

BREAIING BUBBLES

McS02 Urban Architecture Aalborg University

Group 1

2019

READINGGUIDE

This binder is an explorative travel through the concept of Breaking Bubbles. It consists of two reports; A Project Report and a Process Catalogue together. Notice that the binder also withholds bookmarks for comments.

Right behind this page is the start of the project report. The purpose of this report is to unfold Breaking Bubbles. This begins with an introduction of the site and context, followed by five chapters. Each chapter has a small introduction and conclusion. The content of the chapters is an attempt to clarify the project to you, the reader. The destination is to use the basis of the theoretical reflection, analysis and design process as the foundation and parameters to explain the design conclusions. An important notice is how the linear content does not reflect the process. It is a simplification; from shifting between scales, phases, focuses and arguments, constantly adding adjustments to explore and fulfill each potential.

The chapters run as follows:

A - Behind the Bubbles,

Which unfolds the thoughts and theoretical reflections behind the project

B - The DNA of Aarhus,

Is unfolding the backbone, the analysis behind the design

C - Tool Kit,

Here the problem, visions, and design parameters are presented

D - The Pink Hub

Is presenting a design proposal of Breaking Bubbles at Bagnegårdspladsen, through renders, sections and diagrams.

E - Conclusion

Evaluation together with the reference-, illustrations lists and bibliography.

F - Appendix

Is the last chapter keeping a structure of all the background knowledge referenced throughout the report.

The Process Catalogue is placed to your left under the rubber band. This is created with the aim to explain the process through an explorative travel into the universe created; under, doing and by the concept of Breaking Bubbles. It should be read as an addition of the story behind the making of Breaking Bubbles. It is narrowed down into this small catalog told through five steps, unfolding ideas, brainstorm, precedents and inspirations, site visits and discussions.

Behind the Process Catalogue you will find some bookmarks, to place comments, wonders and questions on.

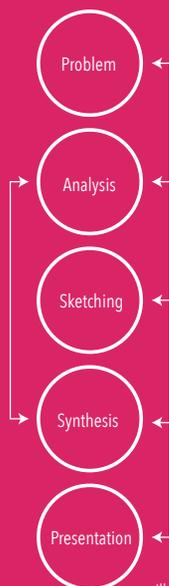
The sources in both the reports have been listed according to the Harvard method. Literary references and articles by; (Last name, year) and webpages by (media/publisher, year). The illustration used in the reports are primarily own shares, the external is referenced in the illustration list by (Illu. xx).

PREFACE

This project is based on the module 'Designing Urban Mobility' and is produced by group 1, MSc02, Urban Design, Department of Architecture and Design and Media Technology at Aalborg University. The project has been produced in parallel with three modules; 'Theories of the Network and its Technologies', 'Simulating and Modeling Urban Flows' and 'Site Morphology and Landscape Techniques'. Running from the 11th of February 2019 to the 6th of June 2019, where the project is handed in. It will conclude in an oral examination on the 20th of June 2019.

The objective of the project module and the project is to understand the increasing importance of mobility within the contemporary network city. The project site is at Aarhus Banegårdsplads, the central train station square. It is a busy urban network node that spans from local to national. Due to the increasing need of new transportation methods the square has to be responsive in the creation of a new critical-creative urban square where places for arrivals and departures, urban flows, variety of urban lives, multiple urban functions and historical traces are incorporated (Semester description, 2019).

The report has been made upon the Integrated Design Process that is an iterative method and is managed through five phases as seen in illu. 01. The different phases interlink and interact with each other and therefore the iterative process permit to turn back to previous phases with new knowledge and rethink the final outcome (Knudstrup, 2005).



Illu. 01 - The Integrated Design Process

TITEL PAGE

Breaking Bubbles

Designing Urban Mobility
Urban Design MSc02
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ABSTRACT

The title of the thesis is "Breaking Bubbles". This refers to the backbone and aim of this project which is to 'break bubbles'; influence and afford a new city structure and an aim of making an impact on how we act, move and experience the city.

This booklet presents the design proposal for a New Banegårdsplads in Aarhus, which today is a busy mobility hub, shaped by taxis, buses, cars and hard surfaces. Here people move from A to B, not pausing or noticing the city surrounding them.

Technology has revolutionized the society, it has impacted and changed how we move, think, communicate, live and interact. The internet, social media have made us a part of a virtual world. A world where you shop, learn and socialize online. You are online when waiting for the bus, driving your car or walking to work. We are not present. We do not talk in the public, to strangers. We live in private, virtual, bubbles.

The term Breaking Bubbles wants to change this by bursting the invisible bubbles, and letting noise and friction from the surroundings be a part of the everyday experience of the place. Creating new spaces to enhance already exciting features by visualising the city. Creating a triangulating (Helden, 2015) element by using movements, the interaction between humans and to 're'-present humans. Also rethinking the traffic by adding a Bus Rapid Transit, BRT, going through the square, connecting Banegårdspladsen by the thought of a safe, fun and efficient space.

Breaking Bubbles will investigate how it is possible to transform a no-present-society and busy-traffic junction into an interacting public domain (Hajer and Reijndorp, 2001).

It is not just a pink provoking statement or art piece. It is something more. It is a reminder of how to change focus in designing the city, to incorporate features as; safe, fun and efficient elements in a similar order. It is a toolbox of statements of how to make, create and afford integrated design, combining professions; as the technicalities from the traffic engineering and the creative visual from design. Breaking Bubbles, provides non-location specific principle tools for design solutions that afford social meetings, and experience while planning for different mobilities and activities.

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**"Art enables us to come together
in a common language." (Open-
ART, 2008)**

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Shopping Center North

University Park

Botanic Garden

Den Gamle By

Architecture School

Mols linjen

Magasin

VIA University Collage

Godsbanen

ARoS

City Hall

Bus Terminal

Dokk 1

Musikhuset

Banegårdspladsen

Train Station

Bruuns Galleri

Swimming Stadium

Tivoli Friheden

Ceres Park & Arena



Destinations

Green areas

Site location

Main roads

Railway

Ferry connection

INTRODUCTION

Banegårdspladsens is the center of mobility and flow in Aarhus as seen in the Strategic Context (illu. 02). It creates connections to the rest of the city and other regions through a bus, train or light rail and closeness to the pedestrian street and makes it an important connective piece. All these connections and flows create potentials for Banegårdspladsen to consist more than hard surfaces, bike parking, bus stops, busy routes, smoking corners, kiss and goodbyes, parking and taxi spots. It could be a catalyst of change and base for meetings and experience, an exhibition of the life, of Aarhus. But the square does not offer much more than a transit hub.

This project has the aim to change. Change mindsets, structures, focuses, movements, surfaces, flows, norms, habits, taboos, thoughts, and presence. To provoke and highlight the monotone and busy human that is too self-centered to take their eyes away from their smartphones too busy to feel, experience, observe and see the world they are actors in. This is what Breaking Bubbles has emerged from. A non-presence behavior caused by the technology evolution. A smartphone society. Where everything is no further away than a swipe or click.

The project takes departure in the initial problem stated by the Municipality of Aarhus:

How can this place become a livable and attractive urban space while still performing as a mobility hub?

(Teknik og Miljø Aarhus Kommune, 2019, p. 25)

A

BEHIND THE BUBBLE

Bubble is as a noun defined as a thin film of liquid forming a hollow globule around the air or a gas or something lacking substance, stability or seriousness. The word probably is of Scandinavian origin, as in Swedish; spelled *bubbla*, in Danish; *boble* and in Dutch *bobbel*. Bubbles are in financial terms used to describe fragile markets that can burst at any time. It is used in the idioms "To burst someone's bubble" which means to break down someone's optimism with realistic facts (Dictionary, 2015).



Bubble [Buhb-uhl]

Breaking Bubbles is a reaction to the busy-always-on-the-move-with-all-attention-in-our-smartphone society of today. It is a concept of how to reactivate the subjects, the humans in their environment, to experiences the public, to be in the present, and to see each other. It is taking the effects of the technology into the consideration of a design matter to create a different, safe, fun and efficient cityscape. It is a reaction of the non-present human, too busy and outstripped to notice the life lived around them.

It seems like a new phenomenon, that is caused by the technological evolution, but actually already in 1903 George Simmel talks about an overstimulated human in the city. He concepts the reaction of it the *blasé attitude*. Caused by the balance between being an individual and a part of a society which collides in the cityscape, by traffic lights, busy individuals, advertisement and noise. It leaves an overstimulation of the senses. Simmel argues that the city is an overstimulating feature and hereby a protective reaction; *the blasé attitude*, which closes out the surroundings (Jensen, 2013). Now the smartphones can be seen as a *blasé* reaction, when zooming out of the present and into the virtual reality.

The *blasé attitude* does not only need to be a negative thing. Being more aware of it can also help us to isolate some impressions and take care of the growing level of stress. To design with this knowledge it is possible for people to interact and chose different levels of presents and interacting behavior in the public. So hereby making a design that can break bubbles without forcing unnecessary pressure on people to always interact with the city, but making a bubble that still creates a connection. Even though we are busy people moving in between A and B we sometimes need to take the time to pause and see that people moving can be a part of the art, the pulse of the city, for those who are watching. To stage the infrastructure, not only as something practical but as something aesthetic, an experience. Instead of romanticising the city as Ian Hamilton Thompson states in, *Ten Tenets of Landscape Urbanism*, how to instead use the movements and differentiability in the city, activate it instead of hiding it away (Thompson, 2012).

Breaking Bubbles wants to break down these private bubbles. It aims for a new agenda on how we design and use our public spaces. Breaking Bubbles answers Maarten Hajer and Arnold Reijndorp's call for a new strategy of how we see the public spaces, as more than an in-between, and how we should treat them as *public domains*. It concepts the social development in the urban networking city: "We define '*public domain*' as those places where an exchange between different social groups is possible and also actually occurs" (Hajer and Reijndorp, 2001 p. 11).

The theory of *public domain* asks for space that affords interaction, creates catalysts for different social meetings, spaces that can do more than being an in-between. Breaking Bubbles sees mobility as more than just a movement from A to B (Jensen, 2013), as well as public spaces as more than spaces. These are interactive features that breaks bubbles and creates room for interventions, meetings, making new conversations, thoughts, friends and for being present.

So how can we make strangers more likely to talk?

William H. Whyte, American urban anthropologist, an observer, states a phenomenon he calls '*triangulation*' which could be one answer to this. Whyte studies human behavior and in his research he states, how we are more likely to talk to a stranger if there is a presence of a stimulant; it could be a musician, artist, entertainer – a third element or person which creates an interaction or a subject to admire or discuss (Helden, 2015). This is what Breaking Bubbles aims to do, to state and to use the already existing elements as the triangulating feature. Jan Gehl talks about how humans want to observe humans; so what if we exhibit, use, the moving human as the element, and by design makes people break other people's bubbles, just by moving or staying in the public room (Gehl, 2017).

Communication has switched platform, forum. From a social life in the city to social life in medias. It is no longer acceptable to create conversations in the public; while waiting for the bus, traveling between A and B, grocery shopping, running in the fitness center, fueling up the car or parking your bike.

Is it a change in the unwritten rules or is it the change in the use of technologies?

The (unwritten) rules of the society today states that if you start talking to a stranger you are either weird, mental ill, drunk or old. Also there is a difference depending on your generation. Young people have a tendency to communicate with their virtual society or just block out the world, where the elderly generation has an easier way around communication (Poulsen, 2015). The Danish society is also criticized by visitors and foreigners to be very private people. Lifestyle expert Henrik Byager explains it by "Unformal meetings with people we do not know or are not sure about who are, we are very very careful around. Many think, that one we have not met, is not necessarily a friend." But what he also states is; "But when you get through the iron ring, the Danes are some of the most social, giving and helpful, open, people." (Own translation, Kjeldsen and Poulsen, 2015). Here this concepts how we live in our own bubbles, afraid to disturb people in their bubbles.

In an experiment leaving a demented woman for somebody to help her only 4 out of 60 did offer their help (Stefani, 2017). But what do we gain from staying in our bubbles? Do we think that freedom is something we gain individually? Because would a gesture, action or word matter if there were

nobody to receive it? This is the statement of the German philosopher Hannah Arendt (Hedegaard, 2016). But today it seems like we have made a distance between the subject, you, me and the public. A modern person is a private person. We need to reconsider how we act and create relations in the public.

How can we break down the frightened behavior towards the physical communication?

Health and Wellbeing is the focus theme behind this project. Having contact with Christina Fruergaard-Pedersen, Exercise and Health coordinator at the Municipality of Aarhus, let the attention to Aarhus Municipality's focus; the fight against loneliness, and how they are using the social media and campaigns on posters and postcards to create more interaction between people in the city.

Generally, loneliness is a growing problem in the Danish society. On Copenhagen University, the Institute of Sociology and Happiness Research they are also looking into this phenomenon. In 2015 they made research on Facebook involving 1095 test persons, where half of them were asked not to use Facebook in a week and the other part just to continue what they normally did. From questions asked at the beginning of the experiment and to the end, the number of people telling they felt depressed went from 33% to 22% and loneliness from 25% to 16%. This is a picture of how social media constantly has an impact on us. 3,5 million Danes have a Facebook account and most are online several times a day, looking into the constant stream of holiday pictures and other burnished, perfect stories (Brixen, 2016).

Technology breaks us apart. But can it also connect?

Different apps are trying to create connections. GuideCatch is an app that wants to connect people in informal meetings to be friends or just have a talk - do we need an app for everything? Has the society changed so much? Is it no longer okay to just meet people and talk? We are so afraid of disturbing, but why not turn it around and think of it as a positive factor to the other person's day? We have so much focus on effectiveness in city and infrastructure design, but what about communication? Maybe instead of being afraid, could we dig deeper and change the issue? (Munch, 2017)

Is it a utopia, that the technology can create the meetings we are too shy or private to make in reality? Stine Lomborg, Media Scientist, does not think it is a solution, as she says; "We socialise with the people we know." (Own translation, Munch, 2017). Her point is that it is the unsafe, unsure and undefined in meeting new people, that stops us in doing it. If an app should succeed with this, it needs to proclaim tight frames for the involved, so you know how to avoid awkward situations. The unsure situation is also what happens in informal meetings or conversations in the public space, on the bus or train, because here we do not know the frame. Will it

be awkward? So not even the virtual world can assure this. As she states; "We are sitting and staring into our screens exactly because we want to avoid contact with the person sitting next to us" (Own translation, Munch, 2017).

But as seen before one tendency often creates an opposite as well. Today there has been a shift from everything being digitized; letters from the bank or doctor to monthly payment check or advertisement. A lot from the physical environment have been shifted into the virtual; now you can study, have skype meetings and do shopping from home or on the move (Andersen, 2016).

The environmental green thoughts have taken over all arguments from these physical pieces of papers. But we are losing grip. It is harder and harder to stand out, if it is about news, communication, and advertisement. It is all just the same click. This is making room to take a step back and forward, because suddenly, it is different to be in the physical world, with letters and paper or social interactions. So when all is the same it makes room for contrast, to pull the world in another direction (Andersen, 2016).



"I look down. Noticing the surface of the earth. The skin of the city". (Shelly Smith in Lanng, 2017, 23, p.45)



Illu. 04 - Jeppe Hein Distance

Sense the City - Jeppe Hein



Illu. 05 - Jeppe Hein Smoking Bench

Can Breaking Bubbles be the catalyst for digging back into the physical world?

Jeppe Hein is a Danish artist living in Berlin in Germany and educated from the Royal Danish Art Academy in 1977 and from the Städelschule für Bildende Kunst in Germany. Hein is questioning our way to sense the city. He is known as an artist that integrates the observer as a part of the creation of the design. He likes the experience of an exhibition to be subjective. There is no right way to experience it, also if you do not see everything in it. Then you would anyway have experience from what you saw. He is comparing it with the experiences in the real world, the cityscape, as a quality. When we experience the city, every individual will experience something different, and will never be able to experience everything. In Hein's universe, the senses are in focus and his world always works with activating something more than the visual sense. In 2009 he made an exhibition at Aros Art Museum in Aarhus, that was called Sense City. Here the point was to enhance the way we sense the city and question it. Hein is working in a playful and curious universe, which makes unexpected meetings between humans. He has a big focus on activating different generations by his art, hereby his art is communicating on different levels to create experiences for different people (Lund, 2009).

The city is an experimental moving and changing art installation itself, by people inhabiting it, and setting the scene depending on static and dynamic parameters. OpenART is Scandinavia's largest Biennial for contemporary art, which states the contemporaneity of the city and its elements. The Biennial does by exhibiting around 100 artworks of untraditional urban spaces enhance creativity, and awaken a new way to experience the city. In the Biennial works of art takes over the streets, squares and public spaces in the city of Örebro, the sixth largest city in Sweden. The city is used as the base for intervention and experience by being a moving and changing art piece (OpenART, 2008).

Both Jeppe Hein and the artworks of the Biennial is working with different *affordances*. Some afford presents others afford social contact. In this way he makes art become the interac-

To understand the city, it is needed to understand people, to design a city it is important to design with people.

ting piece between humans, as friends or as strangers. When in the city, as Simmel also has stated, we are constantly in contact with something. Also, Psychologist James J. Gibson is working in this field, where he works by incorporating the noun *affordances* from the well-known verb to afford. If focus on the interactions in the physical environment on how we interact with our surroundings, but in the opposite way also how it interacts with us. Hereby it is focal on the relationship between the observer and the elements. In this way, the concept should help to understand, not predict, people's behavior. This highlights the prediction of how no human is the same, and how no space or element can please all people (Gibson, 1986).

Breaking Bubbles digs right into this field. It wants to evoke and create a city full of interaction and experience. It wants to afford meetings, create a language, so a stranger is not a stranger and a conversation do not make you labeled ill or drunk. It will activate technology as more than the private sphere. It wants to make the mobility hub more than A to B and more than a room for private bubbles. It aims to break bubbles by making a new, but common bubble; a bubble of transit.

**"Art enables us to come together in a common language."
(OpenART, 2008)**

B

THE DNA OF AARHUS

To construct and design a performative urban mobility hub it is important to address the challenges related within the context. Therefore it was important to include the context from the very beginning and dig deeper in order to get all the untold knowledge.

All analysis ended up highlighting different aspects and giving the full understanding of the context and Banegårdspladsen.



WHAT MAKES THE DNA OF AARHUS?

The atmosphere in Aarhus reflects how the city works, and how the city is used.

Aarhus is a pulsing city, that offers many different opportunities. A great part of the identity of the city is defined in relation to culture, art and music, which is an integrated part of how Aarhus is perceived (Aarhus2017, n.d). This is also contributing to Aarhus as a busy city, where there always happens something. The University of Aarhus, has attracted many students, which create creativity, vibrancy, and a pulsing nightlife.

Aarhus is a city where there is room for differences, and therefore there is a greater diversity in the population, and many nationalities are present. This diverse population has created unity through helpfulness, which also means that Aarhus is a city where many people do volunteer work (Frivillighed, 2016).

Aarhus is a green and sustainable city, which is both reflected in Aarhus Municipality's planning and in the population's own initiatives. Today Aarhus is known as a bike city (Visitaarhus, n.d.).



ONCE UPON A TIME...

The development of Aarhus reflects the city's richness of history through time. From being a viking city Aarhus has evolved to be a city that is known for its university and culture. As shown on illu. 07 the different key developments and initiatives has formed the city's identity and today become a huge part of what you know Aarhus for (Aarhus Universitet, n.d.).



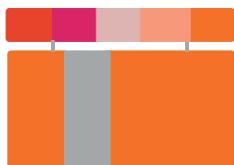
Viking city and trade 800 - 1050



Trade and university city
economic and population growth, one of Europe's
largest ports. highly educated population
1970- now



City of smiles - 1948 -now



ARoS museum of art - opens 2004

DOKK1

Dokk1 culture center - opens 2015



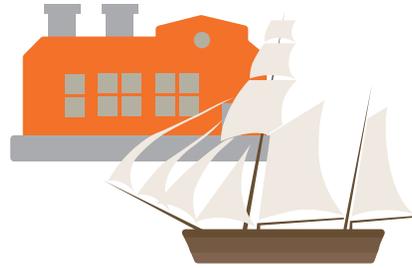
Kattegat connection - in future



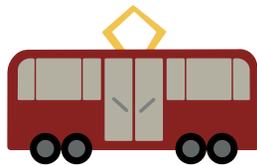
Jutland's unofficial capital - now



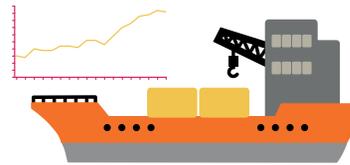
Medieval city governed by the church 1050-1536



Borough - port city and factories
1500 - 1850



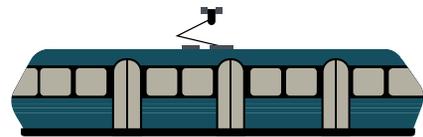
Tram - 1904- 1971



Industrial city
coastal port establishment, Denmark's second
largest city, population and economic growth,
foundation of university
1850-1970

ÅÅRHUS - 2017

European Capital of Culture - 2017



light rail - opens 2017



European volunteering capital - 2018

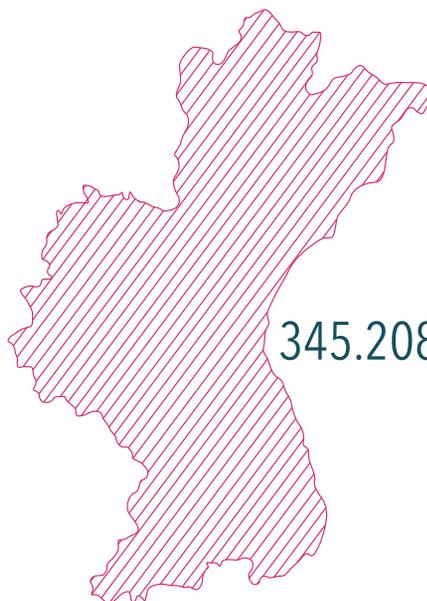


plans to plant 10.000 trees - 2017 - 2025

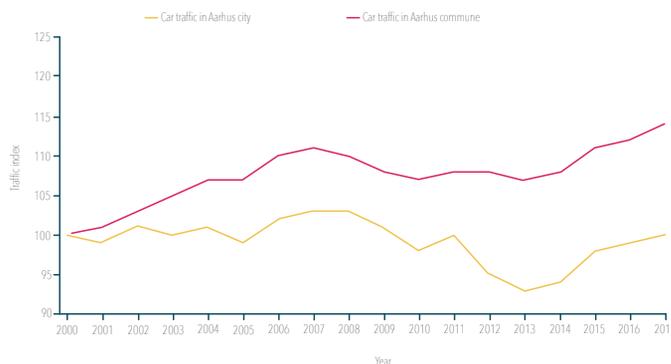
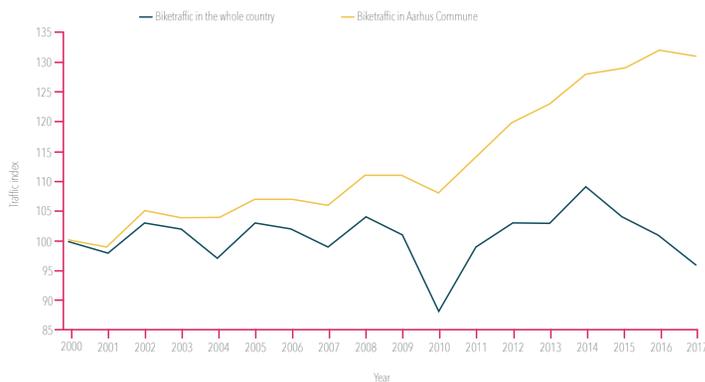
AARHUS IN NUMBERS

Aarhus is the second largest city in Denmark, with 350.000 inhabitants in the municipality. The city is undergoing great growth and has a large standing in business in the region of central Jutland, with over 450,000 workplaces. These workplaces cause many people to travel to Aarhus every day, and for many, Banegårdspladsen is their first meeting with Aarhus.

In order to maintain the status of being an attractive city, mobility is very important for Aarhus Municipality. Their commitment and mindset to topics such as accessibility, health, and the environment have yielded positive results, illu. 08, but they are still far away to achieve their goals (Aarhus Kommune, n. d.).

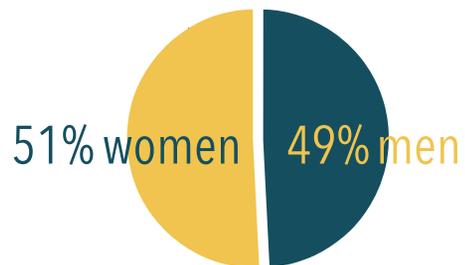


345.208 citizens



“The Street is a stage, and the sense that an audience is watching pervades the gestures and movements of the players on it.”

(Willian F. Whyte in Jensen, 2013 p. 45)



61.982 people travel to Aarhus everyday

ARRIVAL



Illu. 09 - From the shopping street



Illu. 11 - From Banegårdsgade



Illu. 10 - From Park Allé



Illu. 12 - From M.P. Bruuns Gade



Illu. 13 - From Ny Banegårdsgade



Illu. 14 - From inside the train station

"The places of today are perhaps less in accordance with moral and aesthetic codifications from golden days of modernist planning and architecture. Nevertheless, they are sites of interaction and 'staged mobilities' in the everyday life of billions of people." (Jensen, 2013, p. 26)

The arrival to Banegårdspladsen depends on which side you enter the site from. Its appearance is different due to the buildings surrounding it. From Banegårdsgade you arrive at the busy crossing node at M.P. Bruuns Gade where buses from Park Allé both comes from and goes to Banegårdspladsen. When you come from within the train station you go from a dark and loud place and out to the bright but still busy square where people are in a rush to get on the next bus. When you enter Banegårdspladsen from the shopping street you see the big historical building rise in the horizon as well as some small glimpses of movement. When approaching the square, the common experience is that people and traffic rush around, and you understand the importance of the area as a thoroughfare.

MOBILITY

All roads lead to Rome, or in this case Banegårdspladsen. The project site is located in the center of Aarhus, and there are good possibilities for greater connections out of the area.

The site is well-served by public transportation, as seen on illu. 15, and within a radius of 300 meters, you will find a multitude of bus stops, the bus station, and the train station. Today there are no dedicated roads for just public transportation and bikes. This leads to negative experiences with insecurity, queue, and noise, app. p. 105.

It is clear to see that the permeability is good, but there is so much potential in the area. The fact that Aarhus wants to be the leading bicycle friendly city in Denmark makes the result of this analysis critical (Aarhus Kommune, n. d.).



Illu. 15 - Mobility

MOBILITY ZOOMED IN

This analyse gives a better understanding of all the different modes of transportation surrounding Banegårdspladsen. It shows a more detailed explanation of the facilities that exist to handle the traffic.

Public transport has a large standing, and there is a lot of dedicated space for bus and train. The buses have many bus pockets that will satisfy all the different local and regional routes, illu.16. The same goes for the trains. The light rail

and the regional train get their own space south of the area. To deal with the travelers by train, it is necessary to have the taxi and kiss-and-ride as a supplement. The problem lies in the fact that there is too much space dedicated to these, and shortly parked cars take up a lot of space. Especially when they have good opportunities to park in the underground car park in the shopping center, Bruuns Galleri..

When it comes to cyclists there is a larger parking facility west for Bruuns Galleri. Inside the site, there are several small parking facilities, but it still does not satisfy the demand.



Illu. 16 - Mobility zoomed in

MATERIALS

Hard surfaces surround the central train station and its buildings. When you are traveling by foot you pass surfaces that have different tactileities - the fast ones with almost no texture and the slow ones that offer you a bumpy ride due to their gaps in between and not polished finish. Are you traveling by bike or car, or maybe even bus? Then your ride will be smooth on the asphalted roads.



MOVING PEOPLE

Banegårdspladsen is a busy place, where many different people are moving. Elderly, young, children and couples - all moving at Banegårdspladsen.

People are moving at different speeds, some are making a short stay, while they are waiting for the next bus, waiting for a friend, talking with a friend or smoking a cigaret.

While other people are slowly walking across Banegårdspladsen with the intention of enjoying. Enjoying a cafe latté, a shopping day, or just enjoying a walk.

A last group of people is rushing across Banegårdspladsen to just get as fast from A to B as possible, they are rushing to work, school or to a meeting.



Illu. 18 - Moving people

Ole B. J: " People not only observe the city whilst moving through it, rather they create and re-create the city by moving through it." (Jensen, 2013, p. 36)

THE INTERSECTION

Is a poem taking you through the glimpse of different meetings, problems and atmospheres happening at Banegårdspladsen. It is based right in the intersection watching the square move, breath, argue and connecting.

It is a mix of feelings and a mix of traffic. Chewing gum wads, big, small, grey, white
TICK, TICK, TICK,
TICK, TICK, TICK
TICK, TICK,
TICK....
TICK, TICK, TICK, TICK
Odor of cigarettes. Exhaust gas, cars speeding up to cross the intersection before the red light. Maybe because someone needs to catch the train. The buses squeal and there is a heavy sound from the wheels against the wet asphalt and the mechanical ventilator. TICK, TICK, TICK,
TICK, TICK, TICK, TICK,
TICK, TICK, TICK, TICK,
TICK, TICK, TICK...

It is hard to make it over the intersection when your feet don't want to move or lift anymore as when you were young. Some runs fresh across; cowboy jeans, trolley – the sound of plastic wheels on the wet tiles. TICK, TICK, TICK,
TICK, TICK, TICK, TICK,
TICK, TICK
The taxis are fighting for the limited spaces in front of the train station. Tick-over chat. Shouts, anger – a couple are having an argument and walks back and forth pushing each other, yelling and crying. Back and forth up and down in controlling their anger. It is not comfortable to have an argument in the public. TICK, TICK, TICK, TICK,
TICK, TICK, TICK, TICK, TICK, TICK,
TICK, TICK, TICK, TICK, TICK, TICK

Everyone is in a hurry; cars, prams apart from the lady with the walker, she is just hoping to get to the middle of the intersection before the light turns red again and impatient car drivers' patience are tested. TICK, TICK, TICK,
TICK, TICK, TICK, TICK,
TICK, TICK
The light is red, considers if it is worth waiting for green, should you take the chance? Some go with the temptation, some follows the flow and others wait because the law says it is the right and safe to do. Dok... Dok...dok... dok... dok... dok....

RED LIGHT The kerb is a challenge; dunk, dunk, when you have a walker.
TICK, TICK, TICK, TICK, TICK,
TICK, TICK, TICK, TICK, TICK,
TICK, TICK... DOK.... DOK.... ,
TICK, TICK, TICK, TICK, TICK,
TICK, TICK , TICK, TICK, TICK,
TICK, TICK, TICK, TICK , TICK,
TICK, TICK, TICK, TICK, TICK,
TICK , TICK, TICK, TICK, TICK.....

It goes quick,
time, from green
to red and red
to green. You can
see how the warm
air evaporate from
people into the cold
cloudy March air. Lip
salve is add to the lips,
the lips massages each
other and the salve into
the skin, protects the
soft skin from the cold.
The scarf is tightened one
more round around the
neck. **TICK, TICK, TICK,**
TICK, TICK, TICK, TICK,
TICK, TICK, TICK, TICK,
TICK, TICK The tick sounds
announcing the green light is
out of step as a man limping.
DOK.... DOK.... DOK.... It always
turns into red again. Breaks how-
ling, buses sighs., **TICK, TICK**

1, 2, 3, 4, 5, 6,
7, 8, 9....69
HALF SECONDS
TO CROSS THE
ROAD? DOK....
DOK...DOK... Tights,
naked ankles, boots,
sneakers. The garbage
truck whizzes across
the intersection. Can
we walk before it turns
green? People standing
impatient. The taxis are
playing a game of Tetris,
reverses, driving forward,
turns, a little to the left, a
little to the right. A smell
of deep frying; pork, where
does it come from? **TICK,**
TICK, TICK, TICK, TICK,
TICK, TICK, TICK, TICK,
TICK, TICK, TICK, TICK,
TICK, TICK, TICK, TICK, TICK..

TOOT!! (honking
the horn) the
taxi drivers get
impatient. Heads
sucked into the
phones, foreign
talk, snowsuit, hoo-
dies, winter boots,
Nike runners. **1,**
2, 3, 4, 5, 6, 7, 8,
9.....72? It is im-
possible to keep up
the count. Focus: 23
or 36 seconds? Is it al-
ways green in the same
amount of time? Hum-
ming from a motorbike,
BEEP! BEEP! a catering
truck reversing. I
could stand here
forever and tell
unending
stories.

A phone call, a
bike dragged
over the kerb
thud, thud, me-
tal clatter. **THE**
CITY KEEPS
MOVING..

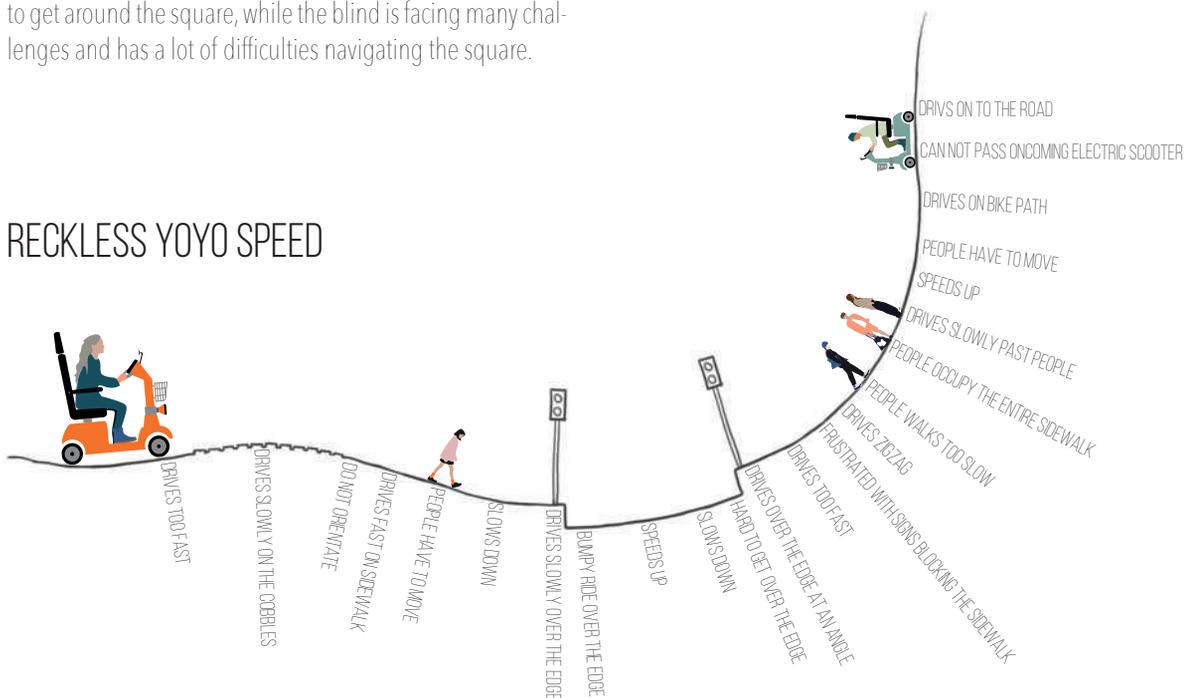
IN THE FOOTSTEPS OF..

Based on observations of people and their routes this method is used to obtain an understanding of the challenges and potentials of each citizen's use of Banegårdspladsen. A number of people have been selected who, for physical reasons, will experience and use Banegårdspladsen in different ways.

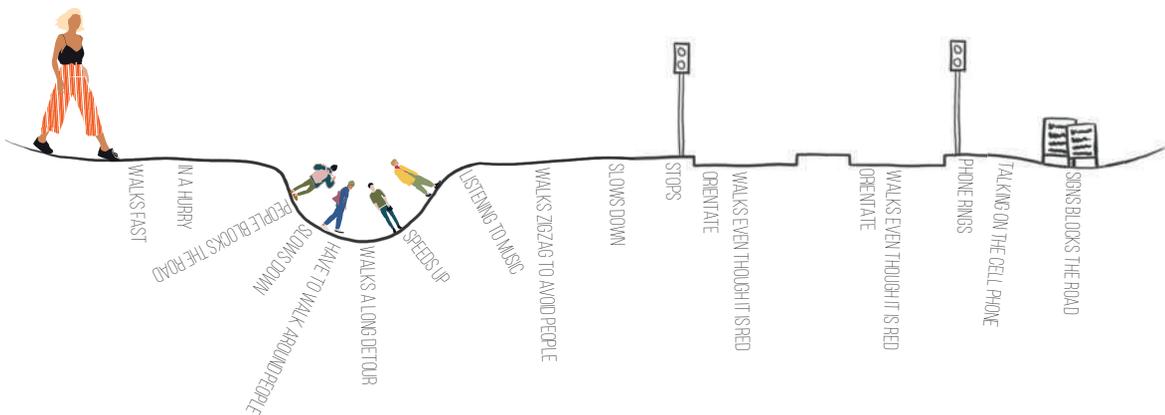
There are clear challenges for everyone, however, it is clear that the young woman, Fast and Furious, has the easiest way to get around the square, while the blind is facing many challenges and has a lot of difficulties navigating the square.

Lynch: "People observe the city while moving through it."
(Jensen, 2013, p. 36)

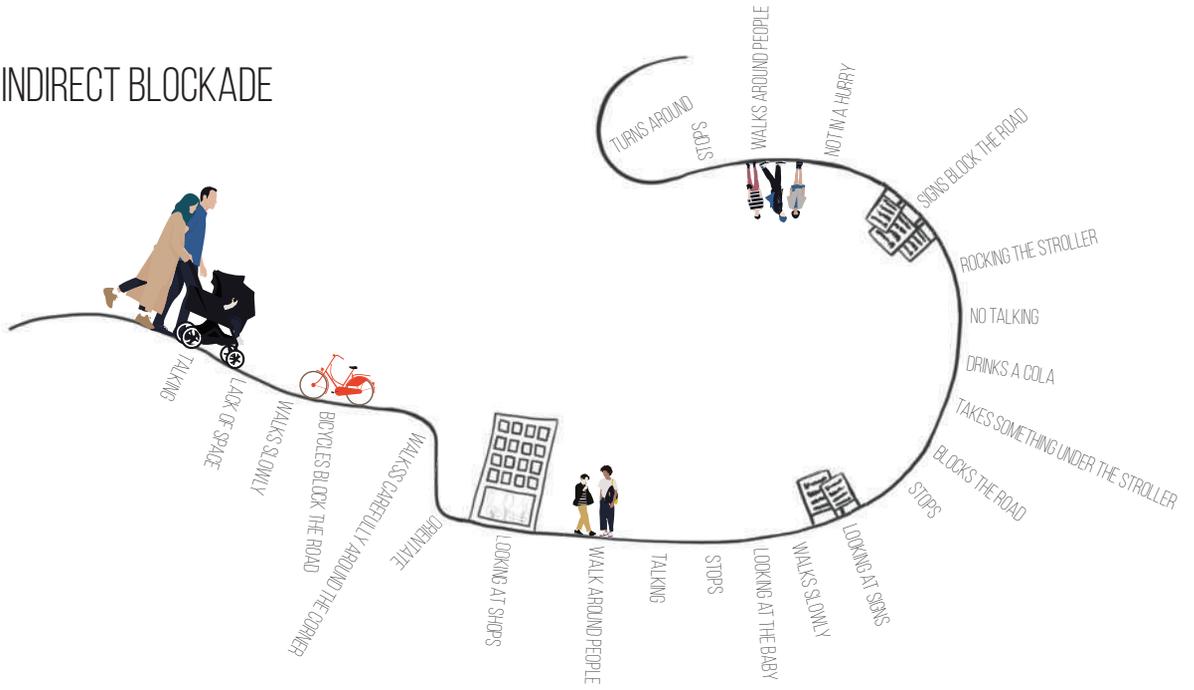
RECKLESS YOYO SPEED



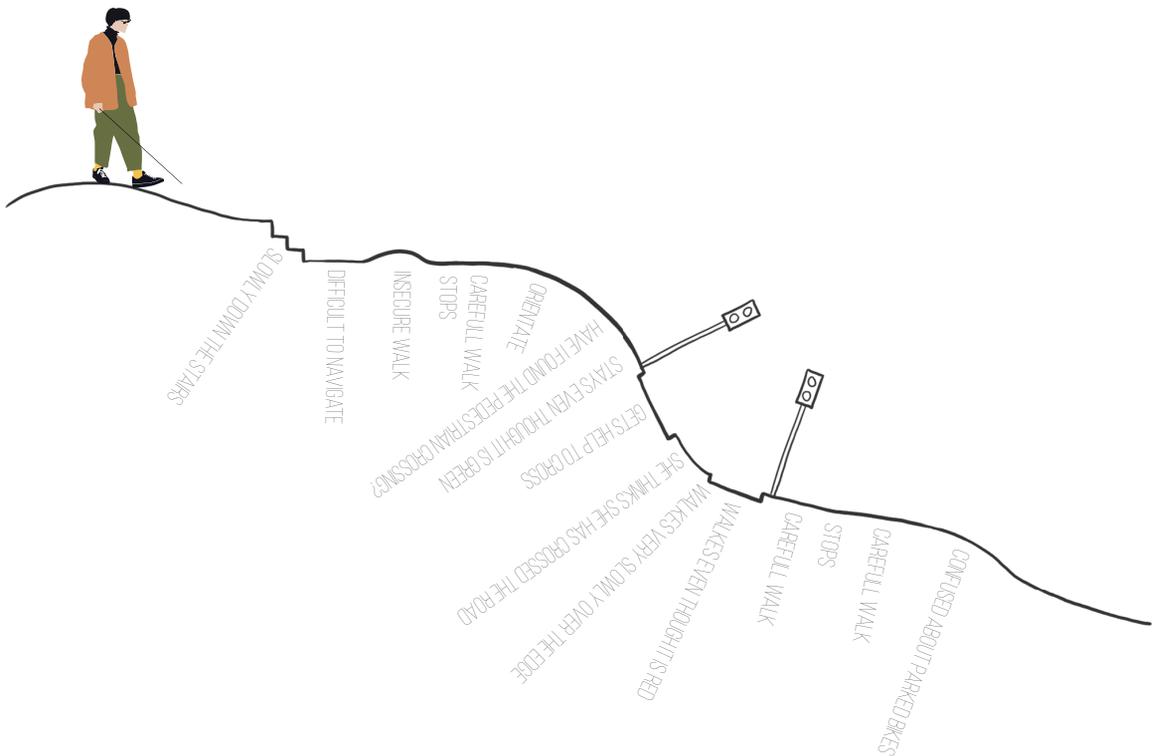
FAST AND FURIOUS



INDIRECT BLOCKADE



THE BLIND ONE



CITYLIFE INDEX

To understand the citizen's behaviour and opinion about the urban spaces and connections Citylife Index is one of the tools that Aarhus Municipality uses. Citylife Index is based on interviews, observations and countings of pedestrians and cyclists.

From the counting it was seen that there was a shift in the numbers of pedestrians entering and leaving the square throughout the day. In the morning the number of people leaving the square is larger than the number of people who are entering. This can be presumed to be due to people coming into work and in the evening this pattern shifts to the opposite direction.

From the counting and observations it was as well possible to see where the common flows at Banegårdspladsen are. In total there was made 100 interviews - these was distributed between 13 cyclists and 87 pedestrians. In the morning it was easier to stop people for interviews - mainly because of the change in the weather as it was rainy and windy in the afternoon.

These interviews gave an understanding of how people perceive Banegårdspladsen and Aarhus from a pedestrian and cyclist point of view. Some of the common opinions are joint and shown by illu. 23 (Christensen, 'et al, 2019).



A bit confusing with all the cars at the train station in the morning.



Sad place. Not bike-friendly, and it feels too unsafe when the bikes and the cars are being so close together.



I do not think it's nice to be a pedestrian in the area when the cars get close.



Illu. 23 - Citylife index

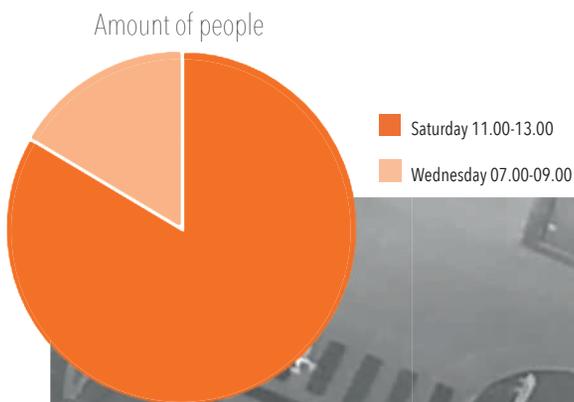
TAKING THE TEMPERATURE

With the inclusion of the Mobilities Tracking Technologies and use of thermal cameras the site was analyzed in different situations. The square was observed both a weekday, Wednesday, and in a weekend, Saturday to see how the flow changes and to observe if there are any common flow patterns on the square. On the chosen Saturday there were approximately five times as many people at Banegårdspladsen compared to the chosen Wednesday.

From the common patterns of movement, it was clear that the movement is generally separated into two, due to a

bump placed in the middle of the square. The bump as well creates a natural stop in the environment and a natural play element for children.

One other important factor is that people gather together in front of the pedestrians crossing at the square. Especially the chosen Saturday it is clear due to the increased amount of people. By the entrance to the train station building there is placed astrays on each side and on the Saturday people are having longer stays here, since they are not in the same rush as the Wednesday (Christensen, 'et al', 2019).

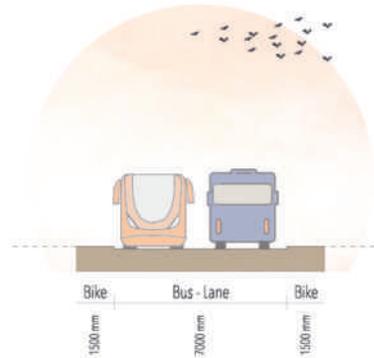


Illu. 24 - Thermal Camera showing space in front of main entrance to train station

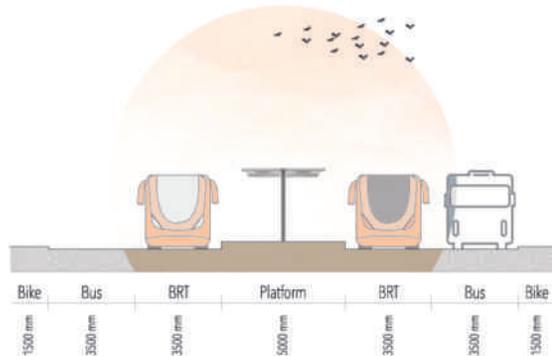
WHEELS VS. RAILS

Bus Rapid Transit is a collective bus based transit system with a composition of bus stops, buses, dedicated bus-lane and other services. The aim is to ensure a fast, comfortable and cost-effective transportation option.

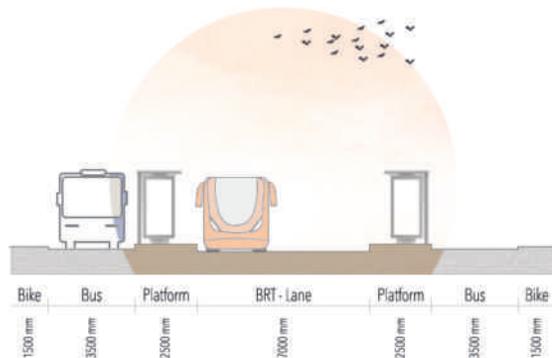
The BRT-system is designed to prevent the problems that typically can cause long transportation time in the traditional bus services, as for example traffic on the roads and payment queues. The direct layout links the essential destinations and minimize the number of stops on the stretch and aside from that signal priority for the BRT supports the high passability. To avoid payment queues the BRT has by the bus stops facilities to buy tickets (Realdania, 2017).



Shows that BRT and regular bus share the road where the passage is narrow



Shared platforms will be beneficial in terms of space and economy. Can be inefficient for BRT and difficult for people with disabilities.



BRT is a priority and gets its own bus stops with platforms on both sides. This takes more space but is effective in terms of fewer pedestrian crossings.

Illu. 25 - BRT technical sections

BRT



Illu. 26 - BRT



- Flexible for the future change
- Flexible for road construction/festivals - detour
- No tracks or cables
- 10 times cheaper to build than LRT
- Shares lane with normal busses
- The bus lane can be mixed-used away from rush-hours
- 90% less emission than normal busses



- More noise
- Hard to attract people away from talking their car
- Bumpier ride
- Do not have tables
- Impervious area/asphalt/hard surfaces
- 90% less emission than normal busses

LRT



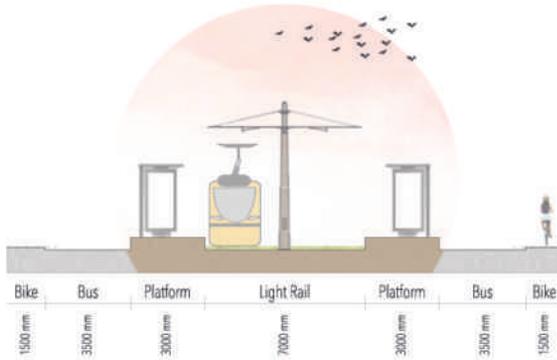
Illu. 27 - LRT



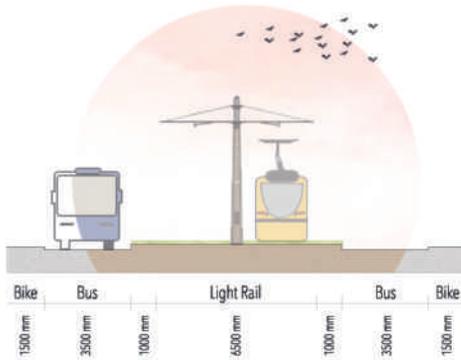
- The only traffic on its rail
- Smooth ride
- Exclusive; tables
- Reliability in arrivals and departure
- Long construction period
- Easy greened/part of public realm/take runoff water
- Biggest capacity- can carry most people



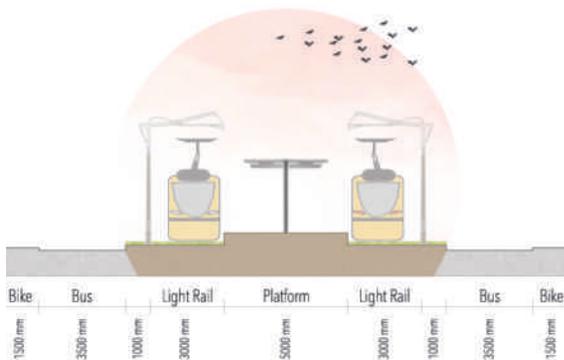
- Not flexible for future change
- Not flexible for road constructions/festivals - detour
- Expensive (10 times the price of a BRT)
- Rails are stationary and take up space



Separate platforms will provide fewer wires and masts. This will give a better visual impression but will use more of the space.



Dedicated tracks for light rail will maintain efficiency and create green lungs throughout the area.



A shared platform for light rails will create a visual distraction with multiple wires and masts.

Illu. 28 - LRT technical sections

RAILS VS. WHEELS

Light Rail Transit is a modern edition of the old school tram. Like a train the LRT runs on rails but is certified to operate among cars, bikes and pedestrians.

The light rail is compared to buses faster, more sustainable because of it running on electricity and more smooth because of the good drive- and brake-performance. Usually, the LRT is applied in the middle of the road and has its own lane that is constructed at the same level as its surroundings to navigate within (Letbaner, 2008).

LEGIBILITY

The Legibility Analysis is a tool created by Kevin Lynch to gain an understanding of the city through various features: *paths*, *edges*, *districts*, *nodes*, and *landmarks*. The analysis is based on group members perspectives and will provide an understanding of the area and parts of the context.

The site is the main mobility hub in Aarhus, so it is surrounded by major paths and nodes as seen in illu. 29. As part of this, it is natural that there is remarkable landmarks and districts that affect the importance of the area. It is an assembly point, which leads to clear distributions and in particular the train tracks are perceived as clear edges that break with the connection to the southern part.



Illu. 29 - Legibility

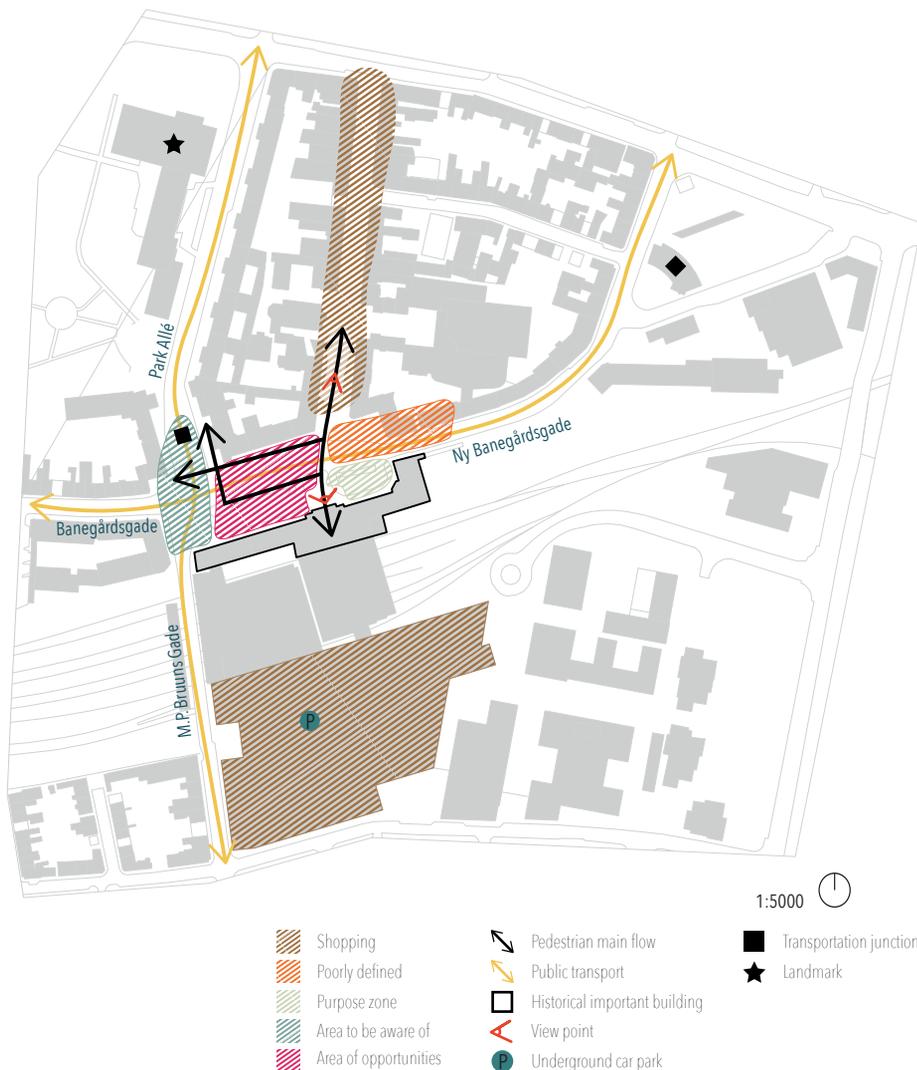
CONTEXTUAL APPRAISAL

The Contextual Appraisal is the conclusive analysis. This is a collection of the most important analytical discoveries which will give a clear picture of the potential and the chosen work process of 'Breaking Bubbles'.

The area is the link in a transportation junction with historical value and composition. The diversity in the area facilitates various factors that define the complexity that exists. The map display different parts of the area with the explanatory description. On the west side of Banegårdspladse as shown in illu. 30, you find a central junction that connects several types

of flows and it becomes an area to be aware of. Furthermore, there are other places that are more complex where today's use makes the experience more poorly defined and brings in great opportunities in further work.

It is the everyday flow that is the root of the execution of the space. It defines what you can see, which spaces are created and gives an indication of the purpose of the journey and stay.



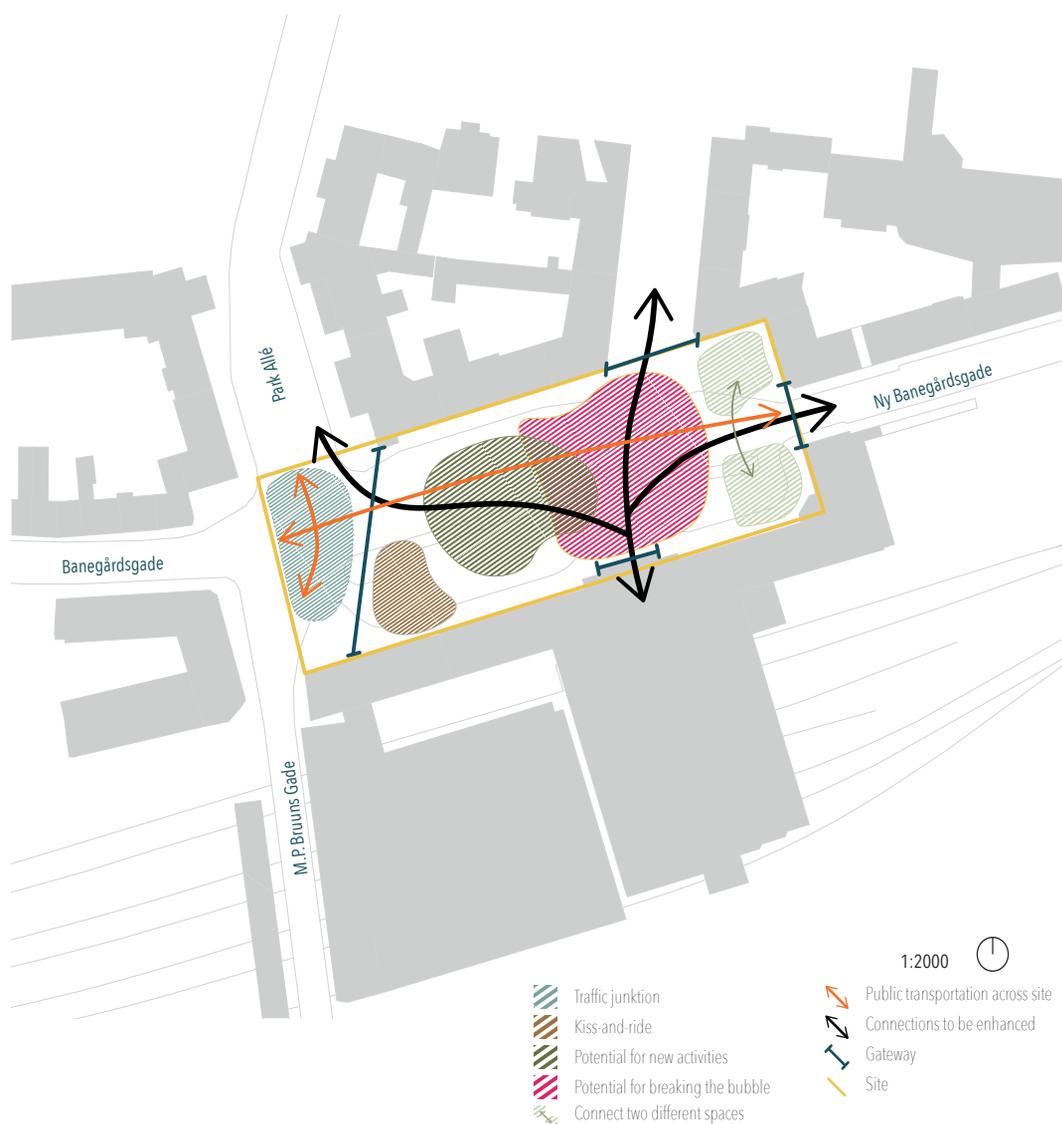
Illu. 30 - Contextual appraisal

OPPORTUNITIES & CONSTRAINTS

The illu. 31 shows a more accurate addition to the site. Where the heart of the area was considered as an area of opportunity has now been reassessed, and split into two spaces where there is a potential to include 'Breaking Bubble' and different activities.

This map is also a two-dimensional analytical conclusion, which is part of the foundation of the strategic decisions. A strategy that will go hand in hand with the problem statement, ideas, visions, and the final masterplan.

In order for Banegårdspladsen to be represented as a mobility hub and a strong gateway to Aarhus. It is necessary to improve the various flows and gateways, and get a better experience through different speeds.



Illu. 31 - Opportunities & constraints

SUMUP

The different analysis has dug deep under the skin of the city of Aarhus and especially Banegårdspladsen; feelings, characteristics, problems, types of mobility, ways to move, smells, sounds, activities, potentials, and numbers. It has by combining the more technical features, like numbers and structures to the atmospheric contemporary activities and tactilities of the space created a backbone for the design development. It has made awareness of how the mobility hub is overloaded and doesn't but the pedestrian or visitor high in the amount and use of the space. It is an example of how the city and infrastructure and technology not only connect but also separates.

С

TOOL KIT

The need for having guidelines that build on the outcome of the analysis are an important part before starting up the design process. The 'Tool Kit' will help and lead the project in the right direction when feeling stuck and out of order to move on.

As well as being tools these are normative to understand the whole aspect and theme of the project, and how to narrow in the theory, 'Behind The Bubbles', in order to be able to use them instructions within this at Aarhus Banegårdsplads when developing a final design solution, where the requirements for mobilities as well are incorporated.

"Art enables us to come together in a common language." (OpenART, 2008)



so..

How can a mobility hub become a moving experience where people expand their interaction from themselves and their own bubble to their surroundings?

BREAKING BUBBLES

'Breaking Bubbles' wants to root out the way we move, see, experience, use and behave in the public room. It wants to change the matter into another light. Banegårdspladen has, therefore, the potential of becoming the catalyst to exhibit life, movements and settings. Breaking up with the monotone, self-centered, effectively moving from A to B. The homogenous almost automation of movement through the city's rooms and meetings. With our heads zoomed into our phones, in our own private bubble.

'Breaking Bubbles' wants to stage the busy human, though a new layer. It will exhibit, change the interaction with the surroundings and the surroundings notion of the happening. Banegårdspladsen opens the phones for a selfie, changes the flow from automatic to experimental.

It wants to make a serious statement through colours and play.

It will divert you out of the structured monotone, busy, alive-non-alive- virtual-social society into the social hub, experiences, creativity an arty-city hub.

It will create a bubble to break up with your own.



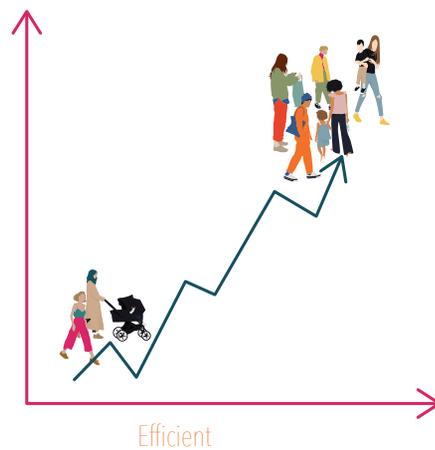
SAFE, FUN & EFFICIENT

Wrap it (*safe and efficient*) up in fun!

The future development of a new mobility hub in Aarhus has to be a collaboration between the safe, fun and efficient. 'Breaking Bubbles' want to enhance the combination of these components by working with all of them at the same time. Safe and efficient should inform the design and be used to stage the fun in the final design solution.

Even though it is wanted to have the three components present in different extents it would depend on the location and function of the space. Where some spaces would have a higher level of safety others will be affected more of the fun and functionality. But overall they would compliment each other and create a balance.

In order to open up people's eyes we need to work with an integrated design solutions. To design from both aesthetic and safe, fun and efficient it is possible to create spaces with much more potential and with a much higher quality than when the components are treated separately.



Illu. 33 -Safe, fun and efficient

SIMON SAYS...

Aarhus Municipality consists of huge amount of plans and strategies within different subjects. For the future mobility transit node, Banegårdspladsen, the Municipality has some clear and precise demands. As shown by the illu. 34 these spans from being mobility orientated to being movement directed (Aarhus Kommune, 2019).



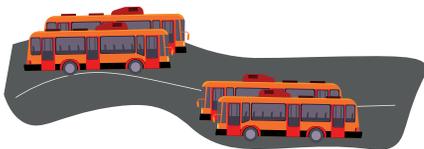
No car traffic across



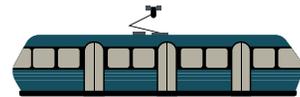
Minimum 500 bike parkings



Kiss & Ride



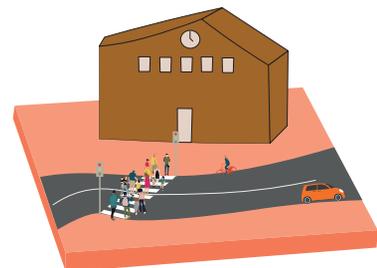
Space for two busses in each direction



Fase 2 - BRT or LRT?



Accessibility



Maintain pedestrian flow

CREATING TOOLS

The illustrations shows the designparameters behind the design proposal.

The aim is not to create tools with a focus on conversations, but making people come back into the reality, to experience the world around them and to create interventions for meeting through design. Both by visual tools and physical actions the principles ground in the concept of *triangulation*. To add the layer, subject or object that awakes people and makes them wonder. People are walking around in 'bubbles', seeing and experiencing the surroundings and social life though a screen, online at the social media.

This project unfolds tools and strategies to break these 'privat bubbels' and turn them into 'social bubbles' instead. The aim is to bring people back to reality, feeling, sensing, observing and interacting with the surrounding elements and people.

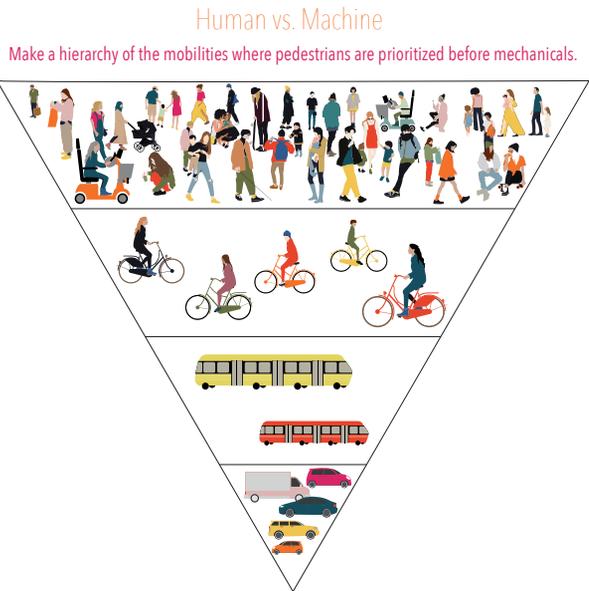
Hereby a success of this project is for people not to look into their phones, but to observe, interact and or communicate with the city. As back in time where a bus ride could end in a conversation instead of scrolling through Instagram. Where a conversation could be bound in a common observing and not the negative fact that the bus is late or the lack of Wifi. Silent communication is still communication. The aim is just to bring people back to the present, take a step back from the virtual reality. We are forgetting to observe the ongoing life of the streets instead we know what happens in Australia or on a beach in Hawaii from Instagram.

We want people to look at people real-time, eye to eye and not through a phone or a camera filter. To create a city that events and creates rooms for positive intervention and communication.



Art vs. Fun vs. Functionality

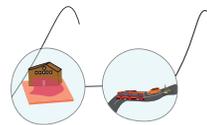
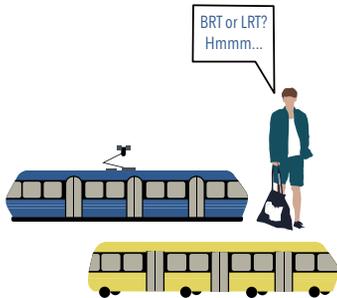
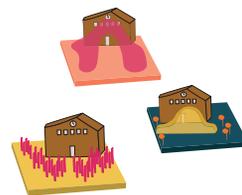
Makes functions a part of the experience.



Speed vs. Mindset

Make space for different movement and people.

Illu. 35 - Creating tools



D

THE PINK HUB

Welcome to *The Pink Hub*, the new urban transit node of Aarhus City. The location connects the dense city center with the important network and makes it possible to get an experience when traveling from A to B.

The Pink Hub consists of different solutions for making the transit hub a safe, fun and efficient place where functional implementations as bike parking also appear as a gesture for people traveling. The integration of a BRT system on Banegårdspladsen and an exclusion of cars make room for new recreational spaces where there is space for different speeds and mindsets.

All this comes back to the aim of making an urban mobilities design where the importance of implementing and designing for the increasing mobility within and between contemporary cities.





Illu. 38 - View from above



Park Allé

Bike lane

Banegårdsgade

Bike art

Kiss-and-Ride

M. P. Bruuns Gade

Ryesgade
Shopping street

Playground

Ny Banegårdsgade

BRT lane

Relax area
Observe point

Bike parking

Entrance to train station

THE PINK HUB

1:500 

Illu. 39 - Masterplan



Stand and wait

BRT stop



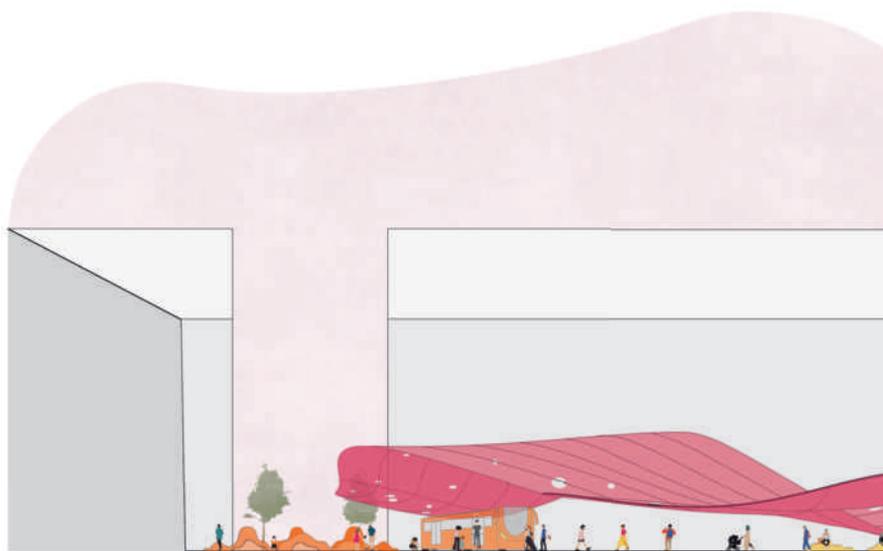
Hotdog stall

UNDER THE COVER

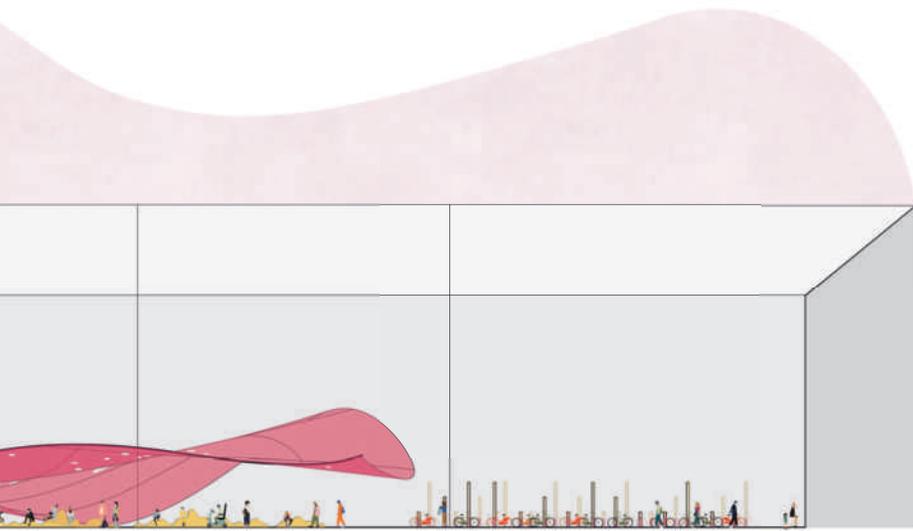
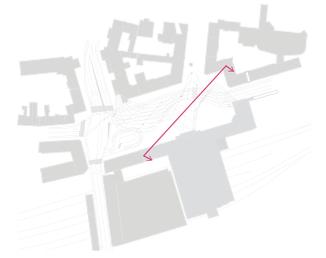
1:500 ⌚

Illu. 40 - Groundplan

SECTION A:A

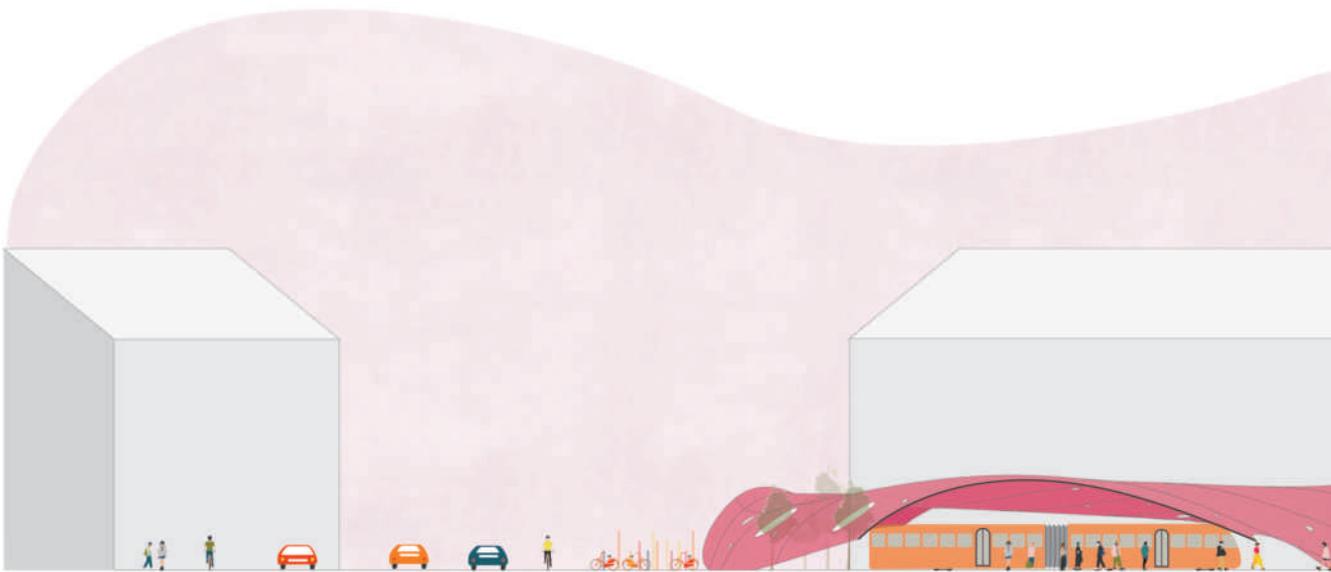


Section A:A
From north-west to south-east

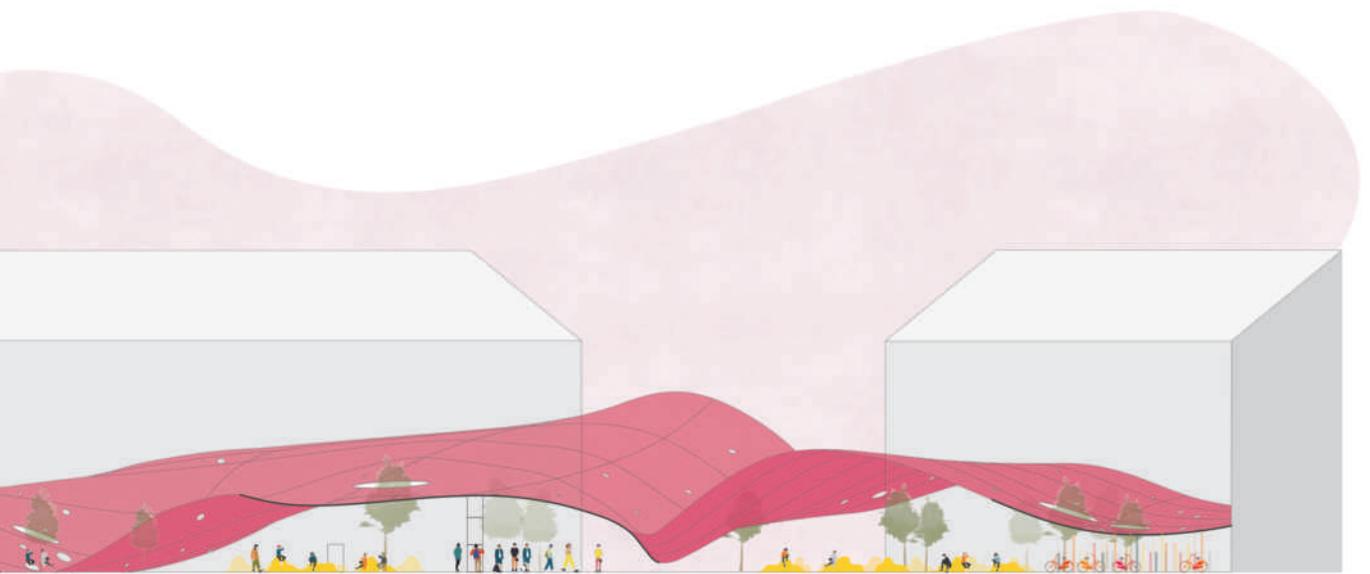
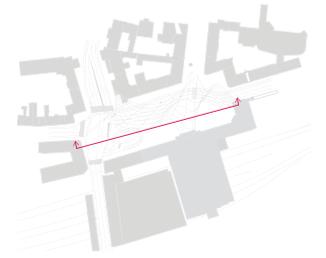


1:500

SECTION B:B



Section B:B
From south to north

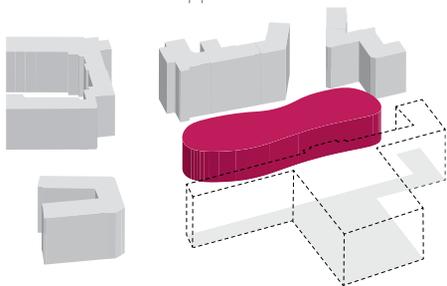


1:500

STEPS OF COVER..

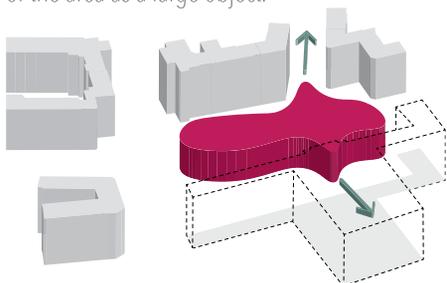
The development of 'The Cover' has a story that is retold in its form. Step by step 'The Cover' has been shaped according to important elements that will supplement the area.

1.



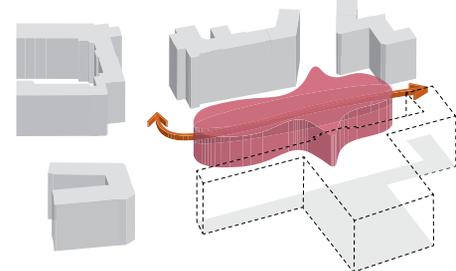
The shape is created and is located in the middle of the area as a large object.

2.



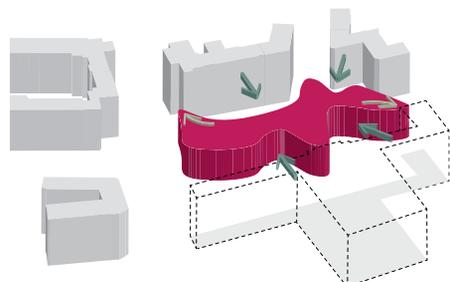
To emphasize the importance of the public flow, the shape is dragged after the flow.

3.



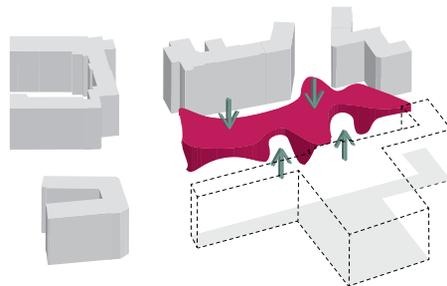
BRT is going through Banegaardspladsen. The shape yields and highlights the BRT route.

4.



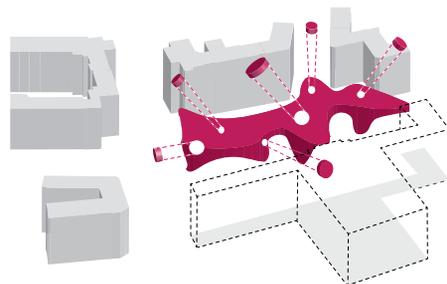
The shape is attached around the corners of the buildings to create a connection. It is also pushed from several angles to make rooms for stay and pleasure.

5.



The shape has now been developed into "the cover", but lacks height differences to create enclosure and satisfaction of technical heights. It is pressed from below and above.

6.



The size of the openings in the cover are depending on their closeness to the ground level. In the human height they will appear biggest, but the higher you raise your view the smaller the holes will become. At the very top these small holes will become small lightnings to symbolise the stars.

These openings has, depending on their placement, different functionalities. Some of them will let you pass through and give you the accessibility. Some will be little peepholes and let you follow the motion on the other side. Some will let the big green trees extend through and reach for the big blue sky above.

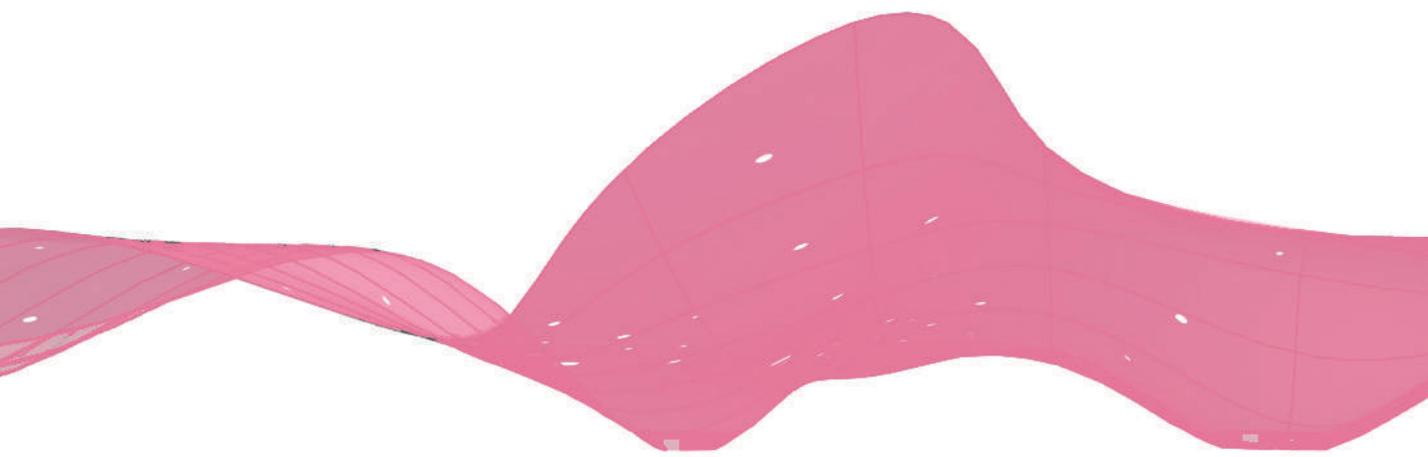
PINK

The colour pink represents caring, compassion and love. Pink connects to the sensitive emotions as hope and calmness. Hereby it helps getting rid of anger, aggression and the feeling of failure (Olsen, n.d.).

Together with the shape the colour pink is a huge contrast from the surroundings and provoke with its controversial features the ordinary transit hub, Banegårdspladsen. The contrasts affords a new experience and creates a new exposure which will make the square a even bigger landmark.

MATERIAL

The selected material will, through a number of criteria, determine which is best suited in the development of a design solution. The desire is to satisfy safe, fun and efficiency. This is done by comparing 3 selected materials and with the use of before mentioned criterias, also showed underneath, the most suitable material is chosen.



VINYL



Illu. 45 - Selgascano Pavilion

Vinyl is by far the cheapest option. It has a good durability of 10-20 years. The material is a good alternative for the environment and it is 100% recyclable. The negative side is that the material has a poor sound transmission, which can create a feeling of being in a tunnel. In addition, the material is not safe against shocks in the form of crashes. An important factor due to its presence in traffic (Sailrite, 2018).



ETFE



Illu. 46 - Selgascano Pavilion

ETFE is a well-known material that is widely used for similar objects see illu 45. It is available in endless colors and has a relatively good sound transmission.

It is the most expensive material, but its features repay the price. It has good durability and is good for the environment. The material has a smooth surface, which makes it self-cleaning at normal precipitation. It also scores well on safety, where it crashes in small honeycomb that does not cause severe hurts (Birdair, n. d.).

This is the recommended material, because it best meets the goals of fun, save and efficient.



LOW IRON GLASS



Illu 47 - Artwork, coloured glass

Low iron glass is a good candidate with many good qualities. Glass generally lasts a long time, and is a material that is a safe choice. It is very transparent and comes in many colors. It is 100% recyclable and additionally has a sound transmission of 95%. The material has the same function where it crashes in small honeycomb that does not cause severe hurts, but can not withstand as much as ETFE. It is the heaviest material and it will create difficulties during the installation (Dillmeierglass, 2016).

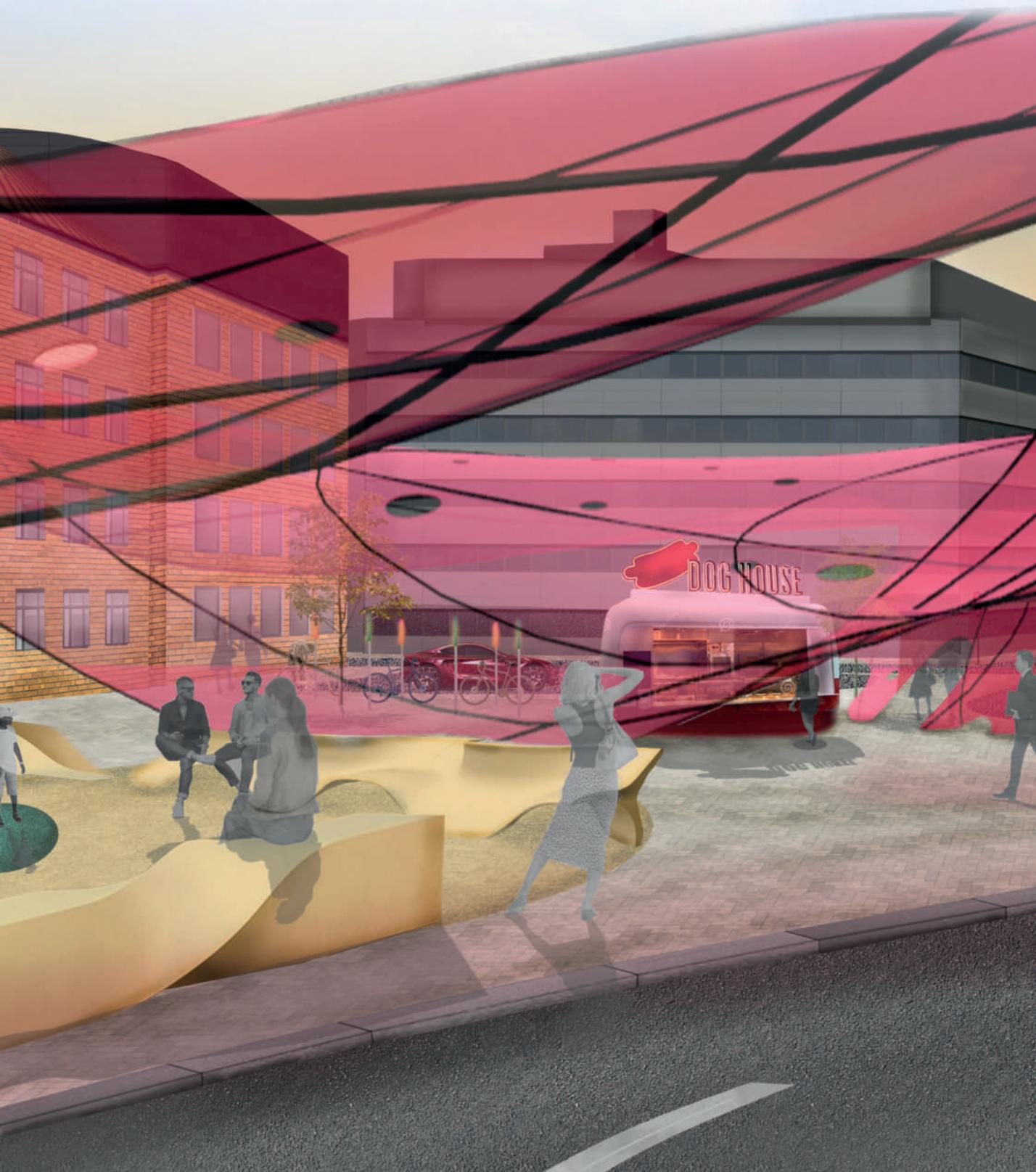


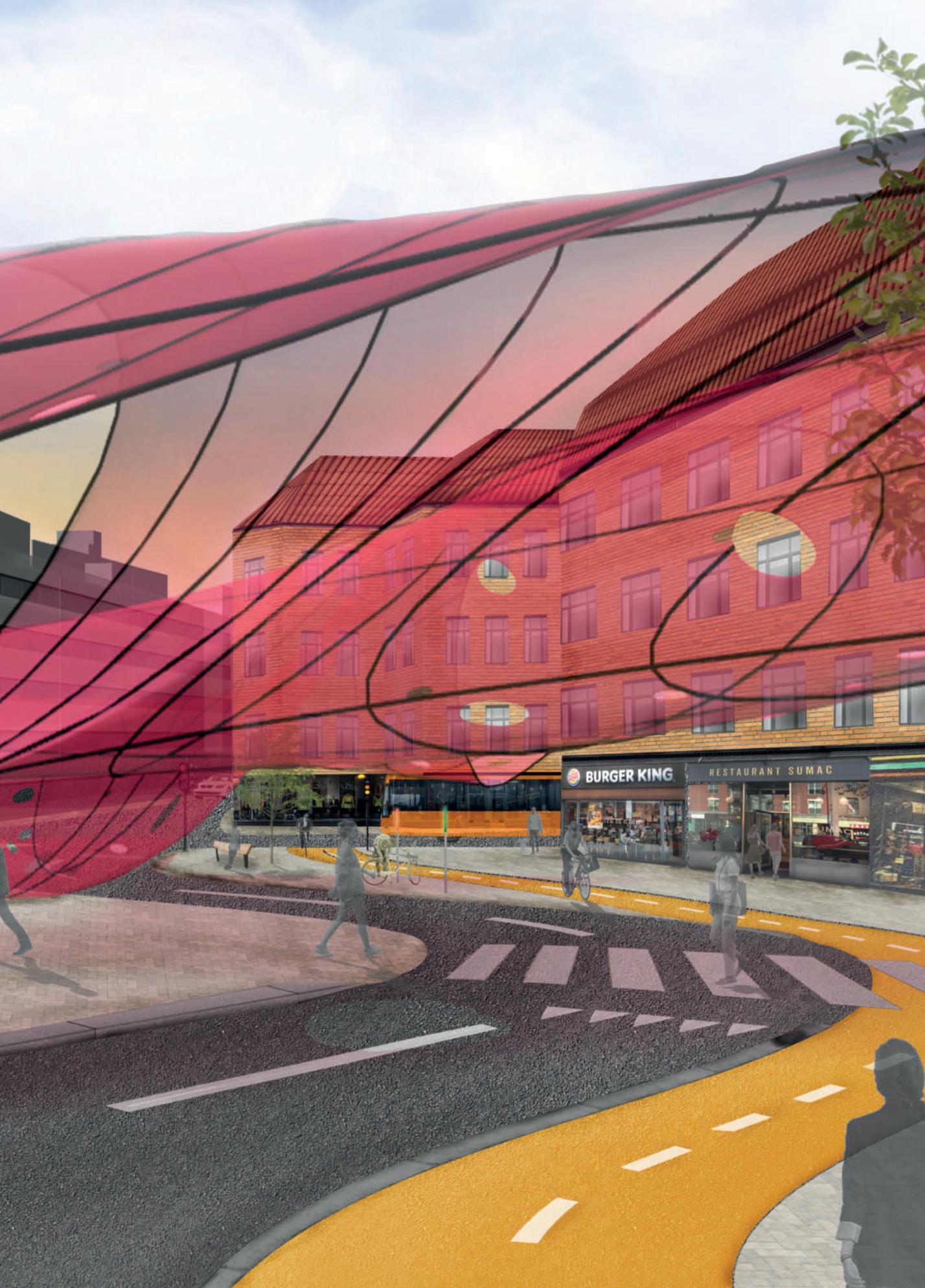
ACTIVITIES & EXPERIENCES

Entering The Pink Hub the city change colour, and new experiences are introduced. It is not longer just a transit node but becomes a city adventure where the movement and the pulse of the city is the attraction.

Now you can sit back and experience the diversity of the city, wait for the next bus, stay, arrive, park your bike and so much more.

The minds is getting unfold and the transit node is now making room for all the differences that people contain.





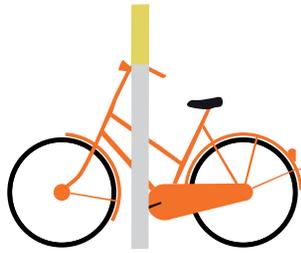
BIKE PARKING

Breaking Bubbles offers functional bike parking with an experience. The lighting will create a space that depending on the number of parked bikes will appear different. When full the parkingpoles will shine in a pink color, with a colorless lighting on top while they not fully used will function as a lamp post. Some of the bikeparkings will as illustrated underneath have room for 2 bikes, whereas there will be room for four bikes around others.

When you park your bike you have to click one of your pedal into the pole.



Free parkingspace



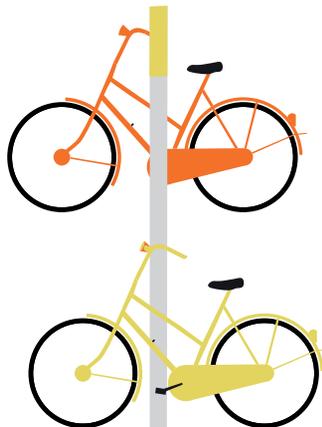
... still free parkingspace



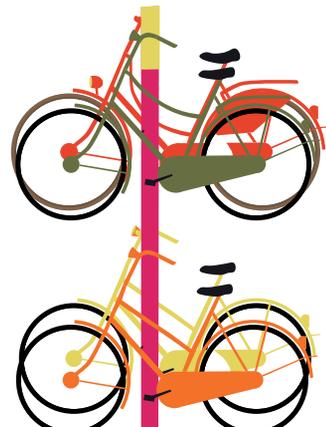
Occupied



Free parkingspace



... still free parkingspace



Occupied

VEGETATION

To support Aarhus's wish about planting 10.000 trees in the city before 2025 it is a desire to plant both trees and other green vegetation on the new Banegårdsplads. These vegetations are integrated in the ground shapes and a part of the unity in the new development. The vegetation will contribute to the solving of essential challenges as temperature rise, absorbing rainwater and strengthen the conditions for animal and plant life in the urban context (Aarhus Kommune, 2019).

As mentioned earlier some of the openings in the roof cover will allow the trees to grow through and be a integrated part of the new structure. These will stand as a big contrast to the development, that are artificial and provoking in its appearance.

PAVEMENT

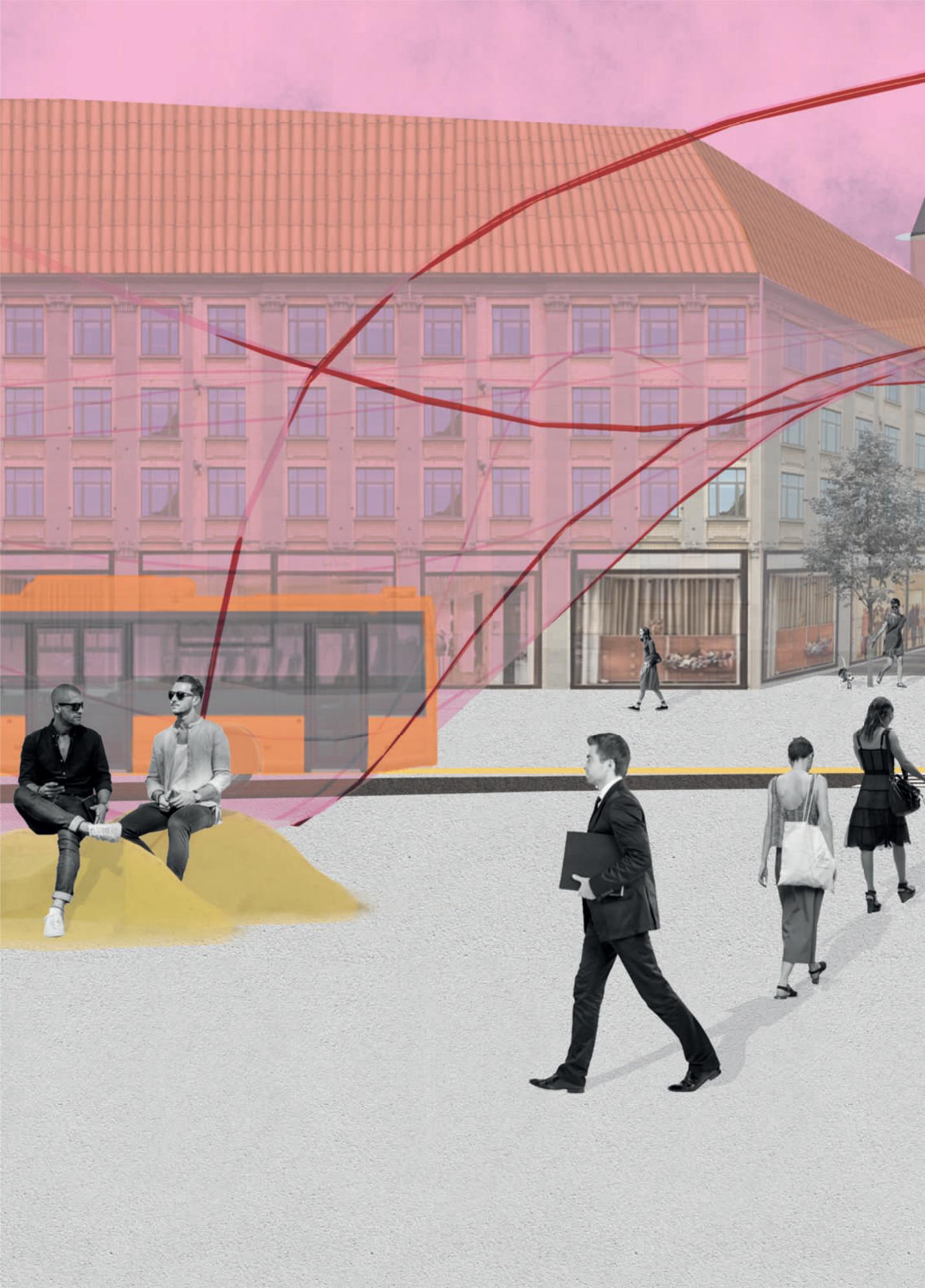
The Pink Hub is covered with white asphalt that stands as a big contrast to 'the cover'. Another highly contrasting pavementtype is the one covering the bikelanes where colored asphalt is used to highlight the movement.

Sports pavement, hard rubber asphalt, is used on the experience spaces where soft rubber is used in the development of the integrated furnitures.

FURNITURES

The furnitures at Banegårdspladsen should embrace the functions, the activities and be a part of the experiences on the site. They should create rooms and afford playing, conversations and interaction, for stay and for waiting. They should be a integrated part of the site and the noticeable, not-ordinary that creates attention.





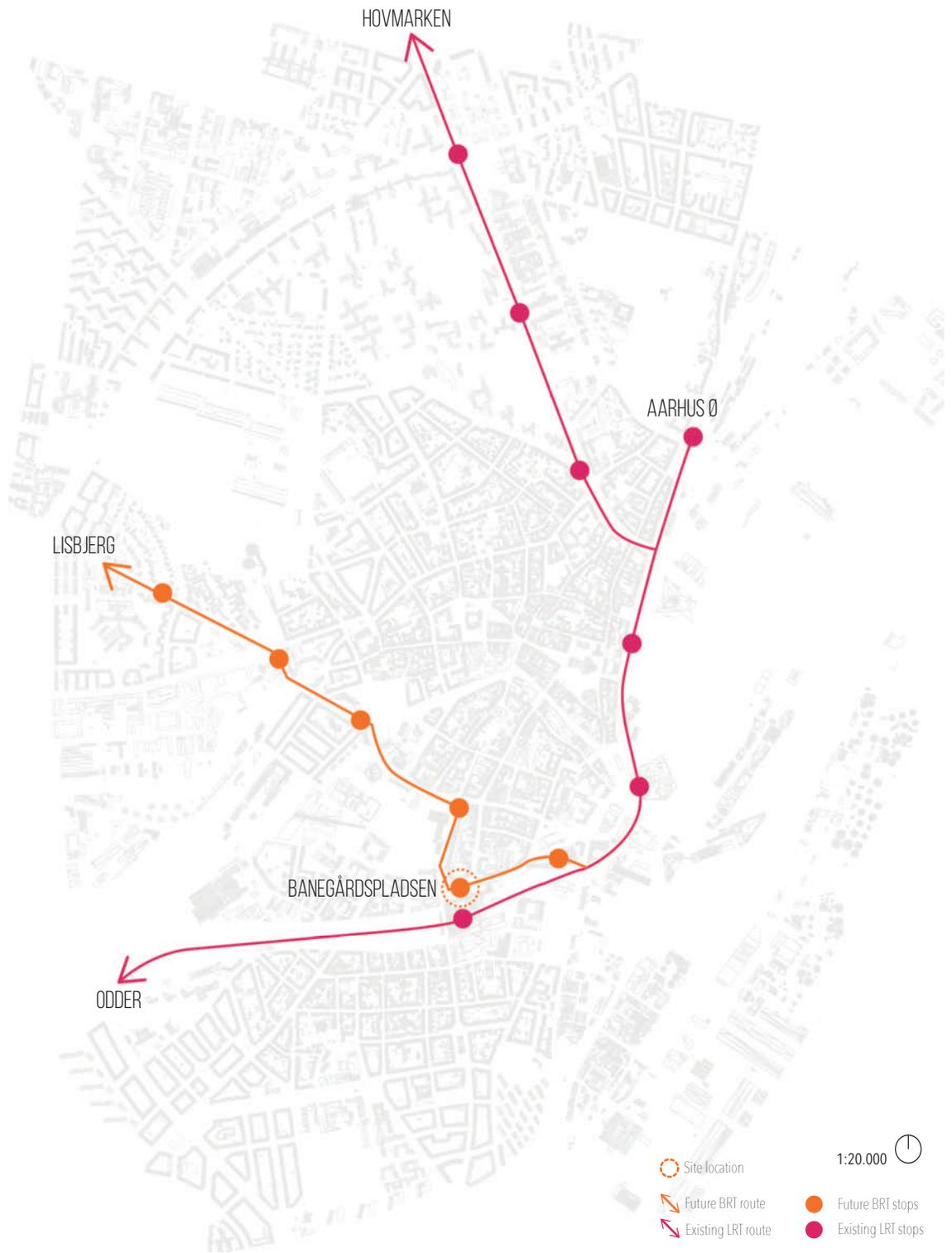


Illu. 51 - View from the train station and towards Rymsgade

BRT & LRT ROUTE

The future BRT-route will be running in cooperation with the newly introduced LRT-route in Aarhus City. Banegårdspladsen will be the buzzing central station and the location with an importance to make room for connecting the network within the city.



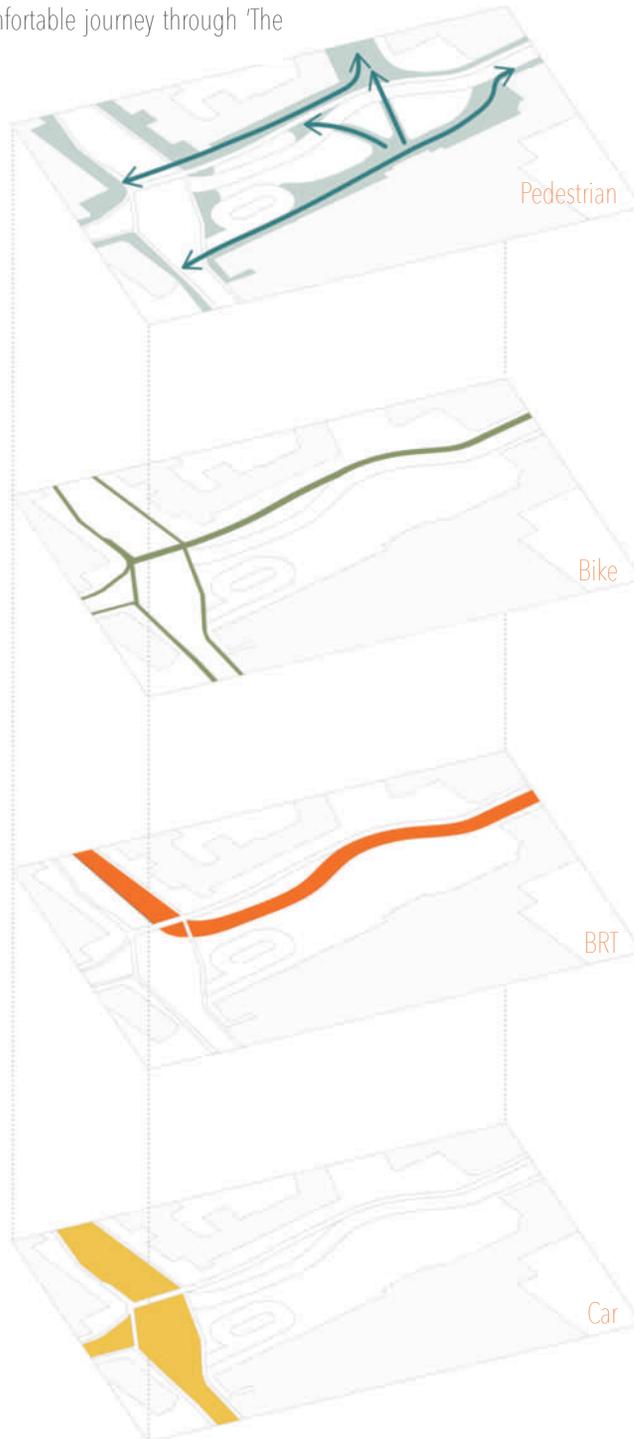


Illu. 53 - LRT-route and future BRT-route

FLOW

The hierarchical system from designparameters has been created. Where the new design prioritizes pedestrians to a greater extent than before. Then the rest follows with new and better-prepared solutions.

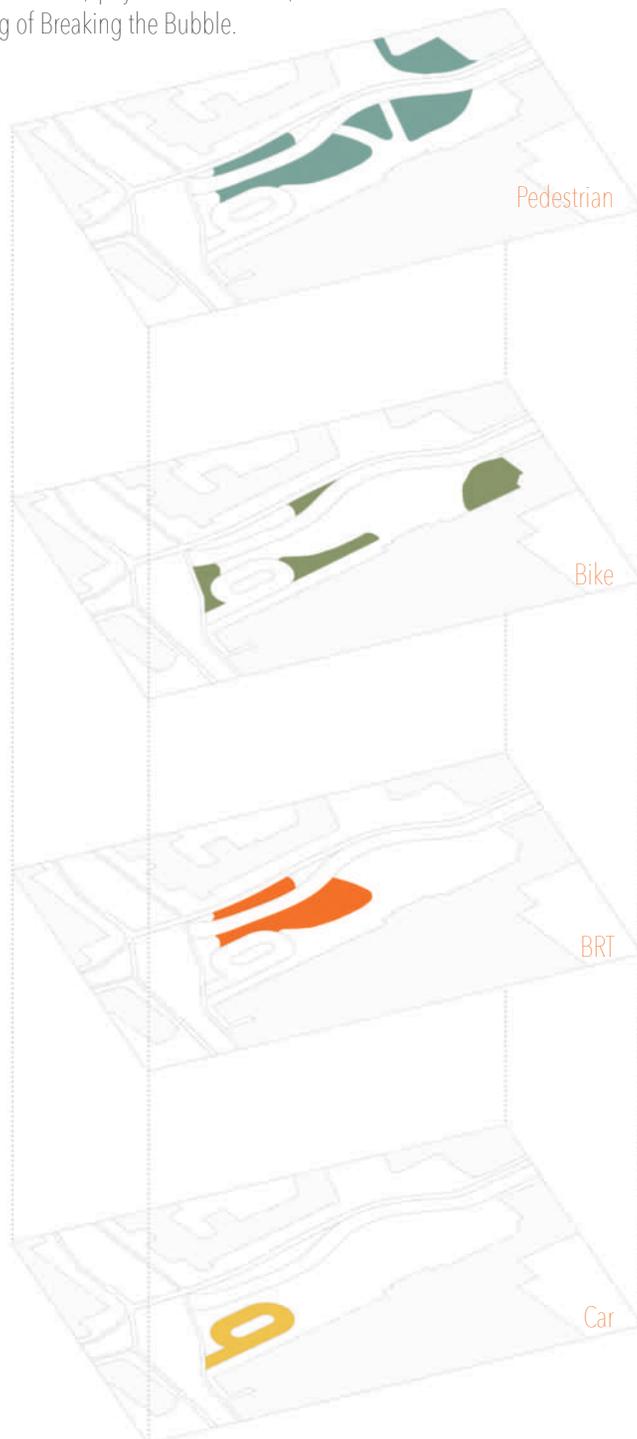
The new solutions create a better connection to the surroundings and make a more comfortable journey through 'The Pink Hub'.



Illu. 54 - Flow diagram

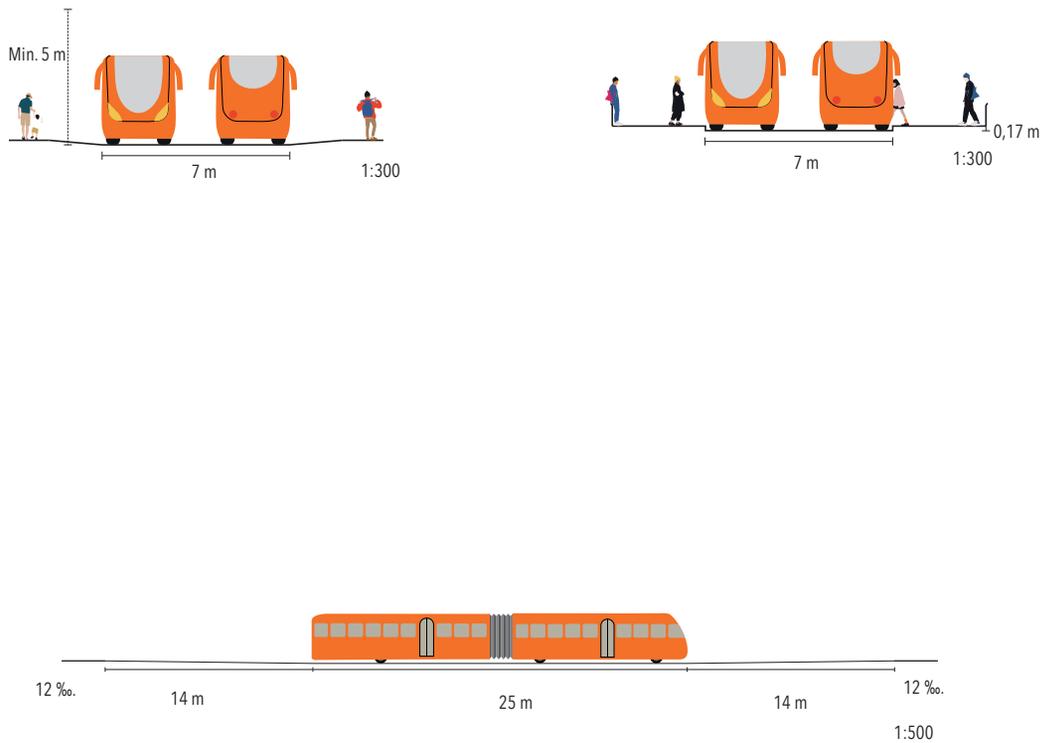
STAY

Despite the fact that the area is a mobility hub, there are attractive opportunities in and around the area for people to stay. The new design will contribute awareness of the people. It will offer various spaces to stay in. It will create a triangular relationship between the social, physical and ethical, thus experiencing the feeling of Breaking the Bubble.



INFRASTRUCTURE

In order to create easy access to the BRT, the road is lowered 0,17 m, this creates direct access from street level to the BRT. To ensure that the experience of driving with the BRT is not compromised due to the slope, the slope is spread over 14 m. This leads to a slope that is only 12 ‰. To make sure that the BRT can drive under the cover, the clearance height is minimum 5 m.



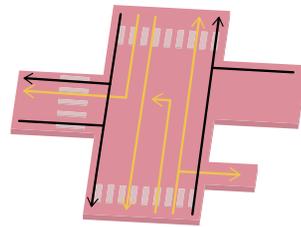
TRAFFIC LIGHT SIGNALING

To ensure that traffic runs safely and efficiently at the intersection in the western end of the square, a traffic light signaling plan has been made, that includes bikes, BRT, and cars. There will be five different scenarios of light regulation.

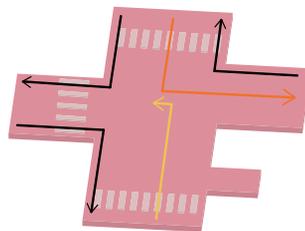
A main focus for the traffic has been to ensure easy accessibility for cyclists, therefore the cyclists have a separate traffic light signaling, that in some scenarios give the cyclists first priority. Another focus has been to create easy access for the BRT, therefore it is seen that when the BRT has green light, nothing is crossing the BRT lane.



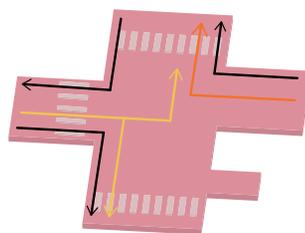
1.



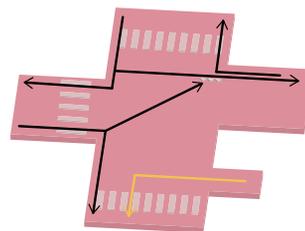
2.



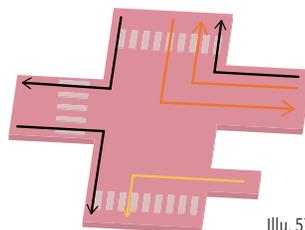
3.



4.



5.



Illu. 57 - Traffic light signaling

PRINCIPLES

With the principles it is broken down into molecules how 'Breaking Bubbles' can be added or used in other locations with another visual outcome, but still maintaining the focuses and effects. These will be the tools to make public domain, create a city that ensure presence and communication across social relations.

These tools as shown by illu. 58 is the backbone of 'Breaking Bubbles' and makes it possible to learn from the concept and adjust the intensity depending on the need for change. As well the principles are breaking up with the separation of planning and design and encourage them to work cross disciplinary and dissolve the line.



Art to stage mobility

The challenge of implementing important supplements is solved by turning this necessity into art.

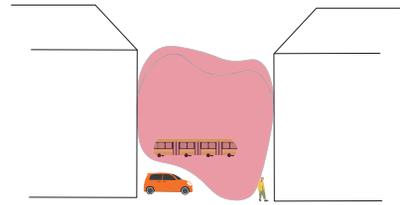


Art to stage mobility



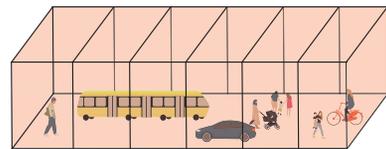
Hierarchy in mobilities

A hierarchical system where pedestrians are prioritized and adapted for through fun, safe and effective.



Art to create identity and attention

Use art as an identity creator object that will be talked about and discussed. The desire is to be a catalyst for a commitment to space.



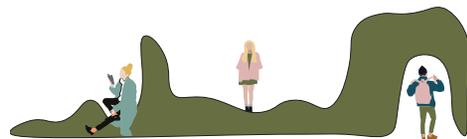
space with confrontations

Instead of creating separate rooms for releasing conflicts, it is desired to create a harmony that will satisfy everyone's needs.



Opportunity for stay when movement

All roads lead to Rome, but everyone needs a break along the way. Therefore, there will be opportunities to stay during the journey.



Space with confrontations

Create a provocation with a space that explores how people use the space by creating a visual barrier, and inviting for a new and untraditional flow and stay solution.

Illu. 58 - Principles

E

CONCLUSION

Breaking Bubbles has proposed a new design of Banegårdspladsen, and some overall principles and strategies for new focuses in the design of the city, public spaces, public domains. An urban focus at present and interaction and how to use the existing vibes and mobilities in the city to create a vibrant, different and experimental city and mobility hub.



The Pink Hub is proposed as a new design for Banegårdspladsen, together with some overall principles and strategies for new focuses in the design of the cities. An urban focus on presences and interactions on how to use the existing vibes and mobilities in the city to create a vibrant, different, experimental city and mobility hub.

The new design integrates the daily journeys and transit through the space as a triangulating factor, interaction between people and the place, create awareness of the surroundings and strangers passing by everyday. Creating a new connecting cover on top of the square that interlink contrasts; new and old, stranger and friend, transit and stay, busses and bikes.

It is not a provoking feature, but an exhibition of the life in the city, the life as the installation. It goes back to the mobility theory, that movement is not just from A to B. We live while we move, we move in a living environment with people moving with us and around us. It is a way of being. Our cities are so rich of things already, so to just opening your eyes is an experience. People are fascinating. But to make people aware, what they do, how they move, the city itself, we need to twist the urban spaces, so they get back into being presence. That is what Breaking Bubbles does.

The design comes from the analysis of the traffic junction where there are a mix of different speeds without safe, fun

and efficiency as well as the municipality's requirements of change and new ways of directing the purpose of the square. The cars now pass around Banegårdspladsen and the implementation of a BRT-route is connecting the site with the rest of Aarhus and the national network. Putting the pedestrians in front and offers room for people to transit from A to B, and for people to stroll around and experience the city.

By mapping different movements and routes the square becomes usable for different mindsets, meetings and speeds.

The cover connects the citizens, visitors, traveler or curious. Breaking down the monotone mind-dragged-down-into-the-phones-no-present-privat-busy-human-way-of-today-living-and-moving into a city art piece, a structure of moving people, now watching their city change movement, color and speed.

Inspired by Jeppe Hein and Olafur Eliasson interacting art, reshaping, reusing the existing landscape and cityscape.

The design task became how to design; the perfect view, the interesting movements, the good transit, the good stay. To design so people will think they have found the perfect spot but it is not found, but planned and designed for the purpose. Breaking Bubbles shows the importance of affordances. The power the right conditions, angles, colors, affordances mean. This is what is the aim the principles. To be tools that can be integrated into different locations, scales and aesthetics.

REFLECTION

Due to the collaboration with Aarhus Municipality and their demands for a new urban mobility hub where an extreme design development should be a catalyst for pushing people's boundaries. This project really took that in and gave the opportunity to work with a solution, that would seem controversial in the eyes of how mobilities usually are created in an urban context.

Through the project theory has been the motor and driver, that has acted as a tool to control the fluffiness, thoughts and ideas and still create a connecting link to the requirements within mobilities as an integrated part of a realistic design solution for Banegårdspladsen in Aarhus.

In relation to the specific design on the site, integrating mobilities earlier in the design process would have strengthened the design even more. This part occurred having a lot more complexity than first expected even though it was in mind all the way through the process. The integration of bike lanes and Kiss and Ride led to restrictions in the design development and therefore ended out having large influence on the final outcome. Furthermore it would have been a good instrument to use Rhino earlier in the process to get a better understanding of built volumes and open spaces.

As the final semester project before the master's thesis, this project has given the team members a professional motivation. The importance of the theoretical reflection has been implemented well along with the design and analysis. This has created a project with a strong backbone, and made it possible to seek and investigate corners and edges as new ways of design thinking. This has left us with both a learning full process and left us with a project which we are very satisfied and proud of. The project has been prepared at a strategic level, where we feel we have responded to the municipality's demands, but also tried to challenge some of their opinions by arguing well against. As part of the argumentation, principles have been developed that can be implemented in other contexts. This is a taste of how it works "out in the world". How to take something extreme and explicit and make it into wide design guidelines or agendas. This is something we hopefully can bring along in our future careers.

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F

APPENDIX

The not so pretty part is all the needed background information. To understand the site there is needed a lot of knowledge, and some of it is hidden here, but is of course used in the elaboration. That it is putted here is off course not making it less important..

The various analyzes found in this section have been part of the process of our assessments and decisions. They give an understanding of what has been used to come to a solution, but they have not been completely decisive either.



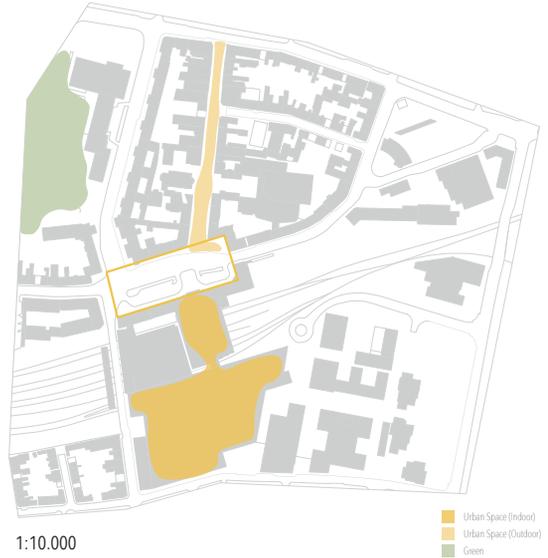
CONTENT

Green recreational
Active frontages
Landuse
Noise
Topography
Plans and Strategies
Comparing BRT with LRT
Kiss-and-Ride

GREEN RECREATIONAL

This map shows different forms and types of urban spaces that invite people to stay. City Hall Park contributes with green structure and recreation in the city center, and Aarhus aims to plant 10,000 trees to create a greater diversity of green structure in the municipality.

The pedestrian street and shopping center (Bruun's Gallery) represent another type of urban space where people have a different purpose for their presence. Where offers, climatic conditions, and personal preference plays a major role.



ACTIVE FRONTAGES

This map displays the active frontages around the site. In the south, there is a dominance of low activity, but it changes partly to the north. It is clear to see that active frontages reflect where people are and where it is attractive to be. Bane-gaardspladsen is a mobility hub with low-mid activity around the square, which makes it difficult to interact with space. In the pedestrian street, the situation is different with better opportunities for the integration with shops, cafes, and other facilities.



LANDUSE

The site is located in the city center and this is reflected in the various functions in the area. The quality of diversity acts as a natural attraction that makes it attractive to visit the place. North of the area is the main shopping street in Aarhus and is dominated by mixed use with residential and shops. Furthermore, one can find the main train and bus station within walking distance of each other. In the south, it changes more to pure functions such as residential, offices and public institutions.



NOISE

Banegaardspladsen is affected by traffic noise because of the central location and as shown on illustration xx it is easily seen that the square is surrounded by some busy roads that leads to a lot of noise. (dB > 75 dB, 75-70 dB, 70-65 dB, 65-60 dB, 60-55 dB)

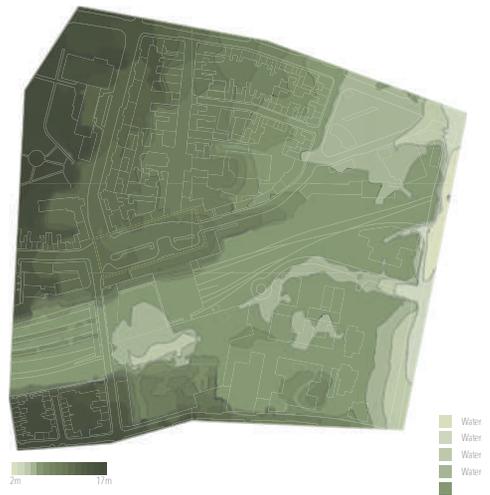


1:10.000

TOPOGRAPHY

Banegaardspladsen is located in a flat area, which means that the terrain is not perceived as a challenge for the design solution.

The terrain rises to the west, and south of the area, we find a lower level where the train tracks lie. This gap divides the city center, and it's perceived as a barrier.



1:10.000

PLANS & STRATEGIES



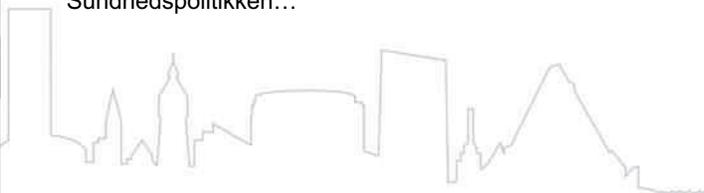
Plans and Strategies

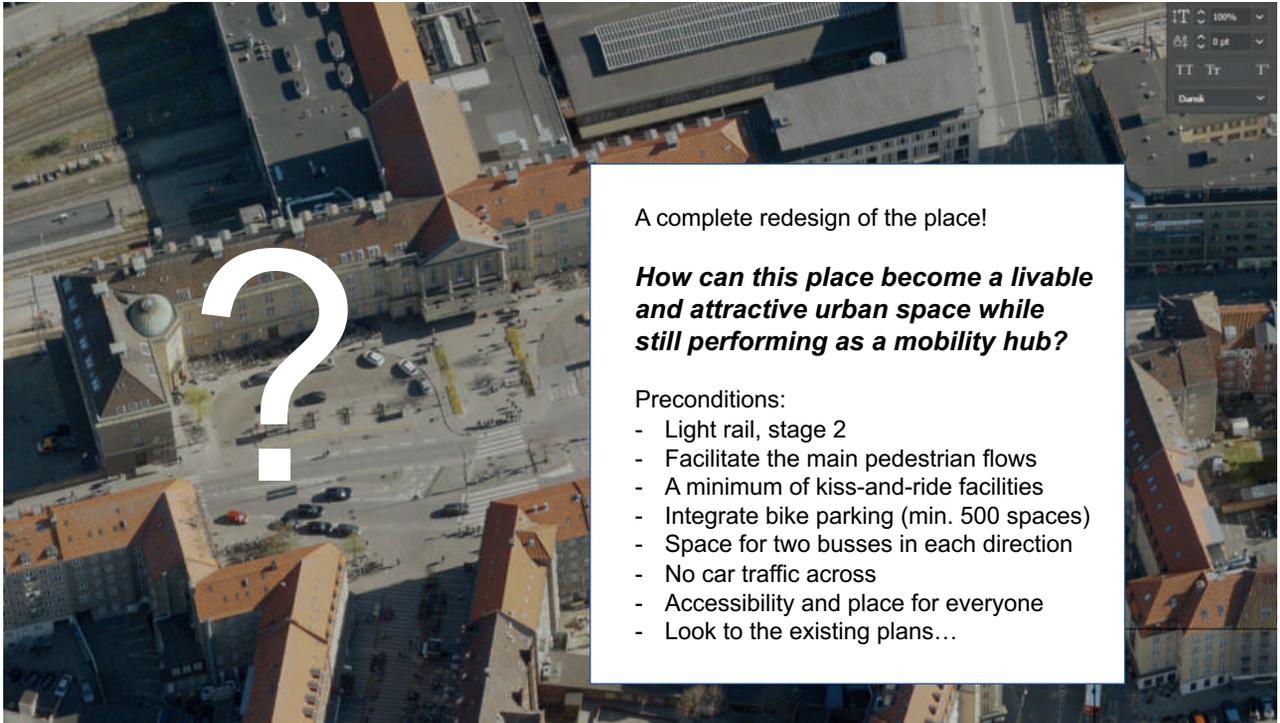
Kommuneplanen

Mobilitetsplanen

Letbane, etape 2

And many more, Cykelhandlingsplan, Fodgængerstrategi, Parkeringsstrategi, Højhuspolitik, Klimaplan/Klimastrategi, Sundhedspolitikken...





A complete redesign of the place!

How can this place become a livable and attractive urban space while still performing as a mobility hub?

Preconditions:

- Light rail, stage 2
- Facilitate the main pedestrian flows
- A minimum of kiss-and-ride facilities
- Integrate bike parking (min. 500 spaces)
- Space for two busses in each direction
- No car traffic across
- Accessibility and place for everyone
- Look to the existing plans...



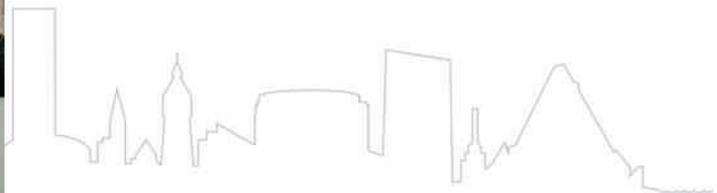
Themes and Experts

Sustainability – Karina Svanborg

History and Urban Environment – Mette Stenslund

Health and Welbeing - Christina Fruergaard

The Green City – Hanne Storgaard/Martin Højholt



COMPARING BRT WITH LRT

2.3. Comparing BRT with LRT

I have chosen to concentrate on BRT and LRT and compare both alternatives with the existing situation along bus route 31 (Snarøya - Grorud - Snarøya) in Oslo. The reason for using this route to compare BRT and LRT is that these two transport systems have almost the same characteristics (Deng & Nelson, 2011, p. 83). Moreover, passengers appreciate BRT and LRT almost equally (Currie, 2005, p. 41). Therefore, it is easier to keep the analysis at a manageable level because the number of variables that must be considered is reduced significantly.

In the following, I will compare BRT with LRT with regard to several characteristics in order to emphasize similarities, and particularly to distinguish differences. Table 2 is based on the study of Deng & Nelson (2011). Their comparison takes into account important variables such as average speed and passenger occupancy, and is more detailed than, for example, IEA (2002).

Examining individual items, there are three criteria where differences between BRT and LRT are significant: roadways, propulsion technology and costs. I choose to concentrate on these categories since they are crucial for decision makers when it comes to investments in new transportation projects (Hensher and Golob, 2008, p. 504).

Table 2 A simple comparison of Bus Rapid Transit and Light Rail Transit

Transport mode	BRT	LRT
Priority	Shared or exclusive	Shared or exclusive
Roadways	Bus lanes or similar	Rail tracks
Propulsion technology	Combustion or electricity	Electricity
Vehicle control	Visual	Signal
Construction time	< 18 months	2 to 3 years
Areal	2 to 4 lanes	2 to 3 lanes
Flexibility wrt implementation and operation	High flexibility	Limited flexibility
Passengers per vehicle	160	170 to 280
Minimum headway (sec)	12 to 30	75 to 150
Transport units per hour	120 to 300	24 to 48
Passengers per hour	9 000 to 30 000	12 200 to 26 900
Top speed (km/h)	60 to 80	60 to 80
Average speed (km/h)	15 to 25	15 to 25
Capital costs (per km, mill. 2011-NOK)	90.07 (90.18)	232.12 (23.66)
Operation costs(per vehicle km, mill. 2011-NOK)	31.64 (27.12)	81.68 (80.28)

KISS-AND-RIDE

