Research & Analysis Booklet 2016-2017
MSc. 3 Dwelling Graduation Studio, Dutch Housing
Appeltjesmarkt, Amsterdam
The Appeltjesmarkt has been undergoing several transformations in the last four centuries. The timeline on this page gives an overview of the history of the site. In the next pages, several snapshots from the timeline are featured. These snapshots show detailed information about the site in a current time and explain the developments that the site underwent.

### Serving the city

The Appeltjesmarkt has always served the city of Amsterdam. The gas company provided the city energy, warmth, and light. The apple market provided for vegetables and fruit, coming from the farmlands. The parking garage and the bus station form a place for distribution of people, in and out of the city.

### Constant transformation

Historically, the plot has been a place of constant transformation. Since the moment the city walls were demolished the place has had a multitude of functions and use, but never for a long period of time. The gas company only existed for 60 years, the fruit market stayed for 40 years, and it’s about 55 years ago that the bus station was constructed. Not only in the past but also in the last decades some major changes took place. The bus station was accompanied by a parking garage, and recently a large part of the plot was covered with gravel.

### Annoyance

The main reason for the constant change is that most of the functions caused some sort of annoyance for the neighbourhood or the city at some point. The gas company caused polluting gasses, therefore it was moved to the Westergasfabriek at the edge of the city. The fruit market caused annoyance by blocking the street for normal traffic and all the garbage it left after market hours. Moreover, the fruit market grew and became too big for the Marnixstraat. The bus station and the parking garage are still there, but they also have a negative influence on their surroundings: a constant coming and going of cars and busses, the smell of gas and the prominent visibility of the large concrete structure of the parking garage, which doesn’t have the most pleasant look.

Because of the constant disappearing and moving of the different functions on the Appeltjesmarkt, the plot was often vacant for use of new functions, for instance when the municipality was looking for a place to construct the parking garage.

### Buffer zone

While the area along the Marnixstraat, especially our plot, has been changing constantly, the residential developments around the plot stayed more or less the same from the moment that they were constructed. The plot has never been part of the developments in the historical city, nor in the 19th century expansions. Therefore, the area along the Marnixstraat can still clearly be recognized as the former border of the city, now being a transitional zone between these two different parts of the city.

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### Nightlife

- **1611-1834** Fortifications and Bastions
  - Site in 1829
  - View from the stronghold to the Elandstraat

- **1743** The Great Stinking Mill or Red Heart (De Groote Stink Molen or 't Roode Hart)
- **1810** Stronghold Nieuwkerk after demolition of the mill

### Functions

- **1808** Windmill demolished
- **1811** Deerskin mill is transformed into malt mill
- **1835** Construction of gasworks of the Amsterdamse Pijp Gas Compagnie
- **1877** ‘Normalisation’ of the Singelgracht
- **1883** Tram line 1883
- **1905** Tram line 7
- **1915** Tram line 17
- **1957** Bus station

### Landscape

- **1611** Construction of fortifications
- **1811** Windmill is transformed into malt mill
- **1971** Parking garage opens
- **1986** Clavis pianos service replaces car dealer
- **2014** Restaurant De Waterkant opens
- **2007** The terrain is used for a yearly festival called Jordaanfestival

### Public Transport

- **1934** Foodmarkets move to Centrale Markthallen
- **1957** Bus station opens on former market
- **1971** Parking garage opens
- **1986** Clavis pianos service replaces car dealer
- **2014** Restaurant De Waterkant opens
- **2007** The terrain is used for a yearly festival called Jordaanfestival
1611-1834 Fortifications and Bastions

The inner city of Amsterdam was built in 4 main expansions. The Apple market is on the outer border of the third one, which was realized from 1610 – 1613. Around the expanded city a new city wall was constructed, along with multiple strongholds, to defend the city against enemies. Stronghold 10 (Nieuwkerk) was located on our site, on it a windmill was built called the Great Stink Mill. Quite a logical name, knowing that the mill was first used as a zeemleer-touwers mill where sheep skins were tanned and processed using urine. With particular wind directions you could smell the mill in the whole city. In 1711 the mill was bought by a brewery and converted into malt mill, until it was demolished in 1808. From 1820 to 1840 the city wall was gradually dismantled, because the defence line moved to the Dutch waterline.

Site in 1829

1. Stronghold Nieuwkerk
2. Side buildings of the mill
3. Schans (later: Marnixstraat)
4. Singelgracht
5. Lijnbaansgracht
6. Lauriergracht
7. Elandsgracht

1810 - View from the stronghold to the Elandstraat
1810 - Stronghold Nieuwkerk after demolition of the mill
1743 - The Great Stinking Mill or Red Heart (De Groote Stink Molen or 't Roode Hart)
In other cities the former strongholds were transformed into lush parks, but because of the economical situation of Amsterdam the municipality sold the ground, resulting in all kinds of different buildings for different functions, without a consistent plan. The area around our location was used for industrial purposes, like a sugar refinery, a tannery and a sal-ammonia factory. On the stronghold itself, the English Pipe gas company (later the Amsterdam Pipe Gas Company, a gas plant where gas is distilled from coal) builds its factory. The building outline follows the shape of the stronghold. In 1977 the fortifications are demolished and the Singelgracht is partly filled up to provide an extra strip of land, which gives the factory the opportunity to expand.

In 1850 the former Schans is transformed into the Marnixstraat. In the second half of the 19th century residential blocks for worker families are constructed along the Marnixstraat, starting in the north. Public transport along the Marnixstraat was provided by a horse tram in those days.

In 1877 the gas factory moves to the Haarlemmerdijkvaart, we know it nowadays as the Westergasfabriek. The municipality takes over the vacant piece of land of the former factory and starts with sanitation.
In 1890 the municipality decides to move all the vegetable-, potato- and fruitmarkets from different places in the city centre to one central groenmarkt (green market). Until that time the main potato- and vegetable market was located along the Prinsengracht, and the fruit market along the Singel, but they caused inconvenience due to the space they used and the mess they made. Moreover, there was too little space on the water for all the vegetable boats. To make the market accessible for boats, 7 inner harbours are dug out, warehouses are built on the piers and residential blocks with retail space or storage on the ground floor along the Marnixstraat. The Lauriergracht is connected to the Singelgracht to make traffic by water easier, the Elandgracht is filled up and connected to the Kinkerstraat for traffic by land.

On April 1 1895 the vegetable market was moved to the Marnixstraat in the area between Rozengracht and Rozenburggracht. The part of the market between Elandsgracht en Lauriergracht was called Appelmarkt (apple market), because this part was for the fruit sellers, the part between Lauriergracht en Rozengracht was called groenmarkt (green market).

The fruit and vegetables were transported by boats from the inland. They unloaded their goods in one of the inner harbours along the Marnixstraat, where the fruits and vegetables were stored in warehouses, on the ground floor of the residential blocks or auctioned. The merchants sold the fruit and vegetables from shops, handcarts or boats, from the Lijnbaansgracht. Due to all the different merchants on the growth of the city, the Marnixstraat was incredibly busy whenever there was a market. For the tram, that appeared in 1900 it was impossible to go through, so it had to be diverted until the market ended.

Due to growth, hygienic circumstances and growing amounts of traffic, the vegetable- and fruitmarket moved to the central market halls on the Jan van Galenstraat in Amsterdam-West in 1934. Residential Blocks with storage on the ground floor for handcarts of the merchants, and the remnants of the insertion ports for the vegetable boats behind remained for years afterwards.
The harbours that remained from the market function were filled up from 1934-1957, to make place for a busstation. Motorised traffic began to claim an important role in those times, connectivity of the city by cars became more and more important. As a result of this a new, bigger bridge was being build between de Elandsgracht and de Kinkerstraat in 1956.
From 1957 on the terrain was being used as a bus station for the NZH (now connexion). A service building was constructed as a resting space for bus drivers. Also customers could wait there for their bus to arrive while having a cup of coffee. Part of the existing buildings were demolished to make it possible for the buses to go through.
Due to the increasing amount of cars, Amsterdam had a big parking issue. There weren't enough parking places available, especially in the inner city. The plan to construct a parking garage next to the bus platform was already suggested in 1956, but it took another 10 years before the Europarking was actually built. Along with it, a petrol station and retail space for a car dealer appeared. All the former residential blocks were demolished to make place for these developments. The bus platform remained in use, so the parking garage was lifted to make it possible for the buses to drive underneath.

From 1986, a piano dealer took over the retail space, which is still there nowadays.
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From 2007 on the terrain has been in use for the annual Jordaanfestival. In 2014 Café Waterkant opened its doors, situated under the spirals of the parking garage. In 2015 the bus platform was reduced in size, a large part was covered with gravel and made only accessible for pedestrians. Some trees were planted and benches were placed.
Morphological Development
Development of the Water Structure
Infrastructural Development

Piet Zanstra (1905-2003)

Before 1800

1842

1883

1900

1940

1960

1975

Projects by Piet Zanstra

Year Project Location

1932 Studio houses Zomerdijkstraat Amsterdam-Rivierenbuurt

1942 Houses Sloterkade Amsterdam-Hoofddorppleinbuurt

1957 Two gallery flats Burgemeester Cramergracht Amsterdam-Slotermeer

1958 Gallery flat Burgemeester De Vlugtlaan 161-345 Amsterdam-Slotermeer

1960 Office building Aurora, Stadhouderskade 2 Amsterdam Oud-West

1961 Reformed church De Ark Amsterdam-Slotervaart

1962 Panoramaflat Den Haag

1963 Reformed church De Hoeksteen Amsterdam-Slotermeer

1964 Reformed church De Bron Hoogvliet

1964 Housing Van Nijenrodeweg 875-893 Amsterdam-Buitenveldert

1968 Four gallery flats with offices at Weerdestein and Mensinge Amsterdam-Buitenveldert

1970 Caransa Hotel Amsterdam-Centrum

1970 Europarking Amsterdam-Centrum

1970 Reformed church Open Hof Rotterdam

1971 Maupoleum Amsterdam-Centrum

1977 Kantoorgebouw Leeuwenburg Amsterdam-Oost
Piet Zanstra (1905-2003)

Piet Zanstra is the architect of the well-known Europarking garage at the Marnixstraat in Amsterdam. He was born (7 August 1905) and raised in Leeuwarden. After his study hydraulics (MTS Waterbouw) in 1925 Zanstra moved to Amsterdam. He worked as an assistant to architect Dick Greiner. In 1928 he worked three years with W.M. Dudok on the Bijenkorf department store in Rotterdam. After this period he moved to Paris to work with J.P. Kloos on the interiors of the Collège Néerlandais in the Cité Universitaire.

Together with Jan H.L. Giesen and K.L. Sijmons Zanstra set up a design agency in 1932. They build a complex of studio houses at Zomerdijkstraat in Amsterdam, which is known as an early example of the Nieuwen Bouwen in the Netherlands. The designers belonged to the society Group ’32 that regarded Le Corbusier as an example and distanced themselves from the austere New Objectivity movement.

The cooperation between Zanstra, Giesen and Sijmons ended in 1954. Each started his own firm. In the late 1950s and early 1960s Zanstra built various apartment blocks and churches in Amsterdam, The Hague and Rotterdam. Well-known projects in Amsterdam are the flats at Burg. Hogguerstraat, Slotervaart and De Ark. In 1960, he received the H.P. Berlage prize for residential housing in The Hague.

From 1966 Zanstra collaborated with architects De Clerq Zubli and Gmelich Meyling. It was during this period that Europarking multistorey car park at Marnixstraat in Amsterdam came about, with its famous helical spiral-shaped access ramps. Also known as the butt of Zanstra. Zanstra's name is especially linked to the maligned Burgemeester Tellegenhuus house at Jodenbreestraat in Amsterdam - better known as the "Maupoleum" from 1971 (demolished in 1997). In 1975, the firm continued under the name ZZP (ZZ+P from 1991). Piet Zanstra retired from architecture in 1980 and started painting. He died in Amsterdam on 23 May 2003.

Sources:
- http://www.kunstbus.nl/architectuur/piet+zanstra.html
- https://nl.wikipedia.org/wiki/Piet_Zanstra

Projects by Piet Zanstra

<table>
<thead>
<tr>
<th>Year</th>
<th>Project</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>1932</td>
<td>Studio houses Zomerdijkstraat</td>
<td>Amsterdam-Rivierenbuurt</td>
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<tr>
<td>1942</td>
<td>Houses Sloterkade</td>
<td>Amsterdam-Hoofddorppleinbuurt</td>
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<td>1957</td>
<td>Two gallery flats Burgemeester Cramergracht</td>
<td>Amsterdam-Slotermeer</td>
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<td>1958</td>
<td>Gallery flat Burgemeester Van Vlugtstraat 161-345</td>
<td>Amsterdam-Slotervaart</td>
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<td>1960</td>
<td>Office building Aurora, Stadhouderskade 2</td>
<td>Amsterdam-Oud-West</td>
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<td>1961</td>
<td>Reformed church De Ark</td>
<td>Amsterdam-Slotervaart</td>
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<td>1962</td>
<td>Panoramaflat</td>
<td>Den Haag</td>
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<td>1963</td>
<td>Reformed church De Hoeksteen</td>
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<td>1964</td>
<td>Reformed church De Bron</td>
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<td>1964</td>
<td>Housing Van Nijenrodeweg 875-893</td>
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<td>1964</td>
<td>Three gallery flats Burgemeester Hogguerstraat</td>
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<td>1968</td>
<td>Four gallery flats with offices at Weerdestein and Mensinge</td>
<td>Amsterdam-Buitenveldert</td>
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<td>1970</td>
<td>Caransa Hotel</td>
<td>Amsterdam-Centrum</td>
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<td>Europarking</td>
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<td>Reformed church Open Hof</td>
<td>Rotterdam</td>
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<td>1971</td>
<td>Maupoleum</td>
<td>Amsterdam-Centrum</td>
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<tr>
<td>1977</td>
<td>Kantoorgebouw Leisewoude</td>
<td>Amsterdam-Oost</td>
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</table>
**Present | Demography**

### Nationality

- **Dutch People**: 403,476 (48.3\%), 12,315 (63.5\%), 2902 (61.9\%), 3645 (51.5\%), 4,796 (63.3\%)

### Age

- **0-4**: 433,237 (51.1\%), 7093 (36.5\%), 1786 (39.1\%), 3433 (48.5\%), 2,710 (36.1\%)

### Other Countries

- **Western**: 16\% (24\%), 23\% (19\%), 23\%

### Non-Western

- **Suriname**: 8\% (2\%), 3\% (6\%), 2\%
- **Turkey**: 5\% (1\%), 1\% (3\%), 1\%
- **Maroc**: 9\% (1\%), 3\% (9\%), 1\%
- **Dutch Antilles**: 1\% (2\%), 1\% (1\%), 1\%
- **Other**: 1\% (7\%), 7\% (10\%), 6\%

### Households

- **One-person**: 68\% (55\%), 62\% (67\%), 62\%
- **Households with Children**: 14\% (25\%), 17\% (17\%), 16\% (18\%)
- **Households without Children**: 18\% (20\%), 21\% (17\%), 20\%

### Average Home Occupation

- **1,52**: 1,8 (1,6), 1,8

### Gender

- **Woman**: 49,6\% (417,052), 50,7\% (406,220), 49,9\% (2339), 50,7\% (3589), 52,3\% (3926)
- **Man**: 50,4\% (452,476), 49,3\% (406,220), 50,1\% (2349), 49,3\% (3489), 47,7\% (3580)

### Nationality

- **Dutch People**: 12,315 (63,5\%), 403,476 (48,3\%), 2938 (45\%), 4,579 (54\%), 3,926 (52\%)

### Age

- **0-4**: 433,237 (51,1\%), 7093 (36,9\%), 1786 (39,1\%), 3433 (48,5\%), 2,710 (36,1\%)

### Other Countries

- **Western**: 16\% (24\%), 23\% (19\%), 23\%
<table>
<thead>
<tr>
<th>MARITAL STATUS</th>
<th>EDUCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AMSTERDAM</strong></td>
<td><strong>AMSTERDAM</strong></td>
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<tr>
<td><strong>JORDAAN</strong></td>
<td><strong>JORDAAN</strong></td>
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<tr>
<td><strong>DA COSTA</strong></td>
<td><strong>DA COSTA</strong></td>
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<td><strong>VAN LENNEP</strong></td>
<td><strong>VAN LENNEP</strong></td>
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<tr>
<td><strong>HELMERS</strong></td>
<td><strong>HELMERS</strong></td>
</tr>
</tbody>
</table>

### MARITAL STATUS

- **Married**
  - Amsterdam: 25%
  - Jordaan: 20%
  - Da Costa: 19%
  - Van Lennep: 18%
  - Helmets: 20%

- **Unmarried**
  - Amsterdam: 63%
  - Jordaan: 68%
  - Da Costa: 71%
  - Van Lennep: 70%
  - Helmets: 72%

- **Divorced**
  - Amsterdam: 3%
  - Jordaan: 3%
  - Da Costa: 2%
  - Van Lennep: 3%
  - Helmets: 1%

- **Widowed**
  - Amsterdam: 9%
  - Jordaan: 9%
  - Da Costa: 8%
  - Van Lennep: 9%
  - Helmets: 7%

### EDUCATION

- **Low Educated People**
  - Amsterdam: 27%
  - Jordaan: 12%
  - Da Costa: 10%
  - Van Lennep: 26%
  - Helmets: 11%

- **Moderate Educated People**
  - Amsterdam: 34%
  - Jordaan: 32%
  - Da Costa: 32%
  - Van Lennep: 32%
  - Helmets: 26%

- **High Educated People**
  - Amsterdam: 39%
  - Jordaan: 56%
  - Da Costa: 57%
  - Van Lennep: 43%
  - Helmets: 62%
Increase of the amount of people in Amsterdam as a whole, but also in the neighbourhoods around the Apple market.

A lot of one-person households, probably due to the age 25-29 years old. High percentage 25-29 years old could also be the reason that there are less households with children compared to Amsterdam.

Percentage of man and woman is approximately equal, there are no really big differences between the neighbourhoods.

Compared to Amsterdam the neighbourhoods around the Apple market are quite Dutch. The neighbourhood with the most non-Dutch people is the van Lennepbuurt. This neighbourhood is also having the highest percentage of non-western people.

In Amsterdam, but also in the neighbourhoods around the Apple market, the quantity of 25-29 years old is the biggest.

There are a lot of unmarried people in Amsterdam and in the neighbourhoods, probably because of the amount of 25-29 years old living in Amsterdam.

In the neighbourhoods around the Apple Market are living more high educated and less low educated people.

In the neighbourhoods around the Apple Market the percentage of unemployment is higher compared to the percentage of unemployment in Amsterdam.

The amount of high incomes is highest in the Helmersbuurt and the amount of low incomes is highest in the van Lennepbuurt.

In the van Lennepbuurt there are living more low educated people, less high educated people, there is less income per household and a low percentage of high incomes.
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Amsterdam in 8 stadsdelen en 99 buurtcombinaties

A Centrum
B Westpoort
C West
D Noord-West
E Zuid
F Zuid
G Oost
H Noord
I Zuidoost

Present | Morphology

www.ois.amsterdam.nl
The Apple Market is situated in the neighbourhood De Jordaan. It's part of the west side of Amsterdam centrum.
Present | Morphology

Legend

- Private
- Public
Present | Morphology

Legend

- Private
- Public
Present | Morphology

building density

Legend

■ Building

☐ Non-building

This map shows the difference in density between the east and west part of the Applemarket. The east side, which is part of the so-called ‘grachtengordel’ is clearly more dense compared to the west side which is not part of the ‘grachtengordel’ anymore.
Present | Morphology

BUILDING AGE

Legend
- <1800
- 1800 - 1850
- 1850 - 1900
- 1900 - 1930
- 1930 - 1945
- 1945 - 1960
- 1960 - 1975
- 1975 - 1985
- 1985 - 1995
- 1995 - 2005
- >2005

1:5000

www.code.waag.org/buildings/#52.3699,4.8786,16
BUILDING HEIGHT

Legend

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<thead>
<tr>
<th>Height Range</th>
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<td>9 - 13 m</td>
<td>Light Yellow</td>
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<td>13 - 17 m</td>
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<td>17 - 21 m</td>
<td>Orange</td>
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<td>21 - 25 m</td>
<td>Dark Orange</td>
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<tr>
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<td>Red</td>
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<tr>
<td>33 - 39 m</td>
<td>Maroon</td>
</tr>
<tr>
<td>&gt; 39 m</td>
<td>Dark Brown</td>
</tr>
</tbody>
</table>

Source: Helvetica 11 pt Roman
Present | Morphology

WATER

Legend

- Water
- Houseboats
- Building volume

A. Singelgracht
B. Elandsgracht
C. De Costagracht
D. Bilderdijkgracht
E. Prinsengracht
F. Rozengracht
G. Lauriergracht
H. Looiersgracht
H. Passeersdersgracht

1. 2. 3. 4.
This map shows all the dwellings in the area in a circle of 500 meters on the groundfloor.
This map shows all the retail in the area in a circle of 500 meters. The retail consists of shops, supermarkets, massage-salons, galeries etc. In all probability the upper levels contain dwellings.
This map shows all the offices in the area in a circle of 500 meters. In all probability the upper levels contain dwellings.
This map shows all the healthcare in the area in a circle of 500 meters. The healthcare consists of health practice, residential care complex, day- and night care etc.
Qpark is a public parking garage with 700 parking spaces. Therefore it's a huge building and determines to a large extend the appearance of the plot.

The Waterkant, a place to have a nice drink and / or meal, is inspired by a part of Paramaribo on the Surinam river. It's a place to relax, connect and enjoy. It's a place where people get to know each other, regardless of origin, gender, age or social class.

The Texaco is one of the few petrol stations within the canalbelt of Amsterdam.

This square is an open space covered with gravel with benches on the side where people can relax. The Jordaan festival is held here annually.

Clavis piano's is a piano shop where one can purchase or rent piano's and pianofortes.

The stoelenproject is the most approachable evening and night relief centre of Amsterdam. The shelter is sober, but safe, warm and free. Every evening and night it holds 45 homeless people.
petrol stations

There are only a few petrol stations within the canal-belt. Most of them are located in the outer area of the city.
With it's 700 parking spaces, Qpark (europarking) is a parking lot with one of the most parking spaces. The 700 parking spaces of Qpark (europarking) is 8 percent of the total parking spaces (8861). The average price of the parking garages varies from 2,00 - 2,50 per half hour and 40,00 - 45,00 per day.
This map shows all the neighborhood markets in Amsterdam. These bustling markets are characteristic for the local atmosphere with their colors, scents and scenes. A visit to the market is one of the best ways to discover the authentic culture in a strange city. Most of the neighborhood markets are open throughout the whole year. These markets consist of organic farmers' markets, flea markets and special markets. The market next to the Applemarket is called the Antiques centre Amsterdam and it is the largest permanent indoor antique market in the Netherlands.
This map shows all parks in Amsterdam.
CONCLUSION:
- the closer to the city center, the more valuable the plots
- our plot lies within the most expensive parts of Amsterdam

Legend

- **5000 €/m² or more**
- **4500 - 5000 €**
- **4000 - 4500 €**
- **3500 - 4000 €**
- **3000 - 3500 €**
- **2500 - 3000 €**
- **2000 - 2500 €**
- **1500 - 2000 €**
- less than **1500 €**
CONCLUSION:
- very attractive location, 2min walking to the UNESCO area & part of national conservation city; still relative big freedom compared to UNESCO area

Legend
- UNESCO World heritage
- National monument
- Local monument
- National conversation city
- Potential conversation city

http://maps.amsterdam.nl/cultuurhistorie  http://maps.amsterdam.nl/monumenten
CONCLUSION:

- Very attractive location for all age groups
Present | Accessibility

CONCLUSION:
- great location in terms of access for all mayor modes of transport
- ideal for people without car

Legend
- Red: Plusnetwork + Corridor CAR
- Blue: Plusnetwork PUBLIC TRANSPORT
- Green: Plusnetwork BICYCLE
- Yellow: Plusnetwork PEDESTRIANS
- Light yellow: Downtown area
- Light blue: Canals
- Pink: Highway

Amsterdam Elandsgracht - 7, 10, 17

Amsterdam Elandsgracht - 170, 172, 174, 272, 280, 752, 753, 754, 758, 197, N70, N97

departure every 10min

Highway access 10min by car

http://maps.amsterdam.nl/functiekaart/?LANG=cs
http://maps.google.nl
## Present | Accessibility

### CAR STATISTICS

<table>
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<tr>
<th>CARS PER HOUSEHOLD</th>
<th>CARS PER KM2</th>
<th>CONCLUSION</th>
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<tbody>
<tr>
<td>0.3</td>
<td>4774</td>
<td>Little amount of cars per household because of city center location</td>
</tr>
<tr>
<td>0.5</td>
<td>1379</td>
<td>Cars per household rise while cars per m2 go down - obvious since further townparts are included</td>
</tr>
<tr>
<td>0.7</td>
<td>1026</td>
<td>Rotterdam has more cars per household and a smaller amount of cars per m2 - the city is more spread than Amsterdam</td>
</tr>
</tbody>
</table>

CONCLUSION:
- acceptable noise for inner city housing
- much better conditions than at Nassaukade street
  (Singelgracht creates distance to the noise source)
- worst conditions at the site are at the S-E corner

http://maps.amsterdam.nl/geluid/?LANG=cs
CONCLUSION:

- Big variety of diverse activities in accessible distance
- Location suitable for all age groups
- Car does not have to be used on an every day base
01. Paolo, ice cream seller from Naples  
   Age: 41  
   Nationality: Italian  
   -Lives in the suburbs of the city, definitely enjoys Amsterdam  
   -Works in the ice cream booth on the site  
   -Like the area especially looking at people from his booth  
   -Doesn't like the public toilet nearby  
   -He would definitely demolish the parking lot  

02. Pascal, self employed from Amsterdam  
   Age: 42  
   Nationality: Tanzanian  
   -Lives in the city center  
   -Has his business in Amsterdam, comes to the park every day for having lunch here  
   -Doesn't like the pebbles in the park, would much more like grass and fountains where children can play, like that he would come here more often with his children  
   -He is not disturbed by the parking lot  
   -Would like more restaurants in the area  
   -Definitely prefers old buildings over new ones  

03. Anne, pensioner from Amsterdam  
   Age: 73  
   Nationality: Dutch  
   -Lives in the city center of Amsterdam  
   -Comes through the Apple market every Saturday when going to the market  
   -Likes the old buildings of Amsterdam but doesn't like modern buildings  
   -Definitely wouldn't want to live only in Amsterdam  
   -Considers the city safe, even at night  
   -Likes that the inhabitants of the city are so multinational  

04. Naz, occasional worker from Amsterdam  
   Age: 41  
   Nationality: Pakistan  
   -Lived in London, Spain and Portugal before, but likes the Netherlands the most because it is the most liberal and considers that important for raising children  
   -Doesn't like the parking lot  
   -Feels safe in the city and on the peninsula of the Apple market but doesn't like this place when the homeless shelter is open because of the drug addicts  
   -Would like to add street food stalls (grab and go), and not some fancy restaurants  
   -Would like more unique public activities on the peninsula that attract people from Amsterdam to the place, like bowling, etc.  
   -Likes the old houses  

05. Joost, bus driver from Amsterdam  
   Age: 38  
   Nationality: Dutch  
   -Bus driver, comes frequently but for a short time to the peninsula  
   -Doesn't like the parking garage but if removing he would like some parking space instead somewhere else  
   -Doesn't like the pebbles on the square, would like fountains and grass  
   -Feels safe in the city  
   -Doesn't like the homeless shelter under the parking lot  

06. Renske and Jan, economists from Amsterdam  
   Age: 27, 31  
   Nationality: Dutch  
   -Live in the building NW to the peninsula of the Apple market  
   -Well aware of what's going on in the neighborhood  
   -Would definitely not want more retail in the new complex  
   -Would not keep the parking lot for the future developments, also consider it too expensive  
   -Would like more green in the area  
   -Like the promenade leading to the De Waterkant  

07. Eduart, student from Amsterdam  
   Age: 27  
   Nationality: Dutch  
   -Walks his dog here very often  
   -Lives in the city center  
   -Doesn't like that they put pebbles instead of grass on the square, feels a bit useless like this  
   -Would not want more retail or dining functions on the peninsula  
   -Would like to add more cultural functions  
   -Definitely would like to keep the De Waterkant and the promenade and the possibility of mooring the boats  
   -Likes the old houses but doesn't like the modern ones  

08. Daphne, teacher and shopkeeper from the countryside  
   Age: 43  
   Nationality: Dutch  
   -Consultant in the piano shop on the site  
   -Lives 25 km away from Amsterdam in the countryside  
   -Definitely doesn't want to live in Amsterdam because of the traffic and noise  
   -Doesn't like the homeless shelter so close because of the drug addicts though they don't really disturb her  
   -Feels safe in Amsterdam  
   Very curious about what could be done in the area  
   -Likes the old houses and the view on them over the water
SITE INFO
- 18 cafes and 3 juiceries are located within a 500m radius
- The majority of the cafes are located in NE-SW direction: the directions of the city center and the museum areas
- Cafes are mainly located on corners with those of higher ranking being on the canal sides
Present | Hotels

HOTELS IN THE AREA

Legend
- Hotel
- Hotel rating
- 50m, 100m radii of hotels

SITE INFO
- 11 hotels within 500m radius from the site
- Hotels are mainly located on corners or close to corners
- Hotels are along the streets that have canals
- The area has 3-4 star hotels (due to close proximity of downtown area, and museums)
SITE INFO
- Within the 500m radius range of the site 16 restaurants are located
- The closest restaurant is 25m away
- The average distance of restaurants from the site within this range is 240m
CONCLUSIONS
- Within 50m each hotel has at least 2 restaurants
- Within 100m each hotel has at least 3 restaurants and a cafe
- Restaurants and cafes are mainly located within the 100m radius of hotels
- More hotels result in more restaurants in the overlapping areas
Present | Churches

CHURCHES, TEMPLES AND THEIR AGGLOMERATION

Legend
- Roman Catholic Church
- Protestant Church
- Reformed Church
- Christian Church other
- Turkish Mosque

100m vicinity of temples and churches

85m Westerkerk height

23m Max allowed height

Legend
- Present | Churches

www.ois.amsterdam.nl
Present | Waterways

CANAL CRUISE ROUTES

Legend
- Route #1
- Route #2
- Route #3

Liek complex IJmuiden

SITE INFO
- 20+ km of waterways throughout the city
- Over a dozen canal cruise companies in the city

http://www.portofamsterdam.com
Present | Ecology

WILDLIFE HABITAT AND POLLUTION IN THE CITY

Legend
- Groundwater Pollution
- Green roofs
- Wild Bees
- Wild Bees

Gas factory on the site in the XIX\(^\text{th}\) century

SITE INFO
- Large scale ground water pollution due to the gas factory and sugar refinery plants that existed on the site in the XIX\(^\text{th}\) century
- Within a 500m radius zone 6 green roofs were developed, thus ensuring a local micro retreat from the city
- Located further away from parks, within 500m, the major wildlife habitat consists of wild bees
SITE INFO
- Richly populated waterfronts with trees
- Mainly deciduous tree species
- Within a 500m radius mainly trees with 30-50cm diameter trunks
- Within the close vicinity of the site several 100+ years old protected trees on the canal sides
- Within the urban blocks several exotic and protected tree species that were planted by the local inhabitants
CONCLUSIONS
- Large scale groundwater pollution on the site due to the former gas factory
- More than 55 large trees (trunk diameter 30-50cm) are located on the site
- 17 out of these are potentially threatened by a possible construction
- Almost every street contains at least one 100 years+ tree with 50cm+ trunk diameter
TABLE OF CONTENTS

- Living
- Working
- Mobility
- Flora & Fauna
- Others
- References
- Conclusion

FUTURE

Alexandra Bergsma
Laurens Kaatee
Roely Rijpkema
Gonzalo Samaniego
**Demography**
Ageing will be more dominant due to the high percentage it has in Amsterdam. Expected is that there will be also an influx of young professionals.

**Increase of population**
The prognosis is that the population of Amsterdam will increase with *70,000 people* up to 2040.

**Increase of dwellings**
Due to the increase of population 40,000 *dwellings* are expected to be needed up to 2040. The focus area's for these new dwellings are shown on this map.

**Demand**
The growing demand for dwellings will come from urban families, high educated starters and top incomes. There is a negative trend in the need for social housing.

**Studenthousing & shortstay**
Amsterdam will have an increasing demand for student housing as well as shortstay (expats).

**Metropolitan area**
Connecting the city of Amsterdam with neighboring cities will offer more choice in terms of living to its population.

**Identity**
Neighborhoods are unique and the city is planning to transform monotone neighborhoods.

**Flexibility**
The living conditions should be capable to adapt to future demands.

**Diversity**
An increase of mixed functions in neighborhoods is expected.

Source: Structuurvisie Amsterdam 2040 (pp. 89-97)
**Entrepreneurship**
Amsterdam has the ambition to grow in terms of the number of small companies (start ups).

**The right place**
Diversity is important in greater Amsterdam but there are also a few hubs present and they are expected to grow due to their location (South Axis, Schiphol Airport and Sloterdijk).

**Transformation**
Many old harbors and industrial sites are the place new opportunities arise. Amsterdam is aiming to allocate places for starting business mainly in the creative sector.

**STRONG SECTORS**

**Financial & Business Services**
Amsterdam is the country’s financial heart and has many worlds largest financial corporations located in the city. It generates 22.5% of the gross regional product.

**IT**
Half of the country’s IT revenue is generated in Amsterdam and it is expected to keep growing.

**Creative Industries**
Many creative industries are based in Amsterdam and this notion generates attracts more in the future.

**Life Sciences**
Amsterdam is home to three major hospitals and many business associated with Life Sciences are based here.

**Trade & Logistics**
Schiphol Airport (growing, new terminal) and the Harbor of Amsterdam are both the 4th biggest in Europe.

**Tourism**
The City of Amsterdam is one of the prime European destinations for tourists.

Source: Structuurvisie Amsterdam 2040 (pp. 99-112)
Focus areas for living:
- West Bank
- Sloterdijk
- Old Harbour
- IJ Shore
- Old Harbour
- Sloten
- South Axis
- Amstel
- Schiphol Airport

Focus areas for working:
- IJburg
- Sloterdijk
- West Bank
- Amstel

Location:
- [Marker]
2010-2020: NEW LIVING-WORKING DEVELOPMENTS

1. Buikslooterm: 2008-2030
   2700 dwellings, 2000 DIY dwellings

2. Houthaven: 2010-2020
   2700 dwellings, 70 boat houses

3. Katharinaocomplex: 2016-
   132 dwellings, diverse spaces

4. Oostpoort Oost: 2015-
   400 dwellings, retirement complex

5. Marineterrien: 2015-
   To be specified

6. Center Area North: 2015-
   To be specified

source | structuurvisie Amsterdam 2040 - watervisie Amsterdam 2040
2020-2030: NEW LIVING-WORKING DEVELOPMENTS

1. Zeeburgereiland: 2015-2030
   To be determined

   To be determined

source | structuurvisie Amsterdam 2040 - watervisie Amsterdam 2040
2030-20XX: NEW LIVING-WORKING DEVELOPMENTS
## 2010-20XX: NEW LIVING-WORKING DEVELOPMENTS

### Amsterdam West: dwellings (units)

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<thead>
<tr>
<th></th>
<th>2010-2020</th>
<th>2020-2030</th>
<th>2030-20xx</th>
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<tr>
<td>Havenstad</td>
<td>1100</td>
<td>1870</td>
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<tr>
<td>Other</td>
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<td><strong>Total</strong></td>
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<td><strong>2750</strong></td>
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### Amsterdam West: offices (m2)

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<th>2020-2030</th>
<th>2030-20xx</th>
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<tr>
<td>Other</td>
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<td><strong>Total</strong></td>
<td><strong>4000</strong></td>
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<td><strong>0</strong></td>
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</tr>
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</table>

Source: structuurvisie Amsterdam 2040 - watervisie Amsterdam 2040
### Amsterdam Centrum: dwellings (units)

<table>
<thead>
<tr>
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<th>2010-2020</th>
<th>2020-2030</th>
<th>2030-20xx</th>
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<tr>
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<td>1650</td>
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<tr>
<td>Total</td>
<td>1090</td>
<td>560</td>
<td>0</td>
<td>1650</td>
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</table>

### Amsterdam Centrum: offices (m²)

<table>
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<tr>
<th></th>
<th>2010-2020</th>
<th>2020-2030</th>
<th>2030-20xx</th>
<th>Total</th>
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<tbody>
<tr>
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<tr>
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<td>15000</td>
<td>0</td>
<td>106000</td>
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</tbody>
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**Source:** Structuurvisie Amsterdam 2040 - Watervisie Amsterdam 2040
Better public transport is one of the statements the municipality of Amsterdam is making in the 'structuurvisie'. This means for example a better connection to the green areas around the city.

The New North-South metro line will be ready in 2017. The municipality is thinking about extending this line towards Schiphol and Amstelveen. Besides this, there is also an option for an East-West metro line. These last three options are just ideas and not close to reality at the moment.
The municipality wants to reduce the parked cars on the streets and squares. The alternatives are:

- garages
- parking spots on the border of the city
- parking garages in the neighbourhood (400-500 spots)

Besides this, the municipality wants to realise P&R location in and around the city.
There are already a lot of bicycle roads in Amsterdam. The municipality wants to make the quality of the roads better. Besides this, the green areas around the city have to be better accessible by bike.
50% of the Amsterdam citizens find it important that they are surrounded by greenery in their living and working area. Living next to the water is also considered being ‘hip’. They want:

- Greenery in the street with a lot of variation
- A nice useful park on walking distance
- Big area of greenery on biking distance

Greenery is important for the psychological welfare and invites people to exercise. The parks are considered as the ‘new workplace’ for future modern people. As an important factor for health it needs to be more incorporated in the city center.

Temperatures are rising, so more public space for cooling down is needed.

Reasons for adding greenery are:
- Healthy for environment, people and animals
- City quality improves
- Natural solution to water storage or redirection
- Possible sustainable food production
- Air quality improves
- Biodiversity

source | structuurvisie Amsterdam 2040
The canals are part of the identity of Amsterdam and interfering with this is not allowed. Amsterdam would like to incorporate activities better on the canals and integrate it better with the public spaces on land. Examples are:

- Greenery and parks
- Catering
- Viewpoints for walking and biking
- Transport over water

There is a future climate problem of hot and dry summers versus wet and cold winters. Risks because of drought are:
- Wooden foundation pillars are left exposed
- No available cooling water
- Consequences for parks and greenery
- Risks of fish deaths and algae overgrowth

The resilience of the city needs to be 50 mm rain per 1 hour From which 10% can be surface water

Greenery as solution for too much water
- Soil surface catches water
- Trees and bushes evaporate water
- Trees, parks, greenery, fountains and watersquares reduce summer heat and provide a comfortable humidity in the air.
- Reduction of NO2, CO2 and pollution

Water as solution for sustainable energy
Gaining energy from the ground water is a proven and existing technique. Amsterdam has a few more points they want to see in the future:
- Collective solutions for ground water energy and stimulating this
- Gain warmth from waste water and organic components
High buildings & Underground

Underground
The municipality of Amsterdam said that only underground buildings will be developed at places with no archaeological values.

High buildings
Around the Unesco-arae zone of 2 km is set out by the municipality. This area can effect the urban landscape. The A10 is around 2 km away.
For a few years now the project 'New Amsterdam climate' has been around. This project is all about a clean and livable city. For the future it is necessary that this project gets more attention. The system used in the project is called the Trias Energetica. There are three categories in this system:
1. Energy saving and reduction
2. Usage of sustainable energy
3. Efficient use of fossil energy

Since 2015 Amsterdam has a climate neutral organisation. Amsterdam intents to go for a sustainable climate neutral city and being independent from fossil fuel. They also want:
- 40% CO2-reduction in 2025, (compared to 1990)
- 75% CO2-reduction in 2040, (compared to 1990)

Existing possibilities for sustainable energy:
- District heating
- Cooling networks
- Energy storage
- Wind energy
- Green and wet roofs
- Neutral building climate

Areas the government wants to adapt to a sustainable approach and adapt to New Amsterdam Climate are:
1. Built Environment
2. Clean transport
3. Port & Industrial
4. Renewable energy
In the upcoming decade there will be a major increase of elderly people in Amsterdam due to two main reasons. First of all the age group (65 and up, baby-boom generation) is one of the biggest in Amsterdam and is already present on the market.

Reason 2 is comes from a shift in behavior. More and more people in this age group decide to stay in the city instead of moving out.

More and more families prefer the city rather than rural area’s. This means that besides the living amenities on dwelling scale, such as a bigger kitchen, extra room, and spacious balcony or outdoor space, also the public space need to adapt to the need of young children.

Safe places to play, schools, day-care and sport facilities are all part of this increase of urban families in the city.

Amsterdam is one of the most popular cities in the Netherlands for high educated people to start their career. The professions are very diverse and generates a demand in many segments of the market.

From affordable living space to upper segment dwellings.

The ambition of Amsterdam is to improve and grow as a city that is attractive for big corporations and businesses. This means also to be able to accommodate people with a top income. Although this is currently a small portion of the market it is believed that it will increase.
ZURICH
12.1% 12.3% 13.4% 12.1% 11.7% 12% 14.3%

STOCKHOLM
14.3% 11.3% 11.3% 13.7% 11.8% 10.6% 14.1%

GENEVA
12.1% 12.3% 12.3% 11.1% 11.9% 12% 14.3%

ROTTERDAM
14.3% 7.4% 7% 11.4% 6.6% 11.9% 13.8%

AMSTERDAM
14.3% 7.4% 3.5% 11.1% 9.4% 11.9% 13.8%

CITY ECOSYSTEM ASSESSMENT - THREE LAYERED SYSTEM

Zurich has a better score due to a few things Amsterdam can improve on. These are:
- investment in efficient and renewable energy
- sustainable public transport system
- willingness to increase public awareness of environmental issues
- the big amount of quality green spaces
- project 2000 watt per capita in 2050

For the water issue, Amsterdam can take an example in Rotterdam. They have:
- multifunctional flood protection
- water plaza
- innovative water storage

source | ARCADIS - Sustainable cities index 2016 / Centre for Economic and Business Research (CEBR)
References | Amsterdam vs Copenhagen

COP

Municipal adjustments
- green passage for fast cycling, more green light on this road.
- all cabs have bike carriers (costs are 3 euro)
- more broad cycle roads
- blue coloured bicycle roads

User behaviour
- quality of the bicycles is better
- people do not cycle next to each other
- not much bicycles stealing
- helmets are normal, around 25-30% are wearing this
- people almost never cycle by red light
- people clearly indicate when they brake or turn

Possibilities for the future
- green passage for fast cycling, more green light on this road.
- more broad cycle roads
- blue coloured bicycle roads

AMS

inner-city with bicycles for free

green passage for fast cycling, more green light on this road.

take bicycle for free in the train

source:
<table>
<thead>
<tr>
<th>Metric</th>
<th>AMS</th>
<th>HKG</th>
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</thead>
<tbody>
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<td>Share of public transport (%)</td>
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<td>84</td>
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<tr>
<td>Car sharing performance (points)</td>
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<td>Shared bikes per million citizens (u/mil)</td>
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<td>Penetration of smart cards (u/cit)</td>
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<tr>
<td>Transport-related fatalities (u/mil)</td>
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<td>Transport-related CO2 emissions (g/cit/year)</td>
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<tr>
<td>Vehicles registered (u/cit)</td>
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<td>Average travel speed (km/h)</td>
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<tr>
<td>Average travel time home-work (min)</td>
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<td>39</td>
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<tr>
<td>Overall satisfaction (points)</td>
<td>13</td>
<td>12</td>
</tr>
</tbody>
</table>
Summary

**Living**
- The municipality is planning 1650 new dwellings in the neighbourhood of the plot before 2030
- The municipality is planning 106000 new offices in the neighbourhood of the plot before 2030
- Ageing will be more dominant
- Influx of young professionals
- Increase of population; 70,000 people up to 2040.
- Increase of dwellings; 40,000 dwellings up to 2040.
- Growing demand for dwellings will come from urban families, high educated starters and top incomes.
- There is a negative trend in the need for social housing.
- Increasing demand for student-housing as well as short-stay
- The living conditions should be capable to adapt to future demands
- An increase of mixed functions in neighbourhoods is expected

**Working**
- Important sectors now and in the future
  - Financial & Business Services
  - IT
  - Creative Industries
  - Life Sciences
  - Trade & Logistics
  - Tourism

**Mobility**
- Less cars
- Reduction of parked cars on the street and on the squares
- More bicycles
- Better quality of the bicycle roads
- Better connection to green areas in and around the city

**Flora & Fauna**
- Bring high quality landscaping in the inner city.
- Reduce the flood risk.

**Others**
- The plot is in the area in which high buildings can effect the urban landscape.
- The main target groups are elderly, urban families, young professionals and top income.
- The focus needs to be on sustainable energy and green spaces
CHINESE SHOP HOUSE

Case Study Report - Research Seminar
Graduation Studio - AR3AD010

By Mike de Lange, 4431626
07 oktober 2016
The Chinese shophouse can be categorized between a rowhouse and a courtyard house. As it was built originally for a mixture of commercial and residential use, it’s called shophouse. The shop was orientated towards the street. Lots of these houses changed, nowadays used as residential house only, but the amount of different types is big.

The house developed in the 18th century and can be seen as a mixture of Dutch tradition of the channel houses with their commercial hall in the front, local style and Chinese construction methods.

Most important feature of the house is the threshold between the public space of the street and the interior of the house by a roof covered front terrace, a veranda. The British empire even forced the owners to open these terraces to the neighbours with the result that a publicly accessible arcade was created, a pavement, built and maintained by the owners of the houses. Another wish of the empire was to connect the stair which lead to the upper floor with the front facade with the result that the upper floor could be accessed directly from the main street and therefore hired easily.
The history of the urban settlement in Malaysia has not been as long as in Europe, but in the large urban settlements such as Singapore, Malacca, Penang and Kuala Lumpur the shophouse is the most common type of building. They act as an indicative landmark of any Malaysian town, big or small and mostly they are also the basic unit of any Chinatown areas. The shophouses are one of the first typologies that made the combination of high population density and intensity of economic activity possible.²
INFRASTRUCTURE

The main roads and streets are easy accessible and connected with the entrance of the shop-front. The front is often a five-foot walkway and the back faces a narrow lane where night soil and refuse may be collected without disturbing the shop front. The shophouses are neatly organized in one row or some parallel rows. The streets names are often the amount of shophouses found in a row, for example, Carnavon street, named “ten houses street” in Penang.
The buildings are typically very long in floor plan with a narrow frontage on the streets. The number of shophouses build side-by-side with common party walls and often identical façade are often inspired by early Chinese residents in Malaysia. The shophouse is mostly build on the street edge, the ground floor is recessed and in this way forms a pedestrian walkway. This walkway is connected to the adjacent buildings.
The combination of both residential and commercial functions create a lively and vibrant urban setting, and the display of the merchandise in the five-foot way, was very important in creating this atmosphere. The aroma of the food, the sound they produced and the sense of colors filled the spaces and enriched the sensory effect of the townscape. The shophouse is divided with a masonry wall, the wall is slightly higher than the roof, which makes it a good fire-barrier. The prevention of fire is important with the wooden roof structure and tiled roof.

In the front part of the building, there is a shop. The middle part is used as a work- / living space. More in the back there was a kitchen and outside a place for a toilet.
Legend
1. residential- or shopfront
2. living space / storeroom
3. rear court (services)
4. corridor
5. bedroom
PLAN

FAÇADE

Early Penang style - 1790 - 1830

This façade is relatively simple in detail and can be divided in two parts, the top and bottom part. The upper floor façade is supported by pillars and forms the pedestrian walkway. The façade is mostly made out of timber construction and has a continuous row of paneled or louvered shutters. With exposed roof rafters it forms an overhang and simple fascia board. The ground floor has a full width opening.

Southern chinese eclectic style - 1840 - 1910

The Southern chinese eclectic style developed a lot since the early penang style in 1790. The wall of the façade is made out of brick instead of wood. Also airvents are made in the wall.
Early Straits ‘eclectic style - 1890 -1910

The early straits eclectic shophouse style adopted to suite the shophouse vernacular and can be seen in pediments, pilasters, keystones and arches. Roof shapes and gable ends were also ornamented according to the tradition and culture of building ownership.

Late Straits ‘eclectic style - 1910 - 1940

Many of these shophouses were designed during and after the Dutch period especially by wealthy Straits Chinese. They got rich because of their trades and wanted a house to portray their wealth. A rich owner may had two or three houses in a row to house their growing family or to create living quarters for the servants which can be distinguished by their less intricate design. This style is most spectacular in the use of ornamentation. The use of reinforced concrete allowed larger spans and cantilevered details.
CHARACTERISTICS

LONG NARROW PLOTS
PUBLIC
SHOPHOUSE  /hyphen.cap SPACES
CHARACTERISTICS
MULTI-FUNCTIONAL (SPACES)

LEGEND
PRIVATE
WORK
MIXED USE
PUBLIC
CHARACTERISTICS

VOLUMES

LEGEND
- PRIVATE
- WORK
- MIXED USE
- PUBLIC

↑ VERTICAL CONNECTION
The party walls are a bit higher than the roof, this for fire safety reasons.
CHARACTERISTICS

FIVE-FOOTWAY

Most important feature of the house is the threshold between the public space of the street and the interior of the house by a roof covered front terrace, a veranda. The British empire even forced the owners to open these terraces to the neighbours with the result that a publicly accessible arcade was created, a pavement, built and maintained by the owners of the houses. Another wish of the empire was to connect the stair which lead to the upper floor with the front facade with the result that the upper floor could be accessed directly from the main street and therefore hired easily.¹

LEGEND

- FIVE-FOOT WAY
CHARACTERISTICS

INTERNAL COURTYARD

The open air-well took away the heat from the charcoal fired stoves and brought in daylight.
CHARACTERISTICS

PITCHED ROOF

The roof is constructed by timber elements and finished with terracotta U-shaped roof tiles.
What you can see here is a clear abstract of the DNA from the shophouse. It represents the section, the DNA is in a lot of the characteristics what can be shown best in the section. The section is divided in 3 main components. The first is the shopfront with the five foot walkway. The second is the main living room or workspace what can be multiplied over times. Also you see the internal courtyard with the airwell to gain daylight and fresh air. The last part, number three is the back end of the shophouse with the services outside, like the toilet. In all the three parts you can see the pitched roof.
SOURCES

LITERATURE