit of that time, Amsterdam’s number of residents shrunk. Large cities like Amsterdam were old and neglected (Cammen & Klerk, 2003). Besides all the moving inhabitants, the once flourishing shipbuilding industry got bankrupt because the ships were made cheaper elsewhere in the world. This was disastrous for the economy of Amsterdam-Noord since many people worked at the wharfs. At the same time many Turkish and Moroccan workers migrated to the Netherlands and many of them found a home in the outskirts of Amsterdam like Amsterdam-Noord.

4.1 The ongoing revival

For the last twenty years some new residential areas arose in open spaces within the urban fabric and this process is still going on, but the part of Amsterdam-Noord outside of the ring road A10 kept its rural atmosphere. This part is a protected nature area. Recently the late modernistic Waterlandpleinbuurt is renewed heavily, many buildings are replaced by family houses and new apartments. Since the 1970s gentrification is spreading over Amsterdam. It started in the former working class neighbourhood Jordaan (Meershoek, 2015) and is since a decade slowly entering Amsterdam-Noord. Gentrification is “a process by which middle-class people take up residence in a traditionally working-class area of a city, changing the character of the area” (Collins, 1998). It is the result of success according to professor of sociology Jan Rath of the University of Amsterdam. He says that Amsterdam is a popular city with much economic activity, which creates a huge pressure on the city. (Meershoek, 2015).

5 The social history of Noord

The social history of Amsterdam-Noord is an interesting element of the city district. In this part will be elaborated how this took place.

5.1 Fancy Noord

In the beginning of the 19th century the area of the Tolhuis grew to a celebratory place. A lot happened in that area because of the construction of the North Sea Canal and the reclamation of the Buikslooter- and Nieuwerdammerham. On the new land arose new infrastructure, but something social emerged as well. It became a loved entertainment park. Especially when, because of the population growth due to the industrial revolution, the city which was then still located south of the river IJ got a lack of space and got overcrowded (Kok, 2016). Since the first Golden Age the city did not expend further so the city had the same size for almost two centuries. (Mak, 1995). The second Golden Age of Amsterdam was about to begin and many people went to the city (Shorto, 2014). The Tolhuistuin, the garden of the Tolhuis, became an important recreational park for the city. It was a green area where the upper class of the city recreated and met each other.

5.2 Labourers and poor families from the city centre

In 1903 a commission investigated possibilities for new urban expansions. The commission advised the municipality to build a new residential area for the upper middle class, where Floradorp is located nowadays. Under the condition that the industry would not come closer and that a bridge across the IJ would be build. An alternative was that the residential area was intended for labourers from lower classes, then a bridge was not needed. The municipality choose to bridgeless alternative with much industry (Kok, 2016).

Amsterdam created a systematic relocation policy for poor families form the poorly maintained houses
The garden villages in the whole is just 44% (CBS, 2007). Buiksloot foreign men came as thousands of new inhabitants settled down. Many the construction of new residential areas ten 5.4 Tough times reconstruction of Amsterdam to ok place and the city expended mostly to the west. In the 1960s working-class quarter. It is often said that the most large changes occurred north of the river Amsterdam-Noord became one of the largest communist stronghold of the country. Then WWII started. There were large tragedies because of the bombings of the industry and raids in factories (Kok, 2016).

In the two decades before and the two after the war many inhabitants of the poorer Amsterdam classes moved from their sanitation neighbourhoods to Amsterdam-Noord. Those neighbourhoods where the parts where the pure Amsterdam life took place. For instance the old Jordaan is a legendary working-class quarter. It is often said that the most real Amsterdammers, people form Amsterdam, live in Amsterdam-Noord nowadays and that is correct. In the garden villages Oostzaan, Nieuwendam and Buiksloot an large amount of 80% is born in Amsterdam, while the average of the city as a whole is just 44% (CBS, 2007).

5.3 The original Amsterdam residents After a rough start the new residential area north of the river IJ started to flourish and. People were going to like there new villages and gardens and many men had jobs at the heavy industry. The area felt save and cohesion arose, and above all companionship. The north side of Amsterdam became one of the largest communist stronghold of the country. Then WWII started. There were large tragedies because of the bombings of the industry and raids in factories (Kok, 2016).

In the two decades before and the two after the war many inhabitants of the poorer Amsterdam classes moved from their sanitation neighbourhoods to Amsterdam-Noord. Those neighbourhoods where the parts where the pure Amsterdam life took place. For instance the old Jordaan is a legendary working-class quarter. It is often said that the most real Amsterdammers, people form Amsterdam, live in Amsterdam-Noord nowadays and that is correct. In the garden villages Oostzaan, Nieuwendam and Buiksloot an large amount of 80% is born in Amsterdam, while the average of the city as a whole is just 44% (CBS, 2007).

5.4 Tough times After the war, as previously mentioned, the reconstruction of Amsterdam took place and the city expended mostly to the west. In the 1960s large changes occurred north of the river IJ. Due to the construction of new residential areas ten thousands of new inhabitants settled down. Many foreign men came as gastarbeider, a temporary employee, to the Netherlands and settled in Amsterdam-Noord because of the labour in the heavy industry. During the second half of the 20th century the area hit rock bottom, the 1980s. Due to the oil crisis of the 1970s and globalisation it was struck even harder than the economic crisis that hit the whole country. The shipyards went bankrupt (Galesloot, 2007). Many people in Noord lost their job and got unemployed. This ushered in dark times. The city district pauperized and the socioeconomic problems were getting worse. Noord is one of the poorest areas of Amsterdam, together with the city districts Zuidoost and Nieuw-West. The worst is the Vogelbuurt/IJplein (Kok, 2016). As is sadly shown in the documentary Schuldig (Gould & Sylbing) which is about inhabitants with debts and how they are struggling to survive. Other areas in Noord are appointed problems areas as well, like De Banne, Blauwe Zand, Nieuwendam-Noord and De van der Pekbuurt. They are high ranked in the in Dutch so called “focus areas” list (CBS, 2010).

There are three major influx moments in the history of Amsterdam-Noord. Those during the pre-war garden villages and the 1960s extension plans are previously described. A third influx emerged in the 1990s because of the urban renewal of the deprived areas of Nieuw-West and Zuidoost. These areas had serious social problems like criminality and unemployment. These areas were heavily renewed without new housing plans for these problem families within the city district. Noord was one of the few places they were able to go to (Kok, 2016). Former district chairman of Noord called its city district the “drainage point” of the city (Van afvalputje naar toppospositie, 2011).

Again Amsterdam-Noord formed a solution for the socially weaker.

5.5 New people In the area of Amsterdam-Noord one accommodated everything they did not want to have in Amsterdam, starting with the medieval gallows field, till polluting chemical and shipbuilding industry and the surplus of the underprivileged population (Oudenampsen, 2010). However things are changing since approximately the start of the 21st century. Some new restaurants opened, the empty shipyards and factory were taken in re-use by people of the creative industry and housing corporations got the opportunity to sell parts of their social housing. Before 80% of Noord consisted of social housing whereby the area was inaccessible for the middle class. This mix of events is the perfect mix for gentrification, the process that is currently going on. However many original inhabitants are not looking forward to welcome the new inhabitants they are afraid of new etiquette. The new inhabitants do not have the tendency to greet everybody they run into in the streets and they look suspiciously to all new and expensive shops that open.
6 Gaining momentum

Amsterdam-Noord is becoming part of the city of Amsterdam. The completion of the new metro line the Noord/Zuidlijn and the construction of better river crossings will connect the northern part to the rest of Amsterdam. The construction of new residential areas will densify the city district whereby it will become more urban. The further implementation of new functions will finally integrate Noord and create a metropolitan atmosphere.

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