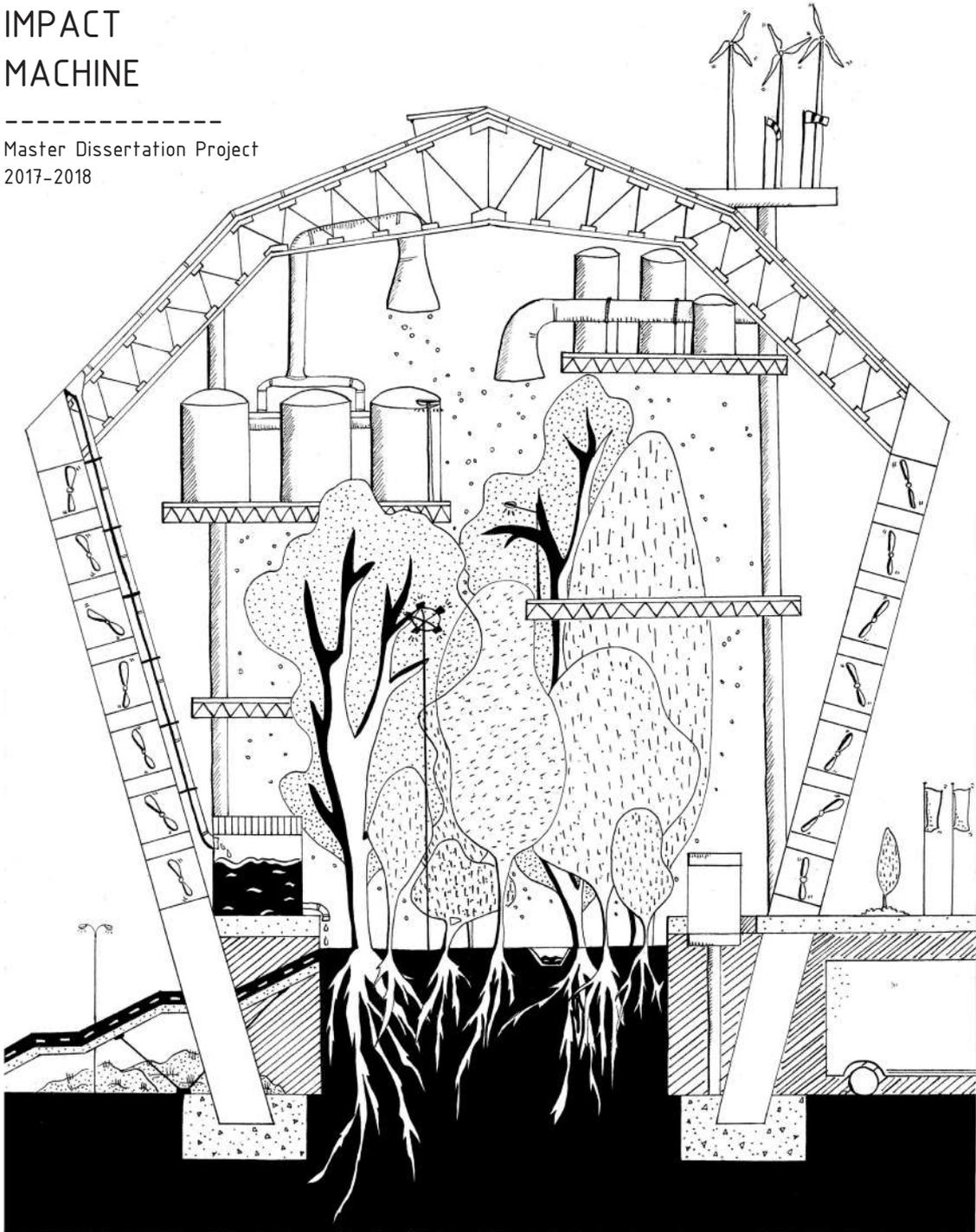

POSITIVE
IMPACT
MACHINE

Master Dissertation Project
2017-2018



POSITIVE IMPACT MACHINE

"C'est aussi un constat ironique et amusant qui nous montre comment l'homme, absorbé par la technologie, essaye de résoudre les problèmes écologiques."

- Ilkka Halso

PREFACE

Deze masterproef is tot stand gekomen met de liefdevolle ondersteuning van mijn ouders, die al mijn hele opleiding lang paraat staan. Zelfs in de late uurtjes om maquettes in elkaar te steken.

Tussen het werken door waren mijn rustpauzen het meest memorabel met jullie twee, Elena en Jolien. Onze verhalen zijn nooit uitverteld en onze zoveelste aankoop boeken nooit uitgelezen.

Aan jou Glenn en je lieve woordjes die me bemoedigen om het beste uit mezelf te halen.

Dit project heb ik met veel genoegen gemaakt dankzij jou Luc Eeckhout. Ik bewonder je vooruitstrevende houding en blik naar de toekomst. Je leerrijke inzichten blijven boeien.

Tomas Ooms, voor je inspiratie en indenkvermogen als de draad even kwijt is



----- INTRODUCTION -----

The biggest challenge we are facing today is climate change. This machine can help Ghent to become carbon neutral in 2050. This machine is an air purification machine with an educative and social purpose.

In the chapter 'Site Analysis' an introduction on the history and the current situation of the Loop is been drawn. The Loop has been an important terrain in all times with a flow of different functions. With the critics and abolishment of the outlet centre the Loop has been frequently in the news on a negative note. Instead the Loop has the potential to be this positive catalyst than can provide awareness, social and educative knowledge and clean air for a better living environment.

My proposal is spread in three chapters. Dérive, Mechanism and the final result: Machine.

A *dérive*, a theory from Guy Debord, is mainly a wander through an area whereby the attention to details of particular spots are mapped. My first impression of the site in combination with a photo series can help understand this odd place. Afterwards in search of the identity of the Loop, elements of every individual separate place are collected.

In the chapter Mechanism all the separate elements in the Loop have been placed in an random order. The same mechanism can be identified for the many functions that have been plugged in the Loop. This dropping mechanism can be found in all scales. The agglomeration of Ghent has several cases where large functions are dropped and used in a consumerism way. With this system in mind, the project on the Loop needs the same ingredients. In this chapter the basics of a good theory, program and technics for the project are evaluated by using references.

The positive impact machine and all the layers needed to imagine this temporary project to succeed. The machine is dropped in the same way the functions and elements are. But this time it is a positive change and a displacement. The air pollution problematic is one that has to be faced and understood. Efficient machines lack the social and educative participation by citizens. This machine is a rediscovery of nature in a place dominated by concrete and parking lots.

This project is a statement to Ghent for more action in terms of mobility, accessibility, cherish nature and use agglomeration sites in human way.

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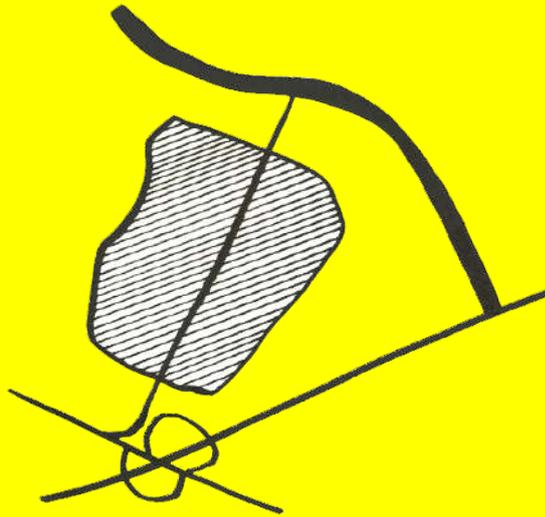
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SITE ANALYSIS



HISTORICAL BACKGROUND

A sequence of divers functions



fig.1

The Loop is situated on a higher platform inbetween two significant rivers the Leie and the Schelde and near the city centre of Ghent. The train station of Ghent-Sint-Pieters is just 3 km away from the Loop. Next to this site runs the E40, an important highway that connects Brussels to the Nord Sea. A bit further this highway crosses the E17 to Antwerp. Besides it's position on the map is of great value relative to other Belgian cities such as Antwerp, Bruges and Brussels, but also to neighboring countries: the Netherlands and France.

Several discoveries have been made during the constructions of Flanders expo and the IKEA. It's sandy loam soil is an ideal ground for the fabrication of residences. The settlements of a house and sheds of the Iron Age, 6 to 8 farmhouses and a burial field of the Roman era and a wooden farmhouse from the Middle Ages have been found. In terms of the archaeological heritage can be stated that the Loop has been an important terrain in all times.¹

fig.1 own sketch based on google maps

¹ VERMEIREN, G, Stad Gent dienst Archeologie, Sint-Denijs-Westrem - site Beurzencentrum - archeologisch

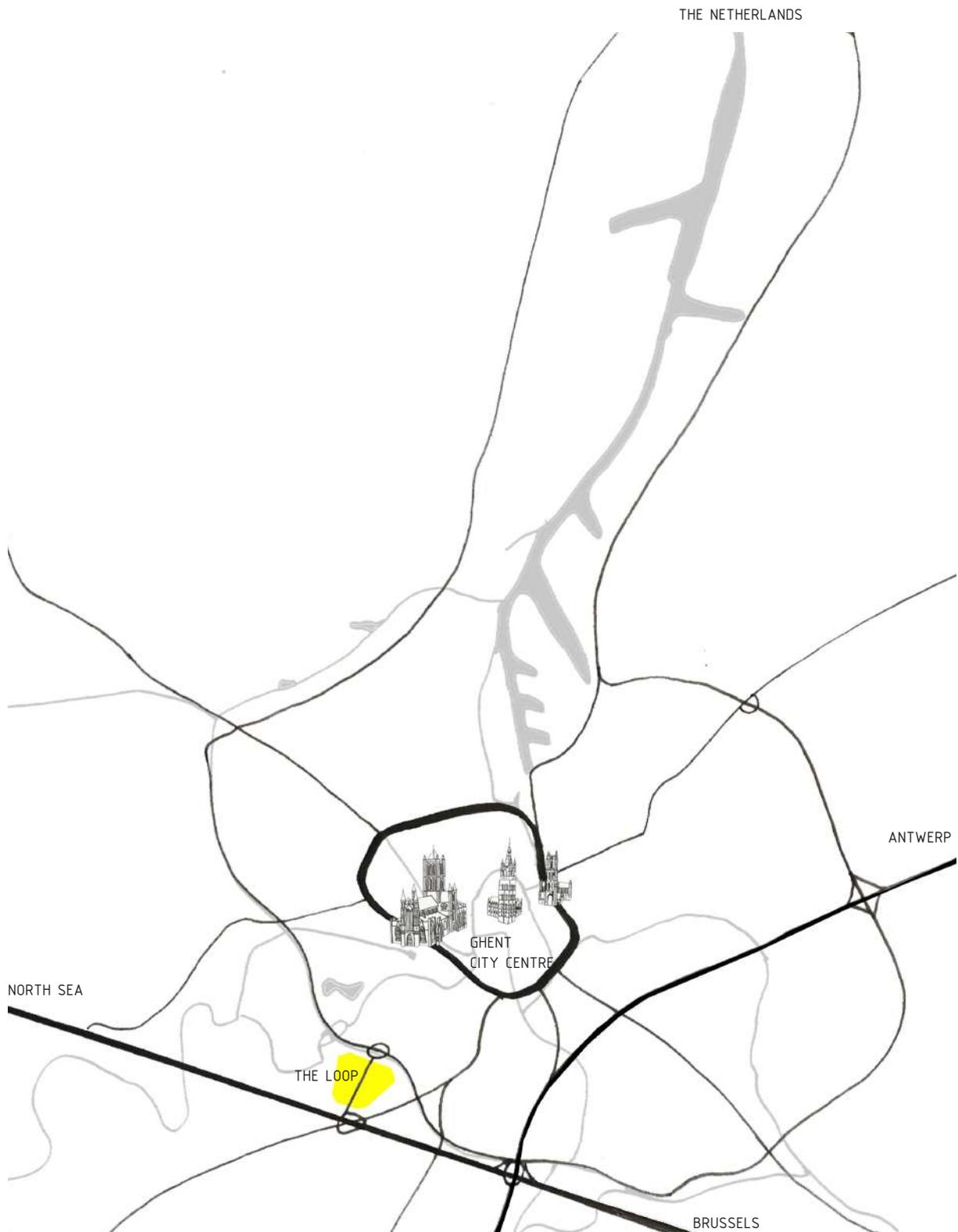


fig.2 own sketch based on google maps

A MILITARY SQUARE "WILLEMSVELD"

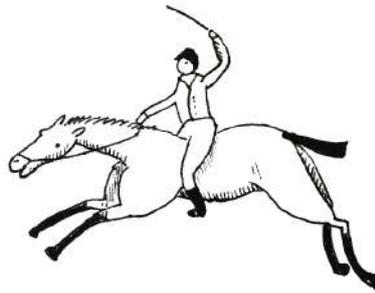


fig.3 Horse racing

The Loop has known a great diversity of functions through many decades. Ghent was under Dutch rule from 1815 till 1830. On the 15th of June 1820 a military square for practice was made under the direction of King Willem of the Netherlands. This square in Sint-Denijs-Westrem was also known as 'Willemsveld'. The activities of the infantry were rapidly supplemented with horse racing. After the Belgian independence this square was assigned the name Sint-Denijsplein.²

The river Leie and the stream Maalte were significant to this area as the different streets such as the main road Kortrijkse steenweg. The Boesbeek and the Maaltepark are still present nowadays.

fig.3. own sketch based on : GODBY, James, Horse Racing, Published by ORME Edward, January 1, 1807, hand-colored aquatint, 13 ¼ x 17 ¾ inches, National Sporting Library & Museum.
2 DE KEUKELEIRE, Erik, Fragments of the Gazet van Gent, "Sint-Pieters-Aalst, Sint-Pieters-Aaigem en Sint-Denijsplein - deel 1 (1819-1901)", 298 pagina's, oktober 2004.

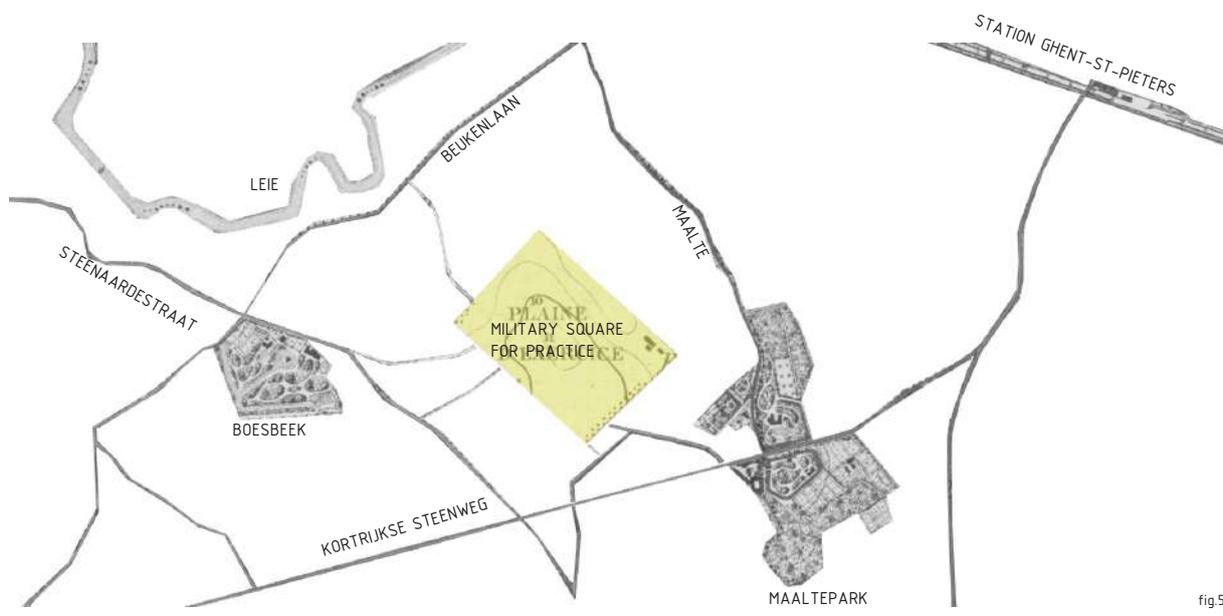
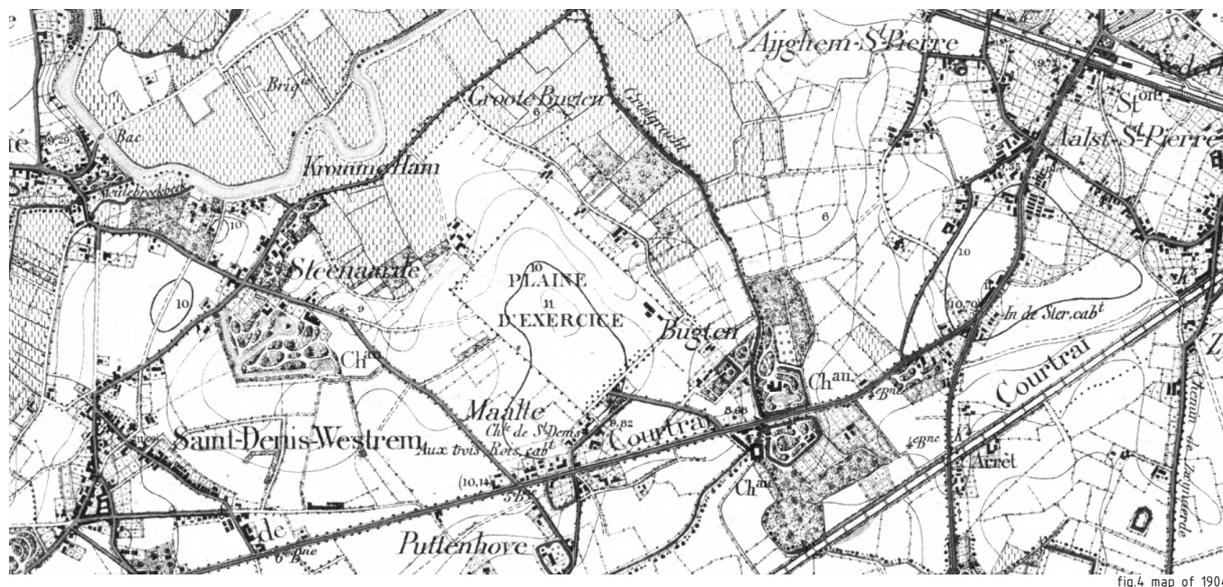


fig.4+5 www.cartesius.be, 4 april 2018

AIRFIELD FOR THE WORLD'S FAIR



fig.6 named after the first "LOOP"ing

In view of the world's fair of 1913 the Loop became in 1910 one of the first airfields in the world with his own "Aéro Club des Flanders". The name 'the Loop' refers to the first looping made by Adolphe Pégoud during the air show of the world's fair.³

During the First World War Sint-Denijs-Westrem played an historic role as a bombing base, from here the historical air strikes on London and other British cities were carried out.⁴ The airfield was greatly reduced by the construction of the E40 highway in 1954 and the waterway the Ringvaart in 1969. In 1984 the airport was lastly closed to make place for the Flanders Expo exhibition complex.

fig.6 own sketch

³ www.stad.gent/loop/geschiedenis-van-loop, 4 april 2018

⁴ www.luchtvaartgeschiedenis.be/content/sint-denijs-westrem-vliegveld, 3 juni 2018

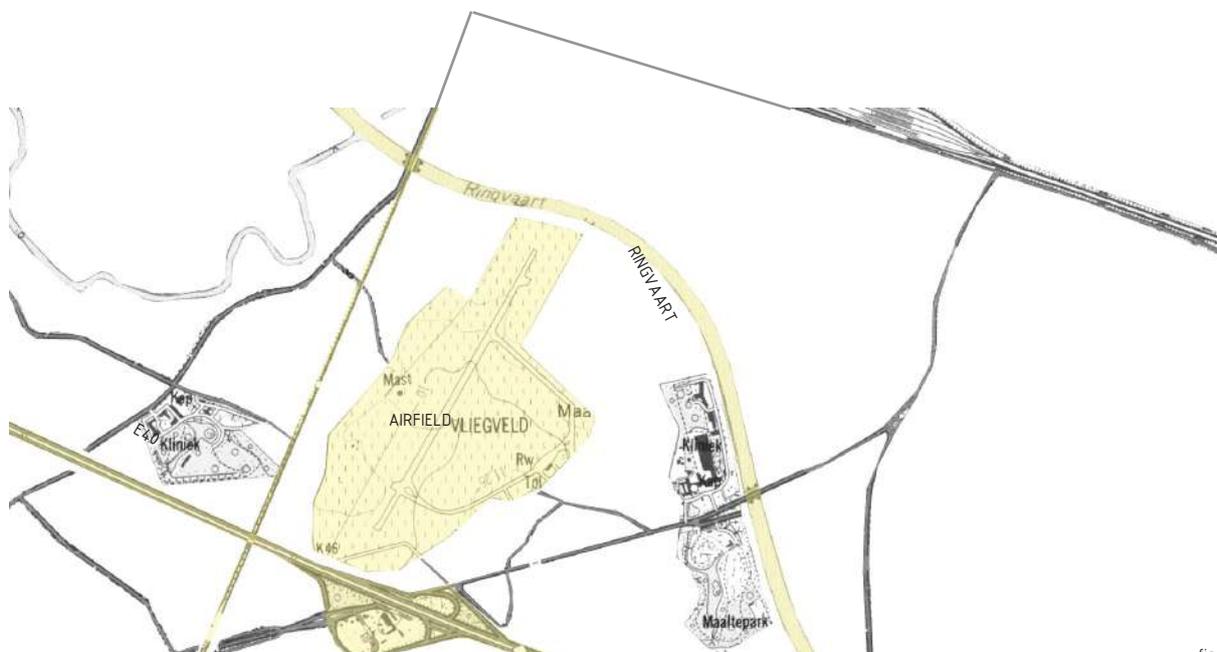
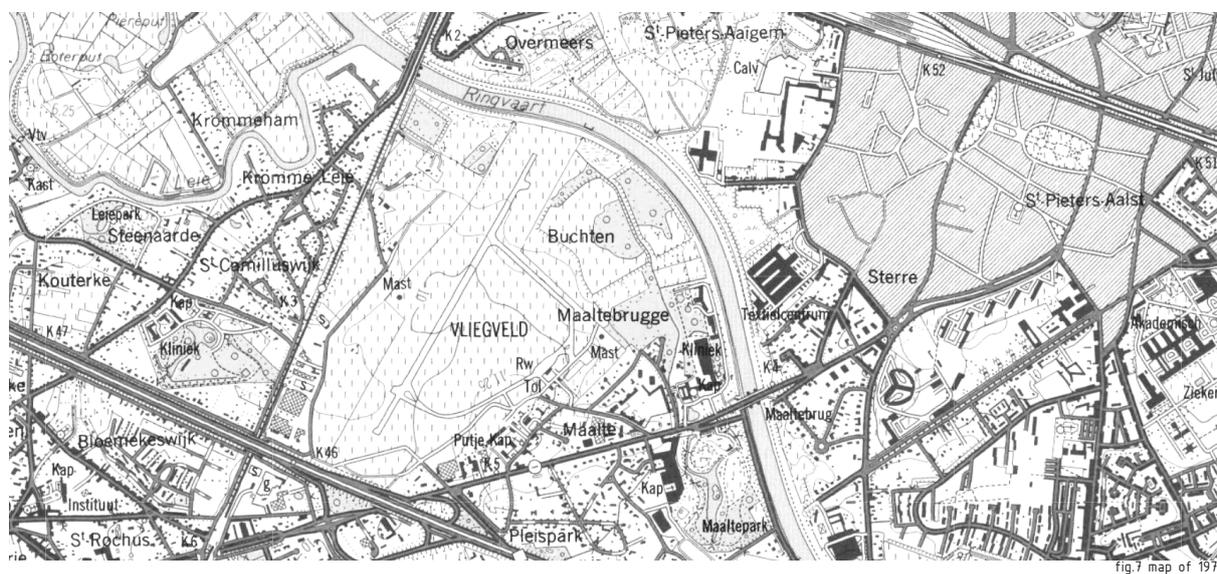


fig.7+8 www.cartesius.be, 4 april 2018

A NEW FLANDERS EXPO

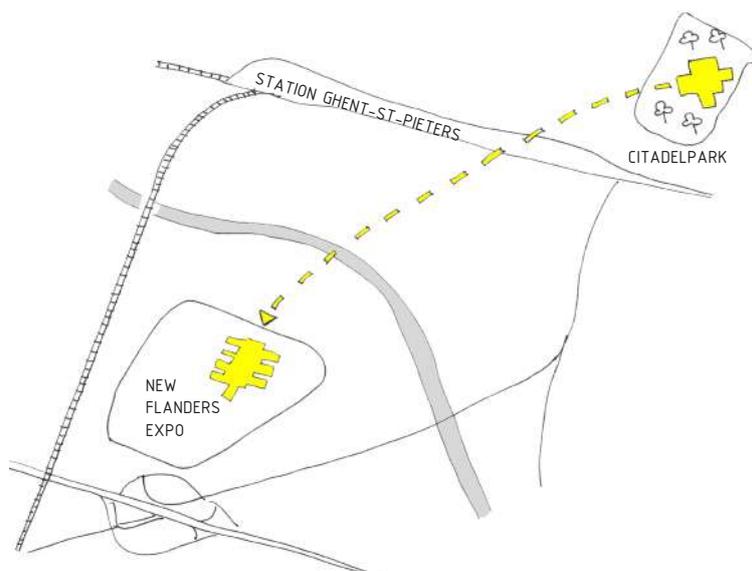


fig.9

In 1984 the airport closed and made place for the new Flanders expo. The expo located at the Citadel-park (near the station of Ghent) wanted to expand and modernise the expo halls. And decided to move over to the Loop in 1987. The Adolphe Pégoudlaan that divides the site in two is the former airstrip of the airfield of 1910. It is named after the first pilot who made a looping during the air show of the world's fair in 1913.⁵

fig.9 own sketch based on google maps

⁵ <https://stad.gent/loop/geschiedenis-van-loop>, 4 april 2018



fig.10 map of 1995

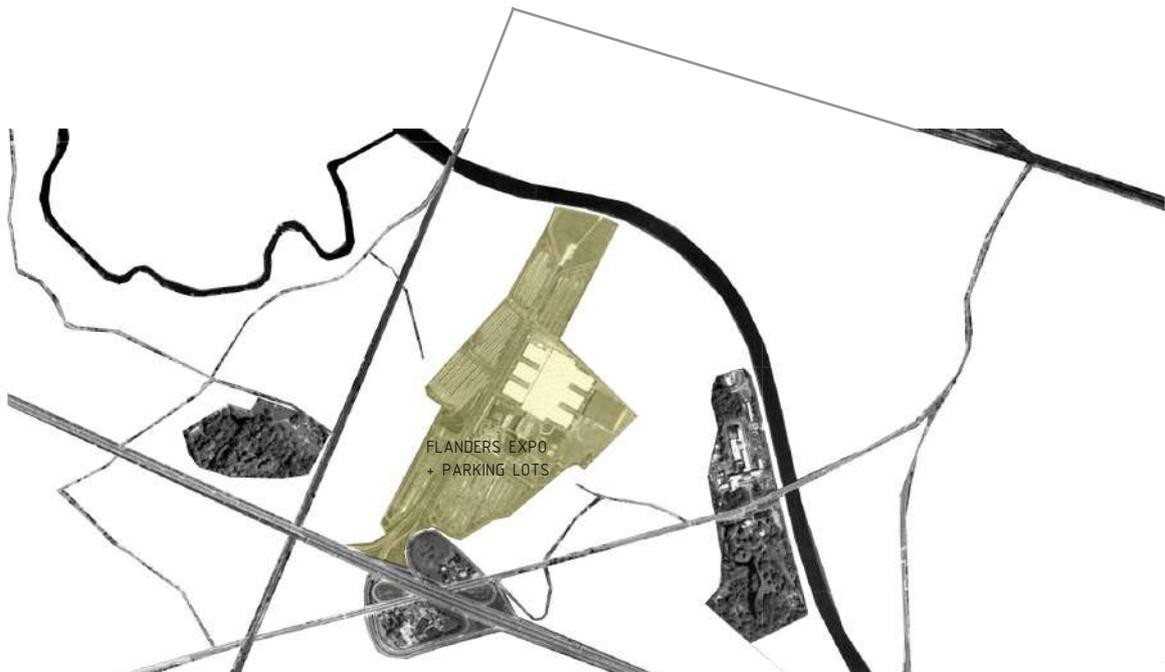


fig.11

VISION FOR THE LOOP

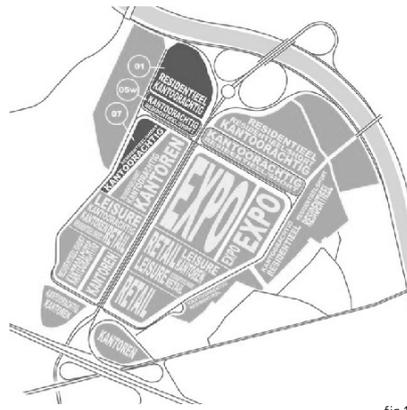


fig.12

In 2003 KCAP Architects and Arcadis Gedas were assigned to create a new masterplan for the Flanders Expo site. The program consists of expo-functions, leisure, retail and for the most part offices. Housing or living on the site is not part of the program, except short stay such as hotels. This masterplan is elaborated to the new RUP. Due to the size of the masterplan, the realisation will take a long period of time. The plan is divided in different steps or phases.⁶

In the first phase the main infrastructure is set up and is already realised (fig. 13). A main road is designated namely the middle road or the Adolphe Pégoudlaan. At the beginning and the end of this main road streets are joint and create in that way a closed circle. These streets are in a sense a sort of highways and are only accessible by car.

fig.12 www.architectura.be/nl/nieuws/1443/take-off-start-van-the-loop-in-gent, 1 june 2018

6 KCAP, Arcadis Gedas, Site Flanders X-po: masterplan Gent Handelsbeurssite,(December 2005), p. 13-14

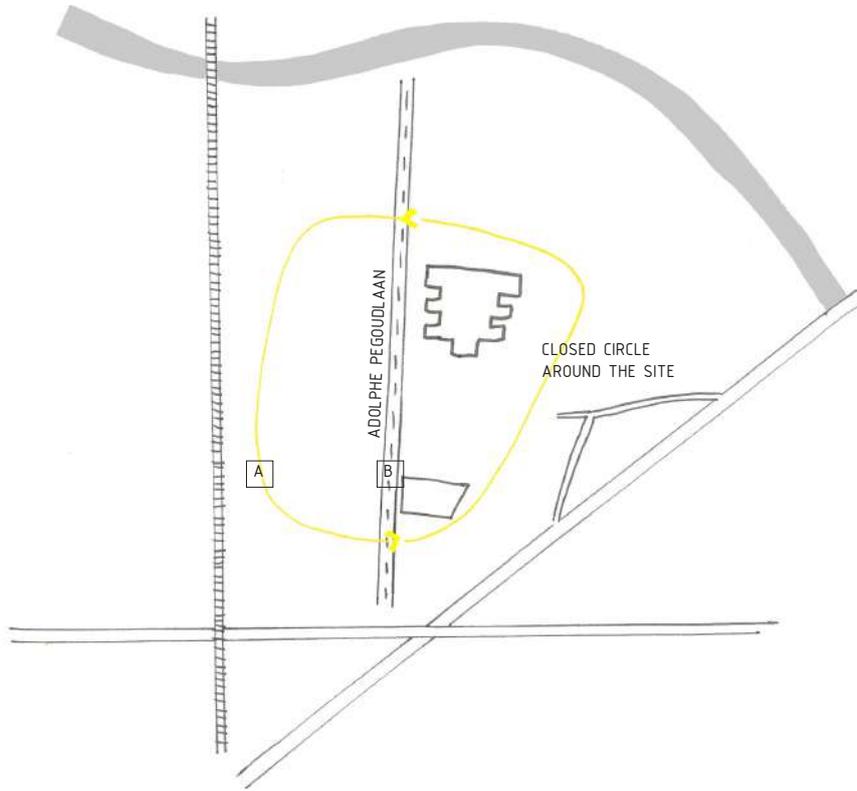


fig.13

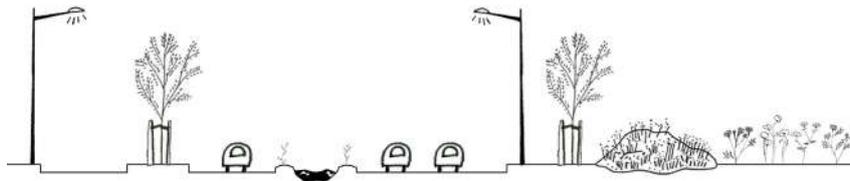


fig.14 SECTION A

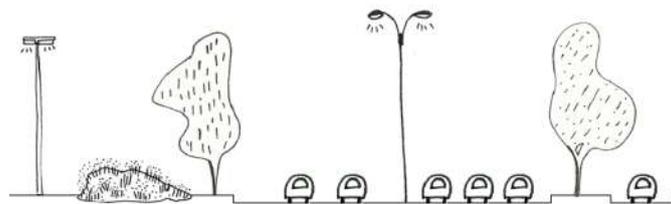


fig.15 SECTION B

fig.13 own sketch based on google maps
fig.14+15 own sketch

FUTURE VISION FOR THE LOOP

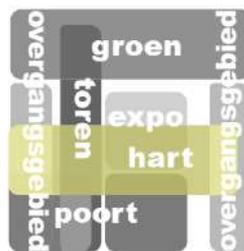


fig.16

After the phase of the main infrastructure, different zones or fields are definite and marked with their own specific character. A green zone, a tower zone, the heart or the core zone, the expo zone and a few transition zones. This distinction of separated zones or functions feels strangely as an modernistic approach.

In this core zone a second level will be created for only slow mobility such as passengers and the level under it can be used as parking lots. The Ikea and the Flanders expo have already their entrances at a higher level (fig. 16). By adding this new level of public domain both buildings and the future outlet centre on this core zone will be connected.⁷

fig. 16 KCAP, Arcadis Gedas, Site Flanders X-po: masterplan Gent Handelsbeurssite,(December 2005), p. 39

⁷ KCAP, Arcadis Gedas, Site Flanders X-po: masterplan Gent Handelsbeurssite,(December 2005), p. 39

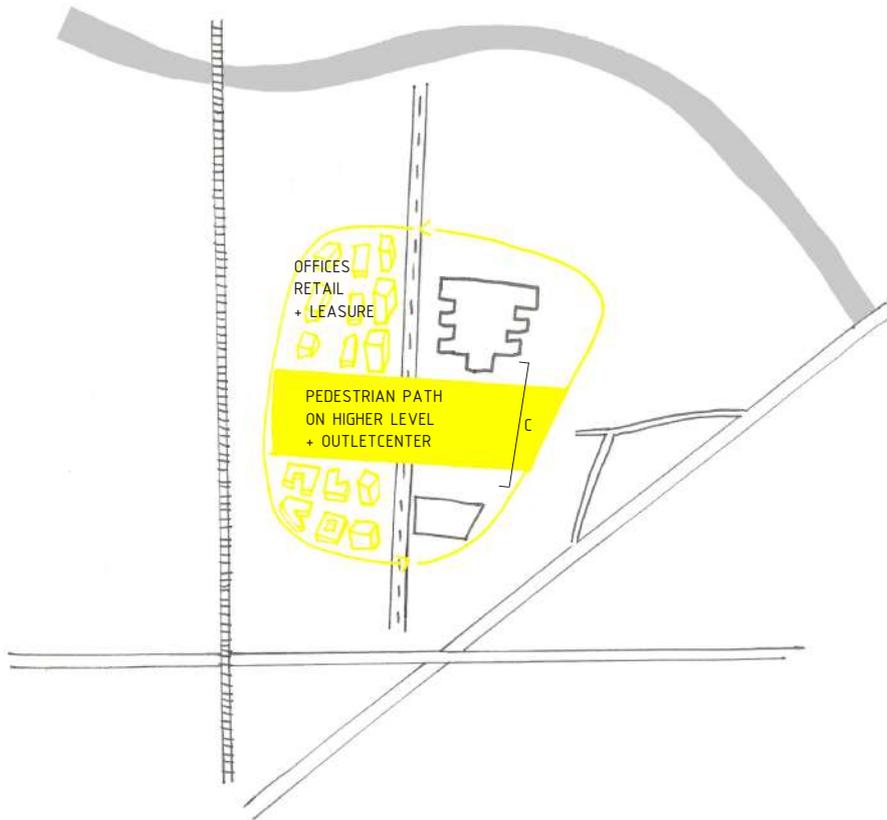


fig.17

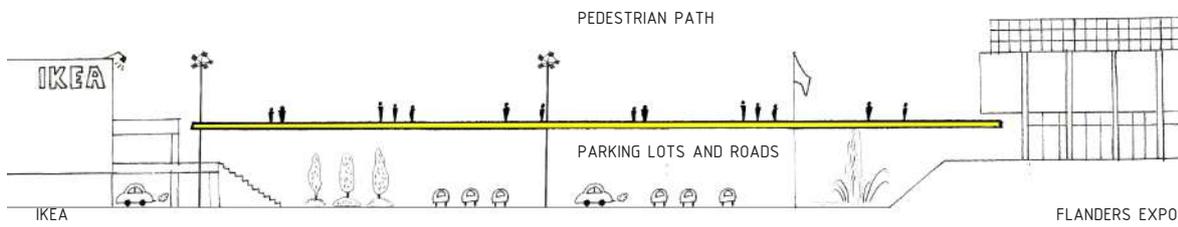


fig.18 SECTION C

fig. 17 own sketch based on google maps
fig. 18 own sketch

THE LOOP IN THE NEWS

After years of negotiation the city of Ghent has decided in the autumn of 2017 to stop the constructions and cancel the masterplan of the Loop. Mainly the planned Outlet centre in between Flanders expo and Ikea has got a lot of critics. Unizo and Gentse Milieufrent, two non-profit organisations, fight together against the plans of KCAP architects and Arcadis Gedas.

The Loop is almost only accessible by car. It has as target millions of visitors per year for their new large department stores and their new offices. According to the city of Ghent, mobility to the Loop will remain smooth and trouble-free even at large expo exhibitions. Mobility studies show that a traffic free system is dubious, a large overcharge of cars is predicted in the Loop, but also on the E40 highway.

By looking at environmental issues such as air and noise pollution for which cars are responsible for a substantial percentage, a better mobility system with better alternatives, namely public transport, is the key to success.

In the case of the Loop the tram is a better alternative but the easiest way to access to the site is without a doubt by car.

Another point on this anti-outlet centre list, is the ambition to make the Loop into the most important trading zone for Ghent.

As millions of visitors are expected, the city centre is under pressure. Many customers will no longer come to the centre for their shopping activities and there will certainly be a job lost in the centre. Not only the stores are going to sense this change but there is also a risk of vacate offices in the Ghent city.⁸

The case has been won, the outlet centre will no longer be build and the masterplan is been cancelled. But now the question remains:

What is the future of the Loop?

⁸ GRIETENS, Erik, "The Loop: grootschalige werken aan flanders expo zijn gestart, de vragen blijven." In FRONTAAL, (winter 2007), p.20-21

GENT

Uitneembaar

Stad trekt streep door plannen voor omstreden outletcenter met 100 winkels op The Loop

Geen megawinkelcentrum bij Flanders Expo

GENT / SINT-DENIS-WESTREM

Het geplande megawinkelcentrum op The Loop, tussen Flanders Expo en Ikea, komt er niet. De Stad wil de plannen afblazen. Geen enkele Gentse politieke partij steunt de plannen overigens nog – ook SP.A, Groen en Open VLD niet. Dat blijkt uit een rondvraag van De Gentenaar. Daarmee sneuvelt een van de meest omstreden dossiers in de stad.

BERT STAES EN JAN CLAEYS



Het outletcenter zou een honderdtal winkels en minstens 1.500 jobs naar de rand van de stad hebben gebracht. Maar ook zeker 10.000 extra auto's op weekenddagen.

Uplace-aan-de-Leie komt er niet. Het stadsbestuur staat niet langer achter de bouw van het grote outletcomplex met een honderdtal kledingwinkels dat was gepland tussen Ikea en Flanders Expo op The Loop. In 2010 had het daar veel nog groen licht voor gegeven, maar er rees veel protest. En vandaag staat geen enkele Gentse politieke partij nog achter het project.

Stroomversnelling

De beslissing zou over enkele weken worden bekrachtigd en bekendgemaakt door het bestuur van stadsontwikkelingsbedrijf Sogent. Maar het dossier kwam deze week in een stroomversnelling nadat De Gentenaar van alle vijf lijsttrekkers in Gent een ja/nee-antwoord had geëist over het winkelcentrum (zie volgende pagina's).

De vijf lijsttrekkers antwoordden allemaal 'neen' op de vraag of er "een groot winkelcentrum mag komen op The Loop, als u burgemeester wordt". Ook Rudy Coddens (SP.A) en Mathias De Clercq (Open VLD) zeggen 'neen'.

Daarmee spreken ze zich voor het eerst expliciet uit tegen het outletcenter, na jaren van ontwikkelende antwoorden.

"We zullen de invulling van The Loop herdenken", zegt Coddens. Hij belooft een 'publiek inspraaktraject'. De Clercq zegt dat we "de binnenstad geen concurrentie mo-



RUDY CODDENS
SP.A LIJSTREKKER

"We zullen The Loop herdenken in een publiek inspraaktraject"



MATHIAS DE CLERCQ
OPEN VLD LIJSTREKKER

"We mogen de binnenstad geen concurrentie aandoen"

gen aandoen" en wil een "breed maatschappelijk draagvlak".

Vrijdagsavond volgde de bevestiging in een persbericht. De Stad wil dat Sogent de gesprekken over de verkoop van de gronden waarop het winkelcentrum zou komen, stopzet. Die onderhandelingen lopen al vier jaar, zonder resultaat. Er is bovendien geen bouwvergunning voor het project.

Onderhandelen zinloos

"Verder onderhandelen is zinloos", zegt schepen van Stadsontwikkeling Sven Taeldeman (SP.A). "Het was vastgelegd dat aan die twee voorwaarden vóór 30 september 2017 voldaan moesten zijn. Dat is niet zo." Het stadsbestuur is niet langer van plan om de termijn voor de gesprekken nog te verlengen, zoals al tien keer is gebeurd in de voorbije jaren.

Unizo reageert tevreden: "We zijn verheugd te horen dat opnieuw zuurstof aan lokaal ondernemerschap wordt gegeven. Het is van groot belang dat de Stad meewerkt aan de versterking van de handelskern. We hopen dan ook dat de outlet op The Loop echt dood is."

Het designer outletcenter The Loop – of 'Uplace-aan-de-Leie' zoals het winkelcentrum werd gedoopt in de volkenmoed – was een project van twee giganten, het Amerikaanse McArthurGlen en de groep Benimmo. Zij wilden 225 miljoen euro investeren en belooften 1.500 tot 2.500 jobs op de site. Er zouden uitsluitend zes maanden oude collecties van designmerken worden verkocht, zeven dagen per week.

Maar het project weekte veel protest los. De argumenten tegen het plan stapelden zich op, net zoals de tegenstanders: Unizo Oost-Vlaanderen, het Gents Milieufront, de Stad Deinze...

Een groot winkelcentrum aan de rand van de stad zou concurrentie betekenen voor de handel in de Gentse binnenstad. Het zou ook grote extra autostromen naar de snelweg in Zwijnaarde zuigen. Per jaar werden 6 miljoen bezoekers verwacht, ook veel buitenlandse toeristen. Volgens berekeningen zou dat op weekenddagen meer dan 10.000 auto's betekenen.

Sogent moet volgende week de knoop officieel doorhakken. Maar The Loop is zo goed als begraven. Over wat er wel op de terreinen moet komen, zijn de debatten vanaf nu geopend.

► Lees ook Regio 2-3

Heeft u nieuws?
Neem contact op met Jan Claeys
Telefoon 09-269.52.75
Mail gent@gentenaar.be

fig.19

WAITING FOR A NEW PROPOSAL

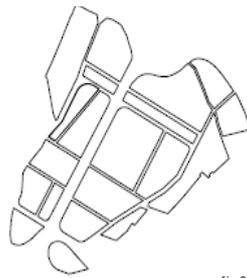


fig.20

The site of the Loop has been notably marked by the masterplan of 2003 made by KCAP Architects and Arcadis Gedas. The over proportionated car based infrastructure ready for these leisure, office and retail functions are already build.⁹ But after the abolishment of the masterplan, the desolated fields are divided and are waiting for a new proposal. What the Loop could not be, is now clear and defined. What it should be remains unclear and a hard nut to crack.

fig20. KCAP Architects, Arcadis Gedas, SITE FLANDERS X-PO : Masterplan Gent Handelsbeurssite, (december 2005), p. 74

9 KCAP Architects, Arcadis Gedas, SITE FLANDERS X-PO : Masterplan Gent Handelsbeurssite, (december 2005), p. 13-14



fig.21

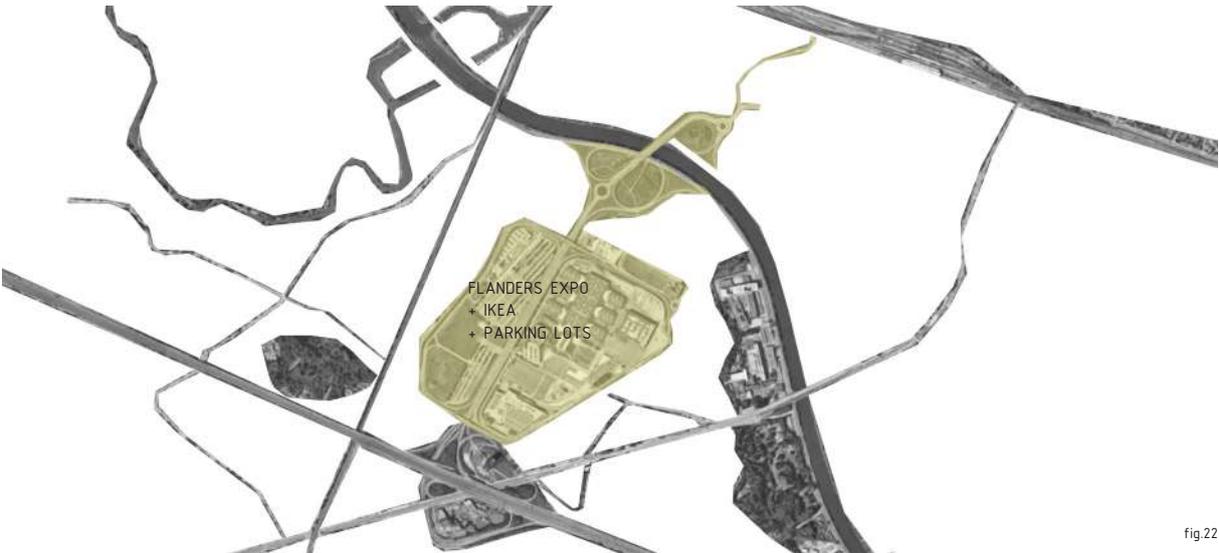


fig.22

MOBILITY AND ACCESSIBILITY

Ghent is an high-ranking student city and looking at the way students travel is of great importance. Students use mostly bikes. Student commuters come by train. It's striking that the principal transport way for non-students is for more than half of the travels done by car. It is still the most used transport in Ghent. If this way of commuting continues mixt with the increase in population. Ghent will have to make choices and change its current mobility system.¹⁰

In September 2015 a new mobility plan was introduced in the city of Ghent. This plan is the first step towards the mobility vision of 2030. The aim is to make a traffic free city where the social aspect is from a great importance. A city where children can play safe on the street and where the public domain is expanded. But most of all Ghent wants to become climate neutral in 2050.¹¹

Electrical cars can be part of the solution. Fossil fuels get exhausted, so economically it can be a benefit to change to electrical cars. There is also a need for cleaner vehicles to guaranty a healthier and quieter environment for the city of Ghent. Also a new model can be implemented to use these cars as efficient as possible. On average, a vehicle is stationary for 23 hours a day and unused for 95 percent of the time. By sharing the car the cost and the parking space can be reduced. In Ghent a large range of sharing cars is available. By preventing traffic to pass through the historic centre a larger pedestrian area will be created.

Besides with too much continuous motorized traffic in the inner city, it's difficult for cyclists and public transport to access it.

To make Ghent more attractive and liveable for residents and tourists, an extension of the pedestrian zone and a new circulation plan is implemented.

Ghent wants to strengthen its cycling infrastructure in function of new developments and a city-regional bicycle network. Investing in the safety and quality of the existing bicycle network remains one Ghent's priorities. Public transport must be made even more attractive by a faster one flow of buses and trams, a modernization of existing tramways.¹²

In the case of the Loop it is mostly only accessible by car. There is in fact a tram 1, that is an ideal connection to the Station Ghent-St-Pieters. In the masterplan of 2003 the tram network makes along the roads a closed circle around the site. After the abolition of the masterplan the tram now stops at the east side of the Loop. There are several limited bike routes. The official bike routes of Flanders (Fietsknooppunten) avoid the Loop completely. If Ghent wants to achieve the title of climate neutral city, a focus on the agglomeration can make a great difference because of its mainly car based infrastructure.

¹⁰ Stad Gent, "Mobiliteitsplan Gent: strategische mobiliteitsvisie. Mobiliteit als moter voor een duurzame en bereikbare stad.", (29 september 2015), p. 18-22

¹¹ Stad Gent, "Mobiliteitsplan Gent: strategische mobiliteitsvisie. Mobiliteit als moter voor een duurzame en bereikbare stad.", (29 september 2015), p. 26

¹² Stad Gent, "Mobiliteitsplan Gent: strategische mobiliteitsvisie. Mobiliteit als moter voor een duurzame en bereikbare stad.", (29 september 2015), p. 95

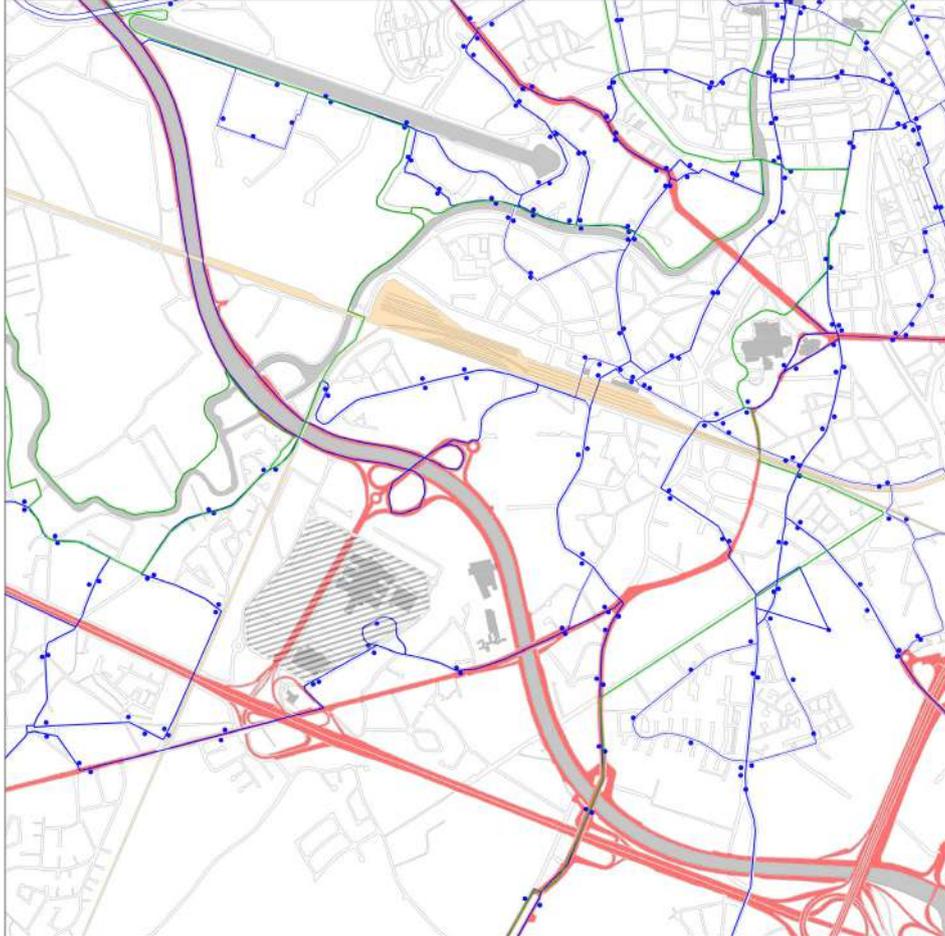


fig.23 Main transports around the Loop (geopunt.be)

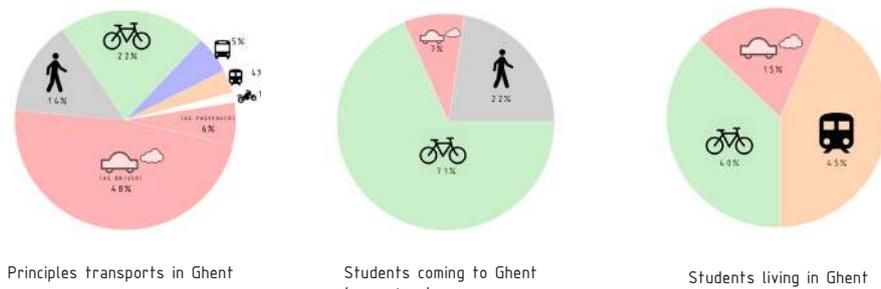


fig.24

fig.23 own sketch based on google maps and www.geopunt.be

fig.24 Stad Gent, "Mobiliteitsplan Gent: strategische mobiliteitsvisie. Mobiliteit als moter voor een duurzame en bereikbare stad.", (29 september 2015), p. 18-22

NOISE POLLUTION

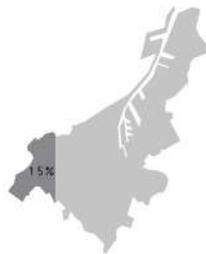


fig.25

From the calculated exposure data it appears that 38,000 or approximately 15% of the inhabitants of Ghent are exposed to road traffic noise of more than 70 dB (A) Lden.

These exposure figures together with the Ghent liveability survey illustrate that road traffic is the dominant source of noise. The priority in this mobility plan is therefore noise pollution caused by road traffic. The city of Ghent wants to ensure that by 2030 the noise level from road traffic over all Ghent will remain below a Lden noise level of 70 dB (A).

In the first place, the city of Ghent wants to make an inventory of urban resting points with a high experiential value in Ghent and continue to work on maintaining and strengthening this spots.

For a good night sleep and a healthy life, the World Health Organisation recommends a sound environment whose average level does not exceed 30 dB (A).¹³

fig.25 own sketch on www.shutterstock.com

¹³ Stad Gent, Vlaamse Overheid, "Integraal geluidsactieplan voor agglomeratie Gent 2de ronde", (2002), p.23-24, 26

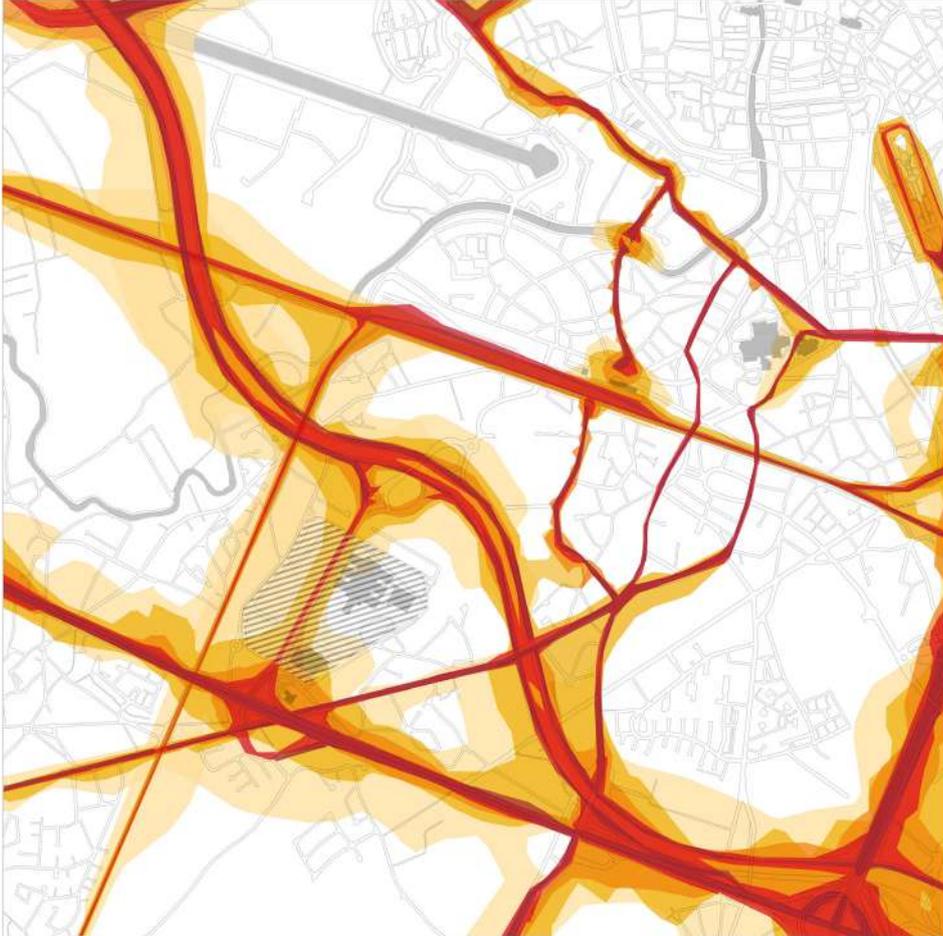


fig.25 Noise pollution Lden 2011

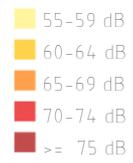


fig.26 own sketch based on geopunt.be

AIR POLLUTION



fig.27

Air is vital. Gases and particles enter our body by inhalation and can cause health damage. Not only to the lungs but to a general quality of life. The too large amounts of ozone, particulate matter, sulphur dioxide, nitrogen dioxide and cadmium are the ones that cause prominent problems in the air quality.

According to the Vlaamse Milieumaatschappij (VMM) 0.4% of the citizens of Ghent live in traffic areas with high NO₂ concentrations. The World Health Organization recommended stricter exposure limits regarding to the European legislation. Europe uses as annual limit a value of 40µg / m³, that is easily achievable. The annual advice value of the WHO is 10 µg / m³. In 2016, the entire Flemish population was exposed to excessively high PM_{2.5} concentrations. 100 percent of Ghent is over polluted. According to the World Health Organization there is no safe threshold for particulate matter.¹⁴

fig.27 own sketch on www.shutterstock.com

14. Vlaamse milieumaatschappij, "Luchtkwaliteit in het Vlaamse Gewest, jaarverslag immissie metingen.", (2016), p.57,62

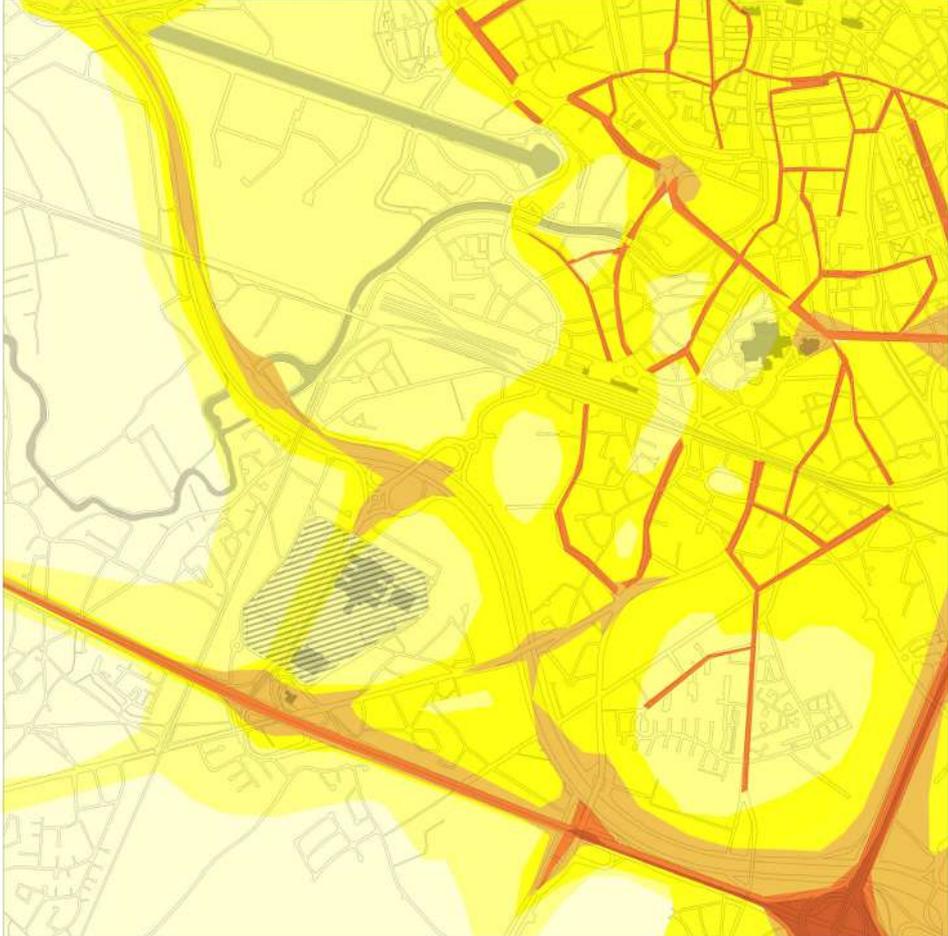


fig.28 Pollution No2 yearly average

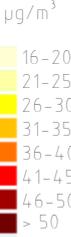


fig.28 own sketch based on google maps and www.vmm.be

AIR POLLUTION IN THE BELGIAN NEWS



fig.29

The Belgian news reported frequently this year about the alarming results of air pollution. Twelve schools in Brussels, and more to follow in other Flemish cities, blocked streets around their school and protested against air pollution. This protests are a cooperation with Greenpeach and started in response to a reportage made by 'Pano' (VRT). By which urine samples of children from the capital were compared with those of children going to school outside Brussels. In the urine of the children of Brussels more soot was found.¹⁵

According to the air quality model of the Vlaamse Milieu-maatschappij (VMM) are even the smallest neighbourhoods over polluted and exceed the European norm of $40\mu\text{g}/\text{m}^3$. Flanders can be seen as one large urbanized area and the results for this area are alarming.¹⁶ To have an clearer image on this problematic. The project 'CurieuzeNeuzen Vlaanderen' was launched this year at which 20.000 citizens all over Flanders will measure the air quality in one month in their own streets. Participants will get measuring tubes that detect nitrogen dioxide derived from car's exhaust. These tubes are then attached at their windows. The results will be published in September 2018 in a map with dangerous and healthy zones.¹⁷

fig.29 own sketch on www.shutterstock.com

¹⁵ www.standaard.be/cnt/dmf20180323_03426553, 9 june 2018

¹⁶ www.standaard.be/cnt/dmf20180112_03294956, 9 june 2018

¹⁷ www.standaard.be/cnt/dmf20180530_03536888, 9 june 2018



fig.30

fig.30 www.nieuwsblad.be/cnt/dmf20180328_03434839, 4 June 2018

BLUE ZONE



fig.31

The Loop is situated in the agricultural region called 'Zandstreek binnen de Vlaamse Vallei'. This type of landscape has a sandy loam soil that is mostly wet and waterlogged. So this landscape is characterized by the many ditches and natural meanders.¹⁸

The Loop is located on a higher platform but the lower parts at the north side are risk areas for floods. This site is positioned in-between two significant rivers for Ghent namely the Leie and the Schelde. The Ringvaart, an artificial canal, is been added in the late 60s. The Watersportbaan at the west side of the city centre was made for rowing races.

fig.31 own sketch based www.users.skynet.be/jeanpierre.schreurs/aardrijkskunde/bodem5.html
¹⁸ DIRIKEN, Pierre and VAN DE GENACHTE, Gert, De landschapskenmerkenkaart 'Oost-Vlaanderen', (2000), p. 4



fig.32 Flooding 2016

■ floods

fig.32 own sketch based on geopunt.be

GREEN ZONE

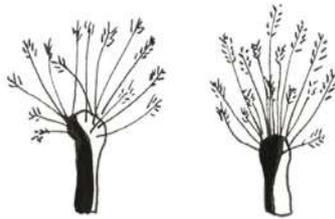


fig.33

Plants in the Loop are adapted to these waterlogged conditions. That's why Willow, Poplar and Alder trees are mainly found in this region. The agglomeration of Ghent has a lot of greenery. Unfortunately it is interrupted by different highways and therefore not valued as it should be. As in the Loop green is seen as a leftover. Around the Loop a few parks are assembled such as 'het Maaltepark' and the 'Boesbeek'.¹⁹

fig.33 own sketch

¹⁹ DIRIKEN, Pierre and VAN DE GENACHTE, Gert, De landschapskenmerkenkaart Oost-Vlaanderen", (2000), p. 4

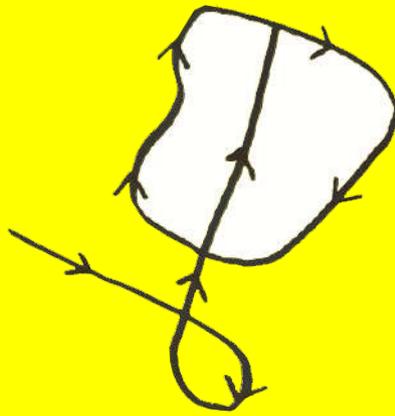


fig.34

- high green
- low green
- agriculture

fig.34 own sketch based on geopunt.be

DERIVE



DÉRIVE STRATEGY



fig.35

My research and proposal are inspired by Guy Debord's Theory of the Dérive.

According to Debord: "a dérive [literally: "drifting"], is a technique of rapid passage through varied ambiances. Dérives involve playful-constructive behaviour and awareness of psych geographical effects, and are thus quite different from the classic notions of journey or stroll."²⁰

So a dérive is mainly a wander through an area whereby the attention to details of particular spots are mapped. I went to the Loop and let the surroundings absorb me. I followed the closed circle around the Loop (fig. 37) and made pictures of each setting that caught my attention.

The photo dérive can help to imagine wandering through this area. In that way to create an opinion and view on the Loop. The whole photo dérive can be found in a separate photo-booklet (fig. 35).

For a dynamic experience I created a small video where I ride in the closed circle around the Loop. The video is put literally in a loop of ten minutes. I chose to go by car as it is almost the only way to access the site.

fig.35 own cover design

²⁰ www.cddc.vt.edu/sionline/si/theory.html, 25 maart 2018

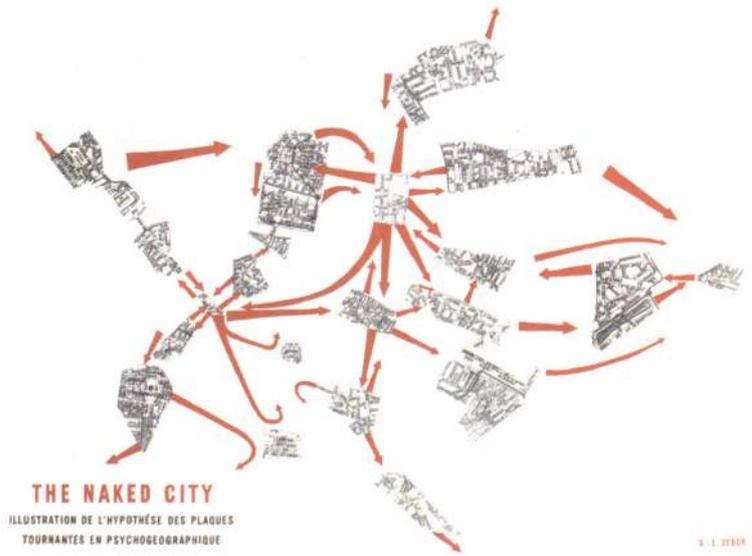


fig.36

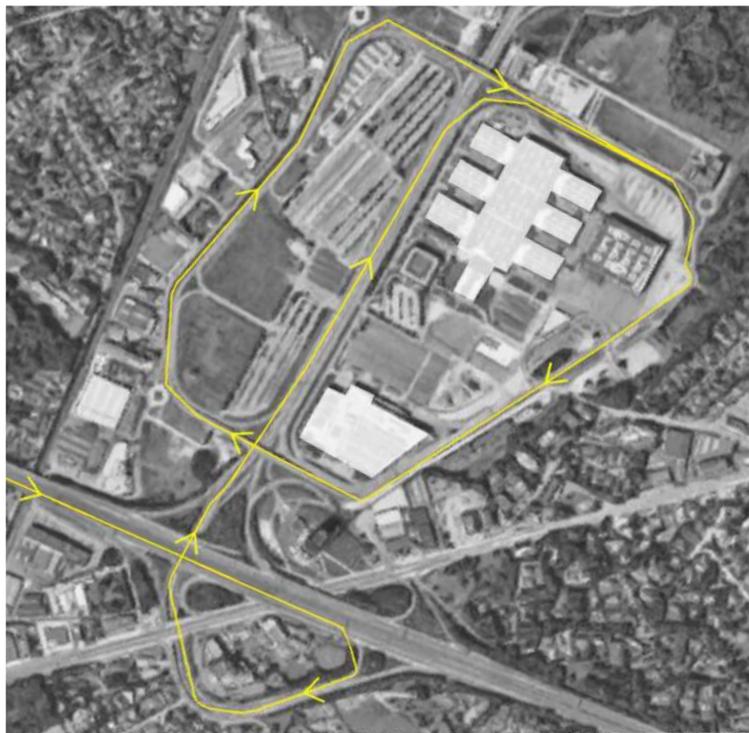


fig.37

 fig.36 www.lipstickspoon.wordpress.com/2014/04/14/the-naked-city-guy-debord-1957, 6 June 2018
 fig.37 own sketch based on google maps

FIRST IMPRESSION AND PHOTO PARCOURS

The first time I arrived at the Loop I lost my orientation. Stepping out the tram you find yourself in the middle of a construction site. Sand piles, fences and red ribbons in sight. There is no explicit pedestrian path or better said there is none. Cars are whizzing circles around the Loop. Apparently the car infrastructure is as ready as it could be. Cars have more priority than any other transport. When walking on this large-scale site you feel small. The plots are so vast and there is no human scale anymore.

To make this photo *dérive* I decided to come back by car. Since a lot of places were not accessibly by foot and I didn't want to end up under a car. Except a girl who learned to drive in the parking lots, there was no sign of life.

The right and the left sides are two extremely different zones. On the right, the Ikea and Flanders Expo dominate the site. On the left, you end up in a desolate grassland with large parking lots and rows of trees, still waiting for a new project.

Nature is a leftover. Trees are planted for a practical reason namely dividing the parking lots and creating shadows for the cars.

Nevertheless it is know that there is a great ecosystem and biodiversity if they wouldn't try to control and to clean it up. And by cleaning up I don't mean the trash on the site because it's everywhere. You clearly feel that nobody cares about the site. It's pure consumerism. You use the plots for an expo-afternoon and then ride away so quick as possible.

Nature tries to fight back. The piles of earth that were excavated for one of the so many construction works are now the new habitats of a rabbit and bird population.

The plots are waterlogged so you can find small ditches everywhere. But then controlled and man-made, and full of trash. On an economic level the plots of land are worth a lot. But there is also a natural site that needs a fair chance.

When riding out of the closed circle around the Loop, you arrive in an industrial site. And no wonder these companies are mostly car companies. But in between them the same phenomenon as nature happens. People try to fight back and go live there. They create their own islands: their typical Flemish house surrounded by huge bushes.



fig.38 own photo's made on 2 march 2018

















IDENTITY DÉRIVE

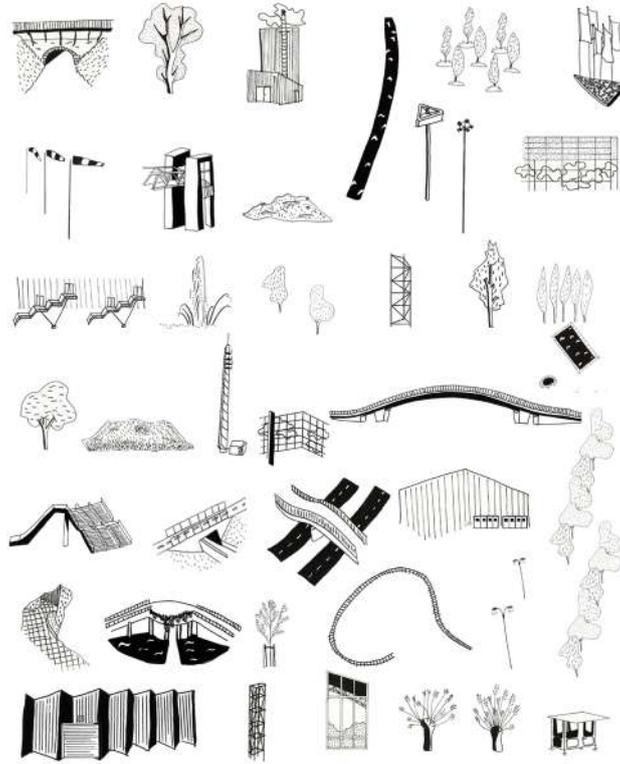


fig.39

After my photo analysis I reflected on what stroke me the most and how I could describe this site in one word. Maybe confusing. Or better disordered. It is difficult to read and to understand as the left and the right side are two different worlds. Since everything is so uncoherent and there is no entity. So I started to draw every element that made each separate spot on this site unique. It became a selection of elements that appealed the most to me. These components form these particular spots and help identifying or just give an identity to that place. From this point of view, I started to set up a catalogue of different elements in a Identity Booklet.

fig.39 own sketch

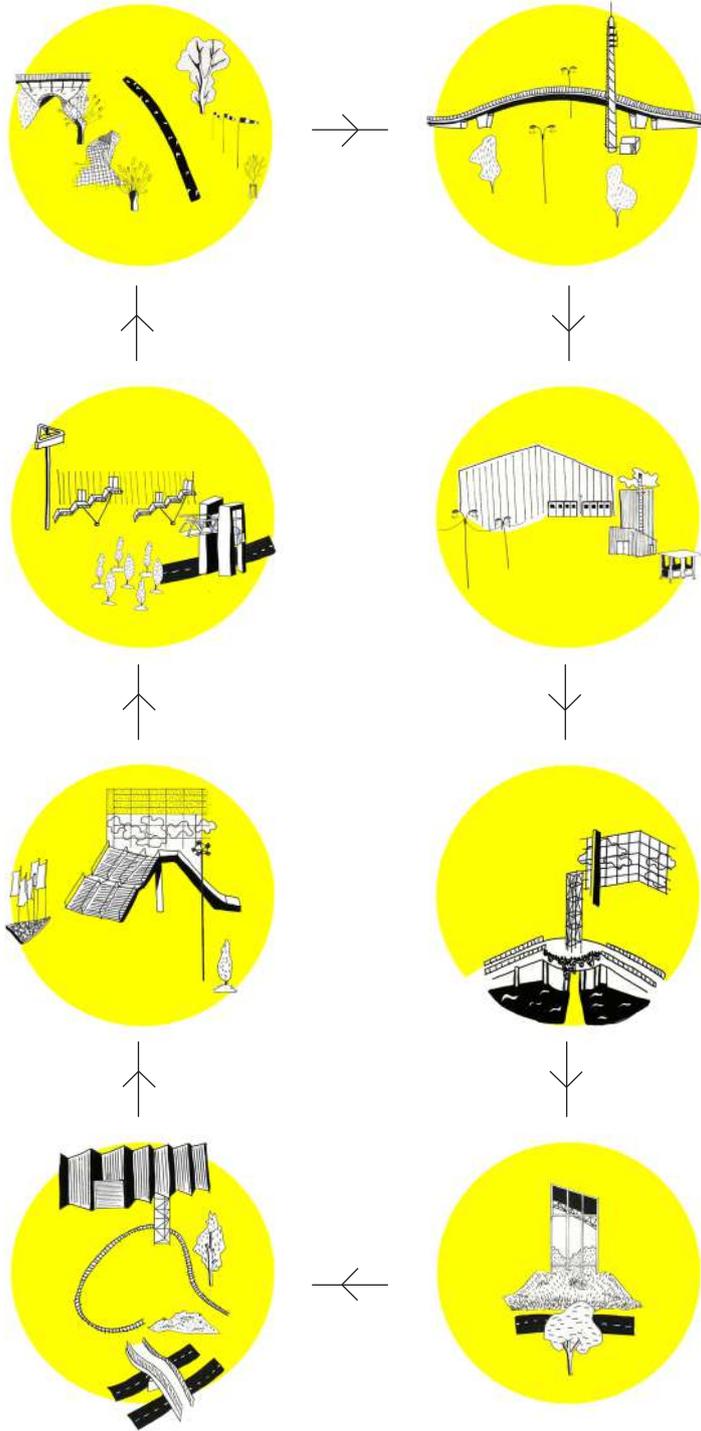
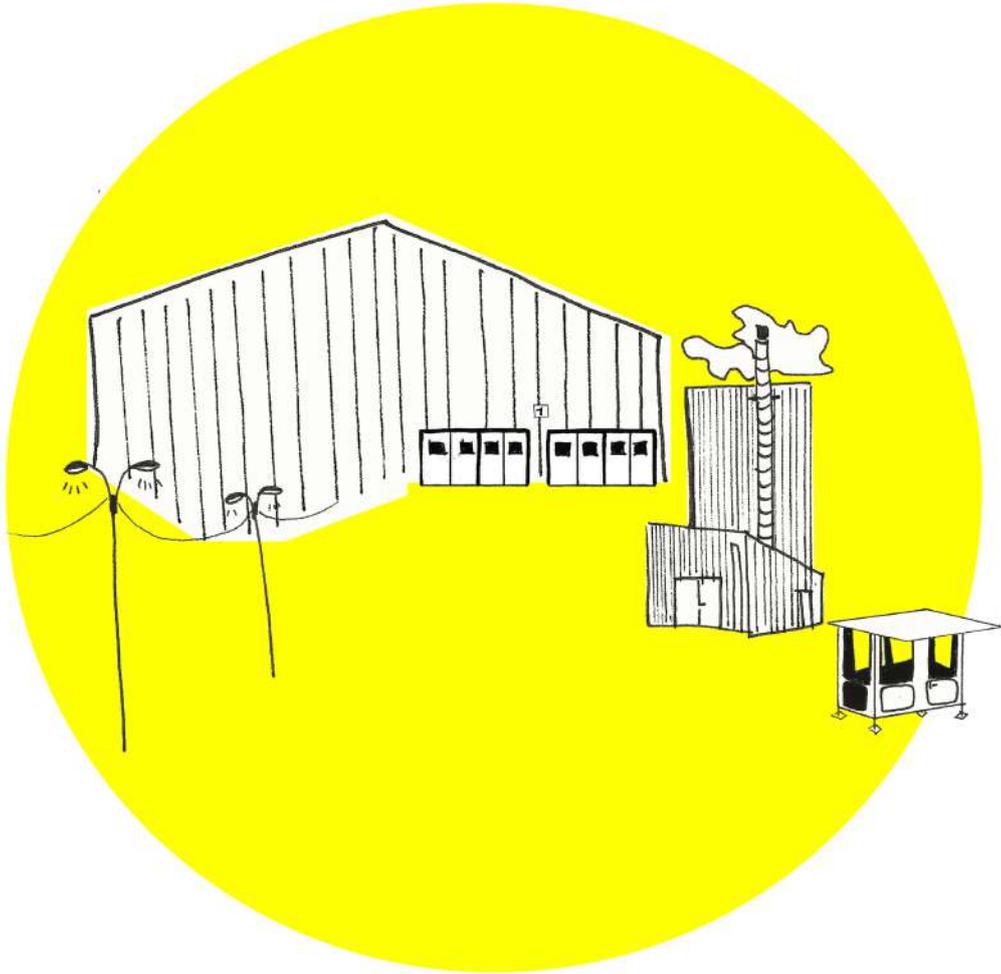
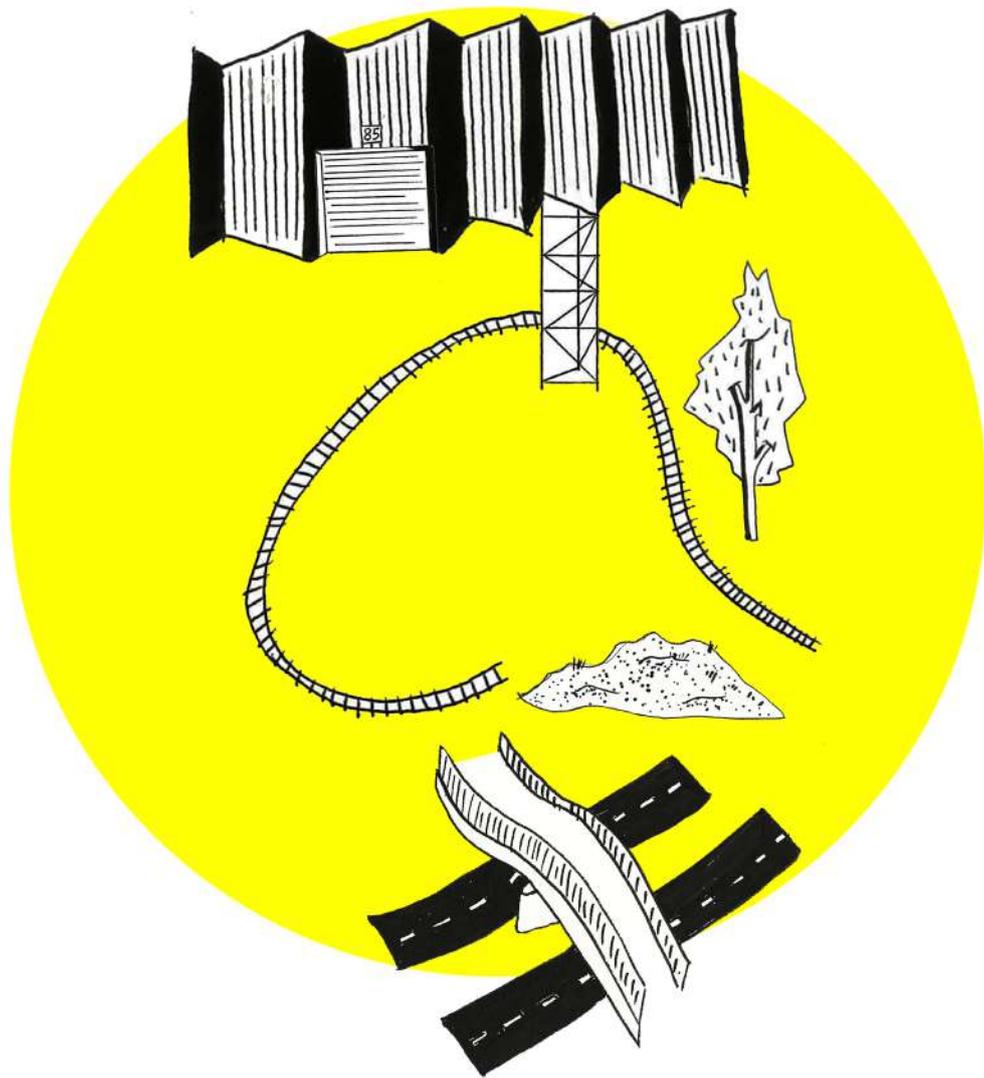
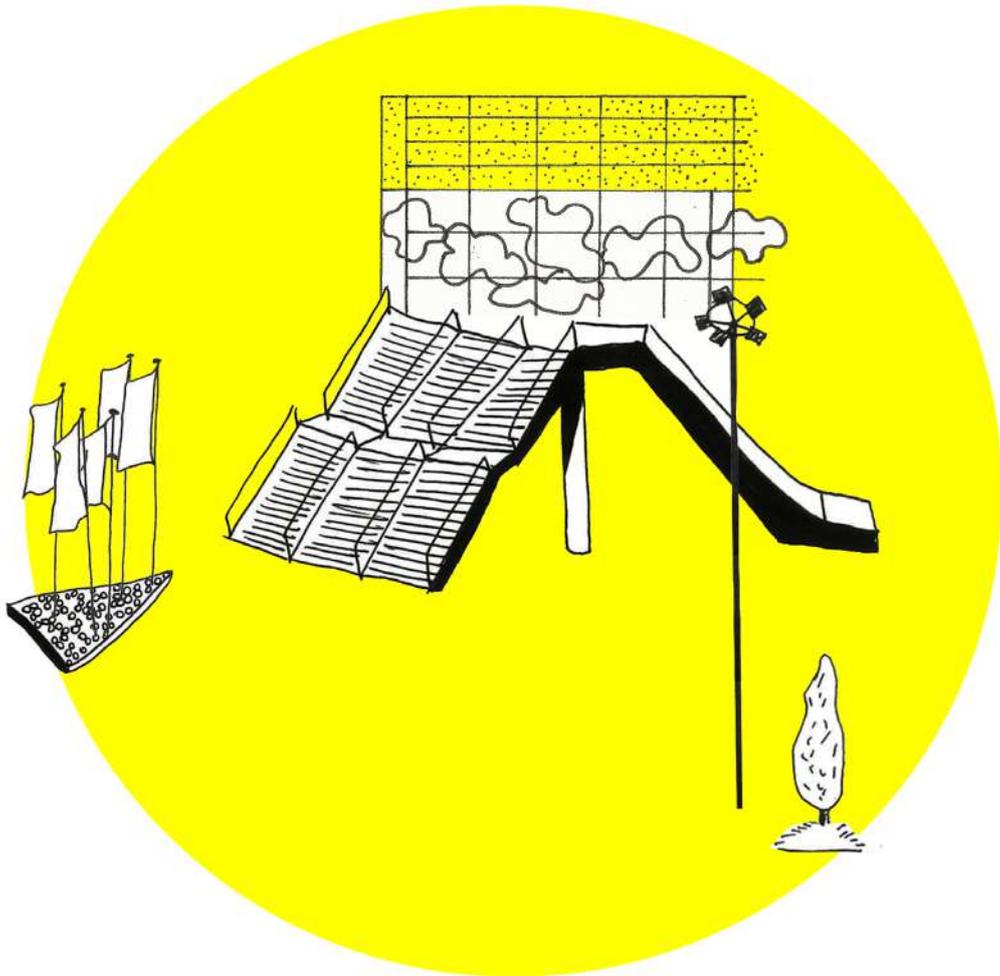


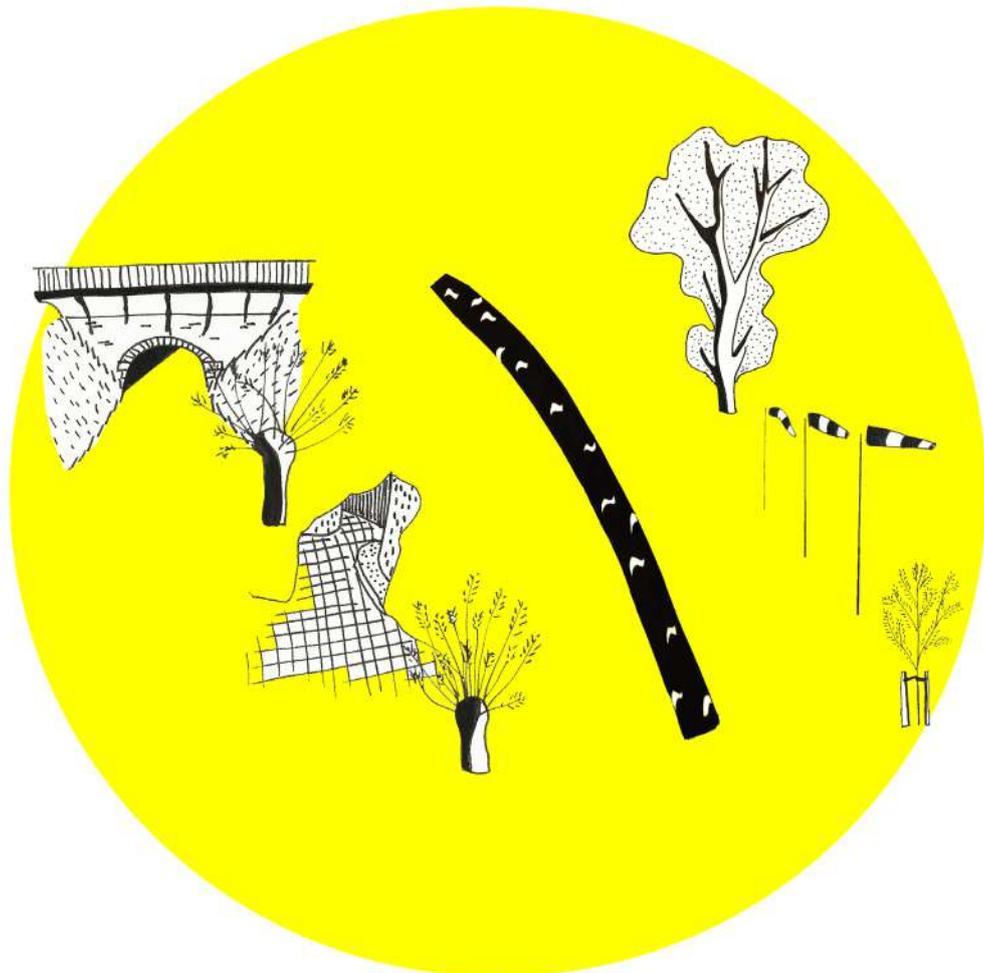
fig.40

fig.40 own sketch









IDENTITY DÉRIVE



fig.41

And according to the mapped route with photos, I worked out a *dérive* with elements. There is not one big entity but a mix of separate elements. There is not one identity of the Loop but a diversity of small identities per place.

Finally after having drawn everything I noticed that I have forgotten to most important element: life. There is no life on this site. It is so empty. The yellow colour symbolizes and really emphasizes this emptiness. A large emptiness with a mix of elements that are randomly placed because at that precise moment that seemed the right spot. It is a mechanism of dropping necessities. There is no clear rule beyond of dropping elements.

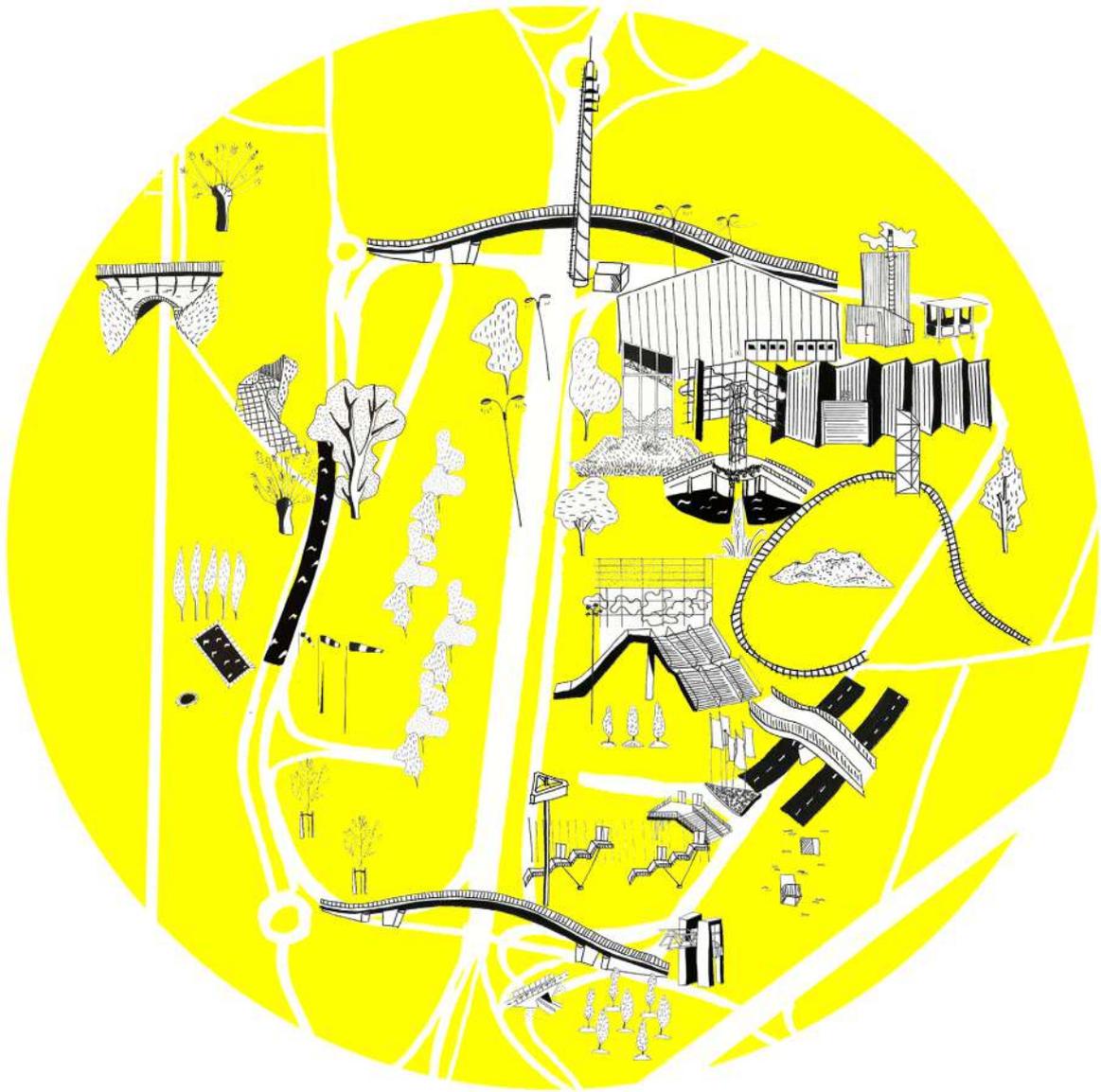


fig.42 own sketch

MECHANISM



UNDERMINING THE MECHANISM

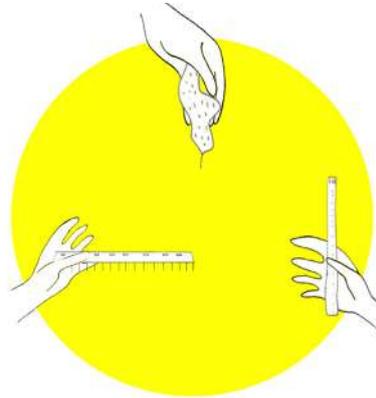


fig.43

There is a clear system and strategy behind the Loop. A dropping mechanism of elements and functions, that the city of Ghent wants to get rid of or don't fit in a city scale.

Not one place in Ghent has had so many function changes as the Loop. In all times it has been an important terrain since its position regarding Ghent. After 1820 it has become a military square for practice, a horse riding hippodrome, an air-field, expo-functions, ...

This mechanism works like this: a new function that is too big for the city centre needs an available plot. The function is dragged to a certain place without any reflection or consideration to its new context. The large new functions create their own context. It's a pick and plug game. This model can be translated on any city scale. All cities over the world.

The agglomeration takes on functions that are too large for the city centre.

The dynamism in a city centre is of a totally different category than the one of the agglomeration. Namely a difference in speed and presence. Cities and especially European cities with a medieval street pattern have a more complex passage for cars. In addition, a city is known for its animated life and accessibility by foot or by bike.

The agglomeration is completely the opposite phenomenon. There is a high speed dynamic and a very good accessibility by car.

In contrast, there is no sign of life after the working hours or events.

On these sites there is no reason to be at that place without a precise purpose in mind. After a certain activity you use the site and leave immediately. It is a form of pure consumerism.

fig. 43 own sketch



fig. 44 own sketch based on google map

DROPPING MECHANISM IN THE AGGLOMERATION

The first functional spot in the agglomeration of Ghent is the harbour. Located in the North of Ghent and creates a connection with the harbour of Terneuzen in the Netherlands.

Besides being an economically crucial place for Ghent, it is not liveable and not accessible. Every element is multiplied and dropped on a practical level. This place works as one big machine.

Destelbergen is a municipality next to Ghent. The highway E17 that goes from Kortrijk to Antwerp, reminds me of the E40 (Brussels to Ostend) that passes next to the Loop.

Around the highway the 'Damvallei' is located. It is a natural park that tries to maintain its rich biodiversity. In the city centre there is no place for preserving nature in such a big scale. And having such a large diversity of fauna and flora. ²¹

²¹ www.natuurpunt.be/natuurgebied/damvallei, 18 maart 2018

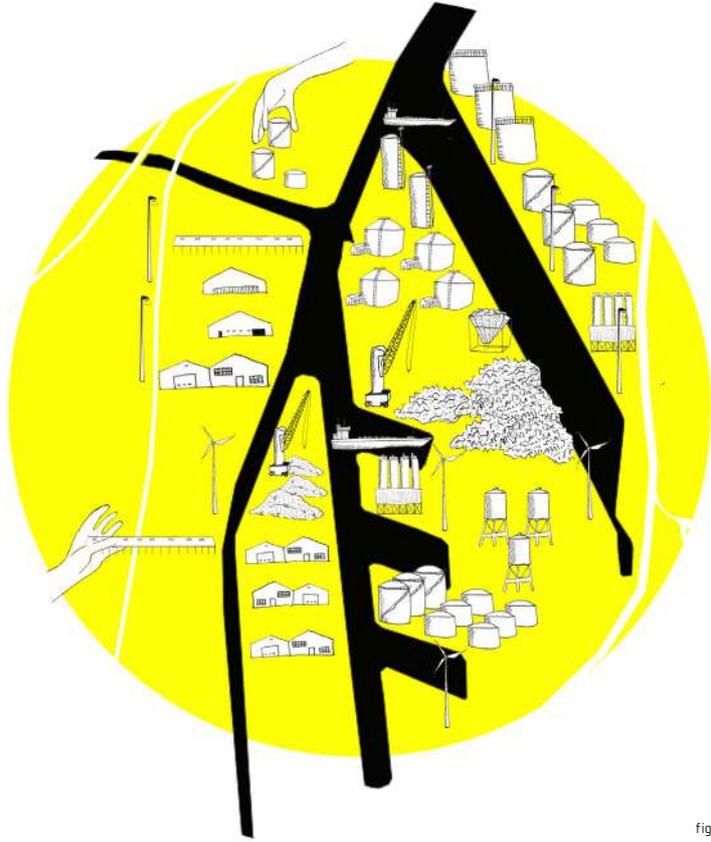


fig.45



fig.46

fig.45-46 own sketch based on google map

This area on the North West of Ghent, best known for the recently built the Ghelamco arena (soccer stadium) is located near the highway E14 and the Ringvaart. It is a bit the same situation as the Loop. Soccer supporters come to this area just for events and afterwards the site is empty. The rest of the location is industrial and non-liveable. The easiest way to reach the site is by car.

The Watersportbaan is a rowing race course. Around the water a lot of sport clubs are gathered. There is not a great mix of functions on this site. Visitors come here to sport in one of the buildings and then go back home by car. But there is live on the site because of the joggers and at the end of the water lane huge social housing apartment were plugged in.

APPLYING THE MECHANISM

If we keep this mechanism in mind. The rules are very clear:

- * functions that are too large for the city of Ghent
- * (infra) structure + elements
- * plug-in system

When entering the Loop or other sites in the agglomeration of Ghent, you end up in a machine. A machine where you go directly to your objective, have a few hours of fun (in the Ikea / Flanders Expo) and drive back home away.

I want to apply these rules in my proposal as a matryoshka (doll) effect.

Fun Palace by Cedric Price would be a perfect example of a compact machine with one program. "The social situation in Great Britain during the late 1950s and early 1960s was drastic. There was a concern that unemployment would lead to moral degradation. This led to suggestions that working class people could be saved by engaging them in social activities and teaching them new professional skills.

Price was heavily involved in exploring how workers' free time could be used not only for leisure and entertainment, but also for personal development and growth, intellectual training and acquiring new skills."²²

Holiday Machine from SuperStudio also deals with a local problem that offers a solution with a machine. The project focuses on facilities for mass-tourism and provides structures which are traditionally bound to the idea of vacation in Italy, That is: hotels and bathing facilities.

The wall also works as a dam so a production of electric power and an indoor controlled climate can be guaranteed for a good stay.²³

The Loop needs a machine that creates a compressed environment for an large experience. Which problems does the city of Ghent want to put aside? Which problem can be dropped in the Loop inside a large infrastructure? In the analysis part the mobility problem has been highlighted. The Loop and the agglomeration of Ghent are car-based infrastructures and can take in air pollution problems. Ghent performs very poorly according to the guidelines of the World Health Organization. Thereby Ghent has even set a high objective to become carbon neutral by 2050. Creating a machine to give these goals a boost. Pollution will remain a major challenge even after the emergence of the self-driving car.

²² Mathews, Stanley, "The Fun Palace: Cedric Price's experiment in architecture and technology." *Technoetic Arts*, September 2005, Vol.3(2), pp.73-92
²³ 'Superstudio', *Perspecta*, 1 January 1971, Vol.13/14, pp.303-315

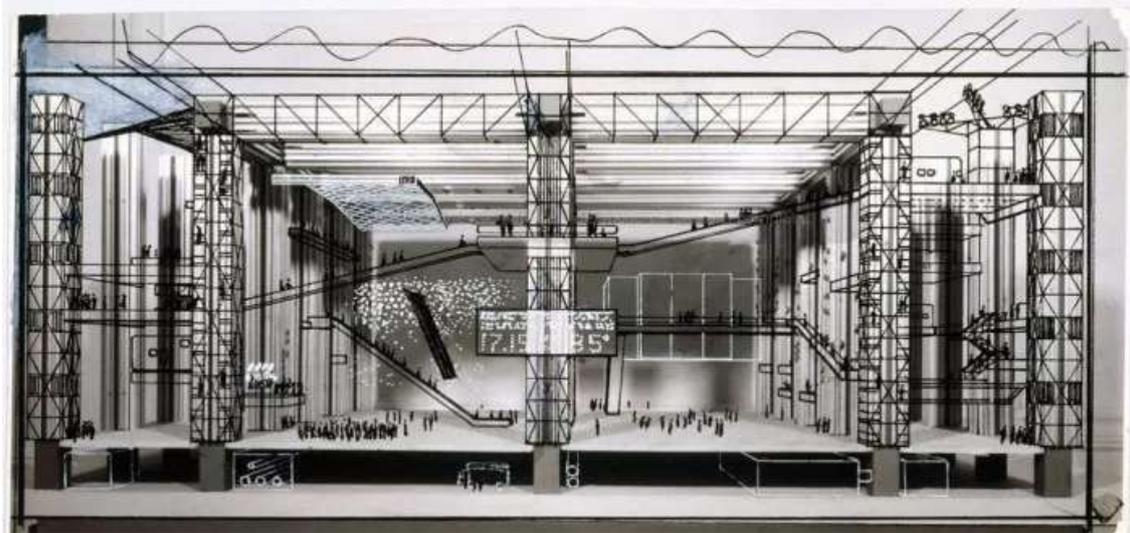


fig.50



fig.50

fig.49 www.interactivearchitecture.org/fun-palace-cedric-price.html, 24.04.2018

fig.50 'Superstudio', Perspecta, 1 January 1971, Vol.13/14, pp.303-315

FROM MECHANISM TO MACHINE

There are several ways to tackle this problem in the form of a machine. Climeworks AG facility near Zurich is the first to capture carbon dioxide at industrial scale. This machine can capture about 900 tons of Co2 annually or the approximate level released from 200 cars. The air is pumped through fans and the absorbed Co2 is converted into Co2 neutral air. A concentrate of pure Co2 is taken up and given to the plants at a plant nursery next to it. This is an efficient system that is still in full development.²⁴

This can be made on a large scale. But also on a smaller size. Imagine having one on each rooftop in the city centre of Ghent.

As it is a Swiss system it is an efficient one. This efficiency can turn out to become a disadvantage as citizens will not feel the need to care about their own air pollution.

The Smog Free Project from the Dutch designer Daan Roosegaarde in Rotterdam tackles this critic. This machine is placed in different parks in Rotterdam and recycles the air that flows in. With the pure Co2 concentrate, black rings are made.

This smog jewellery pieces could serve as conversation starters about the need for action on air pollution and public health, as well as a visible reminder of the dangers of our modern industrialized lifestyle. Daan's Smog Free Project has as strong point its power to communicate.²⁵

Every day people get pointed out how bad things are going with our planet. How everyone is responsible for his actions. That it is time to change and if everyone starts individually, it would already be a big improvement. Pointing the finger has proven its opposite.

Positive messages are better received. Observing and understanding through a machine that there is really a problem. Making people curious. Stimulating citizens with ideas.

Ghent is a student city, a city with many young families with children and there is no better way to learn while having fun. An experience, a trail, an afternoon with the family. To the example of Cedric Price learning and development can be done in a fun way.

²⁴ www.sciencemag.org/news/2017/06/switzerland-giant-new-machine-sucking-carbon-directly-air, 25 april 2018

²⁵ www.freehugger.com/gadgets/worlds-largest-air-purifier-aims-create-smog-free-parks-cities-around-world.html, 25 april 2018



fig.51



fig.52

fig 51 www.sciencemag.org/news/2017/06/switzerland-giant-new-machine-sucking-carbon-directly-air, 25 april 2018
fig 52 www.kickstarter.com/projects/1777606920/the-smog-free-tower, 25 april 2018

THE SOCIAL AND EDUCATIVE PURPOSE OF THE MACHINE

It is a compact system where air is purified. And to attract citizens of Ghent to learn about this technology it is put in a 'natural' setting. A super trail where you can wander and experience a lot of atmospheres. Following the example of the Flanders Expo and the Ikea, which also offer a route to follow and to get to know their products better. And it works very well. Both offer a human scale experience in a lifeless and inhumane site.

The positive machine would also guarantee this. The human side comes back, nature comes back. A place where trees and natural processes can be fully rediscovered and in the meantime provides air purification. Nowadays children in cities grow up without getting in touch with nature.

A full immersion in such a machine where children can learn by playing. After coming out of the machine you got more knowledge. Trees need a longer process than a Swiss machine, but that process can be included in the experience.

Bhutan is located next to China and India. The country is still forested for 72% and it is the only carbon negative country in the world.²⁶

If plants were planted in Flanders in the same way as Bhutan a great difference would be visible.

But areas like the Loop are worth a lot and for economical reason will never be exchanged for trees. That counts for a great part of Flanders.

Nowadays there is a trend to categorise and put everything in a box with a label, that counts also for nature. It seems that protecting nature in separated places it's the way. So preserving nature can only be in a separate place, namely a machine.

Such separate places can be found all over the world. Gardens by the bay is a showpiece of greenery on the coast of Singapore. The Gardens strong point is their educative program. Children from all ages learn about plants. There is a calender filled with signature festivals, music concerts and movie screenings, sports and community events, and educational workshops and school programmes.²⁷

The Biosphere facility functions as a laboratory for scientific studies, discoveries and discussions on researching and comprehending global issues as climate change. Their vision on public education and teaching about the planet and its living systems makes of this centre a good example for the positive impact machine.²⁸

26 www.gvi.co.uk/blog/bhutan-carbon-negative-country-world/, 25 april 2018

27 www.gardensbythebay.com.sg/en/the-gardens/our-story/introduction.html, 10 june 2018 2018

28 www.biosphere2.org/, 10 june 2018



fig.53



fig.54

fig.53 www.elconfidencial.com/tecnologia/2014-11-24/el-plan-para-recrear-la-tierra-que-termino-como-gran-hermano_482766/, 9 June 2018
fig.54 www.cpgcorp.com.sg/CPGC/Project/Project_Details?ProjectID=1069&AwardID=53, 9 June 2018

MECHANISM INSIDE THE MACHINE

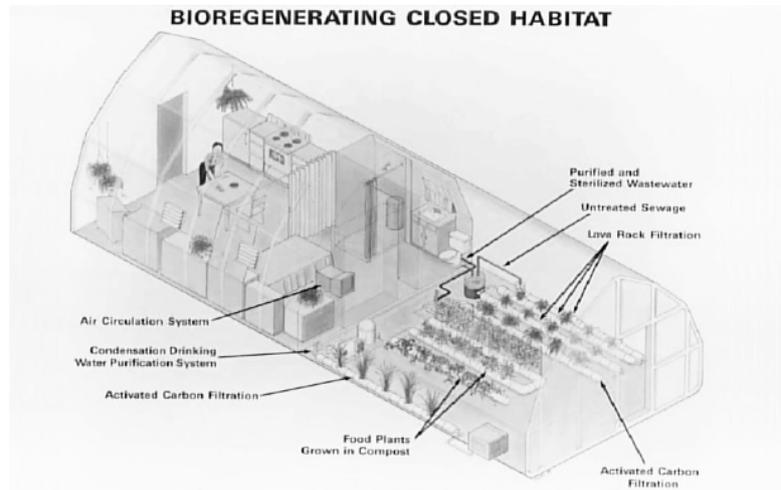


fig.55

Through the process of photosynthesis, plants convert carbon dioxide through light energy into glucose and oxygen. The absorption of this carbon dioxide takes place via small openings in leaves. To guaranty a healthy stay in the machine without a to large concentration of carbon, a different strategy is needed.

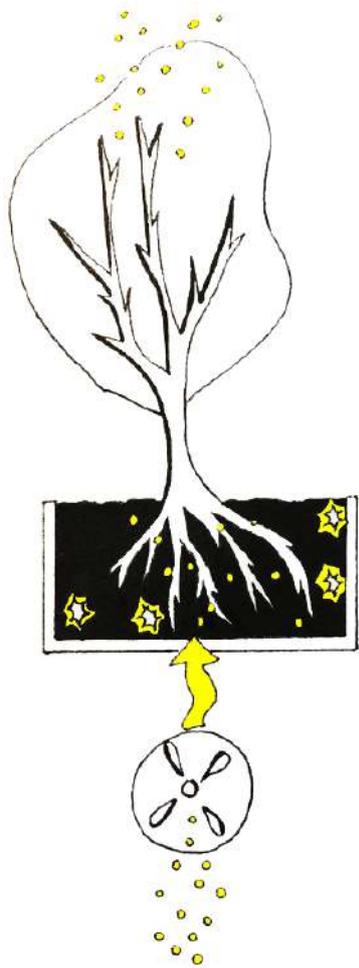
The basic strategy of the positive impact machines for purifying the air is derived from Wolverton's model. B.C. Wolverton was an environmental scientist working for the NASA in the late 1960s. He created the Biohome, "closed ecological life support system", where house plants recycle and purify the air.²⁹

The plants are placed in a tank with a bio filtration. The polluted air from outside is sucked up in the tank through air pumps. Afterwards filtered through the soil, purified and degraded by the action of microorganisms around the roots of the plant.

The roots capture the degraded carbon dioxide and blow it out in the form of oxygen.

According to NASA: "Before the houseplants were added, anyone entering the newly constructed facility would experience burning eyes and respiratory difficulties, two of the most common symptoms of Sick Building Syndrome. Once the plants were introduced to the environment, analysis of the air quality indicated that most of the VOCs had been removed, and the symptoms disappeared." A graduate student tested this Biohome for further development for habitation. He lived in it for the summer and came out with no negative health issues. Little fact the Biohome is been destroyed in 2005 by the hurricane Catherina.³⁰

fig.55 www.takenakateien.co.jp/english/ecoplant.html, 9 june 2018
29 www.spinoff.nasa.gov/Spinoff2007/ps_3.html, 25 april 2018
30 www.ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20120003454.pdf, 25 april 2018



oxygen

plants

roots of plants

soil with microorganisms

air pump

carbon dioxide

fig.56



fig.57

fig.56 own sketch

fig.57 Wolverton, B.C., JOHNSON, Anne and Bounds, Keith, "Interior Landscape for Indoor Air Pollution Abatement" in NASA, STI Sep 15,(1989)

PLANTS INSIDE THE MACHINE

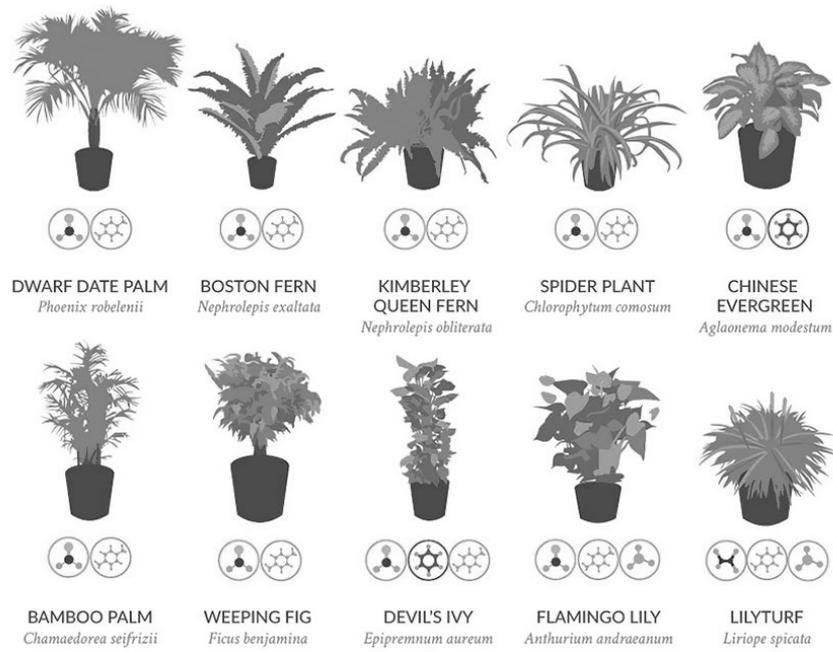


fig.58

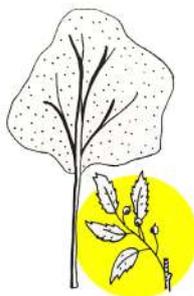
Wolverton became famous after his work at NASA with his book "How to grow fresh air: 50 houseplants that purify your home or office." In this book, Wolverton ranks the top 50 best houseplants, each with their own level of purification. Besides plants, tree species will also be integrated in the positive impact machine. The institute of Biometeorology of Bologna has investigated which trees can absorb and purify a large percentage of the CO₂. These trees have been carefully selected depending on their individual CO₂ accumulation (2 tonnes in 30 years or an average of 70 kg per year)³¹ Some trees from this list are applicable in Belgium.

fig.58 www.lovethegarden.com/community/fun-facts/nasa-guide-air-filtering-houseplants, 10 june 2018

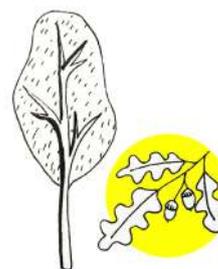
31 www.lifegate.com/people/lifestyle/city-trees-smog-pollution, 25 april 2018



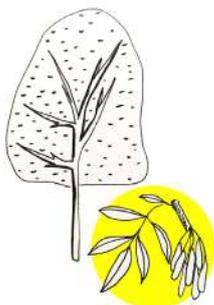
Elm (*Ulmus minor*)
* up to 30 metres tall
* 3,660 kg of CO₂ into biomass



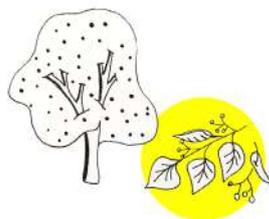
Hackberry (*Celtis australis*)
* 20-25 metres tall
* 3660 kg of CO₂ in 20 years



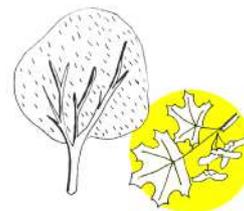
Turkey oak (*Quercus cerris*)
* up to 35 metres tall
* 4,000 tonnes of CO₂



Common ash (*Fraxinus excelsior*)
* up to 30 metres tall
* 3 tonnes of CO₂ in 30 years



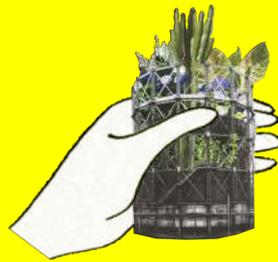
Wild Linden (*Tilia cordata*)
* 20 - 40 metres tall
* city and garden plants



Norway maple (*Acer platanoides*)
* up to 25 metres tall
* 4,807 kg of CO₂ in 30 years

fig.59

MACHINE



MACHINE AS A TYPOLOGY



fig.60

The photography duo Hilla and Bernd Becher created a catalogue of industrial structures such as water tanks, silo's, ... in a documentary style.

"I became aware that these buildings [blast furnaces] were a kind of nomadic architecture which had a comparatively short life—maybe 100 years, often less, then they disappear," the artists said of their work. "It seemed important to keep them in some way and photography seemed the most appropriate way to do that."³²

It is a set of typologies with each a different finish but of the same type of structure. The air purification machine could also be typology in the landscape, a kind of nomadic architecture. In all sort of forms and structures but with the same purpose and ingredients.

fig.60 www.misfitsarchitecture.com/2015/10/13/bernd-and-hilla-becher-honorary-architecture-misfits/wassertuerme_gesamtansicht_becher_bernd_hilla_3b4688dc/, 25 april 2018

32 www.artnet.com/artists/bernd-and-hilla-becher/, 25 april 2018



fig.60 own sketch based on: BECHER, Bernd (Bernhard) and Hilla, *Bernd and Hilla Becher: Gas Tanks*, The MIT Press, Cambridge, Massachusetts, 1993, p. 21

APPLICABLE IN THE AGGLOMERATION



fig.61

This new typology can be placed all over the agglomeration of Ghent. It is a positive city ring that can have an impact for the centre and its surroundings. But not only Ghent has this air pollution problem.

It is a phenomenon that is seen in every city. As the industrial typologies photographed by Hilla and Bernd Becher, the positive impact machine can be plugged in and found everywhere.

Each country use the same layers and ideologies but with another building method or design that suites the local context.

fig.61 own sketch



fig.62 own sketch

APPLICABLE IN THE LOOP

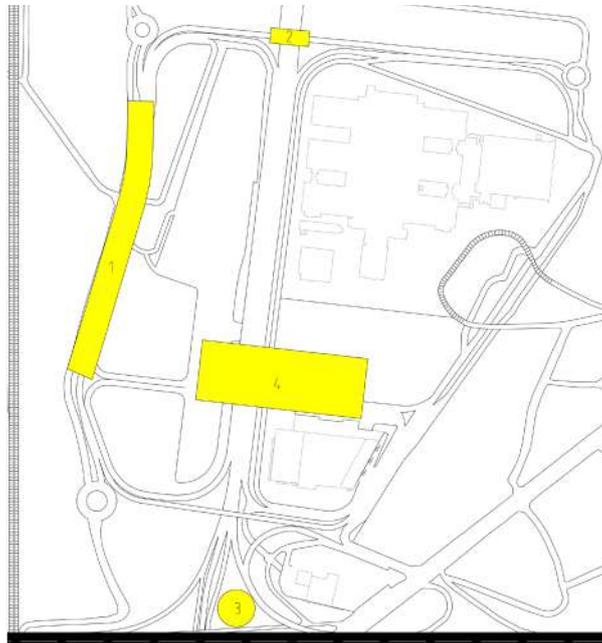


fig.63

To explore the possible positions of positive impact machines into the context of the Loop. Several try-outs were set with each their own focus. The first try-out is inspired by the high-line of New York. It is a horizontal high level route that follows the water flow of one of the many ditches.

The machine can also be a vertical tower where nature is piled up and competes against the KBC tower in the beginning of the Loop. It is set above the second bridge, as if the carbon dioxide is collected before entering the city centre.

At each highway exit, trees grow in-between these roads. The leftover spaces can be filled and used for air purification and re-use / re-claimed by the neighbourhood.

The last try-out is the one I worked out in detail. The machine can reconnect the two parts of the Loop and can be seen as a middle bridge.

fig.63 own sketch

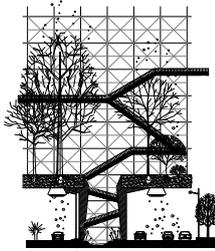


fig.64 horizontal try-out

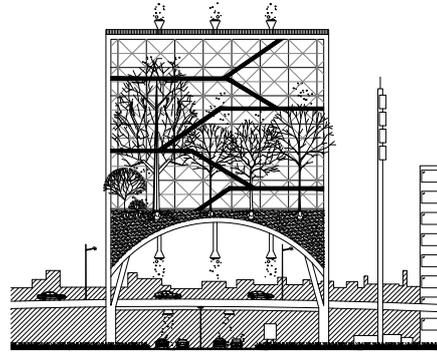


fig.65 vertical try-out

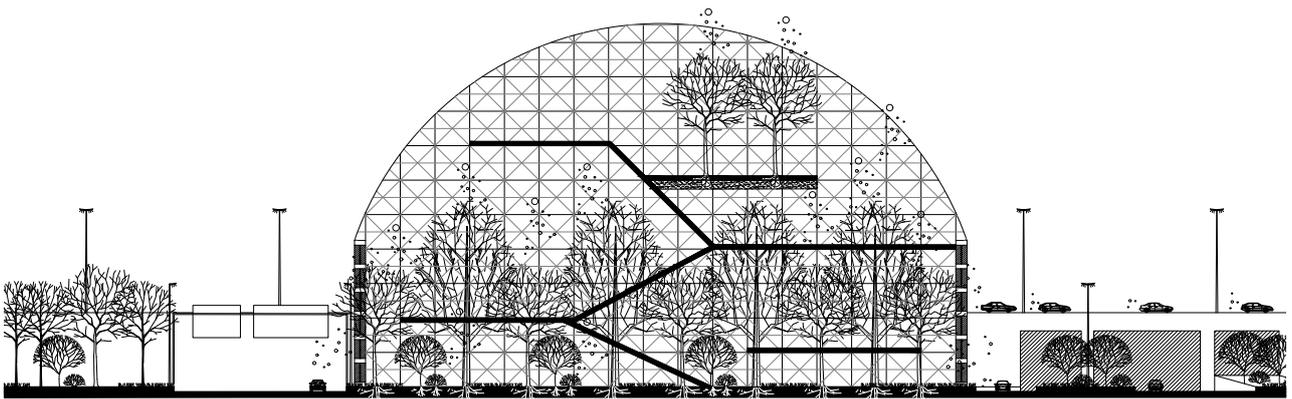


fig.66 leftover space try-out

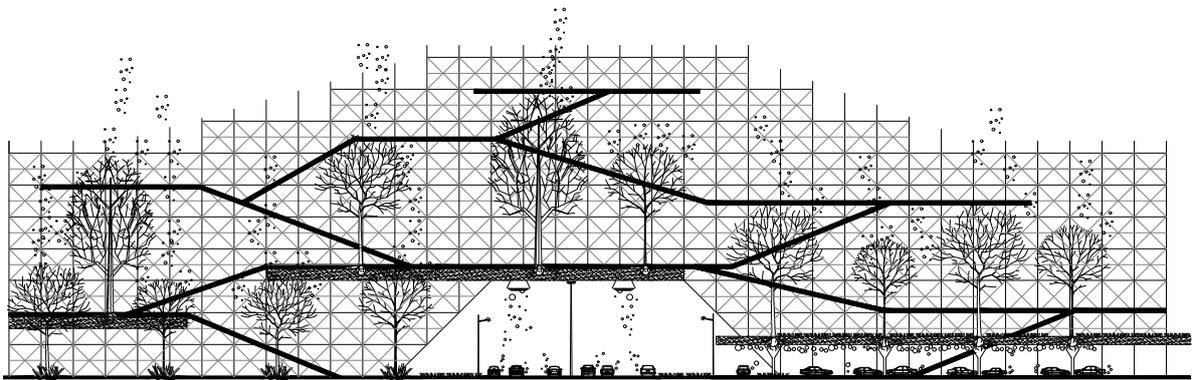


fig.67 connection try-out

fig.64-67 own sketch

NEW MAGNET ON THE MAP



fig.68

By looking closely at the Loop a vertical sequence stands out. It is a rhythm of highways, trees, ditches, tram tracks,... This new positive impact machine can break this order by positioning itself horizontally. It can restore the connection between both parts of the Loop.

The two magnets of this area are without a doubt the Flanders expo and the Ikea. Now the positive impact machine competes at the same level. The marketing strategy of both Flanders expo and Ikea work with a showroom experience where you can wander, touch and learn about their products. This route asks to use all senses and visitors experience it as an all-in afternoon of pleasure. This formula is applicable in the new machine. It can become a showroom of nature, an experience where you learn in a fun way about air pollution.

fig.68 own sketch

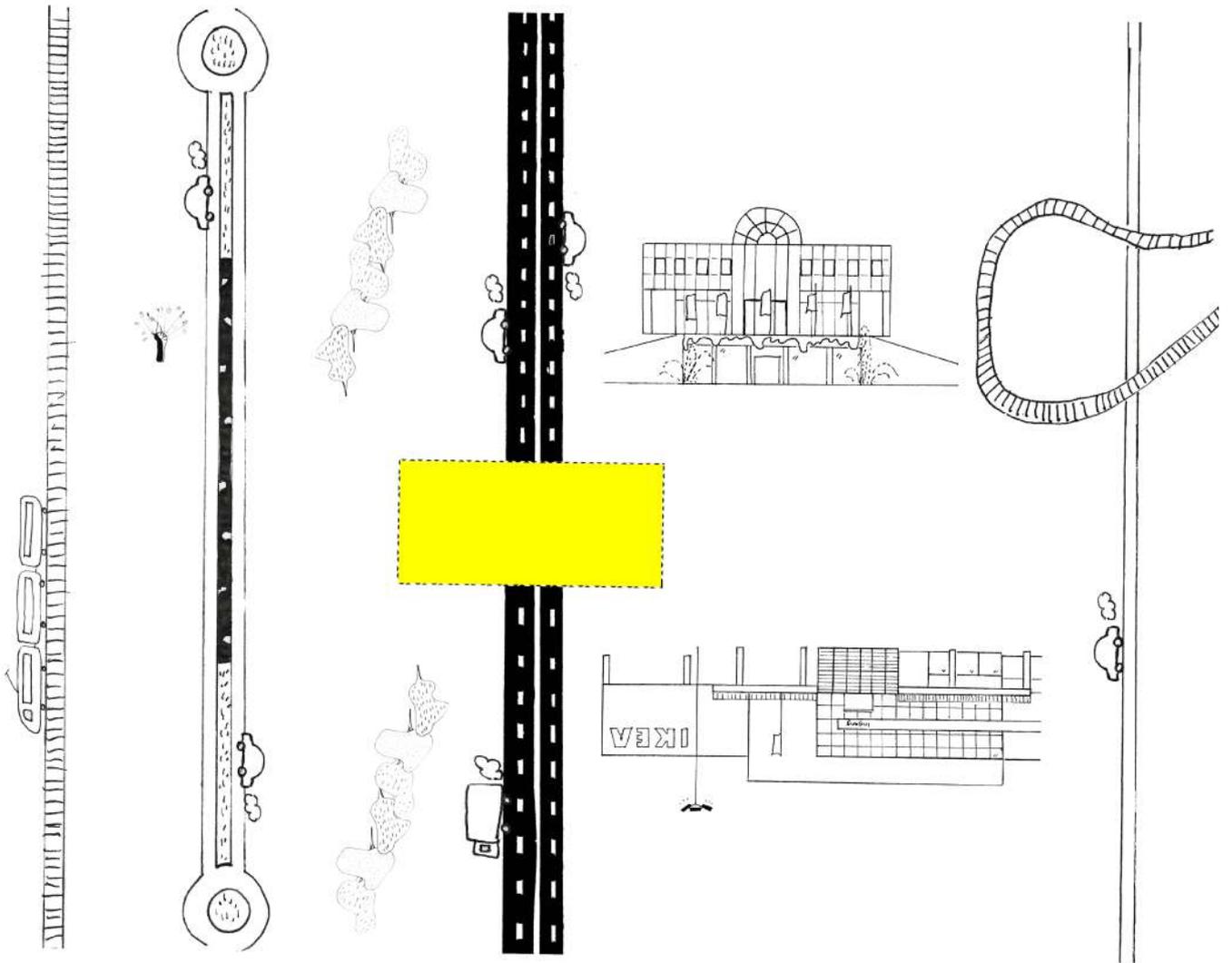


fig.69 own sketch

DROPPING A POSITIVE IMPACT MACHINE

All over the Loop elements are randomly dropped depending on the necessity. This time a positive element is placed. It is a displacement. All the existing elements are questioned.

This new element is positioned in the middle of the site and is only accessible by car. The positive machine creates an experience, nature is rediscovered and glorified and most of all you learn about this air pollution problematic. So it feels very ironic that you would drive back home by car and pollute yourself. So it is also a statement to Ghent that change and alternative routes and mobility is crucial. The positive impact machine is a game changer for every one in each position: parents, children, students, authorities, businesses, ...

These plots are waiting for a new masterplan and in the meantime a temporary project can be set. The positive impact machine can be such a temporary project financed by local businesses. Businesses that want to make a positive change for Ghent and to be ones that create a positive impact.

DERIVE INSIDE THE MACHINE

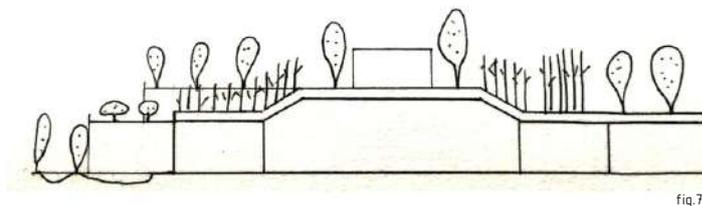


fig.71

In the chapter *Dérive* a parcours following the closed circle around the Loop is explored. Now the *dérive* strategy is applied inside the machine. In the positive impact machine it is a full experience where seasons can be rediscovered.

By entering the machine all senses are activated. Coming from a polluted environment the air will smell like green of forests. The atmosphere comes alive and the first deep breath of fresh air is taken in. Unlike the concrete in the loop, wet and warm dry earth smells so different. Now and then a hint of fallen leaves and a rotting tree trunk gets into the mix. Delighted by the sound of your feet sliding through the leaves up towards the summit of the machine.

Branches are snapping and you come out of the shadow of the trees. The light shines warm on your face and you find yourself in a flower field as in a Monet painting. Sometimes you catch the hint of a wild jasmine. Rose blossoms fragrance gets carried by a mild breeze. Insects humming and you hear the crispy grasses under your feet. Wild fruit trees are almost in your reach and you get hungry.

You are distracted by the sound of running water going into a small waterfall. Enjoy the view on the lake and inhale for a last time and absorbing this silence before leaving the machine and confront the car noise and its filthy smell.

fig.71 own sketch

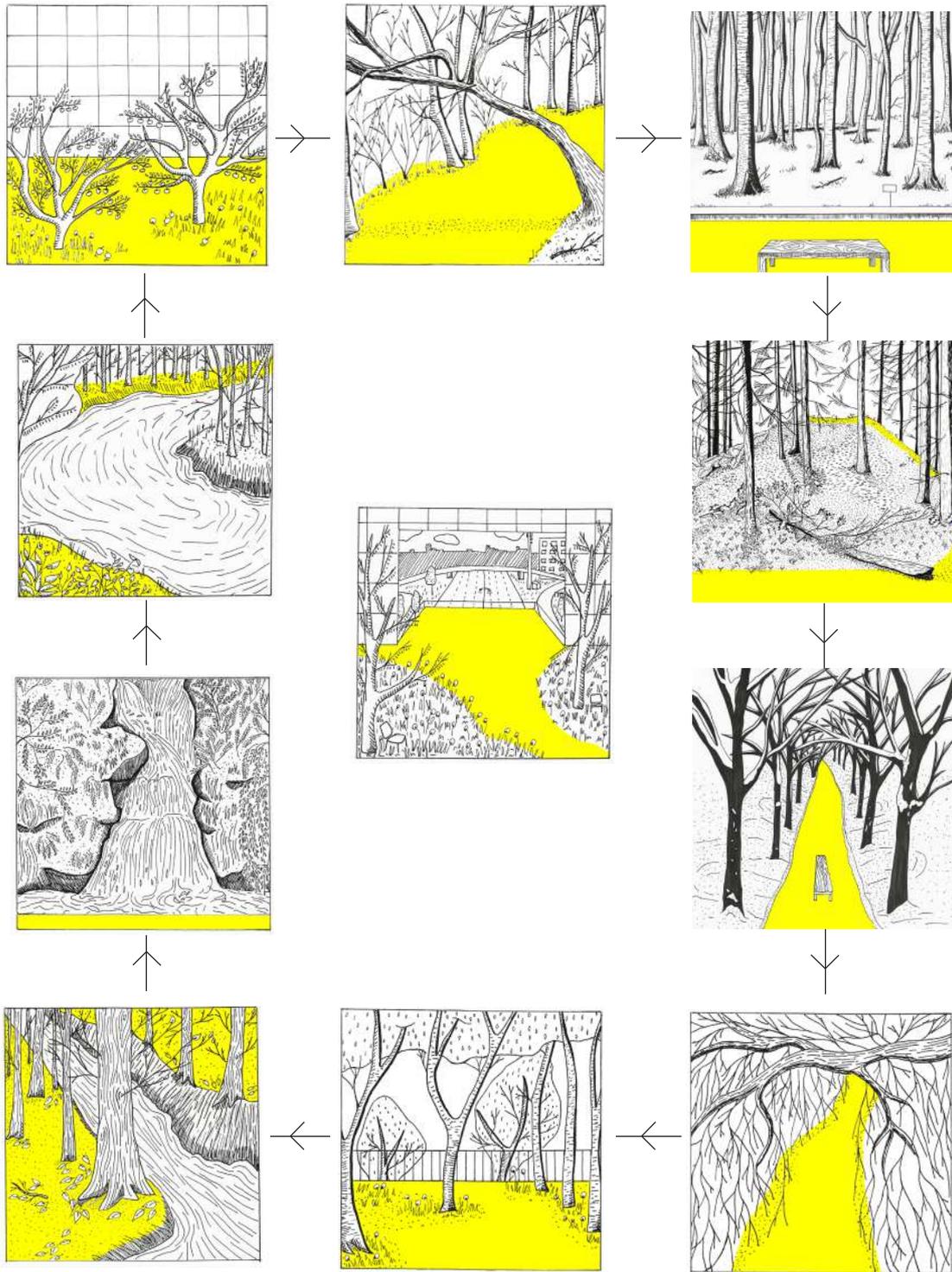
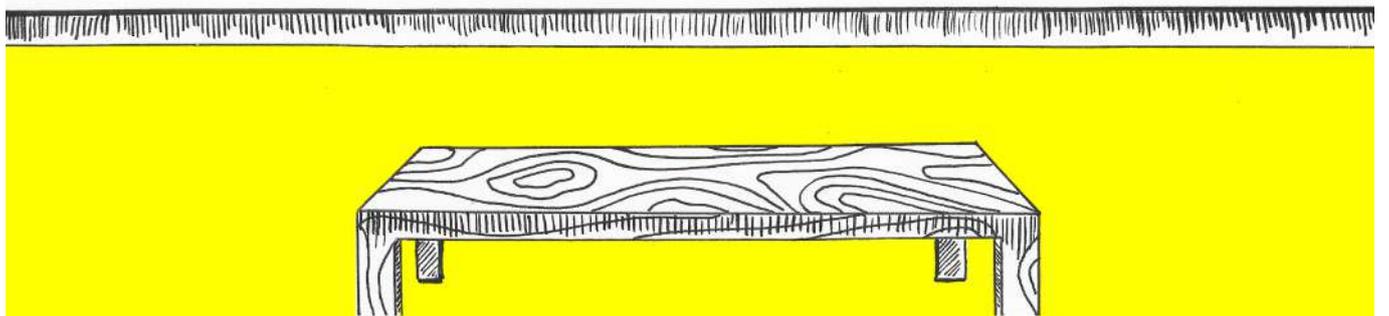
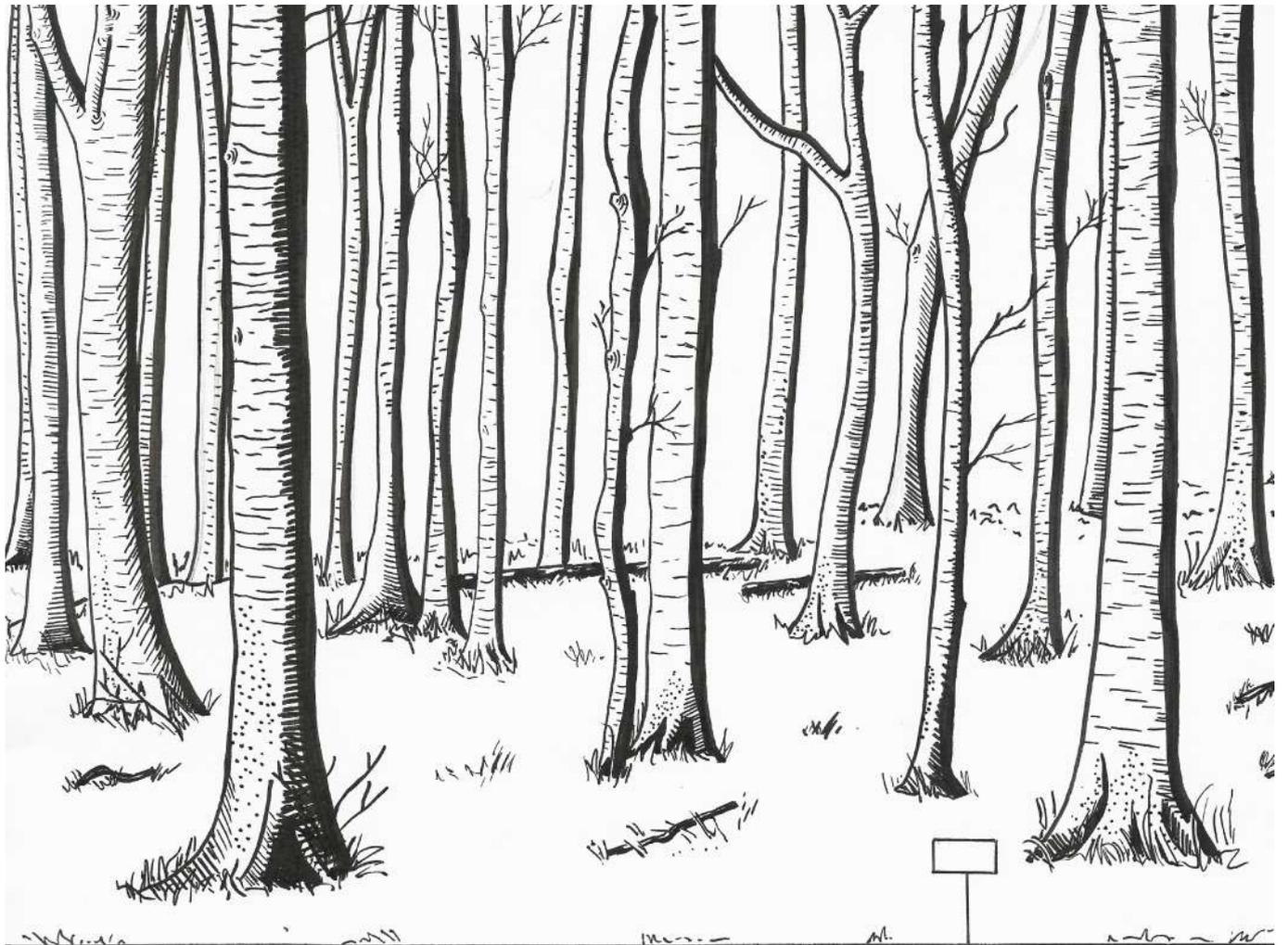
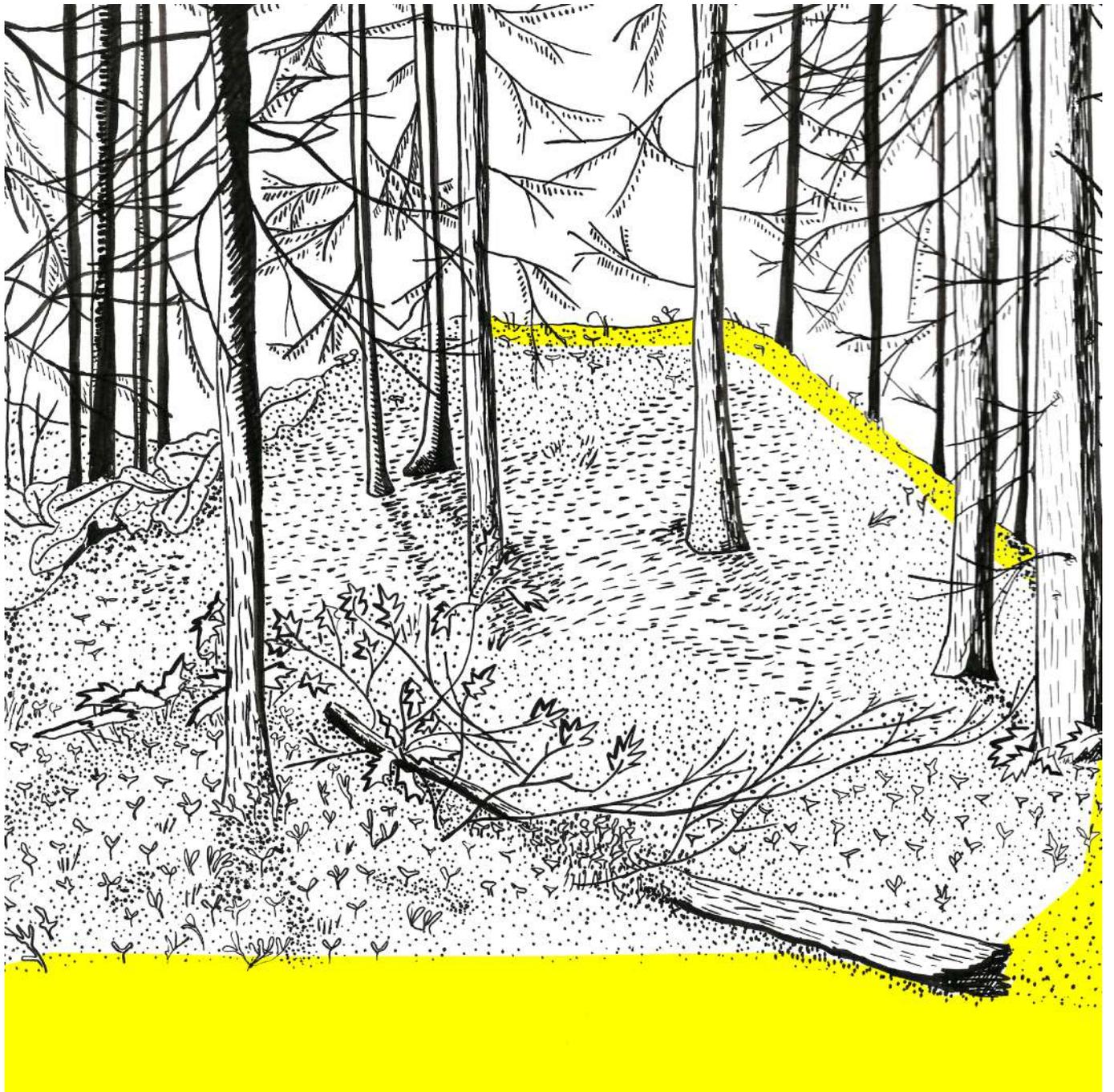
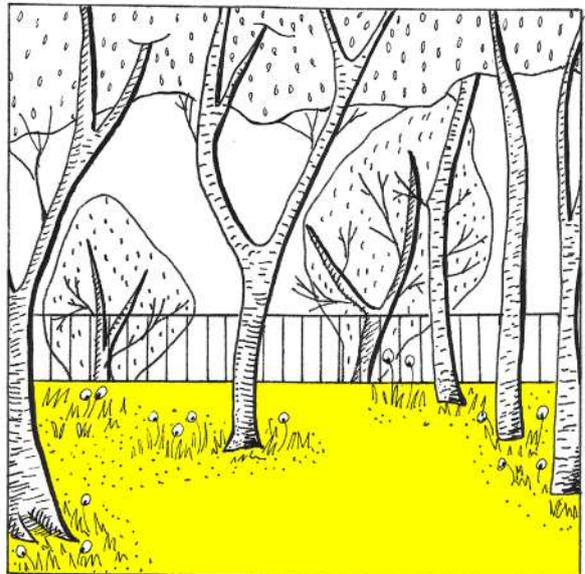
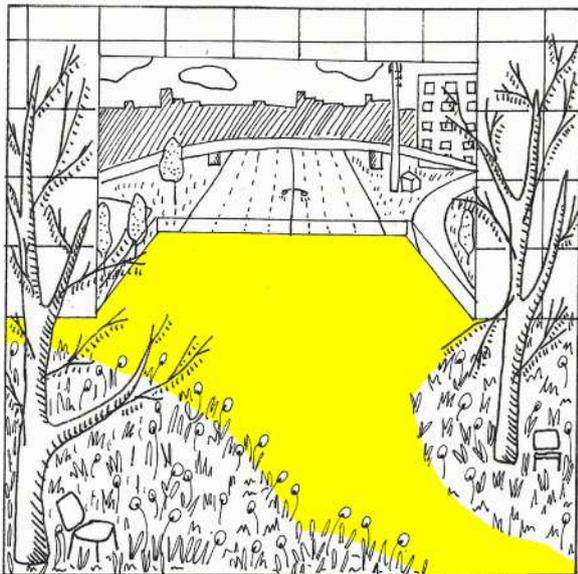
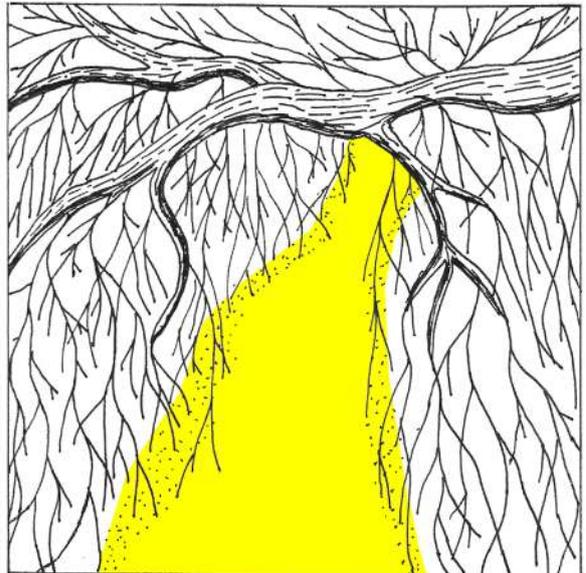
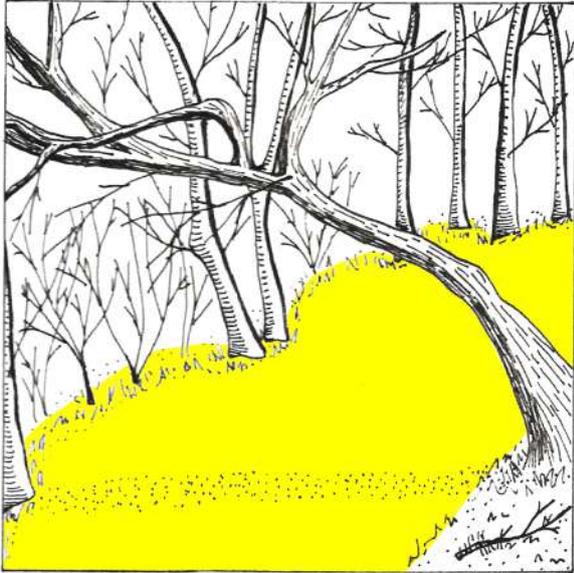
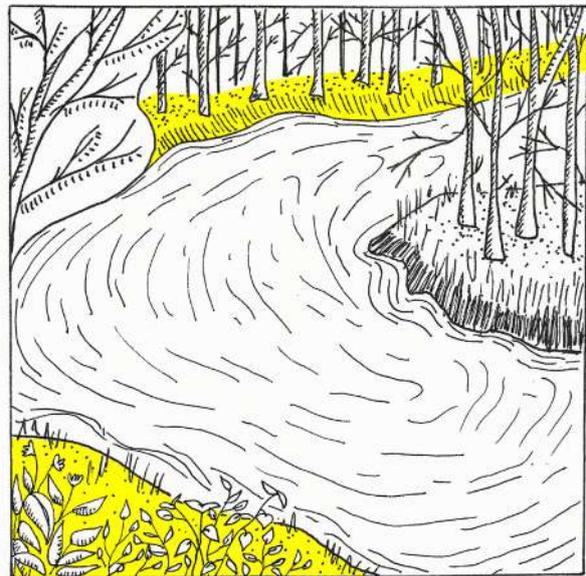
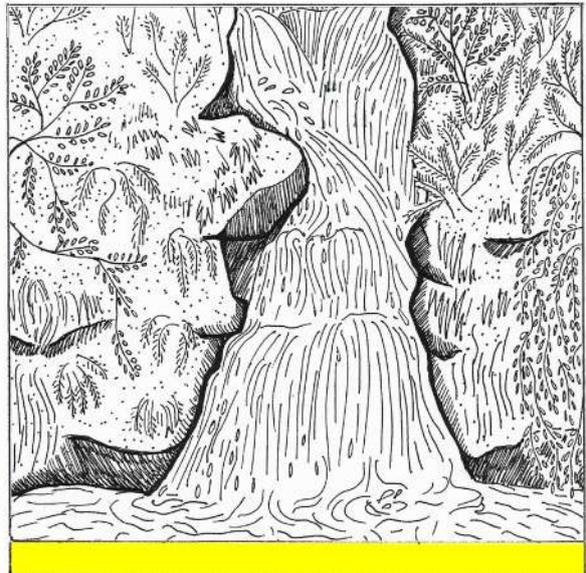
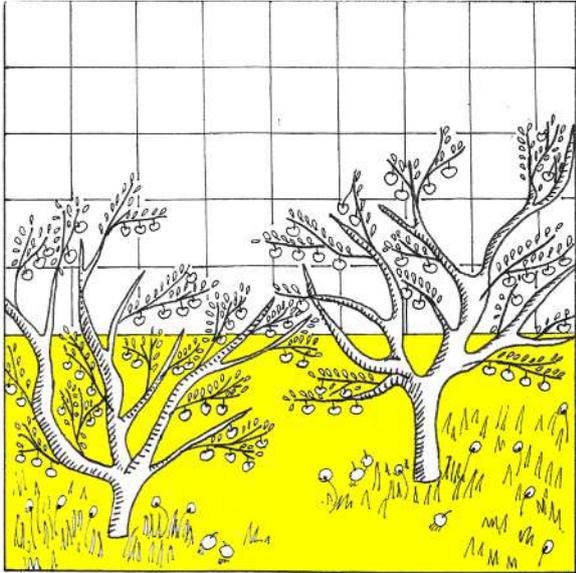


fig.72 own sketches









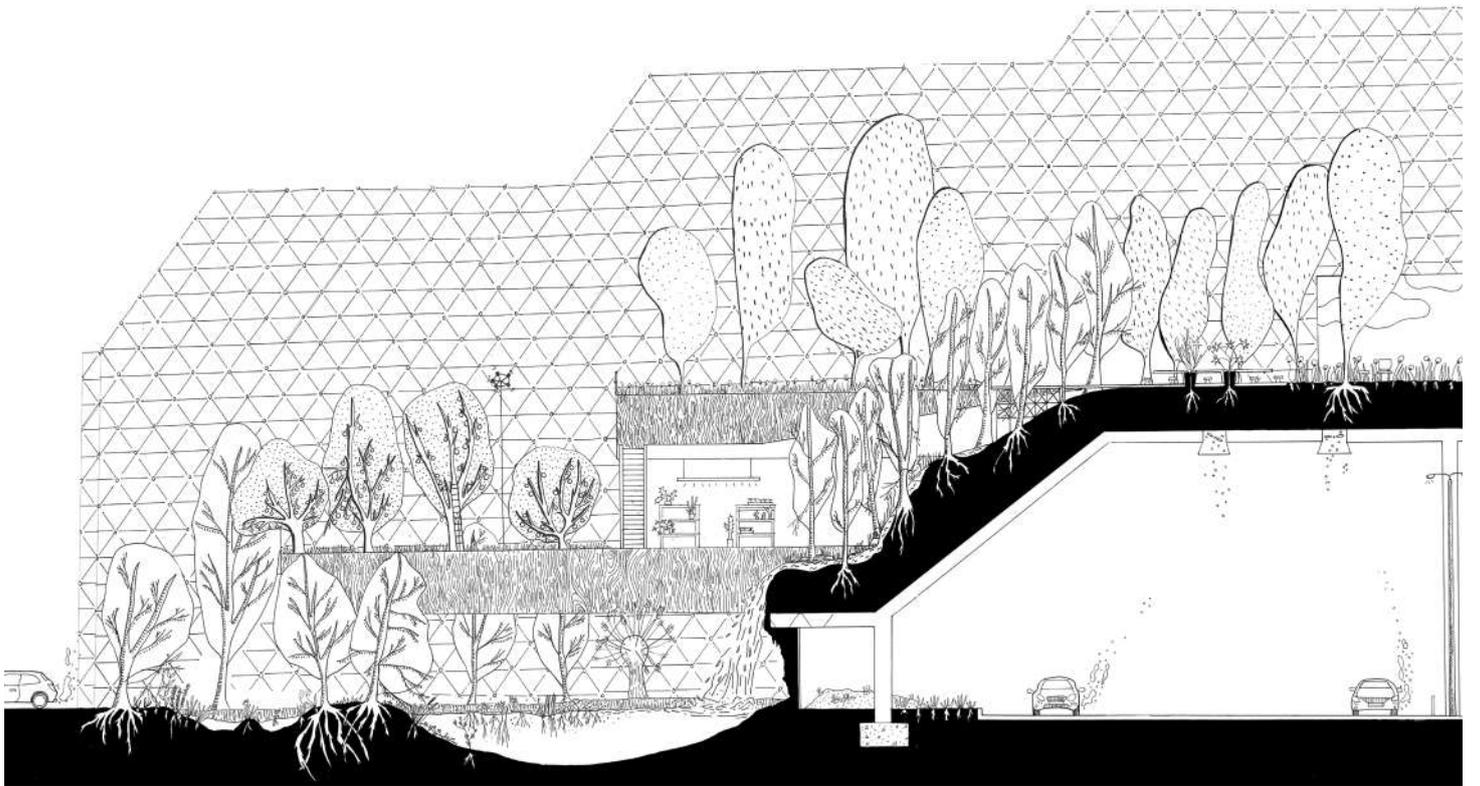
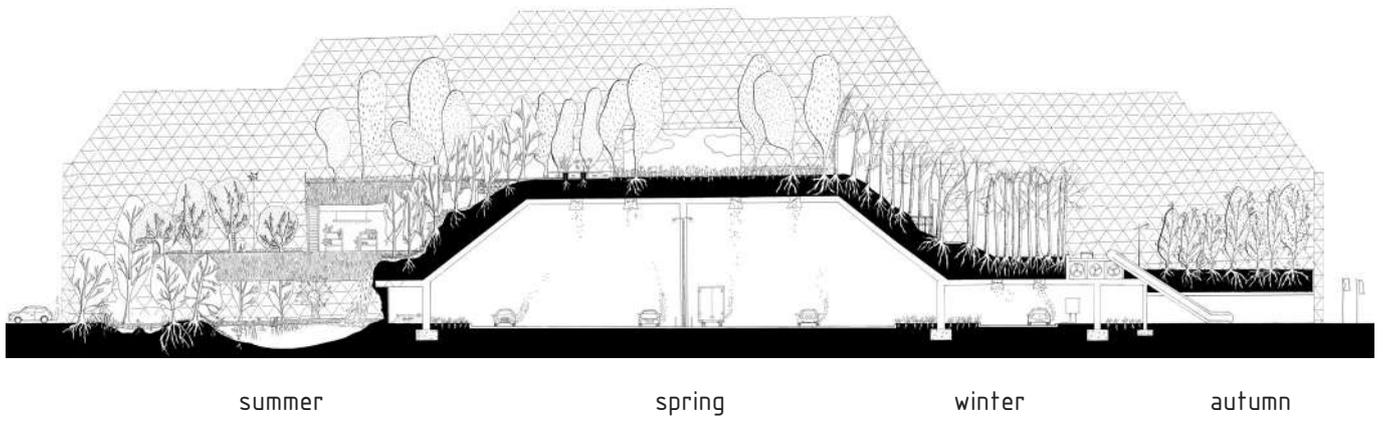
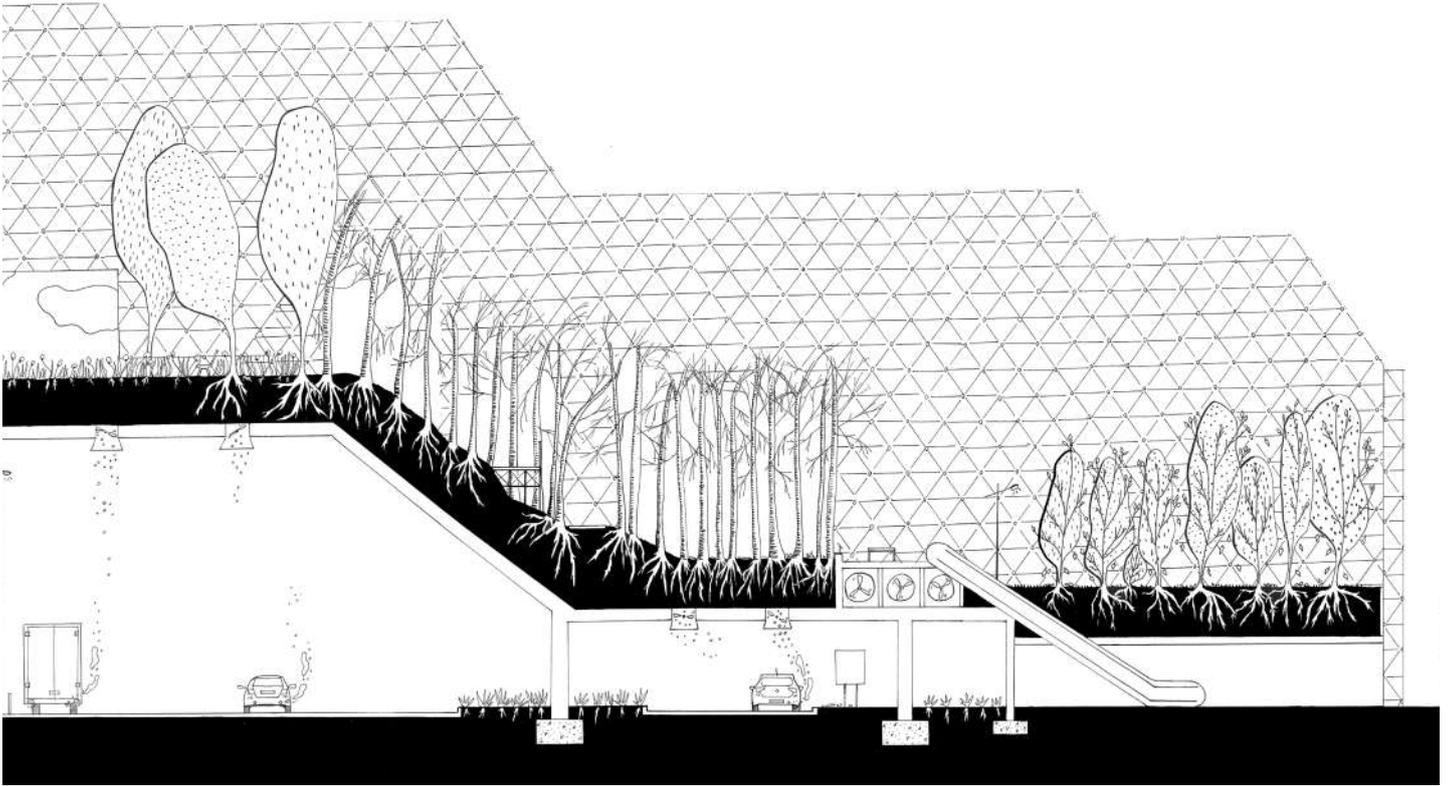
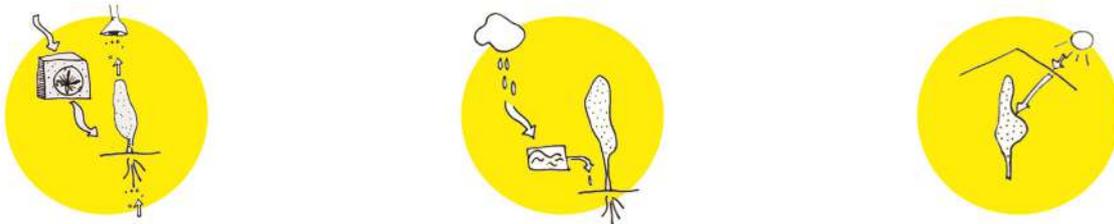


fig.73 own sketch



PURIFICATION STRATEGY



As seen in the chapter Mechanism the basic of the air purification strategy is inspired by B.C. Wolverton. The trees and the roots are equally important in the purification process. The carbon dioxide from cars around and in the loop is pumped up and absorbed through the soil, degraded by microorganisms and taken by the roots of the plants. The leaves of the trees can process the invaded air through their pores, at the bottom of the leaf. Besides it is still possible to apply the efficient Swiss model of Clime-works AG. Air filters are then placed on the sides of the machine and take the concentrate pure carbon dioxide out of the air. The oxygen can be given back to nature or maybe it can be sucked up into silos and sold to the city Ghent. The machine provides a good climate for the plants but also for the visitors of the machine. Water is recuperated and used for the plants or in excess the water flows to the artificial lake. This new showroom of plants is in real contrast regarding to the industrial look and purification process of the machine.

fig.74 own sketch

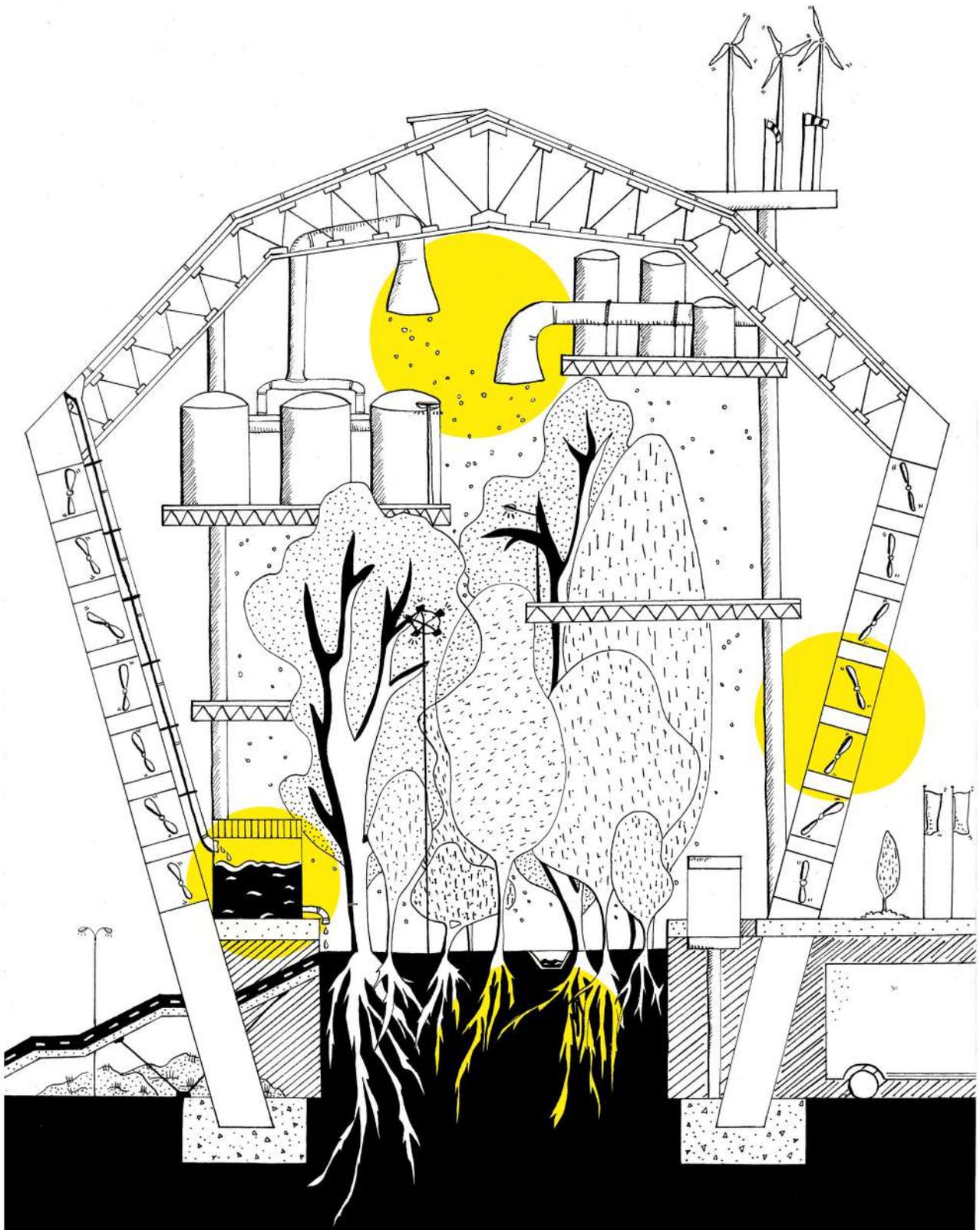


fig.75 own sketch

PURIFICATION STRATEGY WITH BIOBEDS

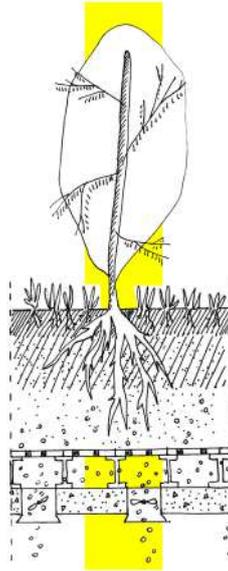
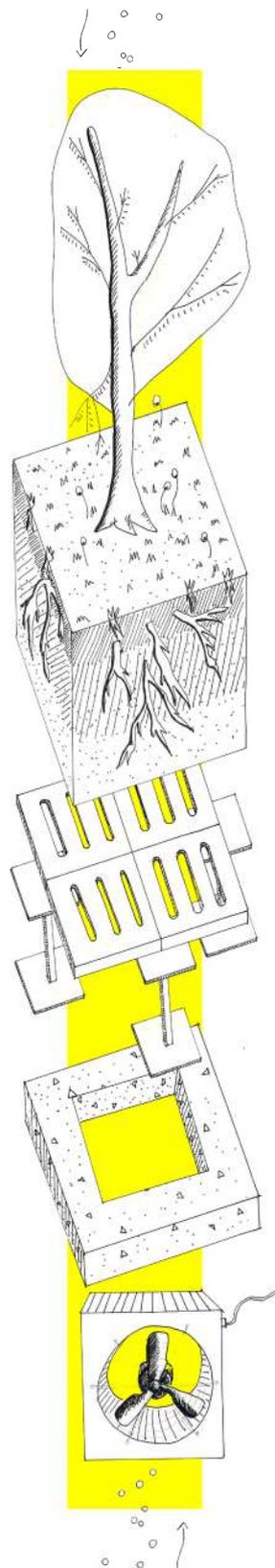


fig.76

The biobed is an inexpensive, simple and efficient innovation that can minimize environmental contamination when using pesticides. In the case of the positive impact machine, it can guarantee a good flow of the carbon dioxide through the machine. Every tree can absorb the equal amount of air.³³

To carry the heavy load of the soil and trees a strong concrete structure is needed. On top of this structure a sort of carriers support grids. On this grids a membrane separates it from the soil. So the carbon dioxide is sucked through air pumps into a sort of tunnel and spreads across the machine to reach each plant.

fig.76 own sketch
33 www.biobeds.net/en/home-eng/, 10 june 2018



oxygen

plants

roots of plants

soil with microorganisms

grids

tile carriers

concrete structure

air pump

carbon dioxide

fig.77 own sketch

STRUCTURE AND TEXTILE MEMBRANE



fig.78

Above this biobed, the machine is closed off by a fragile 'scaffolding' system inspired by Buckminster Fuller and Biosphere 2 in Arizona. Buckminster Fuller is known for the creation of the geodesic dome, the basic unit of this system is the tetrahedron in combination with octahedrons. This form is the most economic space-filling structure. The Biosphere steel structures have the same components but instead of a dome it has straighter forms.³⁴

This fragility of the steel structure translates the delicate part of nature that has to be preserved and protected. A fragility that is contrast with the careless attitude regarding the Loop. It can easily be dismantled and put in an new agglomeration site as a temporary project.

Instead of using glass, the membrane consists of textile. Since medieval times Ghent has been an important city for textile. A textile membrane can be the finishing local touch.

fig.78 www.archdaily.com/tag/buckminster-fuller, 10 june 2018
34 www.bfi.org/about-fuller/big-ideas/geodesic-domes, 10 june 2018

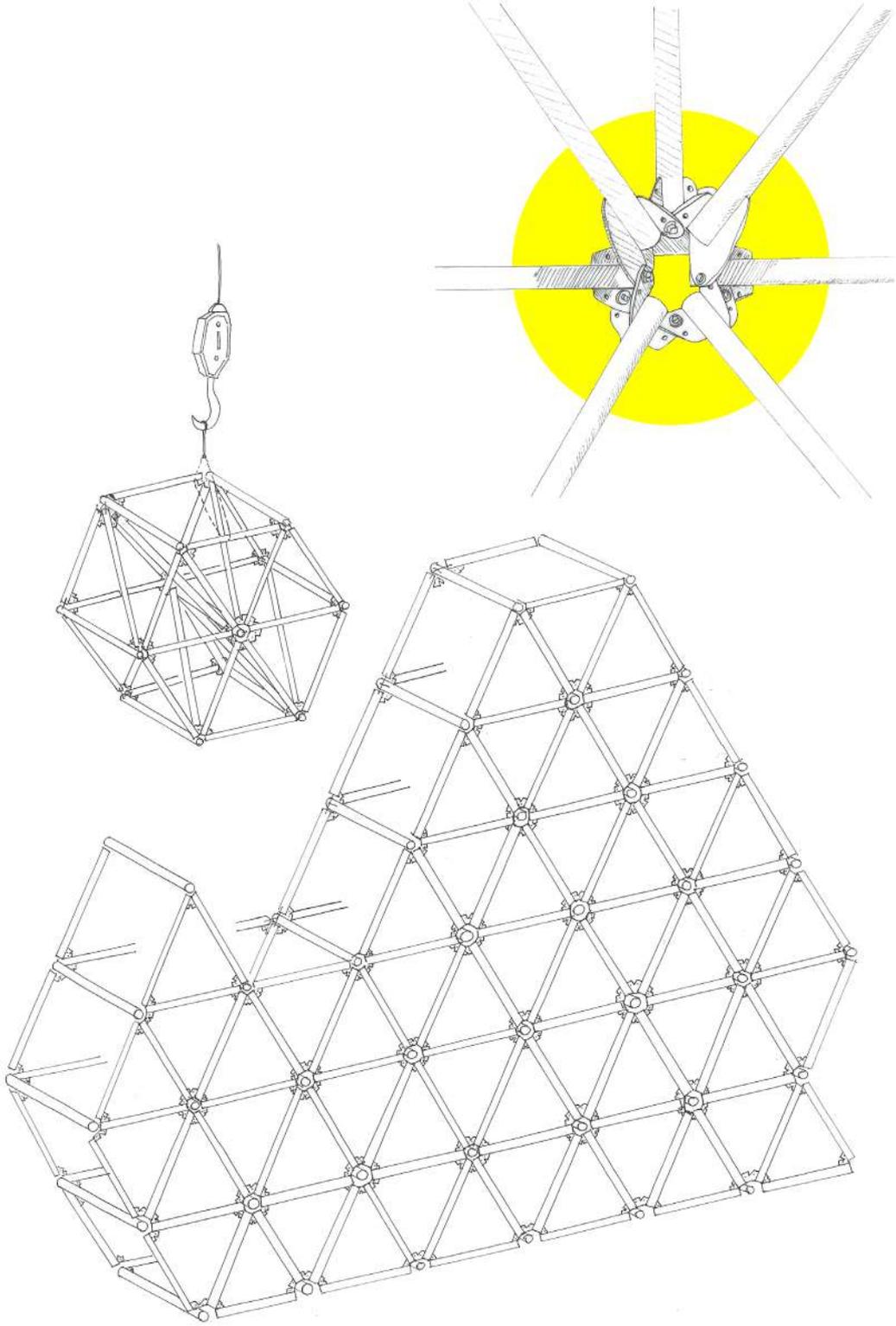


fig.79 own sketch

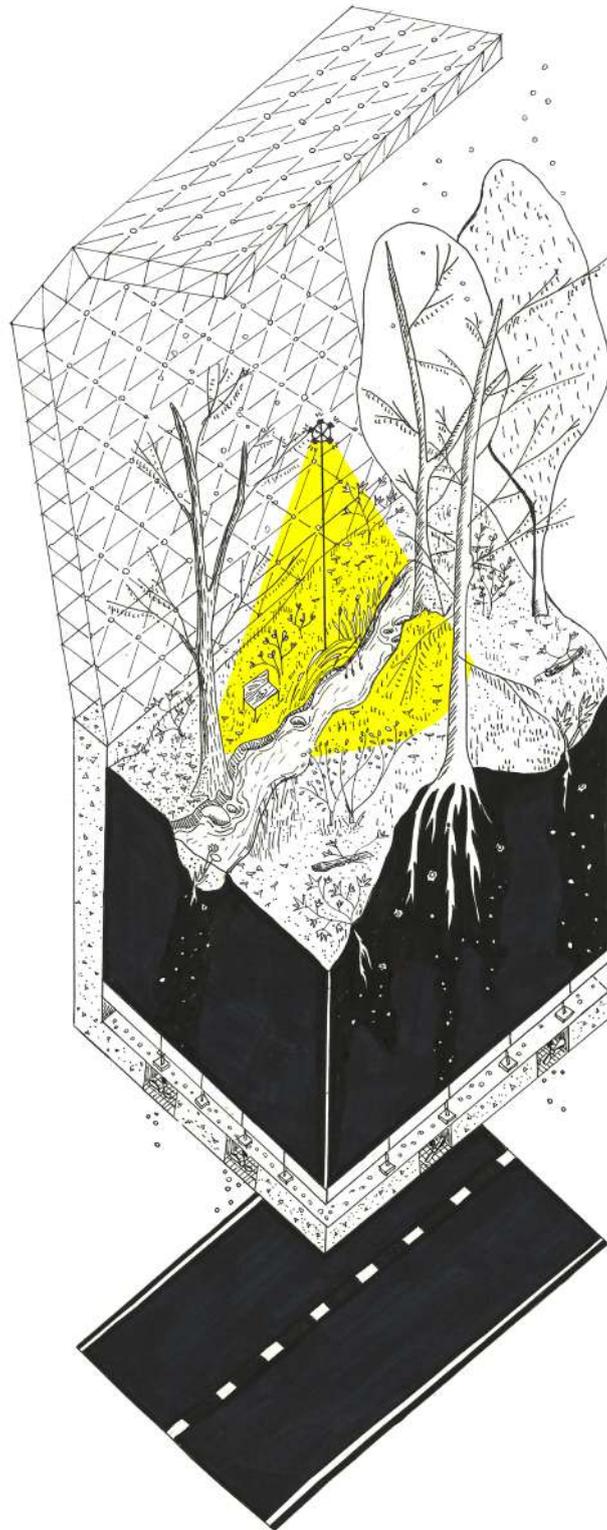


fig.80 own sketch

AFTERTHOUGHT

The Loop can be seen as an exemplar for all agglomeration cases around city centers. It is easy accessible by car and easy left without any care. Since these spots are so near the centre, instead of neglecting these it would be better to embrace this spots. And to create positive catalysts and hubs around the city. Where alternative mobility can be the easiest way to access.

The air pollution problematic is one of the so many to solve. But for every problem there is a need to inform and involve citizens. Create positive messages where people feel they can make a change. Fun and a full experience attract visitors.

Dérives can create this needed attention to the detail that didn't seem important. Nature is so easily put in boxes and seen as non economical value. Young children miss this connection with nature that is crucial. After entering such a machine an awareness and melancholie will be left. A sense of this is absurd to ride back home and pollute now myself.

The positive impact machine creates a totally different and opposite reaction to such industrial sites. And highlights the potentials of those places.

It is a displacement.

It is a statement.



fig.81 own sketch

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