

# The Road Towards Liveable Streets

- A transformation along Ystadvägen in Malmö



Bicycle Competition at Ystadvägen in Malmö 1938, Photographed by Otto Ohm / Malmö Museer

## The Road Towards Liveable Streets

– A transformation along Ystadvägen in Malmö

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ABSTRACT

In the end of March this year (2023) UN's Intergovernmental Panel on Climate Change (IPCC) declared humans are to blame for the 1,1-degree global warming of our planet. Furthermore, that the Paris Agreement will fail. Our lifestyle and energy consumption are unsustainable, and the emissions must now be reduced within a few years to mitigate the effects of climate change.

The transport sector is one of the biggest emitters of CO2, in Europe particularly the emissions caused by the transport sector grew 25% the last 30 years. Passenger cars and motor vehicles stand for a majority of these emissions, 62% respectively. In addition to the negative impact cars have on our environment, health, and safety they also take up a lot of space. Parking lots and multiple car lanes are occupying the urban realm, and thus suppress its potential of contributing to a livable and attractive city environment. Reimagining spaces given to cars is therefore a good way to start the work towards more sustainable and liveable cities.

The aim of this thesis is to show how Ystadvägen, a car dominated road in Malmö with a lot of spaces dedicated to cars, can be transformed into an environment that prioritizes people. Enhancing those areas with mixed functions, such as housing, schools, cultural hubs, and active ground floors is the key design philosophy of this thesis. The mobility of Ystadvägen will prioritize modes such as walking, biking, and public transportation - transforming a grey and unattractive road into a living and inviting street.

Ystadvägen will no longer be a place that you just drive through, but a place where you want to stay.

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## AIM AND METHOD

This thesis aims to investigate how a car-oriented road could be transformed into a street that prioritizes people. This I will do by researching what other people have to say regarding the topic combined with personal thoughts and opinions. The research will result in a toolbox that will be implemented for the design proposal.

### Why Road Transformation?

My interest in this topic started during my bachelor's degree in urban planning at Blekinge Institute of Technology. There, we students were often faced with specific numbers on how much parking space was needed per person when building new apartments, schools, retail and commercial buildings, offices, and the list goes on and on. Numbers that felt outdated when knowing how long the process of planning into a finished building often is. Many of my colleagues and I tried to push these numbers in our projects we proposed car-free neighborhoods, car-free streets and aimed for as low parking ratios as possible.

Cars are one of the big emitters of fossil fuels and with all the knowledge we have regarding climate change and what causes them, making our cities as climate neutral as possible is not only something to strive for it's the only option. Therefore, I took the opportunity that writing a thesis is, to learn more about it.

## RESEARCH QUESTIONS

- *How can a car-oriented road transform into a streetscape that supports livability?*
- *How could this be translated into a toolkit for future road transformations?*







# **Part 1**

## **Research**

## HISTORY OF STREETS

Streets are an essential part of our urban patterns; they are the network that shapes life and movements in our cities. Traces of this can be traced back to Mesopotamia 4000 BC, which is said to be the first street we know of (KTH et al., 2022, p. 14). Since then, the streets have transformed and adapted to suit the desires of the time.

Medieval streets were about five meters wide, just wide enough for two carriages to meet, often irregular and slightly curved (ibid.) During the 17th and 18th centuries, the number of horse-drawn vehicles raised tremendously, streets were now widened and straightened (Sert, José Luis, 1944, p. 164).

In the 19th century, the streets became even wider after several city fires. Now the streets started to become decorated with trees, such as esplanades and boulevards. Several of these esplanades and boulevards later had to give in to the revolution of the automobile. At the beginning of the 20th century, cars were still unusual to see

on the streets, and horse-drawn vehicles were still more common than automobiles. World War I was the beginning of increased numbers of automobiles in European cities, much because of the progress in the automobile industry in the USA (ibid.). After World War II, the Americans had a major influence on the reconstruction of European cities under the Marshall Plan, which benefited their economy as American companies were able to promote their products on the European market. (Verkade and Brömmelstroet, 2022, p. 92).

The arrival of cars in our urban landscapes meant that new roads were built, old ones were widened, and cities were shaped to meet the new demands that the car brought with him. Motorways, viaducts, underpasses, overpasses, and the modernist ideals of traffic separation just to mention some. The list of consequences cars in cities come with is long; air pollution, noise, cognition, accidents and sprawl, and finally – car addiction.





The first streets that we know of were in Mesopotamia in 4000 BC, they were made of simple materials such as sticks and stones.



4000 BC

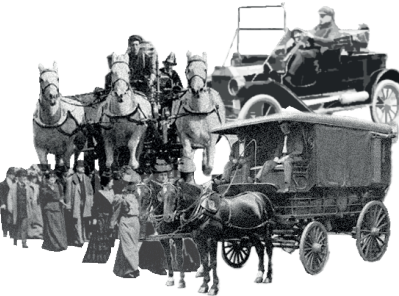
17th-18th century

During the 17th and 18th centuries, the number of horse-drawn vehicles raised tremendously, streets were now widened and straightened.

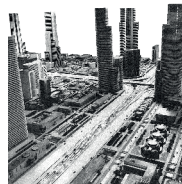
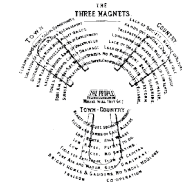


20th century

At the beginning of the 20th century, cars were still unusual to see on the streets. Horse-drawn vehicles were still more common than automobiles.



Automotive city era



**1902 Garden Cities of To-morrow**

With new technology comes new possibilities, Ebenezer Howard publishes Garden Cities, where satellite cities should liberate people from the cities' slums.

**1930 Ville Radieuse**

Le Corbusier's utopian city Ville Radieuse would house a large population in mixed-use skyscrapers. Pedestrians and cyclists were separated from the roadways to make room for the glorified automobile.

**1939 Futurama exhibit**

Futurama was an exhibition in New York in 1939 designed by Norman Bel Geddes. It showed how narrow, tall skyscrapers would make it possible for a widespread highway system.

Walkmobile



Hermann Knoflacher is a civil engineer and professor. He is the director of the Institute for Traffic and Planning in Vienna. He is known for his work to reduce the usage of cars in cities and for the 'walkmobile' he created in 1975. A design that has become popular among activists to draw attention against cars at demonstrations.

Medieval streets were about five meters wide, just wide enough for two carriages to meet. They were often irregular and slightly curved.

The medieval era

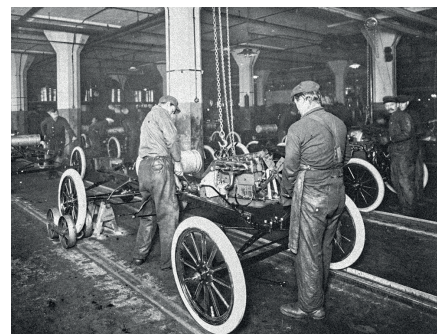


19th century

In the 19th century, the streets became even wider after several city fires. Now the streets started to be decorated with trees, such as esplanades and boulevards.



End of WW1



World War I was the beginning of increased numbers of automobiles in European cities, this because of the mass production progress in the automobile industry in the USA.

Jane Jacobs

In 1961, Jane Jacobs' books Life and Death of Great American Cities are published. It is written as a critique of the 1950s planning ideal, in which the automobile eats up living urban environments.



To be able to midget climate change the future of transportation needs to be carbon-neutral. The best options is to focus on public transportation, bike lanes and wide sidewalks for pedestrians.

Carbon-neutral age



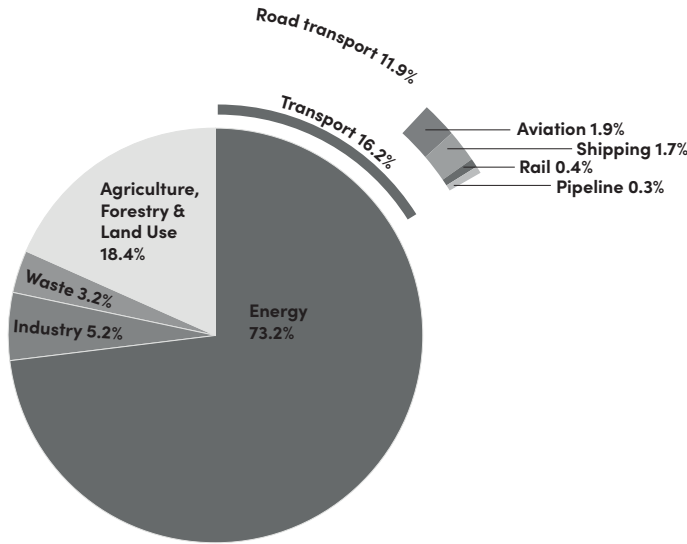


*“Neither short-term 2030 targets nor long-term 2050 climate targets are realistic without significant transport emissions cuts.”*

European Federation for Transport and Environment regarding the Paris agreement goals

AN AUTOMOBILE PROBLEM

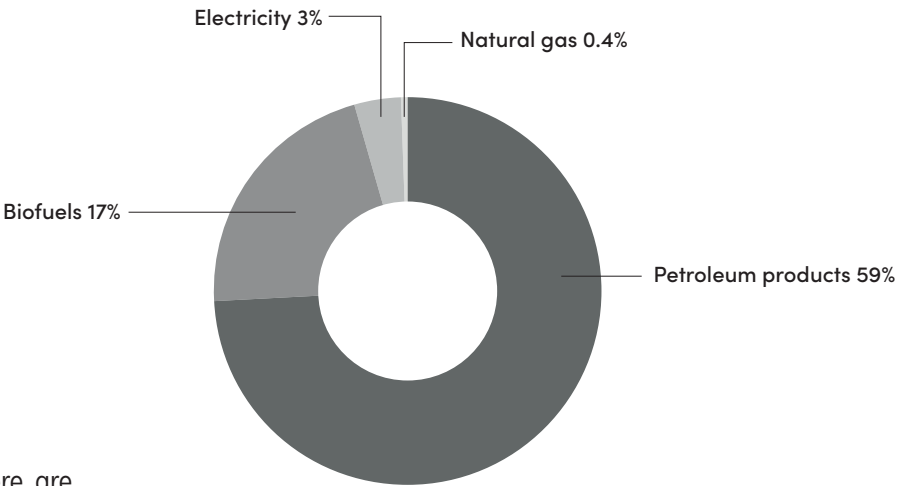
Cars are many people’s first transportation choice and one of the biggest reasons for this is often the comfort the automobile comes with; it takes you from point A to B in all weathers and most likely you find a free space to park at the end of your ride. The most difficult challenge on the road towards less car-dependent cities is convincing people to change an old habit. Telling a person to leave their car and use other means of transport can be difficult. Under every article published on social media regarding plans on reducing spaces for cars in cities, you will likely find a comment section filled with angry drivers. In a comment field like this one, following an article about Malmö municipality’s decision to transform a square currently used as parking into a car-free place, I find reactions like; “Pathetic, where should you park when you are nearby, and you need your car?” or “This will result in that no one will visit the city, a business will go bankrupt or even abandon the city, people will need to leave the city to shop. What a brilliant example of how to kill a city”. The happy news is that they could not be more wrong. Pedestrians, cyclists, and people going by public transportation spend more money than people in cars (Matthew Carmona et al., 2017).



Globan Greenhouse Gas emissions by sector  
Source: Climate Watch, the World Resources Institute (2020).

Numbers from Sweden’s official statistics show that there are nearly five million private cars in traffic (Trafika, 2022), that’s 477 cars per 1000 inhabitants only counting privately owned cars. And numbers from the Swedish energy department stated that 25% of the energy consumption in Sweden is caused by the transportation factor, within this factor 94% is caused by road traffic and 60% comes from private car users (Energimyndigheten, 2022). On top of this it is the sector that consumes most fossil oil of all sectors, nearly 76% and it is causing 33% of greenhouse gas emissions (Naturskyddsföreningen, 2023). All these statistics show how many emission problems are caused by the transport sector, as well as environmental problems such as health hazards, noise, polluted air, eutrophication, and acidification, and the road network often contributes to physical and visual barriers in our landscapes.

The Paris Agreement translates into keeping global warming well below 2 degrees Celsius and limiting the increase to 1.5 degrees Celsius, however, there are no legal bindings regarding the member countries’ transport sector. But as the quote from the



Final energy use in Swedish transport sector  
2020  
Source: Swedish Energy Agency (2022).

European Federation for Transport and Environment stated there must be a significant number of emissions cut to fulfill the Paris agreement.

Globally the traffic sector stands for thirteen percent of greenhouse gas emissions, while it is one-third of Sweden’s (Naturskyddsföreningen, 2023). This does not mean that Sweden is especially bad compared to the rest of the world since Sweden’s electricity and heat production is more resource-efficient and emits less greenhouse gas than other countries (ibid.). However, this means that the transport sector is one of the areas where Sweden has great potential to influence its emissions.

*“A man who, beyond the age of twenty-six, finds himself on a bus can count himself as a failure.”*

- Margret Thatcher 1986

## POLITICS

December 2022 three months after the Swedish election was a tough time for sustainable transport in Sweden, the day before Christmas, December 23 the new government presented that they are canceling the planning of new railroads for high-speed trains, canceling the work with new railway lines between Lund and Hässleholm and put the plans of new railway lines between Gothenburg and Borås on pause.

New Swedish laws for 2023 benefit car owners by lowering fuel prices by mixing less biofuel in the petrol and diesel and lowering the fuel taxes. Additionally, the current travel deduction for travel by private car to work is strengthened by increasing the price from 18,25 Swedish krona to 25 SEK per mile. The deduction for travel to work by a company car is increased from 6,5 SEK to 9,0 SEK per mile. At the same time, it is also becoming more expensive to travel by public transport, in Scania ticket prices increased by 10%

in February 2023, for this reason, many people continue to choose the car as a commuter.

Continuing to prioritize the car as a good option for commuting in our cities is the wrong way to go. As it is today, we are still building parking lots for every new building, we are still widening multi-lane highways. Although research shows that increased capacity does not lead to reduced congestion (Gilles Duranton and Matthew A. Turner, 2011), building more roads is a step in the wrong direction. More roads lead to more traffic. Instead, we need more attractive pedestrian- and bicycle lanes and better public transportation. The Swedish environmental goal is to reach zero emissions of greenhouse gases to the atmosphere by 2045, if no change in transport investment is made, the goal will not be reached.



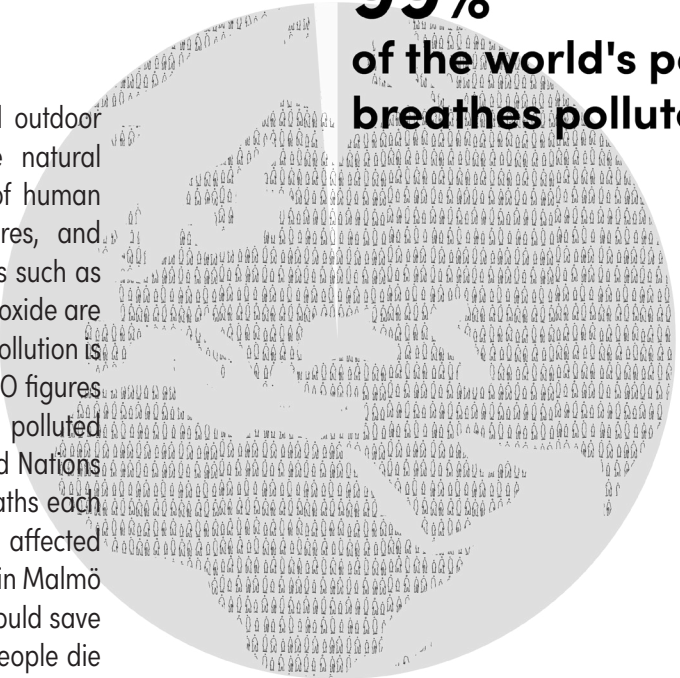


## AIR POLLUTION

Air pollution is the contamination of both indoor and outdoor environments by gases or particles that alter the natural properties of the atmosphere. Caused by a variety of human influences; combustion devices, industries, forest fires, and transports are common causes of polluted air. Particles such as ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide are particularly dangerous to public health. Among others pollution is a contributing factor to respiratory diseases, recent WHO figures indicate that 99% of the world's population breathes polluted air (WHO global air quality guidelines, 2021). The United Nations claims that polluted air causes 7 million premature deaths each year, with low- and middle-income cities as the worst affected (United Nations, 2019). A recent article stated that a ban in Malmö on old cars that release too much-polluted emissions could save 26 life every year, it is estimated that ten times more people die from bad air in Malmö than from traffic every year (Petra Hultman, 2022).

Air pollution is one of the main causes of climate change globally. Most of the causes of air pollution, such as the burning of fossil fuels, also cause greenhouse gas emissions. For this reason, action to reduce pollution is crucial for both climate and health.

**99%**  
of the world's population  
breathes polluted air.





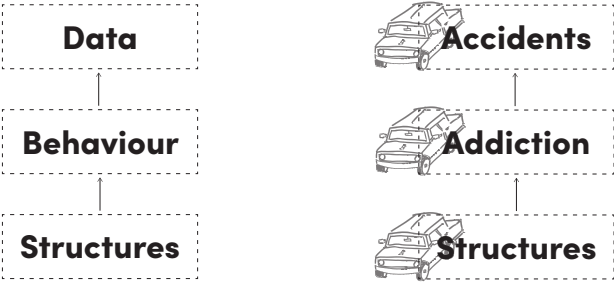
# TRAFFIC ACCIDENTS

Every year car accidents kill 1.2 million people globally and wound twenty million (Grescoe, 2012, p. 12). In the 15-29 age group, it is the most common cause of death (Verkade and Brömmelstroet, 2022, p. 126). On top of this, the time spent in cars is one reason for the increased obesity (Grescoe, 2012, p. 13).

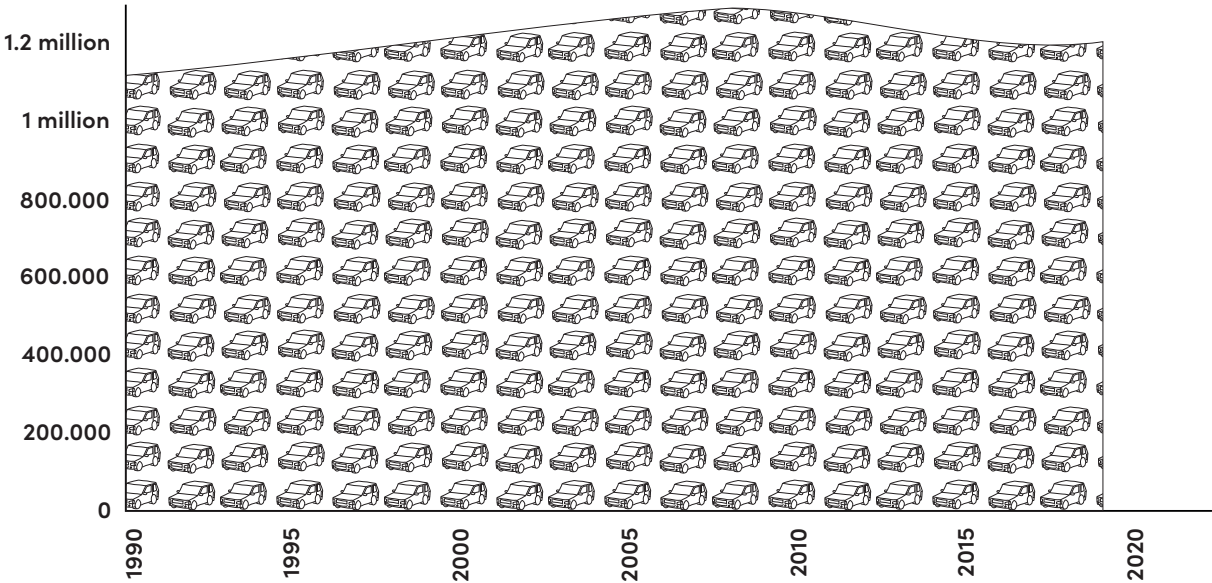
The Austrian professor and former head of the Transport and Planning Institute in Vienna, Hermann Knoflacher is famous for his different methods towards safer and cleaner streets. In a recorded lecture on YouTube, Hermann lectures a group of traffic engineers about urban structures and traffic safety. He begins by showing the numbers behind traffic accidents, or as he calls them – data. All accidents involving cars eventually end up in the line of transmitted statistics and yearly reports of injuries in traffic. So how do we end up with all this data that nobody wants? Hermann says that the answer is to be found in the structures of how we build our cities. The structures affect our behaviors, and

our behaviors are what cause the data. We can only change the data if we change the behavior and to do so we need to change our structures.

Hermann goes on he says that traffic engineers today have a small little car living inside of their brains, and it affects their decision-making regarding infrastructural planning. What if they instead had a pedestrian or a cyclist in there, how would our streets look like then?



**ROAD TRAFFIC DEATHS GLOBALLY, 1990 TO 2019**  
Total number of deaths from road traffic incidents, including vehicle drivers or passengers, motorcyclists, cyclists and pedestrians.  
SOURCE: IHME, Global Burden of Disease (2019)



## NOISE POLLUTION

Noise is not a new phenome, especially not in cities. But the fact is that noise pollution often happens to be the forgotten pollutant. Given its history, there is no doubt that it has not been tackled with the same energy as other environmental pollutants example air pollution, and the reasons for this are not entirely obvious. The point is that noise pollution is nothing new, we are still facing many of the issues and problems that we have been discussing for hundreds or even thousands of years. Although the nature of the noise problem has changed with new technology and new behavioral patterns, the main problem remains the same. The big difference between now and back then is that noise pollution will in modern cities affects a larger amount of people, because of rapid urbanization (Murphy and King, 2022, pp. 2–3).

Common causes of noise pollution today are many and varied, including construction work (above and below ground),

helicopters and aircraft, railways, and of course motor vehicles (ibid). How sensitive we are, and to what extent is very individual, something someone perceives as disturbing could go by without notice for someone else (Murphy and King, 2022, p. 248). In my own experience, this can be to some extent explained by where we live and the sounds we are used to.

Environmental noise is common in Sweden and traffic noise is the most common. Studies show that about one in five people is affected by traffic noise above 55 dB and this environmental disturbance has a negative impact on health in several ways. It can cause general nuisance, it can also harm learning and performance, cause hearing damage and tinnitus, and cause negative physiological effects and sleep disturbance, which can in turn lead to negative health effects (Region Skåne, 2020, p. 129).



*“There are a lot of ways you can describe this. You know, I like to call it “the national automobile slum.” You can call it suburban sprawl. I think it’s appropriate to call it the greatest misallocation of resources in the history of the world.”*

- James Howard Kunstler regarding American suburban sprawl in his TED talk 2004

## SPRAWL

The destruction of our cities and their surroundings caused by increased car use has long been recognized. In Richard Brian’s 1966 book ‘New Movement in Cities’, he already discusses the destruction, and how we in the future probably will regret all the space we dedicated to automobiles.

After the end of the second world war and all the industrial success with mass production, the planning ideal was set by the modernist movement. The ideas behind Frank Lloyd Wright’s Broadacre City and Le Corbusier’s Ville Radieuse were both two big inspirations for the planning paradigm around the globe currently. In Sweden, we see this clearly in ‘The Million Program’ areas which are the big public housing development in the 70s, and the separation of transport modes that went with it. Large-scale housing construction helped end the housing crisis, and after just a few years, housing became easier to get hold of and more people could afford to buy a house. More people began to dream of owning a place outside the city, with a garden and garage. One thing led to another, and suburbs grew up everywhere, automobiles and the now numerous motorways made the suburban movement easier. The sprawl also contributed to external shopping centers which in recent years have hit city centers hard, with smaller towns being particularly affected.

Living surrounded by external shopping centers and freeways, public transportation will probably in most cases feel distant and inefficient.



# URBANIZATION

Numbers from the UN stated that 55% of people live in cities globally, in 2050 that percentage is suspected to raise to 68% (World urbanization prospects: 2018: highlights, 2019). More people living in cities equals an increased need for housing and more people that needs to transport themselves around town.

The year 2010 the Swedish physician Hans Rosling spoke at TED in Cannes about world population growth. Rosling was famous for his clear way of explaining complex matters efficiently, no exception this time. In 1960 there were 3 billion people in the world, one billion living in industrialized countries and two billion in developing countries. The industrialized countries were educated, healthy, and lived in small families saving money to buy a car. The developing countries were working to get enough food for the day and saving to buy a pair of shoes.

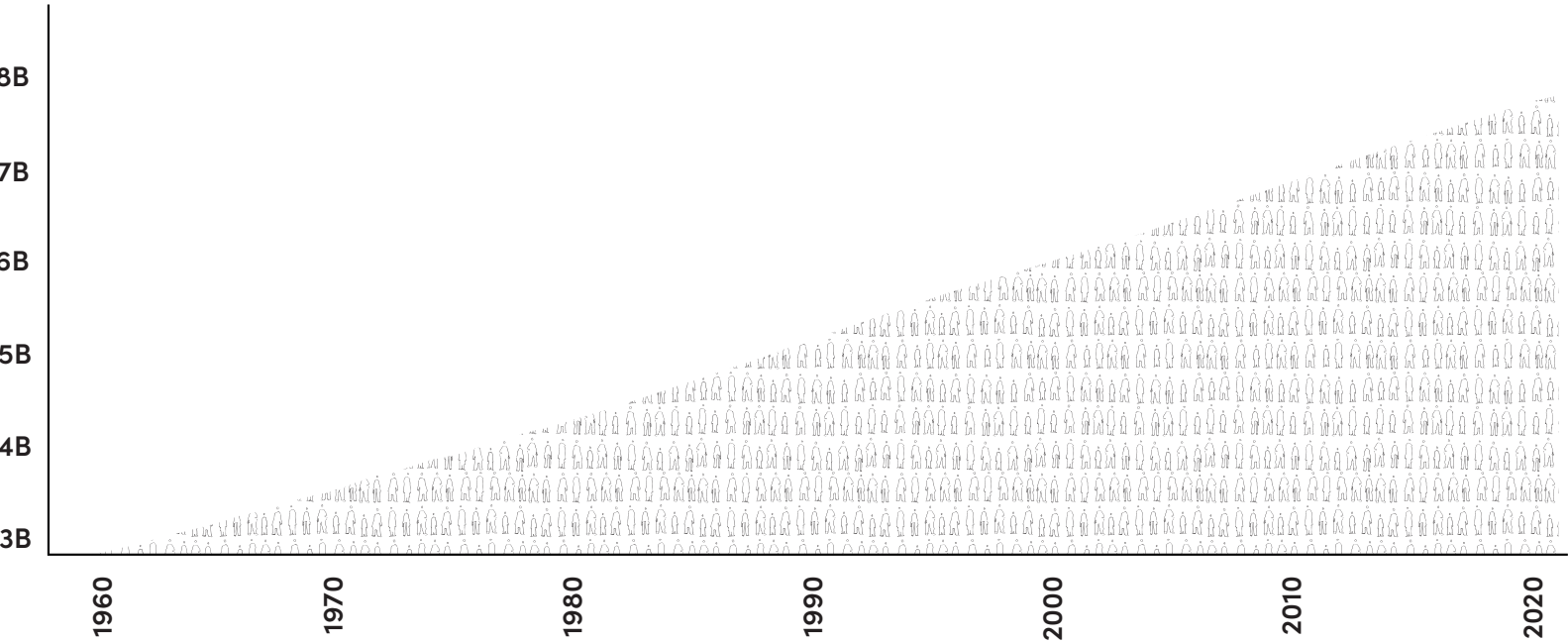
Fifty years later, the world's population had more than doubled and by 2011 there were 7 billion of us. Economic growth in the West has increased and Westerners now not only own cars but also sometimes go on holiday abroad, and to get there we prefer to fly. The most successful developing countries have moved on and are now emerging economies that transport themselves by car. But the poorest group in the developing world is still two billion people, almost as poor as they were 50 years ago. The gap

between the richest and the poorest is now wider than ever. What will happen in the future? How much will the population increase and how many of us can our planet support? Rosling said that more countries will catch up with Western development, such as China. The number of emerging economies will also increase and grow in population. What will happen to the developing countries is that they will double in population. Only if they manage to get out of poverty, get an education, and improve child survival will the large population growth in the developing countries stop. Child survival, education, and finally family planning in developing countries is the solution to global population growth (Hans Rosling, 2010). Urbanization is therefore a risk but also a big opportunity for cities toward a cleaner and more sustainable future.

Sweden is a highly urbanized country with 87% (over 9 million inhabitants) living on 1,5% of Sweden's land area (SCB, 2019), the cities that are growing the most are the big cities. In the coming years, major investments will be needed to ensure that urban infrastructure does not collapse under heavy traffic pressure, and since widening streets is not an option and would not be sustainable, we need to focus on public transport, bicycle- and pedestrian lanes.

## WORLD POPULATION

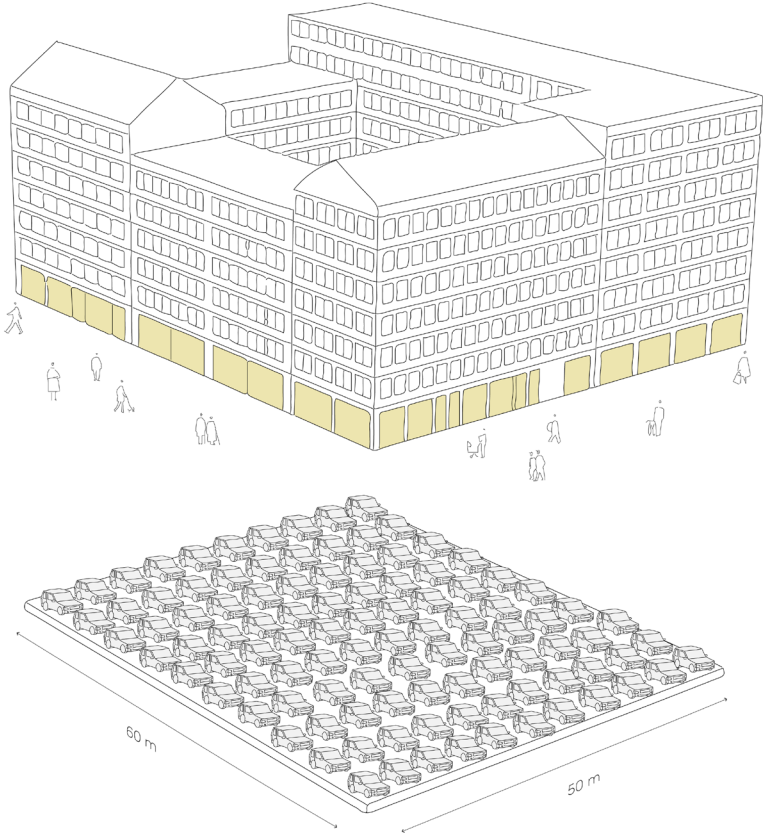
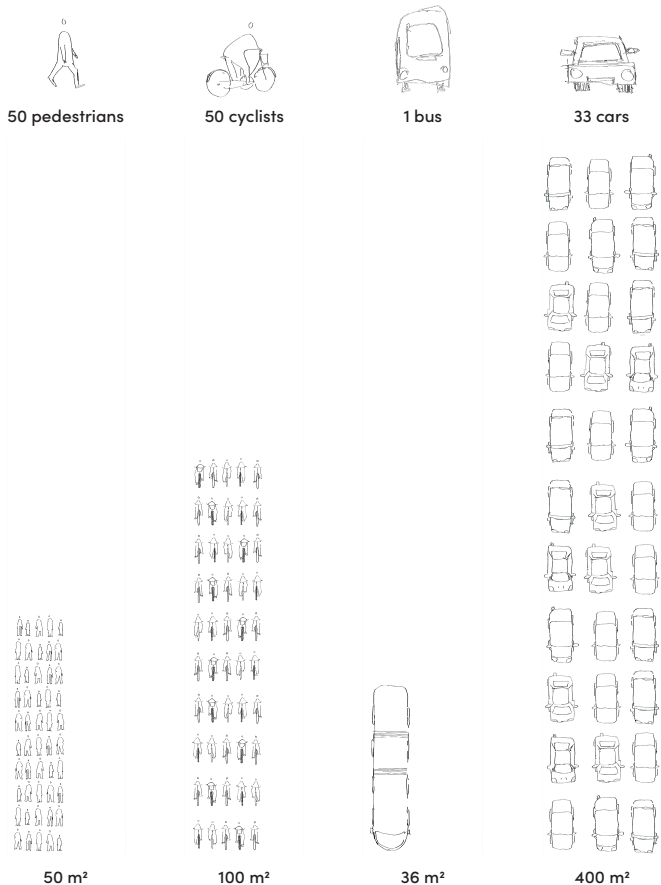
SOURCE: DATACATALOG.WORLDBANK.ORG



SPACE

The automotive industry is moving towards electric cars, and soon a lot more people will buy and drive electric cars. So, if the car industry is changing from this these loud emission monsters towards something quieter and less damaging to the climate, everything is good, right? No more fossil fuels equals that we saved the climate? It is not that simple, regardless of what fuel the car is running on, it will still take up a lot of space and cause traffic accidents. It will contribute to more road wear than other cars due to its weight, which leads to a faster need for road maintenance. This is both costly and demanding in terms of resources. Research from Umeå University also proves that electric cars also contribute to particles that pollute the air (Kriit, 2022, p. 42).

One opportunity with the new technology of driverless towards fewer cars in cities would be if they learn to park themselves on the outskirts of the city. This could also be the start of a smarter system for the co-utilization of automobiles, first, it drives one family into the city then it picks another family up and drives them elsewhere.



- Home to 280 people
- Active ground floors that generates workplaces and services to the city

- 100 parking spaces



# **Part 2**

## **Case studies**



## Car free Sundays – Bogotá

Bogotá is one of the worst congested cities in the world, traffic jams are part of normal life there, every day except Sundays, and so has it been for almost 50 years. The author of Car Free Sundays is Jaime Ortiz Mariño, an architect who spent part of his student years in the United States between 1967 and 1970. There he witnessed how American cities were dedicated to cars while his home country Colombia started the same interventions inspired by the US, the only difference where that most person's main mode of transport was still where bicycles in Bogotá.

Jamie came back to Bogotá with an idea of a different outcome for his city, and even if no utopia were created Bogotá is car-free between 7 am and 2 pm on Sundays. During this time no motorized vehicles are allowed on 120 kilometers of the capital's streets; pedestrians, bicycles, skateboards, or other vehicle-free transport takes over. Entrepreneurs enter the streets and goods are sold in small tents, along with other types of activities and events. the people of Bogotá reclaim the streets (Alma Guillermoprieto, 2019). Even if the cars are back after 2 pm it is an inspiring example of what is possible to achieve even in one of the world's most crowded cities.







Photographed by Ryan Tyler Taylor. Taken on March 2, 2007

## Utrecht, Netherlands

Utrecht, the fourth largest city in the Netherlands, is probably one of the most progressive cities in the world in terms of prioritizing pedestrians and cyclists and reinventing streets. Over the past decade, they have changed the design of dozens of streets in the city from being car-oriented to creating spacious areas for pedestrians and cyclists. The city of Utrecht is home to 350,000 people and is expected to grow to 455,000 by 2040, this number makes Utrecht a perfect comparison to Malmö with roughly the same number of inhabitants and expected population growth.

It's no coincidence that Utrecht is one of the best cities in the world for the number of cyclists, it's a clear focus of the municipality where a lot of work is being done. The big driving force behind the change is to create a better and healthier city for the people and the climate, therefore heavy traffic is kept out of the city as much as possible. By making this a priority, they can focus on public transport and the most sustainable road users, pedestrians, and cyclists. A bonus of the reorientation is that these road users take up less space than cars, space that they instead devote to public spaces, rainwater storage, or new greenery (City of Utrecht, 2020). Utrecht in numbers:

On a normal day 125,000 cyclist are passing by downtown Utrecht, 98% of the households own at least one bike and 50% owns a three

or more. The average number of traffic that runs into Utrecht city center by car is between 12 and 15%.

One of the redesigned streets is Croeselaan, which used to be a four-lane street at the back of the central station. Now it is a street with wide spaces for both pedestrians and cyclists, which together with a tree-covered park in the middle creates a public space in a central location. If you look at a map of what Croeselaan used to look like, you can see the traffic-separated four-lane street; looking at it today after the redesign, the street doesn't even appear to be a street for cars. There are only certain parts of the street where there is room for car traffic on Croeselaan today and in these places only one lane in each direction.

There are several projects such as the Croeselaan around Utrecht; a school that also serves as a bicycle bridge, a motorway that has been restored to a canal again, and a parking garage for 13,000 bicycles are just some of the recent projects that have been made to promote cycling in the city. It wasn't always like this; the Netherlands and Utrecht were as car-oriented in the 1950s, 60s, and 70s as many other Western countries (Laura Bliss, 2019). The big difference is that they wanted to change, so they invested in these changes.



## New York - Street Interventions

In the last decades, New York has been working on a large re-design of their streets. They started by setting out clear strategic goals for the project, which was that they wanted to cut half of the annual traffic fatalities by 2030. They also wanted to give room for more public places on streets, double bicycling by 2012, and implement a rapid bus system.

One of the first interventions took place in Times Square, which was closed to traffic for six months to see what would happen. If it would contribute to a safer traffic environment, better mobility, and business for surrounding retailers they would keep it, if not they would go back to how it was before. Said and done, the ones so chaotic square got decorated with picnic chairs and the people instantly came running. And the numbers showed that the interventions were a success. Traffic injuries went down, traveling times got shortened and five new flagship stores opened with rents doubled. It did not end with just Times Square, these interventions

took place on many streets and ground parking areas around the city, often in close cooperation with neighboring businesses since it is proven that the more people on the streets, the better business (Janette Sadik-Khan, 2013).

A simple method often used at the beginning of each process was temporary furniture and paint, these simple tools were used to show what the place could become. This method was also used for the development of the city's new bike lanes. Less than 15 years ago New York wasn't a good city to bike in, the amount of bike lines was poor and the ones they had was often not very safe. As an answer too to double cycling by 2012, they built a large number of new bike lanes, often separated from both cars and pedestrians. The new safer bike lanes massively increased the number of cyclists in the city, and the retail numbers went up by 50% (ibid.).



Photographed by StreetLab Taken on July 22, 2019





## Venice, Italy

Venice is one of Europe's biggest car-free cities and probably the most famous one, but the fact that the historical center is a place without cars is something they almost forget to mention. It falls into the shadow of all the canals, bridges, and gondolas rides. Some tourists that drive there by car are surprised that they need to park somewhere in the outskirts, and tourists that come by other means of transportation can find themselves leaving again without reflecting on the fact that they spend a week not surrounded by cars. Since this world heritage city always has been car-free that's the normality there, and no one seems to really miss the cars.

Venice is there for a great example of a city that lives without cars, it proves that businesses don't go bankrupt because their customers can't park their cars outside the store. It also shows that parking garages in the outskirts function as a complement to support the car-free inner city, while ensuring that those living outside the city can commute by car almost all the way there and then switch modes of transport.



# **Part 3**

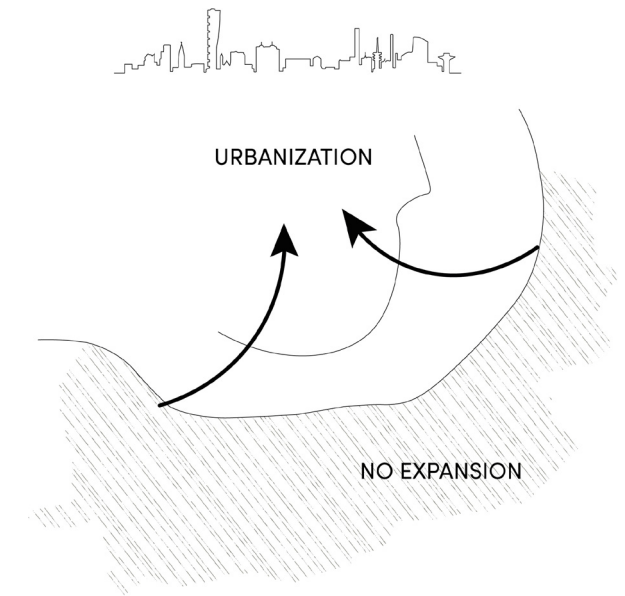
## **Analysis**



## MALMÖ

Located in southern Sweden, Malmö is Sweden's third largest city and the largest city in Scania, just a bridge away from Copenhagen. Malmö has around 350 000 inhabitants and is expected to reach 500 000 by 2050, to cope with the large increase in population, a significant increase in housing is needed. To protect the valuable farmland urbanization must happen within the outer ring road.

A large increase in population also places greater demands on the transport system. It is therefore important to focus on sustainable transport solutions, as stated in several of the municipal plans (Malmö stad, 2016, 2018a, 2018b).





Some of Malmö municipality’s goals, strategies and leading directives for future development stated in the comprehensive plan (Malmö stad, 2018a).

“In the long term, Malmö’s energy and Transport system will be supplied exclusively by renewable energy sources - primarily local produced - and characterized by efficient and safe energy use.”

Page 15

“Planning should promote public space as a democratic arena with a holistic view of the city -through the design and location of squares, parks, streets, and other features, andby always considering aspects such as equality, safety, accessibility, public health, and justice.”

Page 15

”The whole city should be accessible to all groups in society, regardless of disability. It should be possible to reach the whole city and its various attractions by public transport, on foot or by bicycle or, if necessary, by car.”

Page 16

“Planning should help to reduce air pollution and provide good opportunities to choose cycling or walking instead of driving, example by extending the network of cycle paths and safe, secure school routes. Areas with low noise levels are rare and need to be increased. More trees in urban areas can contribute to a better microclimate and air quality.”

Page 17

“Physical and mental barriers will be removed, and the city will heal, for example by transforming some access roads into main streets.”

Page 34

“In existing low-density retail areas, with large parking lots and expansion areas, denser development should be made possible.”

Page 34

“People should be at the center of solving traffic problems. This will result in a transport system that contributes to a healthy, attractive, and inclusive city and region.”

Page 39

“The transport system should be designed to encourage more people to walk, cycle or use public transport. Access to these modes of transport should be prioritized, both in the city center and for commuters coming from outside Malmö. This to achieve good accessibility in an equal, energy-efficient, and less environmentally damaging way. Good connections between transport modes should be planned with a holistic approach to the whole journey.”

Page 39

“Malmö municipality will continue to work on measures to improve air quality in the city in order to achieve the environmental quality standards for nitrogen dioxide, reduced particulate matter and reduced traffic noise, and monitor the effects of the measures.”

Page 39

## YSTADVÄGEN IN THE REGION

A road has a big role from a regional perspective, since Ystadvägen is connecting Malmö and Ystad and in between these as well as passing other cities and villages of different sizes, there is no doubt that Ystadvägen is one of the big key infrastructural pieces in Scania. In a study by Malmö municipality where the traffic on Ystadvägen was measured at three different locations inside the ring roads, you can see that the commute into Malmö is slightly larger than the commute out of Malmö. This is also supported by the travel behaviour survey conducted by the municipality, which showed that commuters living outside Malmö use cars to a greater extent than those living in Malmö.

My focus in this thesis is on cities and how they can become less car-dependent. The fact that suburbs, suburbia, and rural areas are more dependent on cars is outside my focus area. What I am addressing, however, is people living in these areas with weak or non-existent public transport, and how they can continue to commute to the city’s outskirts by car and then continue their journey by public transport or other sustainable alternatives.

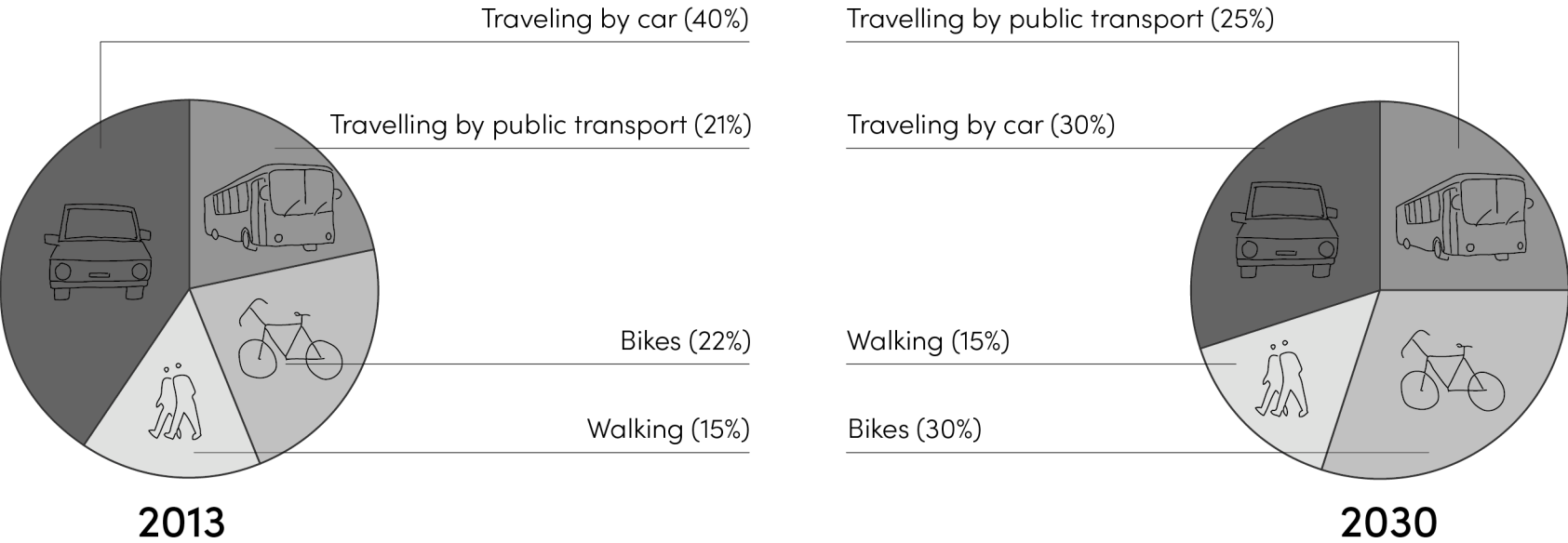
STREET NAME	MEASURED AT	YEAR	DATES	DIRECTION	TUE	WED	THU
Ystadvägen	Northwest of Poppelgatan	2022	2022-09-05 – 2022-09-11	Northwest	9458	9541	9900
				Southeast	9001	9139	9619
		2021	2021-08-23 – 2021-08-29	Northwest	9591	9837	10013
				Southeast	9523	9812	9945



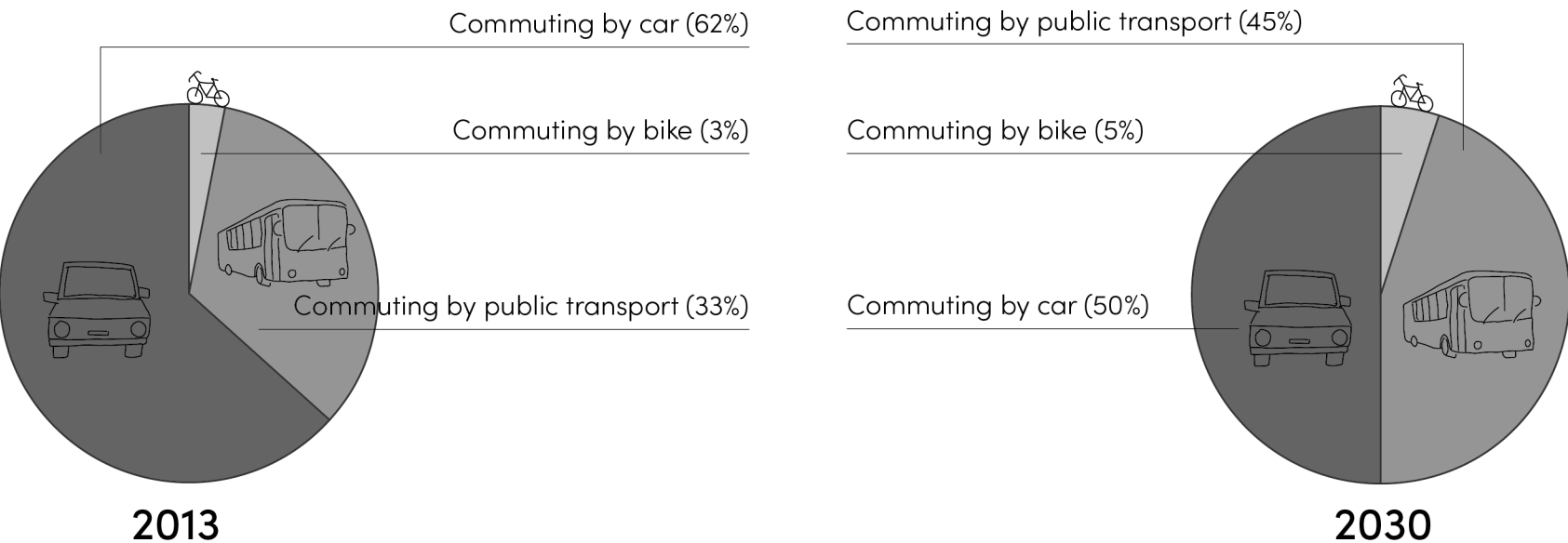
Traffic jam on Ystadvägen during the 80´s CR Mamlö Museer



Previous numbers and future municipal goals for travels within Malmö



Previous numbers and future municipal goals for commuting into Malmö





## YSTADVÄGEN

Ystadvägen is one of Malmö's major access roads, with varied types of surrounding buildings and several destinations such as industry, retail, and leisure. This results in several entrances and exits along the street.

Most of Ystadvägen is a European road in southern Scania that connects Malmö and Ystad. However, the last access road that leads into Malmö is not classed as a European road, I would describe it as a heavily trafficked and very car-oriented road surrounded by large blocks of shops and car parking areas. The character of the road differs depending on where you are on Ystadvägen, closer to Dalaplan it has more of an urban street feel, with bike lanes, some active ground floors, and apartment buildings. The closer you get to the ring road, the more car-oriented it becomes, to the point where it becomes difficult to find any crosswalks or sidewalks wide enough to accommodate pedestrians and cyclists. On this part of Ystadvägen, the connections to the surrounding neighborhoods are weak, the industrial buildings have their entrance on the other side, and the side towards Ystadvägen is fenced off.

The air quality along Ystadvägen is bad and the route has high noise levels, especially bad is it around Dalaplan, where the population density also is high.

The buildings include industrial premises in brick, open neighborhood structures, and smaller units of single-family housing. Ystadvägen is lacking continuous greenery and gives a fragmented impression.

In addition to parking lots and shopping carts, there are several interesting buildings, including old textile, brewery, and leather factory buildings. And a diversity of surrounding neighborhoods, small housing areas, apartment buildings, schools, a track and field stadium, and an old building from the end of the 19th century built to look like a castle.

From the beginning of the 20th century until 1940 Ystadvägen where trafficked by tramline number 2. Today the super bus number 8 runs here until the crossing Ystadvägen/ Munkhättegatan and bus number 32 continues to Käglinge.

Statistics of traffic accidents on Ystadvägen show that the bike line on Heleneholmstigen which is crossing Ystadvägen is causing several accidents with cyclists involved every year.

Ystadvägen is part of Malmö municipality's green climate zone, which aims to create better air quality. The climate zone also comes with certain restrictions regarding bus and truck traffic, depending on age and Euro class.





DALAPLAN  
A MAJOR TRAFFIC  
INTERCHANGE

THIS SECTION IS  
FENCED OFF AND HAS  
NO CONNECTIONS TOWARDS  
YSTADVÄGEN

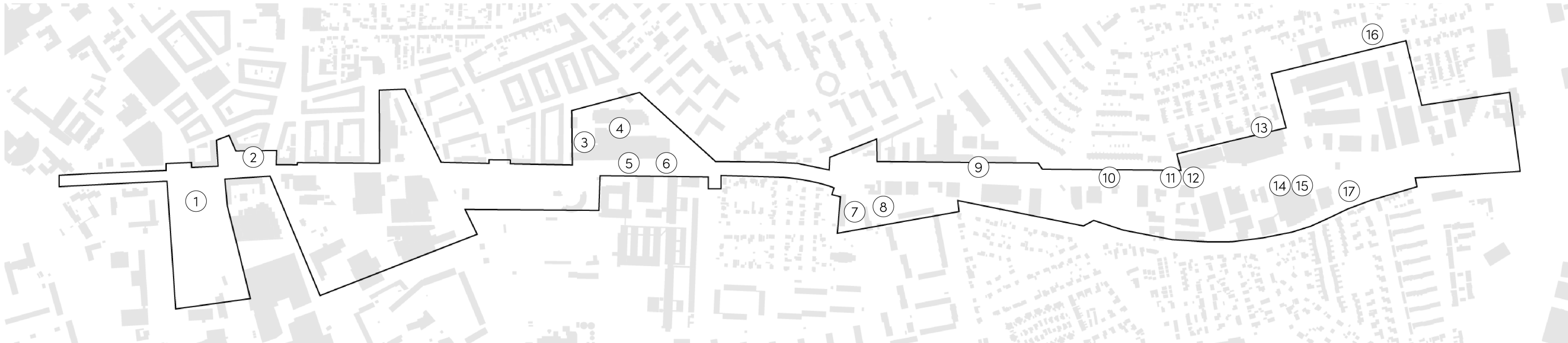
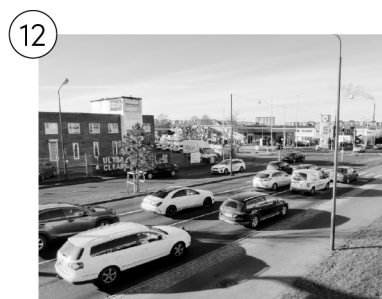


- |                         |                           |
|-------------------------|---------------------------|
| ■ Apartment buildings   | ■ Sports                  |
| ■ Single family housing | ■ Industrial and Logistic |
| ■ Commerce              | ■ Mixed                   |
| ■ Educational           | ■ Church                  |
| ■ Hospital              | ■ Bus stop                |

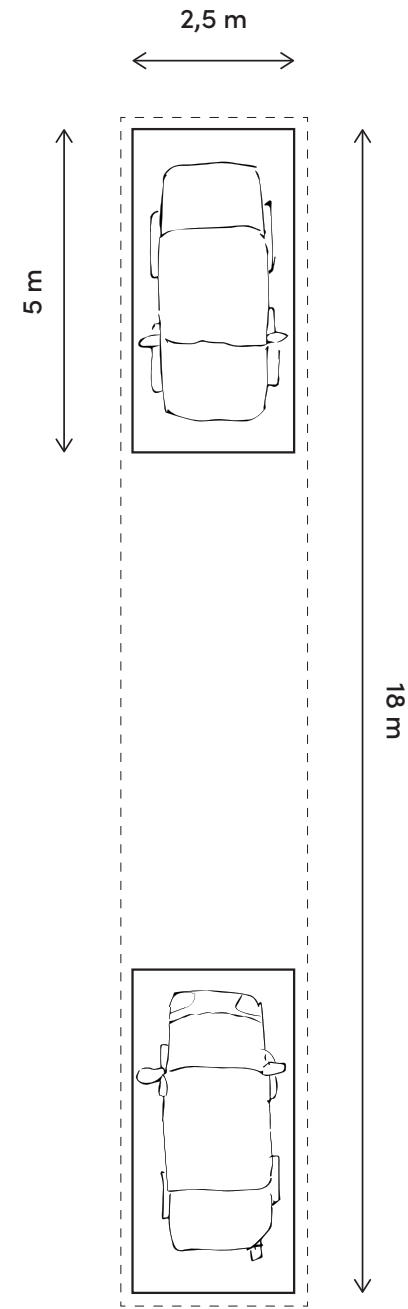
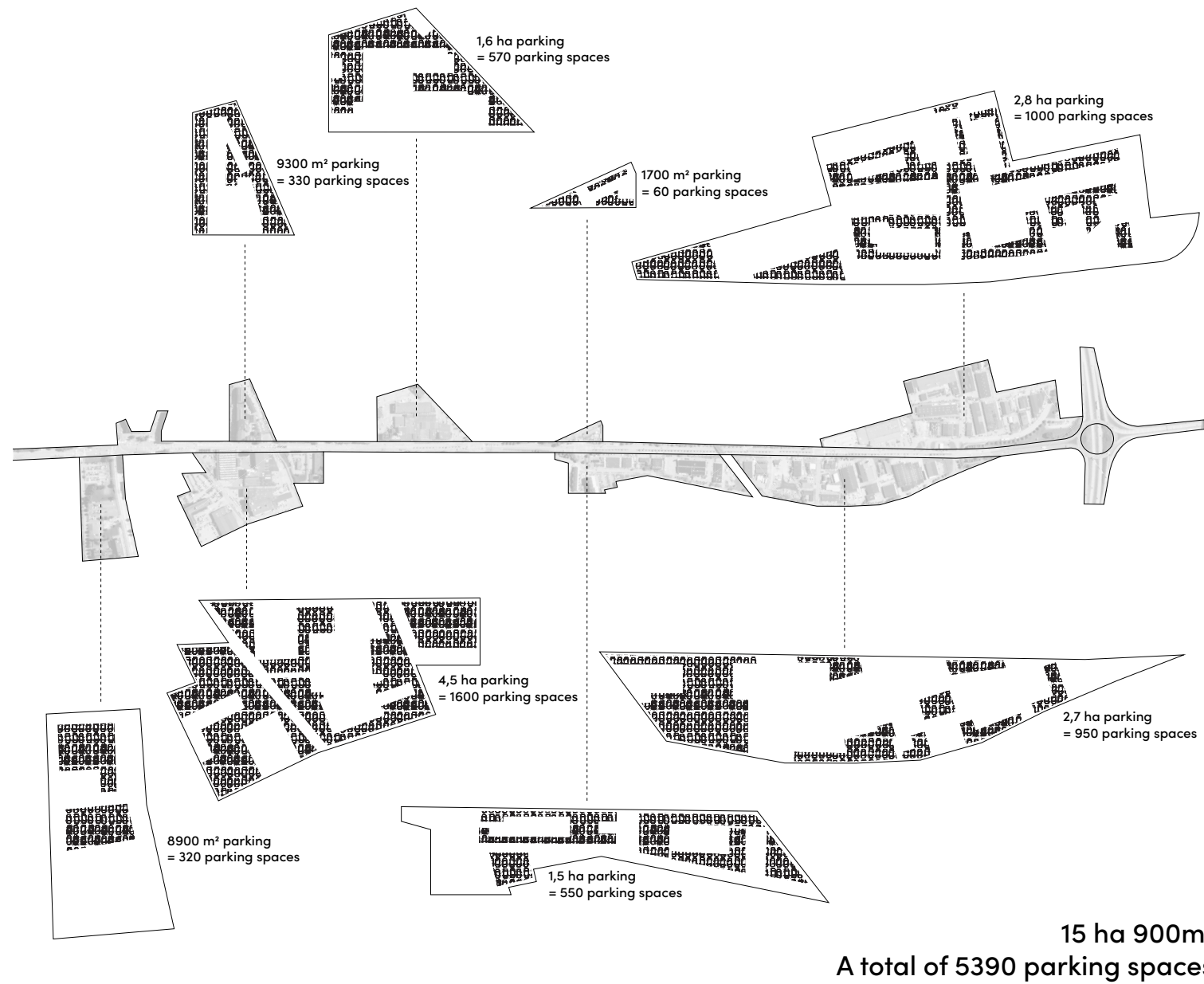
UNDERPASS FOR  
PEDESTRIANS AND CYCLISTS

THIS SECTION  
HAS NO PEDESTRIAN  
CROSSING





# SQAURE METERS DEDICATED TO PARKING AROUND YSTADVÄGEN



## How I calculated

2,5m x 18m = 45 m²  
45m²/2 cars = 22,5 m² per parking space  
+5,5 m² for spillage areas, entrance and exit etc.  
= one parking space takes up around 28 m²

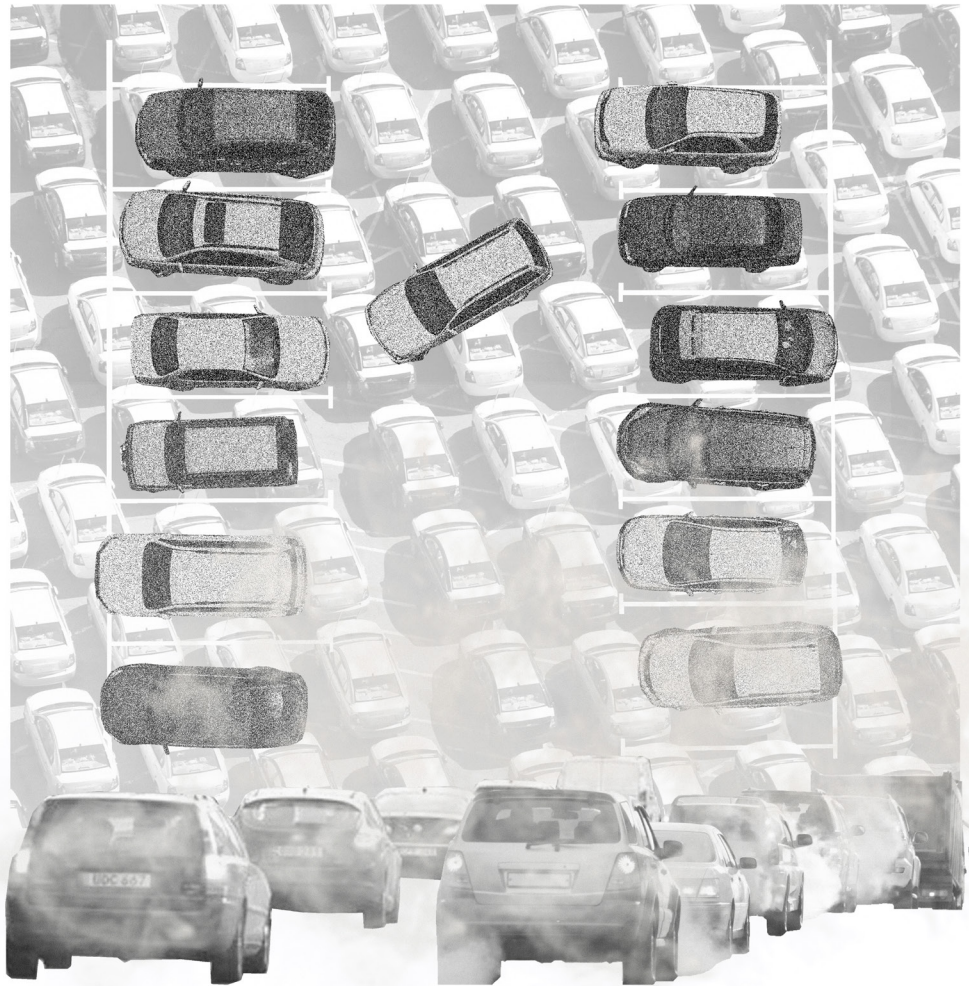
xx areal meters / by 28 = estimated number of parking space





# **Part 4**

## **Design**



Approach

In my design proposal for Ystadvägen, I have chosen a more realistic approach to how an access road could transform into a liveable street. For this reason, I have chosen to continue to provide some space for cars on the roads. The considerations have been that the route connects Malmö's hospital area with the rest of the region, that fewer lanes will contribute to changes in travel habits, and that the car lanes can be converted to cycle lanes in the future.



Vision

Ystadvägen will go from being a four-lane road where cars crowd and speed and where the streetscape lacks clear interaction with its surroundings. To a vibrant street that prioritizes pedestrians, cyclists, and public transport. Ystadvägen will be framed and filled with new functions such as housing, schools, cultural hubs, and active ground floors. In other words, the spaces previously dedicated to cars will be given back to the people.



# TOOLBOX

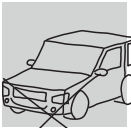
Based on the research and conclusions, I have developed a toolbox to help me during the design phase. The toolkit is divided into four categories: health, air quality, safety, and public life. Some things go into each other, and some tools could have been under several categories, but to make it clear and easy to apply, I have chosen not to repeat myself.

Health



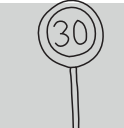
LESS NOISE

Air Quality



LESS CARS

Safety



LOW CAR SPEED

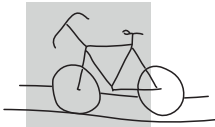
Public Realm



ACTIVE GROUND FLOORS



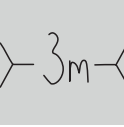
PUBLIC SPACES



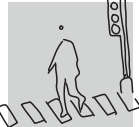
BIKE LANES



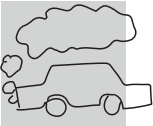
TREES ABSORBS CARBON MONOXIDE, DUST AND ORGANISMS AND ACT AS FILTERS OF THE AIR.



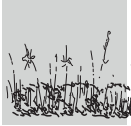
SMALL CAR-LANES; MAXIMUM 3 METERS



PEDESTRIAN CROSSINGS



BETTER AIR QUALITY



OTHER VEGETATION EX. BUSHES, GRASS, PLANTS



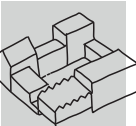
HIGH CONNECTIVITY IN THE STREET NETWORK



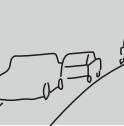
NO THROUGH TRAFFIC



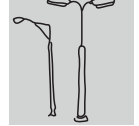
POPULATION DENSITY (DAY AND NIGHT POPULATION)



MIXED BUILDING FUNCTIONS



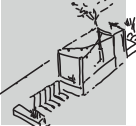
FEW CAR LANES



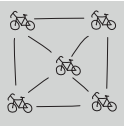
GOOD STREET LIGHTING



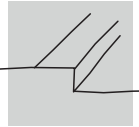
PROXIMITY TO SERVICE AND PUBLIC TRANSPORT



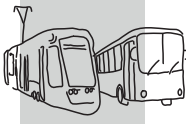
FLEXIBLE UTILIZATION; EX SIDEWALKS, SHARED SPACES, PARKING ZONES



CONTINUITY AND CONNECTIVITY OF THE BICYCLE NETWORK



SEPARATE PEDESTRIANS AND CYCLISTS FROM CAR TRAFFIC



PUBLIC TRANSPORTATION



PEDESTRIAN LANES





· Connect Ystadvägen to the surroundings in a way that strengthens the overall network.

· Densify on car parking spaces and one-storey industrial buildings

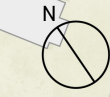
· Prioritize active mobility

· Public places





MASTERPLAN







A total of 7350 new inhabitants

## RECLAIMED SPACE

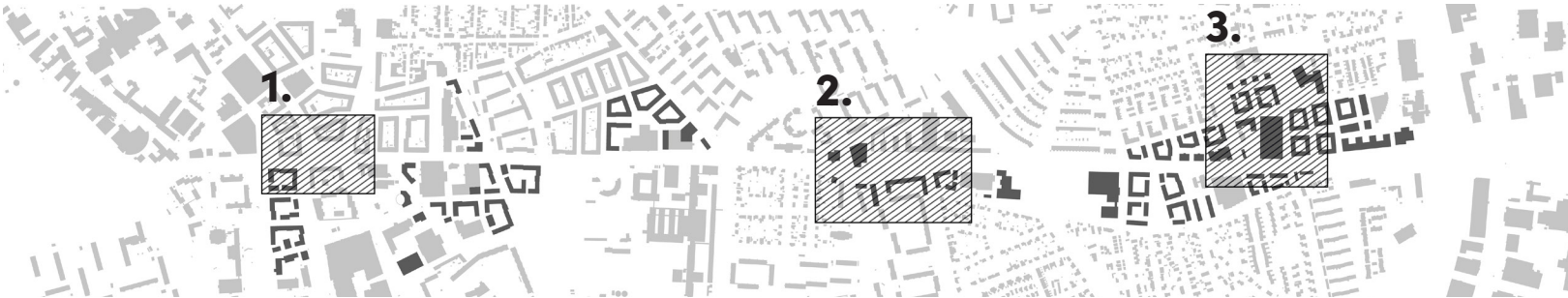
Today, Ystadvägen is surrounded by 15 hectares and 900 square meters of underused space dedicated to cars. This is the equivalent of 5390 parking spaces. With the graphic on the left, I want to show how my masterplan could repurpose these parking spaces. The result of the design is that instead of car parking spaces, space is created for 7350 new inhabitants. This is after calculating the gross floor area and according to Swedish figures for housing per household (2.2).

In my design proposal for the new masterplan, I have reclaimed these areas and densified Malmö with mixed-used buildings and created a city street instead of a car-oriented road, focusing on liveability, walkability, bikeability public transportation. Along the street, there will be space for schools, cultural organizations, public spaces, active ground floors, housing, and much more.

A big priority in the making of the new areas along Ystadvägen has been to create a seamless connection to the existing surrounding areas. This is to ensure easy orientation when moving around the district and the whole city. It also means that areas that have been disconnected from Ystadvägen now will be better connected to it.



### THREE FOCUS AREAS



#### 1. Dalaplan

Dalaplan is today a traffic node for several big streets in Malmö, where Ystadvägen meets Nobelvägen, Södra Förstadsgatan, Per Albin Hanssons väg, and Johan Ericssons väg. The “square” Dalaplan is not a place where you would like to stay, mostly because of the noise and the bad air quality but also because most of the square is dedicated to car parking.

#### 2. Almtorget

In this area, Ystadvägen passes Almtorget and Agustenberg’s Botanical Roof gardens, both nodes for Malmö that could be strengthened.

Almtorget was built in the 1960s and is characterized by the principle of car separation, which in this case means that the square where not placed along the road. Almtorget is not only affected by the noisy Ystadvägen but also Västra Hindbysvägen, which is also very busy and where cars drive fast. Along Västra Hindbysvägen there are some industrial buildings filled with different functions.

Agustenberg is a neighborhood that was redeveloped in the late 1990s with the aim to transform a 1950s area into a socially, economically, and ecologically sustainable neighborhood.

#### 3. Hindby

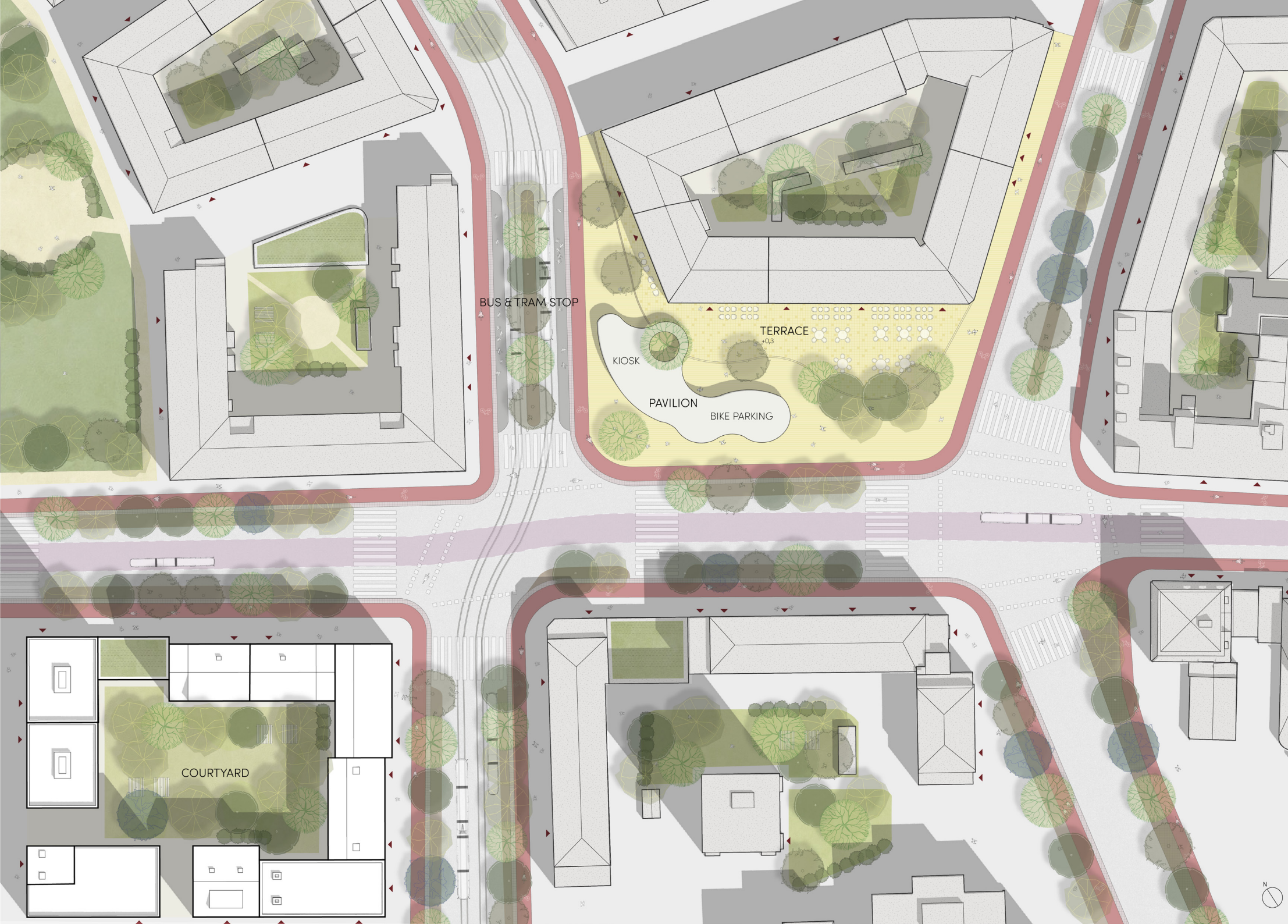
The first area bordering the ring road is currently industrial and commercial. The whole area is strongly car-oriented, and it is difficult to move around on foot. There is a lack of pedestrian crossings and if you want to avoid running across Ystadvägen, you may have to take long detours.



**Dalaplan**

- 1. Park
- 2. Mixed-use units; housing, commercial, retail
- 3. Underpass
- 4. Parking



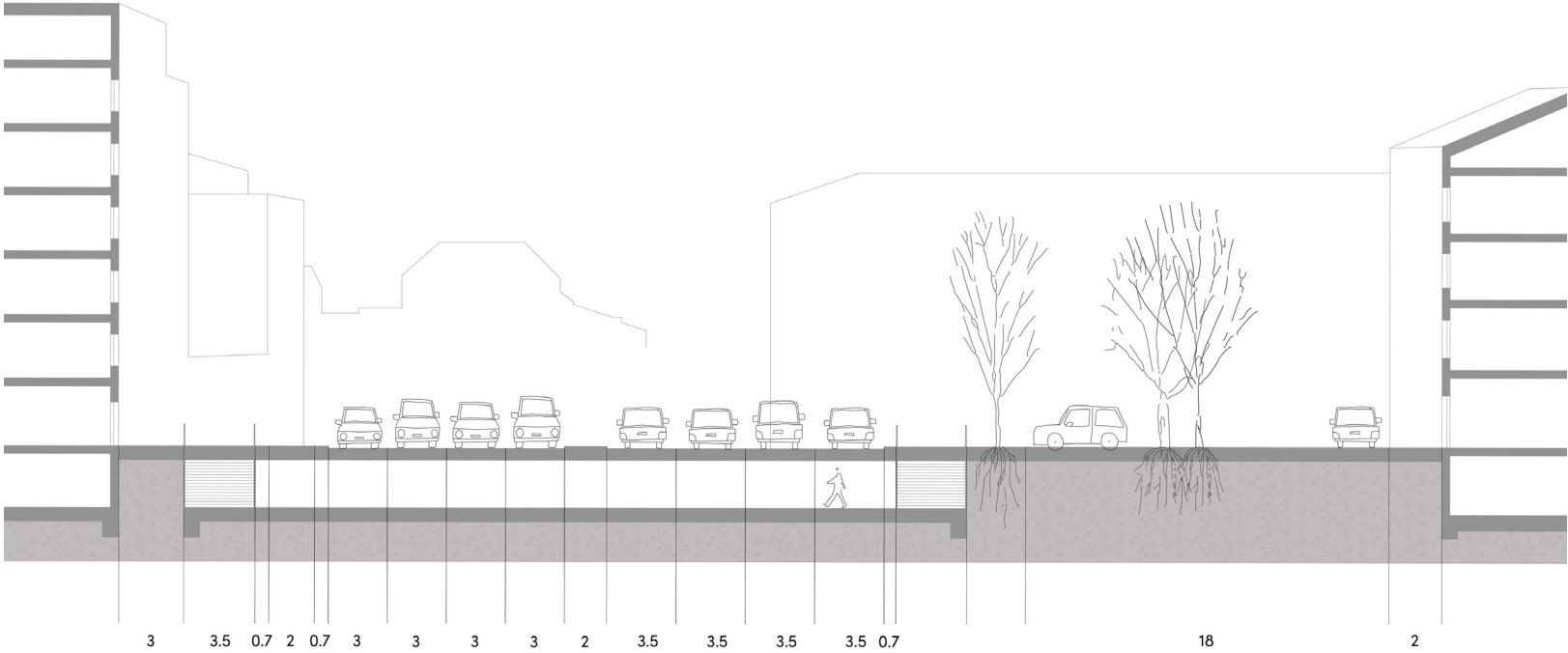


The design idea for Dalaplan is to create a place to be. Instead of a busy intersection for cars, Dalaplan becomes a hub for active mobility choices, with trams and buses stopping here. It will be easier and safer to cycle around Dalaplan, with widened and traffic-separated cycle paths. The pedestrian tunnel disappears, and all pedestrians stay above ground.

Above ground, there is room to stay on the now widened square where a terrace allowed for businesses to occupy for activities outside their store. A mirror pavilion will also be built on the square with functions such as a kiosk and spaces for bicycle parking.

On the empty plot of land currently used as a car park, I'm suggesting three new apartment blocks and extending the university facilities (see masterplan). Towards Dalaplan and along Per Albin Hanssons Väg active ground floors could be fitting.





Before

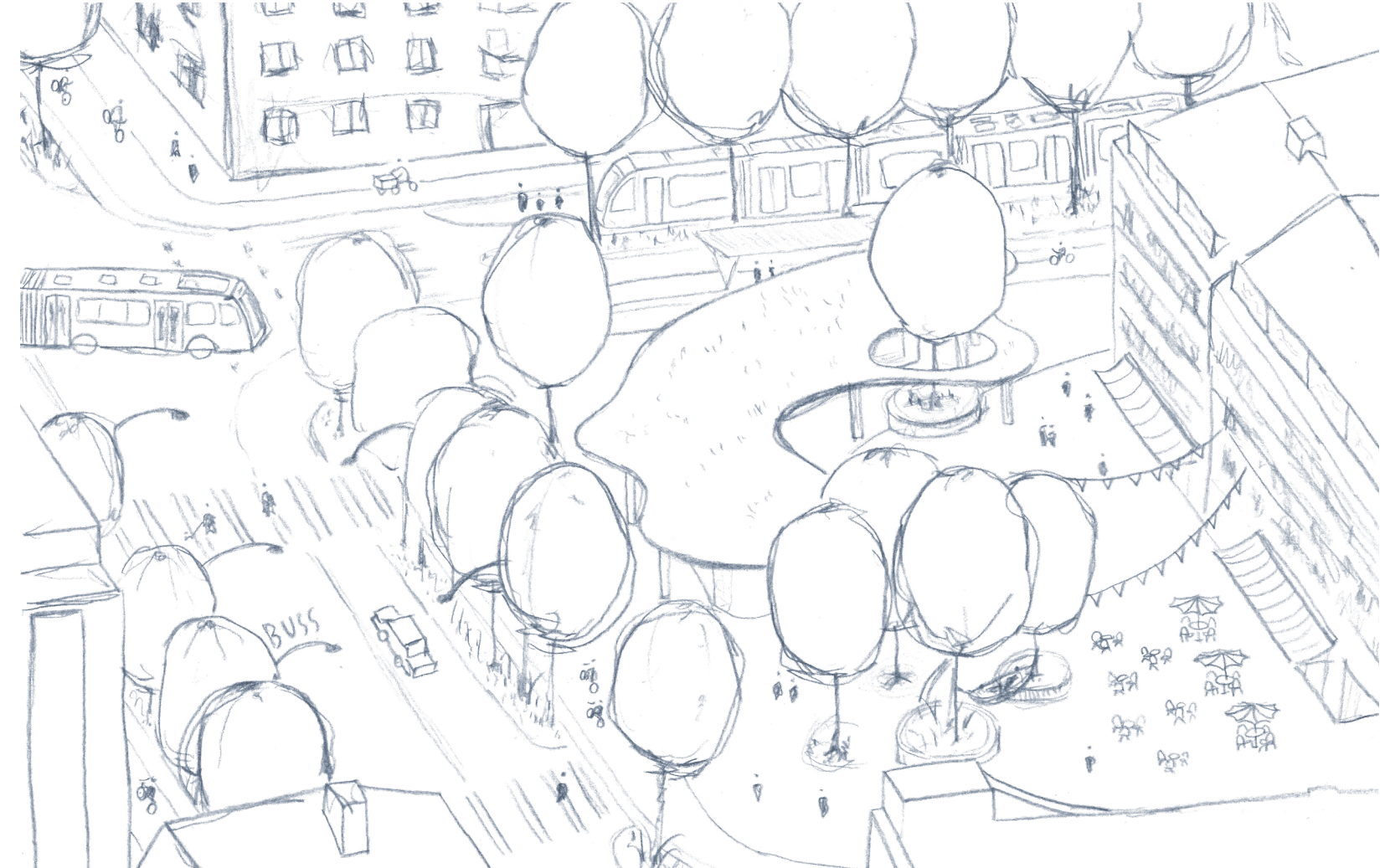


After





*Vision of the new square*



*Axonometric sketch of Dalaplan*

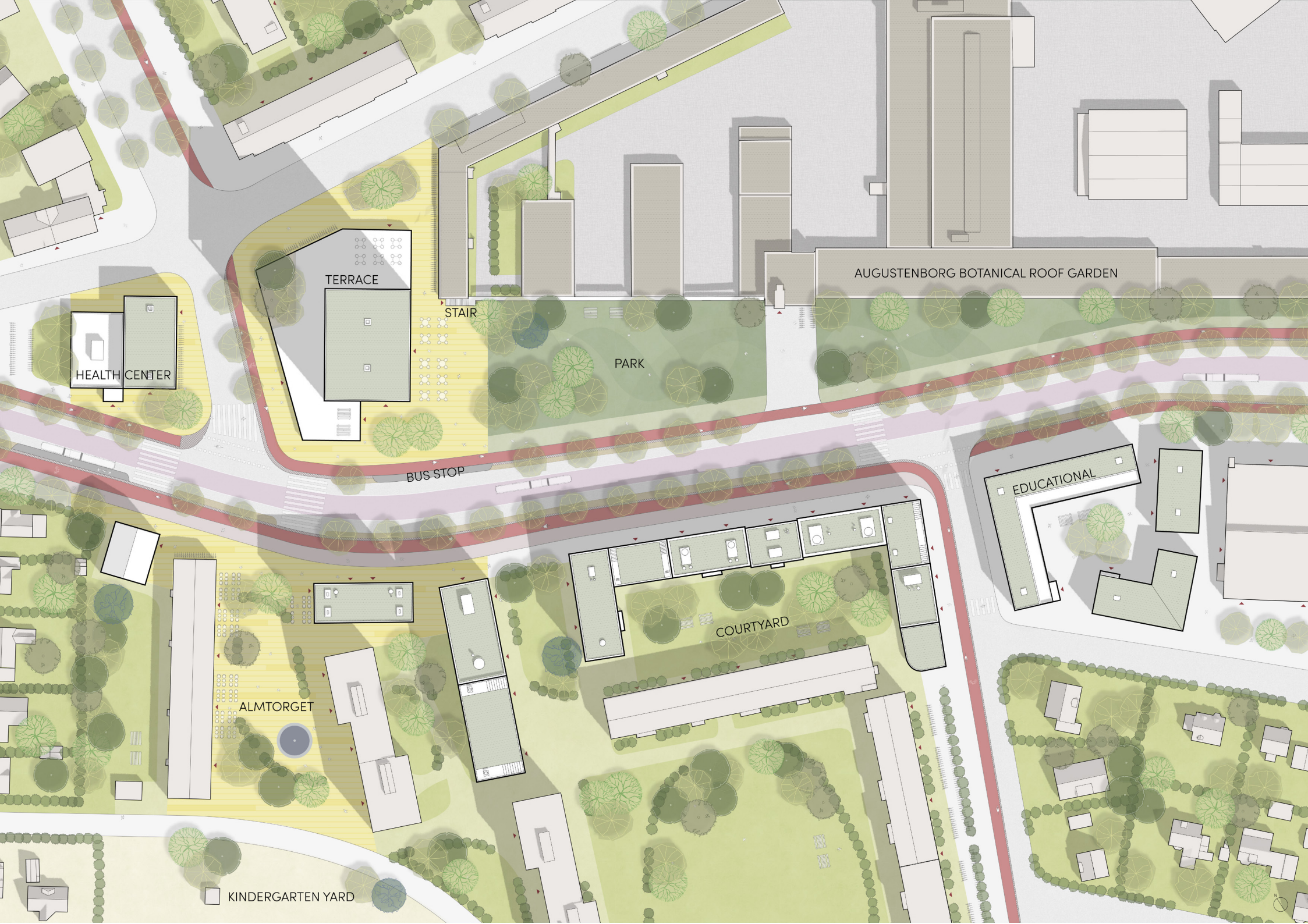




**Almtorget**

- 1. School
- 2. Housing
- 3. Industrial, retail, or commercial
- 4. Gas station
- 5. Health and social care
- 6. Health center
- 7. Almtorget Square
- 8. Housing with active ground floors
- 9. Kindergarten





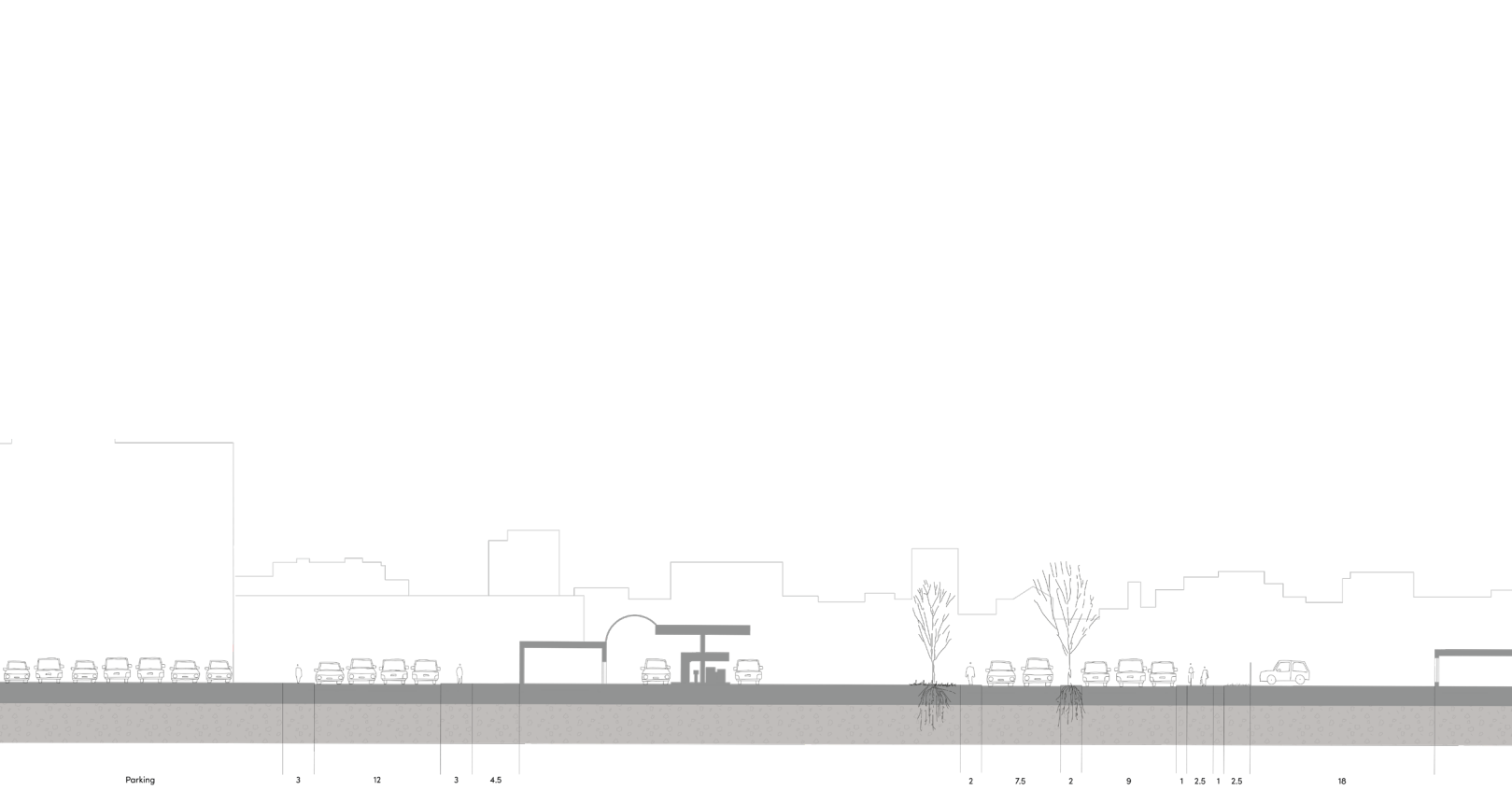
The design idea between Almtorget and Agustenberg was to link the two nodes with Ystadvägen. To achieve this, the road had to be reshaped. A curve could strengthen Almtorget's position with Ystadvägen while allowing Augustenberg Botanical Roof Gardens to develop its activities in an urban park.

Creating the curve meant that some of the commercial buildings along Västra Hindybyvägen would need to move. But the municipality's policy documents support new construction on plots where single-story premises currently operate. Some of the businesses can be relocated to new premises being built.

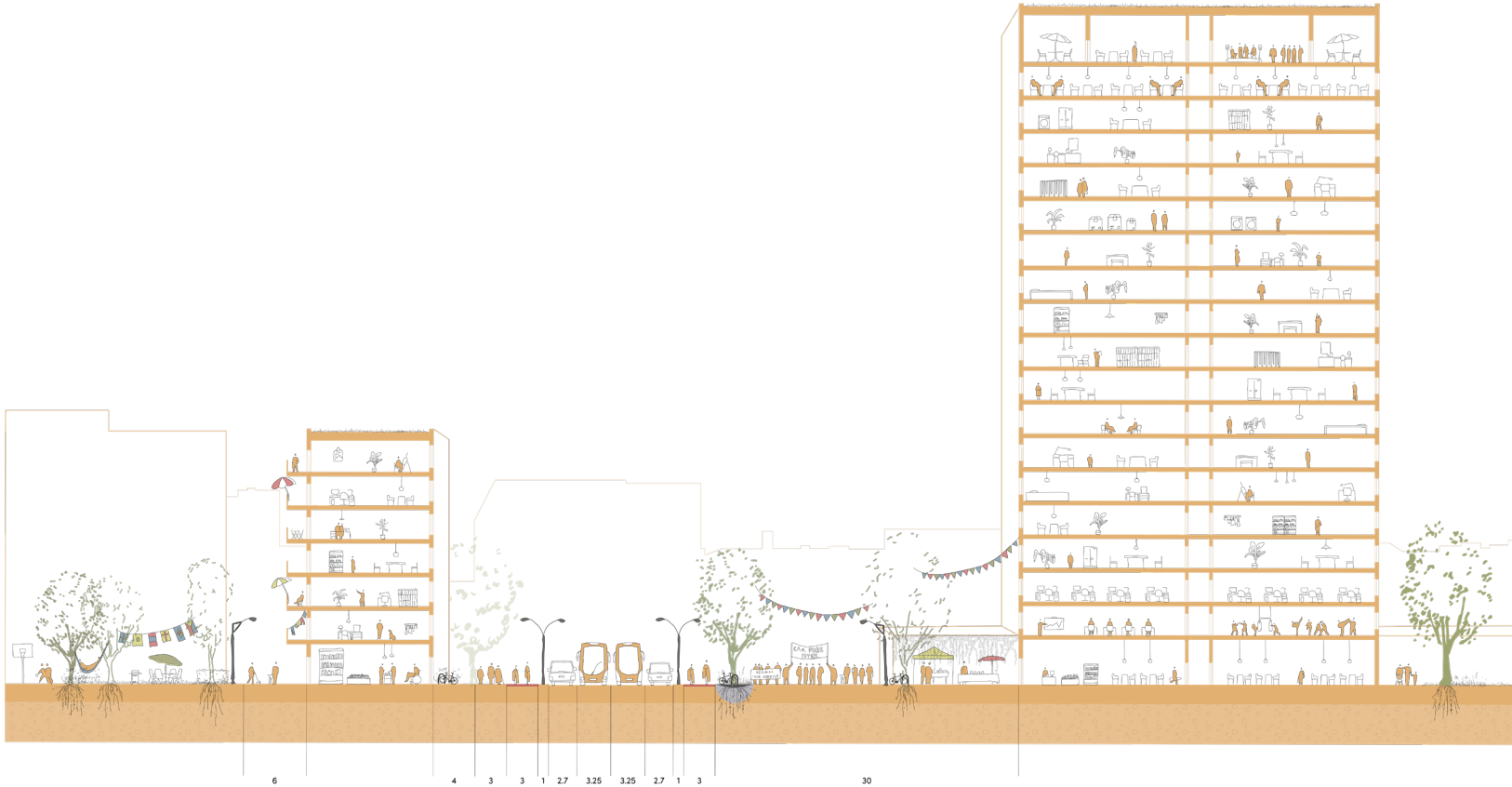
The curved road also contributes to the construction of a new iconic building. The iconic building could be around 18-25 floors high, and thereby be visible at a far distance from Ystadvägen and its surrounding neighborhoods.

As Augustenberg is characterized by its sustainable solutions, it is proposed that new construction in the area follows the same standard. Consistency with Augustenberg's Botanical Roof Garden can be created by creating more active rooftops, for example, cultivation, community spaces, or green roofs.





Before

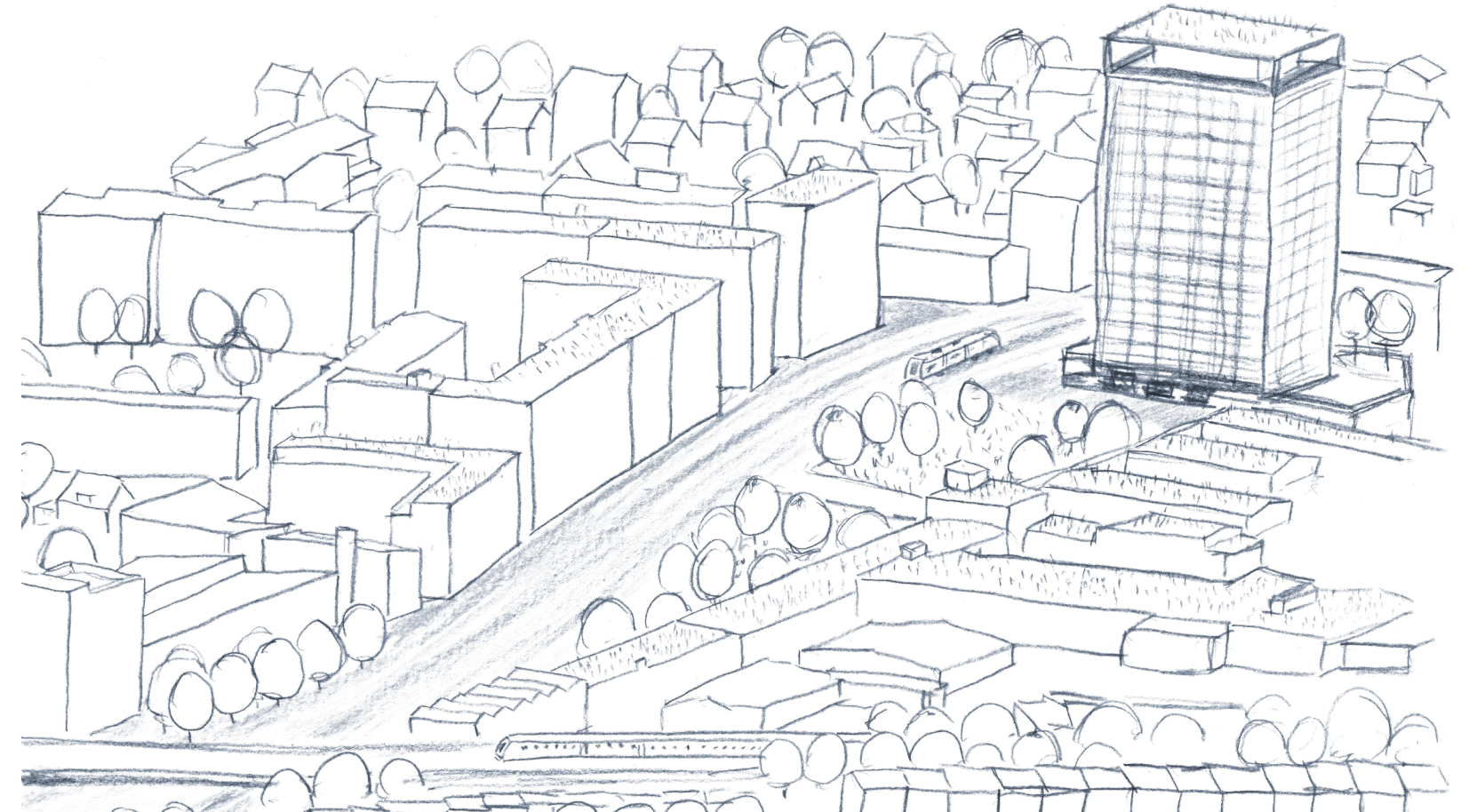


After





*Vision of the the streetscape outside Agustenborg and Almtorget*



*Axonometric sketch of the development around Agustenberg and Almtorget*





**Hindby**

- 1. Park
- 2. Mixed-use buildings; industrial, commercial, retail
- 3. Retail
- 4. Hamburger restaurant
- 5. Housing
- 6. Gas station
- 7. Underpass
- 8. Bus station

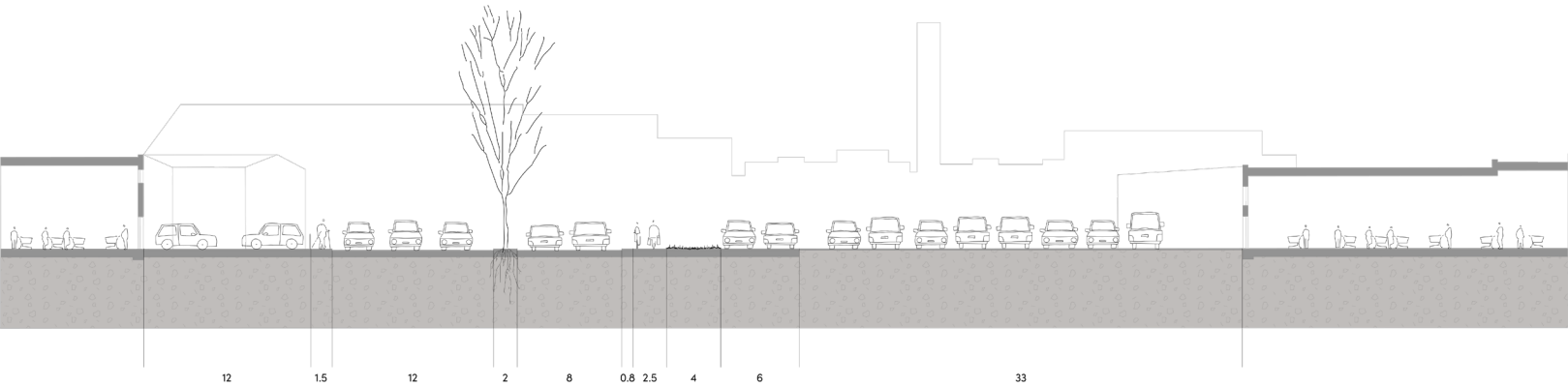




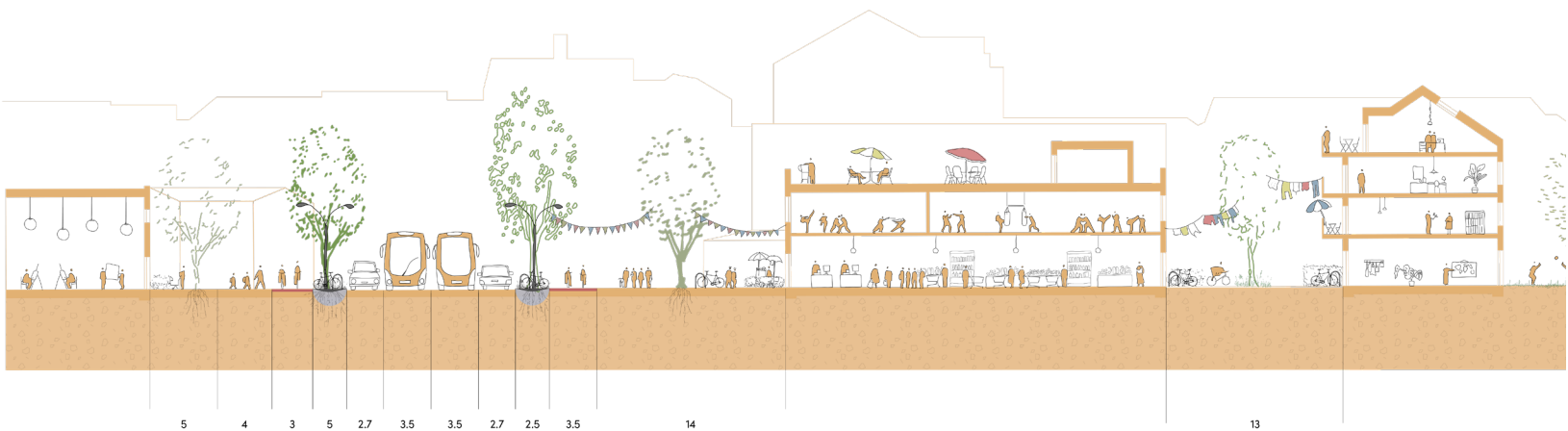
As Hindy borders the inner ring road, this is the first area you encounter when entering Ystadvägen towards Malmö or the last when leaving the city. It is also the end/beginning of the site boundary for my masterplan. Therefore, the idea here is to create a place for switching transport modes inspired by Venice's parking facilities on the outskirts of the city. For this reason, a key part of the design has been created to create a terminus for city buses, as well as a mobility hub. In the mobility hub, which has space for 1000 cars, it will be possible for incoming commuters to leave their cars and easily switch to buses or rent a bicycle. People living in the city that from time to time need a car will also be able to rent those here. The design of the exchange point is centered around a small square where businesses such as shops, restaurants, and grocery stores can operate.

In addition to all this Hindby will be the area where most densification of a mixed character takes place with new housing, schools, offices, and business premises. The new car-free neighborhoods are seamlessly connected to the existing ones to create good connectivity.





Before

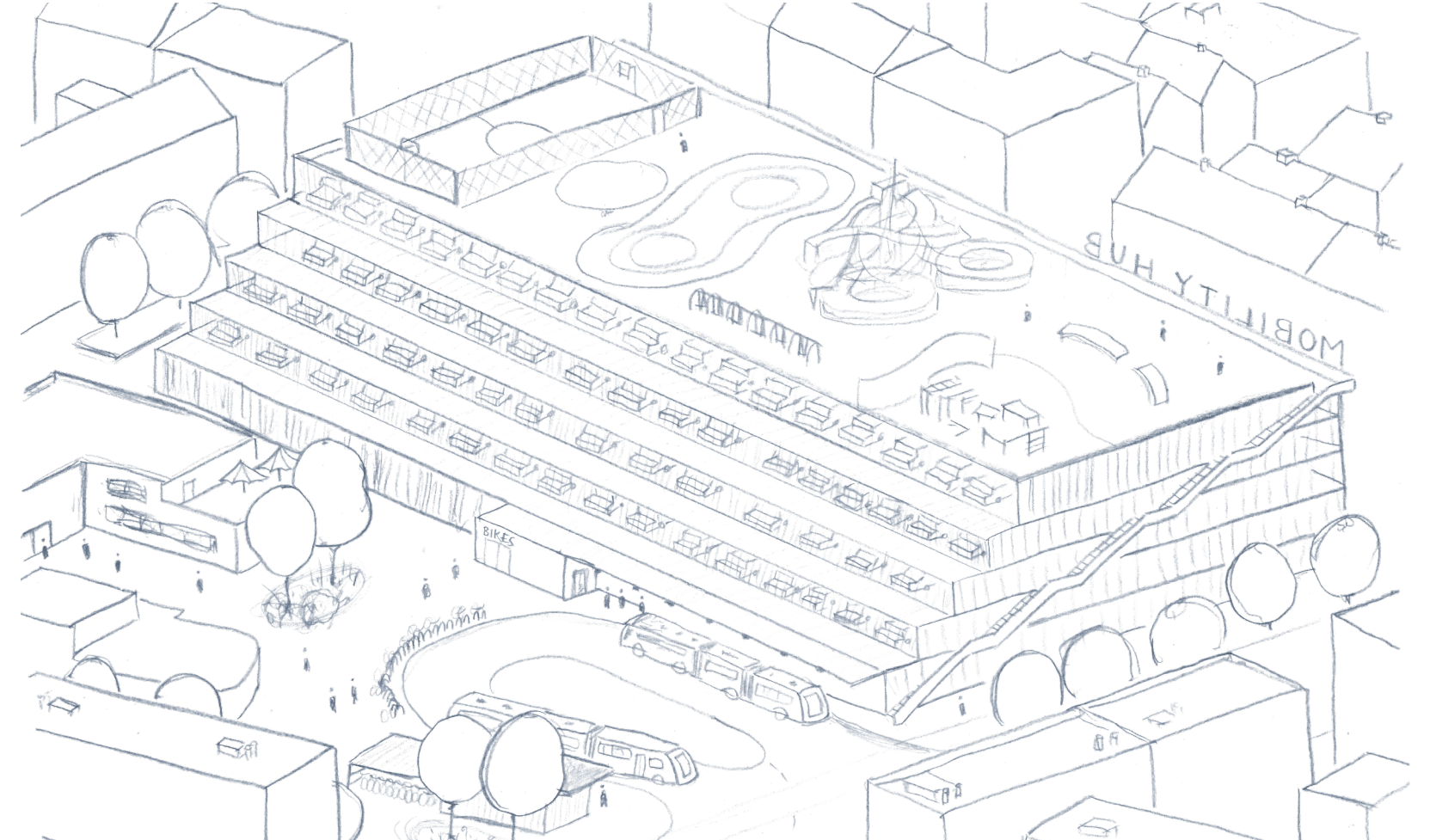


After





*Vision of the new bus terminus and mobilityhub at Hindby*



*Axonometric sketch of the Hindby development*





# **Part 5**

## **Reflections**



*“As people move back to the city their old suburban habit of driving makes traffic grind to halt. They realize cars in the city are like popcorn in a funnel. They start cycling, reading Jane Jacobs, visiting Copenhagen, lobbying for bicycle lines, reading Jan Gehl, hating on people driving in from the suburbs and thinking of themselves as ‘bicycle urbanist.’”*

– Steven Fleming, Velotopia 2013 page 13

## REFLECTIONS

The alarm about climate change is louder than ever and warnings from scientists, environmentalists, activists, and citizens of this planet continue to be raised. Now is the time to act to mitigate the effects of global warming. As Architects and Urban designers, we have a responsibility to make sure that our cities are being adapted for the future, that we take care of the resources we have, and that new additions are of good quality that will support a more sustainable lifestyle. This can't happen without the politicians that are making the final decisions, but until then we should continue to raise our voices. I think that is one of the reasons why a growing number of people are supporting the so-called “War on cars”, advocating for less cars in cities.

At the beginning of the process of making this thesis, I did not know what the finished project would look like. In some early ideas, I thought about suggesting the entire road be closed to car traffic. After two rolls of sketching paper, I ended up with a more realistic approach for the development of Ystadvägen. The choice of still dedicated some spaces for cars on the road section was made

after considering that this is one of the main entrances in and out of Malmö, that the hospital area is adjacent to Ystadvägen, and to ensure that deliveries can reach their destination. The priority of a separate bus lane in each direction where important to showcase to drivers that public transportation will be the fastest option. In the future, hopefully, there will be fewer cars in traffic so that cars and public transportation could share lanes without delaying the flow of public transportation. This would mean even more space for cycle paths, greenery, and, for example, outdoor seating.

With this thesis, I wanted to further immerse myself in the discussion of the amount of space we dedicate to cars, cars' impact on climate change, liveability, and making room for more people in a growing city. Throughout the whole process, I have read and been inspired by the knowledge, thoughts, and opinions of others. The design is a result of research and my own visions, and although it feels like I only scratched the surface and that there was so much more I could have done, I hope this can inspire similar projects in the future.



*Thanks to,*

*Andreas, your knowledge and input have been a great inspiration and help during the writing of this thesis.*

*Teresa, Peter, and Louise.*

*My friends and colleagues at SUDes.*

*Mamma och pappa för allt stöd under de här fem åren.*

*Assar.*



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