

The journey as a destination

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ABSTRACT

The journey as a destination explores how spatial changes can improve the integration of a certain time and space into people's everyday life. How activities and experiences can be made possible through architectural changes of the interior space in a commuter train.

This research is important for individuals, to make better use of existing time and to ease the efficiency struggle in the everyday life. In a wider sense it promotes and increases the attraction of public transport, in the strive for a sustainable development. The thesis thereby highlights the importance of looking to the individual in order to make a greater change.

As the development of public transportation is ongoing, this is a way of taking it one step further with a focus on social sustainability. *The journey as a destination* investigates how one can experience commuting as valuable by looking at where time actually is spent. By enabling and improving desired activities during the journey the time spent on commuting can change from being looked upon as useless to meaningful. The space of a train can shift from being perceived as merely a transport mean to an actual place. The thesis explores if design can make the journey become a destination.

ABOUT THE AUTHORS

Ylva and Hanna met during their studies of architecture and have throughout the years of education become well-working partners as well as close friends. Both have a background from Umeå School of Architecture, Umeå University, from where they graduated with a degree of Bachelor in Fine Arts in 2012. They reunited at the studies of the master program *Design for Sustainable Development* at Chalmers Architecture, Chalmers University of Technology, in 2013.

Travelling, mobility and infrastructure are themes they have dealt with in previous projects, on both educational and professional levels. Airports, travel centres, tram halls and traffic nodes have been in focus of investigation but always with a strong point of departure in the individual person. The thesis work has made it possible to build upon this knowledge and investigate this area from a new point of view.

In this master thesis they together explore a strong mutual interest: how small implementations can make a greater change and how architectural tools and methods can affect in new fields than the traditional. The common view upon architecture and the way of attacking a problem, in combination with a lot of laughter has made the collaboration between Hanna and Ylva in this thesis an exciting journey.



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THE STRUCTURE OF THE BOOKLET

This booklet is the result of a one semester project at master level of education. It includes research-based work of which conclusions are presented through a design proposal and through reflections in text.

Part I brings an understanding of the subject, the purpose of the project and methods used in order to answer formulated research questions.

Part II includes the research divided into five chapters. Beginning with investigating the importance of the subject in the global, national and regional scale (*The Big Perspective*) followed by the development of public transport, commuting and car use (*Everyday Mobility*). The evolution of the train station and development of the train is discussed (*The Whole Journey*) and included is also an analysis of the current situation of the train space and its surroundings (*Site & Space*). Part II ends with a chapter explaining the perspective of commuters and their future desires (*The Commuters*).

The research chapters include facts and explanations based upon findings through various research methods, which corresponds to the research questions. Each chapter ends with a reflection where the authors express personal views and understandings of the issues described. The reflections are subjective, where the authors process the content of the chapter and from where the basis of the design derives.

Part III includes the design proposal presented in drawings, text and illustrations.

Part IV consists of a concluding chapter where the result of the project, design decisions, the project process and the role of the architect is discussed.

PART I: INTRODUCTION

INTRODUCTION

Every weekday about 92 000 people work commute in the region of Västra Götaland. The average time of commuting is 82 minutes (back and forth) a day which equals 126 000 man hours. This is comparable to 15 750 full-time working positions per day. An average commuter spends 40 working days each year on commuting, which equals eight working weeks.

A tremendous amount of time is spent on commuting every day, why the aim of the master thesis is to investigate how time could be taken advantage of to a further extent than in the current situation. An improved use of travel time affects the individual commuter as well as workplaces, labor markets, municipalities and of society as a whole.

Work commuting, both on a day to day and weekly basis is increasing in Sweden. The daily travels are made by different means of transport – car, bus, commuter train, tram or subway. Weekly work commuting more often occurs by train or air plane. The more frequent and time consuming the travel is, the higher is the need of development and making use of the time.

The thesis is investigating a daily travel distance of about 40-50 minutes one direction with commuter train in the region of Västra Götaland. A theoretical part in combination with a design proposal brings attention to the issue of commuting and is to act as a starting point for a discussion upon public transportation, with focus on the spatial and social aspects. This lies in the interest of manufacturers and operators of public transportation and of departments of planning and infrastructure within municipalities and counties. Also organisations, educations and institutions within the field of infrastructure and public transportation.

BACKGROUND

All over the world a trend of urbanisation is visible – people moving from small towns to big cities. In Sweden small towns struggle to keep residents and as a result they brand themselves as suburban areas to urban cities, attracting people to live in one place and work in another. A crucial link in this development is the infrastructure between the different areas in order to move people, goods and services back and forth. For a sustainable transformation, increasing public transportation becomes important to aim for, not least to reach environmental goals of reducing carbon dioxide emissions. In order to make a change on a great scale, one needs to start by looking to the individual person; in this case it is about encouraging more people to choose public transportation over the car.

Alongside this development people are struggling to find enough time in their everyday life. Health problems such as stress, burnouts and mental illnesses are constantly increasing in today's society. The necessity of taking advantage of every minute of the day in order to achieve what you have set up to do is the case for many. We tend to schedule our whole days, even activities with recreational purposes, such as physical exercise or friendly gatherings. Efficiency is a factor affecting everything we do and we are forced to limit the unused pauses in between our daily activities, in order to make our everyday life run as smoothly as possible. *Can the struggle of efficiency in people's everyday life be eased through spatial changes?*

A demand of increasing the efficiency is obvious also in the architectural development of commuting and travelling. There is a great focus of creating extensive travel centres and at transport junctions a wide variety of functions are gathered to offer what commuters desire without the need of leaving the station area. Today, a travel station no longer includes functions merely connected to travelling, but also to what you need in your daily life. Although modern travel junctions offer new possibilities of making the day more efficient, a commuter actually spends most of his time on the travel vehicle – not at the station. *How come the development has not reached the means of transportation?*

The transport sector is also trying to keep up with the efficiency development, through offering various ways of buying tickets and introducing more frequent routes and faster travels. Transport companies tend to describe the possibilities

of commuting to work in terms of, among others; travel distances, ticket fares and means of transport. An individual consider these aspects but his decision whether to commute to work or not depend upon on more than these factors. A person's income, the distance from home to transport junction, the comfort of the transportation, attitudes, cultural and social habits are examples of other aspects. We believe one of the key factors is how well the time spent on commuting fits into the daily life of an individual. How one can make use of a time today perceived as wasted, where the only purpose is getting from point A to B. The possibilities of performing different activities are today limited on commuter trains which is why it can be hard for many to see the advantages of commuting with public transport.

“To highlight the properties of a traffic environment as “functional” and “appealing” is to put focus on the traveller's perspective. Today, and especially in the past, there have been tendencies within the sector of public transport to place technology at the forefront and forget about the spatial experience.”

Time is key in today's world. A great amount of people are already commuting to work in Sweden and spend a lot of their daily time on public transportation. For some, this is a time for working while others get a moment of rest. For some this is a short period of quality time, where they are in limbo between work life and private life.

To make use of every second lies in the interest of many people in modern society and for those commuting the situation is not different. For some people, the current situation is functioning well and we do not aim to interrupt this. But we believe various experiences of commuting and the usage of the daily time of travel could be developed further. We believe spatial interventions in spaces of travel can make a journey better adapted for more people's everyday life. We see this as an opportunity to develop an existing time many people believe can not be used, in a space which is already a natural part of their daily life. Through this, also increase the attractiveness of public transport and ease the connections in the urbanised future, between small towns and big cities.

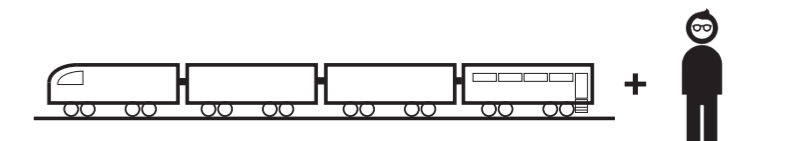
THE NEED FOR ARCHITECTS

As architecture students we have been taught to deal with issues in various contexts and of different scales. We believe our mindset and work can contribute to a positive change in a wide range of issues in society, hence we find this profession exciting. However, we believe the areas of work could be extended and wish to inspire for new collaborations and fields to engage in.

To work with architecture is to deal with the perception of humans. No matter size or purpose of a project, the desired will of the user should form the basis and be expressed in the result. The ability to affect the lives of people is what triggers our interest and why we find this profession important. For us, the work of architecture includes a variation of working methods due to the specific requirements of a project and the result does not have to equal a spatial change. We believe our capacity of looking to behaviours, movements and habits can result in changes of various kind. But our mission is not simply to change, but to improve.

A train journey gathers a large amount of people which implies the possibility of improving a situation for many. Today, people are squeezed together like animals in a cattle transport and hours of the day are spent closely seated to strangers. The obvious limitations in space determines which activities and behaviours are accepted. The space is currently organised due to economic and efficiency factors and although the meaning of the travel has developed, the organisation has remained.

Due to the obvious spatial challenges and the lack of development, we argue there is a great need for the architect within the field of train design. Hopefully this project can inspire to future improvements as well as new thoughts regarding the work for the architect.



TRAIN DESIGN

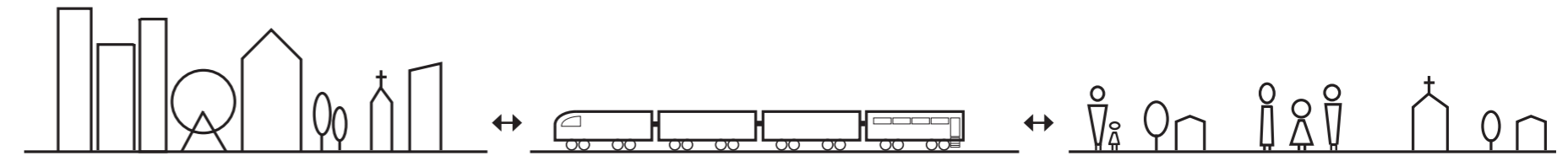
ARCHITECT

MAIN QUESTION FOR INVESTIGATION:

Can the time of travel be better valued and integrated into commuters' everyday lives, through spatial implementations that serve various needs of individuals?

QUESTIONS FOR INVESTIGATION

To reach an answer to the main question for investigation, four focus groups were created with related questions. This to investigate the subject from various angles and in different scales. The focus groups relate to the time, space and object of the project and is investigated both separately and in relation to each other.



POPULATION DEVELOPMENT

How has urbanisation and regional expansion developed and affected the region of Västra Götaland?
What is predicted for the future?
How can urbanisation and regional expansion develop in a sustainable way?

WORK COMMUTING

How is the situation of work commuting?
How does it affect a city's development?
What factors are considered when a person decides to commute?
How does commuting affect the social structures of a commuter?

TRAIN DESIGN

How does the interior space of a train function today?
How do people use and experience the space?
What are the preconditions, restrictions and possibilities?
How do the performed activities relate & function together?
How could the design be adapted to commuter's needs and desires?
How does the interior affect the behaviours and movements?

EVERYDAY LIFE

What is the daily life of a commuter like?
How and where is time spent?
How could the commuting time be developed to support the daily life?

DELIMITATIONS

Swedish context

The research concern the Swedish context, otherwise clearly stated.

Work commuters

People travelling some distance regularly between one's home and one's place of work.

Existing train model

The design proposal is based on the layout of an existing regional train of a specific model (Regina).

Specific route

A certain route to investigate is chosen; from Vänersborg to Gothenburg. This due to its length (approx. 50 min) which is relatively common in the Västra Götaland region, from several smaller communities to Gothenburg.

Rules and regulations

The design proposal is based on current regulations for trains (see chapter *Site & Space*).

DEFINITIONS

Regional expansion

An effect caused by observed changes in people's commuting patterns which causes the boundaries between functional labor markets to expand.

Work commuting

To travel some distance regularly between one's home and one's place of work, over municipal borders.

Public transport

Any form of transportation that charge set fares, run fixed routes, and are available to the public such as buses, subways, ferries, and trains.

The Gothenburg region

Includes the municipalities of Ale, Göteborg, Härryda, Kungsbacka, Kungälv, Lerum, Mölndal, Partille, Stenungsund, Tjörn, Öckerö, Alingsås and Lilla Edet.

METHODS

The work process of the thesis includes various methods of research. A combination of literature and real life situation analysis creates a wide base of information for the design proposal. During the whole process a combination of research and design have been performed, by constantly trying out what was found from investigations, observations and interviews in sketches and drawings. Presented below are the methods used in the process.



PREVIOUS RESEARCH AND LITERATURE

Taking part of previous studies and readings connected to the issues of investigation.



INTERVIEWS

Current commuters

As the target group is people who commute from Vänersborg to Gothenburg contact has been made with commuters today traveling along this route. Through interviews and a workshop, direct information about their life situations and future wishes was reached.

Involved actors

For research and inspiration, interviews with relevant persons have been made. These, for example, include actors connected to Västtrafik, Bombardier Transportation and the municipality of Vänersborg.



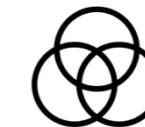
SURVEY

Through a national online survey, information from a greater group of commuters from all over Sweden could be achieved.



OBSERVATIONS

Through making travels with the commuter train observations and analysis work have been made. This through sketches, notes and photos of the situation on the train.



DIAGRAMS

The results from interviews, the survey and observations have been translated into diagrams.



SKETCHES

Results from the research have been tested in sketches (plans, sections and drawings in different scales) by hand and in computer.



1:1

Tests of measurements have been made in scale 1:1 to understand the actual experience.

PART II: RESEARCH FOR DESIGN

THE BIG PERSPECTIVE

The world is facing major challenges: climate change and shortage of natural resources are a few. Fast development of big city areas and expanding regions cause increased movement of people. These aspects together requires sustainable strategies in order to meet the needs of both humans and nature. A crucial link in this equation is infrastructure and how it adapts to the conditions.

CONTENT:

Sustainable development
Population development
Social well-being
Reflections



SUSTAINABLE DEVELOPMENT

STATE OF THE WORLD

"*Nature is the basis of our well-being and our prosperity*" - so reads the first sentence in the summary of the *Living Planet Report* by *WWF*. The use of natural resources puts a tremendous stress on the planet. The human population consumes more natural resources than nature can provide us with. The use by the world's population, also called the ecological footprint, is comparative to one and a half planet of natural capital. (*WWF* 2012)

One reason for the high numbers is the great use of energy. (*Offerman* 2006) To reduce the carbon footprint (the use of CO₂) human beings need to change behaviour by producing more in new forms and consume better, wiser and less. Climate change is one of the major effects of the human behaviour. The usage of greenhouse gases contributes to an increased greenhouse effect which affect both nature and human beings in a negative way. Almost a third of the carbon dioxide emission in the world is caused by the traffic sector. (*WWF* 2014) According to forecasts made by *Trafikverket*, carbon dioxide emissions will increase until 2030 even though the cars are becoming more fuel efficient and the total amount of emission from the transport sector have decreased in the last couple of years. (*Konsumentverket* 2013)

STATE OF THE GOTHENBURG REGION

In the city of Gothenburg a quarter of the total carbon dioxide emission derives from the traffic sector. Of this number three quarters of the emissions are due to private cars. The vision for Gothenburg 2050 states that consistent urban planning around public transport and close to central locations is an aim which could reduce car dependency. To be able to reach the environmental visions, the report also states how public transportation and bicycle transportation have to be developed further as an attractive alternative to the car all year round. (*Miljöförvaltningen* 2013)

POPULATION DEVELOPMENT

URBANISATION

The number of people living in cities have increased steadily during a long period of time. About 70 percent of the EU citizens live in cities and among the EU-countries the trend of urbanisation is strongest in Sweden. (*Carp* 2012) Until 2030, the Swedish population is calculated to increase by 12 percent and the growth is predicted to take place in the big city regions. The middle sized cities are also predicted to increase while the rural areas are to decrease in population. Although the development of the big cities offer great opportunities, such as work and education, the population increase can cause problems. Transportation problems as air pollution, noise and congestion are increasing in big cities. And for the country as a whole, a trend of small towns dying due to loss of inhabitants is an alarming issue. (*IVA* 2010)

REGIONAL EXPANSION

regional expansion - an effect by observed changes in people's commuting patterns. An increase in commuting causes the boundaries between functional labor markets to expand. (*SCB* 2010)

Development

During the 1970s and 1980s work commuting increased dramatically in Sweden. This created difficulties in defining the conditions of the local labor markets (LA-regions) based on solely administrative areas. Because of this, *SCB* (The Central Bureau of Statistics) and *ERU* (The Expert Group of Research on Regional Expansion) developed a new division of local labor markets. The purpose was to create a model which divides the country in independent and geographically delimited labor markets, whose extension in practice is due to the daily travels of individuals (their journeys between home and work). A revision of the regions is made every fifth year. (*SCB* 2010)

In Sweden, regional expansion has mainly occurred in densely populated areas in the middle and southern parts as well along the northern coastline. Due to small popula-

tions and municipalities covering large areas, the possibility of regional expansion to occur in the sparsely populated parts of the country is small. (*SCB* 2010) Forecasts by *SCB* imply that the population of rural municipalities will continue to decrease. The rural regions often depend upon one single industry or the public sector, why they are vulnerable and not as competitive as larger cities. (*Boverket* 2012)

Situation in the region of Gothenburg

Since the 1970s, development of regional expansion has been less frequent in Gothenburg compared to Stockholm and Malmö. This is mainly due to the regional conditions, for example in sense of city structure, natural geographical conditions and standard of transport systems. There are many opportunities for regional expansion to be strengthened in the Västra Götaland region. Municipalities geographically situated within reasonable commuting distance to Gothenburg could be better connected and thereby increase the labor exchange. As the Västra Götaland region holds long distances between the cities, developing fast train systems will be key but also to improve the connections of various means of transport, such as terminals and commuting parkings. (*Västra Götalandsregionen Tillväxt och Utveckling* 2009)

Effects

A number of investigations have shown results of regional expansion as positive when it comes to economic growth and employment. The benefits include a more differentiated labor market and increased specialization of trade and industry, labor and education which results in an improved matching of supply and demand. (*Västra Götalandsregionen* 2007) By integrating adjacent regions, commuting becomes an alternative to migration and in turn also to unemployment and dependency of subsidies. (*Västra Götalandsregionen* 2005 & *Västra Götalandsregionen* 2007) Regional expansion has in Sweden been perceived as an opportunity to change the situation in regions of poor economic development. (*Knutsson* 2007) Small Swedish municipalities consider the relation to big cities vital, even though some are located as much as 200 kilometer from big cities. It is common to brand small cities as suburban areas to big cities. Regional expansion can also act as an insurance in case of future bad times for rural municipalities of too long distances to big cities or municipalities not being part of, nor a potential part of, a big city's labor market. (*Sveriges Kommuner och Landsting* 2008)

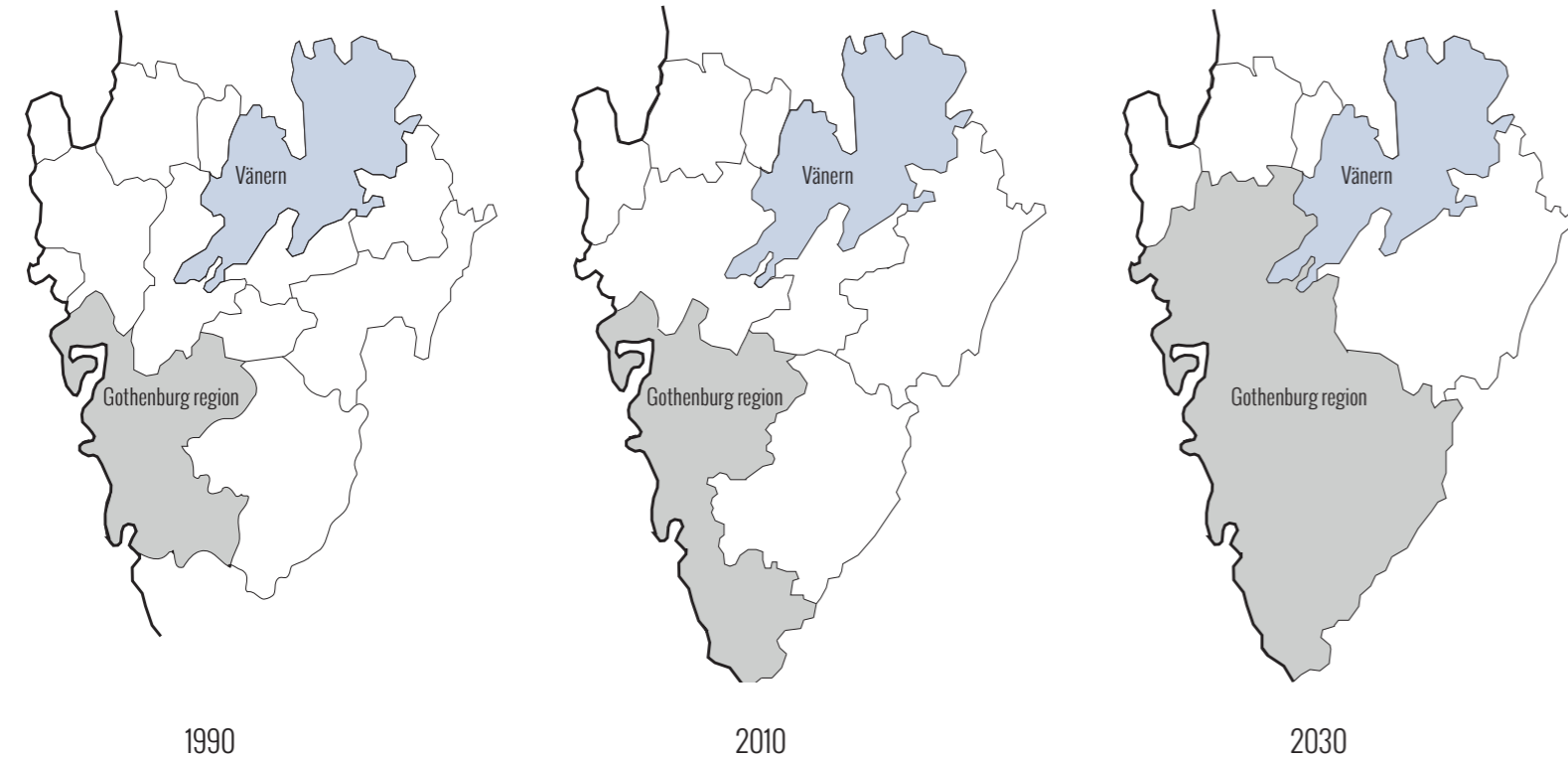
Sustainable regional expansion

The effects of regional expansion are in most cases presented as positive but as it requires increased movement of people one need to also consider the downparts. If the travels between regions are carried out by the transport systems and choices of today, there will be negative environmental causes on both nature and humans. (*Boverket* 2005) Decreased car use and more environmentally friendly public transport are two important factors in order for regional expansion to be defensible from a sustainable perspective. Regional expansion does not only imply people choosing longer travels to their workplaces, but it also affects the rest of the daily life as the movement of people expands to larger geographical areas. (*Sveriges Kommuner och Landsting* 2008) This implies an total increased amount of travels why development and attractiveness of public transport is of high importance.

According to *Boverket*, for regional expansion to be defined as sustainable it requires a development which ensures a good quality of life for all citizens in prosperity, health, environment, social security and justice. This is to be secured through political decisions with a base in national goals but is to be adapted to specific regions and conditions. (*Boverket* 2005) Public transport, the rail connected in particular, is the version which best meets these requirements. (*Västra Götalandsregionen Tillväxt och Utveckling* 2009)

The discussions about regional expansion are in most cases only concerning employment, commuting flows, salaries and possibilities of growth. What often is left in the shadow is how it affects the individual person. Regional expansion can bring positive effects such as greater job opportunities, a better combination of home and work or increased salary. But the everyday matters such as waiting on the platform or getting a moment of rest on the way home from work are also important factors to consider. To focus regional expansion on social sustainability could be done by highlighting the everyday life of commuting and see it as a point of departure. To get closer to the everyday level and pay attention to the patterns and effects of the commuting. (*Sveriges Kommuner och Landsting* 2008)

Expansion of the Gothenburg region



(SCB 2010)

SOCIAL WELL-BEING

Population growth in cities and expanding regions affect our way of living. An enlarged region results in an increased number of, as well as longer, travels. Spending much time on travelling, on a daily basis, causes effects both mentally and physically. Some argue that commuting generates the least positive and most negative effects of all daily activities. (Stutzer & Frey 2008) Studies show that people commuting experience more stress than people working close to home, a problem which increases with the time and distance of the travel. (Gil Solá 2013)

The greatest issue for people travelling on a daily basis is the lack of time for social relationships. Partners, children and friends are often neglected in times of stress. (Wopenka 2013) Parents feel stressed about being far away from the children and feelings of guilt and insufficiency is common. (Haugen 2005) When the amount of spare time decreases and stress is experienced more often, poor health is a result. Less time for physical exercise, health care and sleep are reasons for the increasing number of sick leave in Sweden, a major problem in society. The stress issue is also due to the rising level of ambition and the evolution of a high performing society. The feeling of stress, partly deriving from high level of ambitions, seems to be higher in big cities than in rural areas. (Sveriges Television 2014)

A feeling of home and belonging decreases when a person starts to commute and spend time in two cities. One gets less time to be active in neither of the cities' social life nor take part of public activities and the cities' development. A feeling of rootlessness can occur and affect the commuter's well-being negatively, as well as the municipalities. (Haugen 2005)

For people commuting, the feeling of stress due to the actual travel is often based on the insecurity and lack of control. Not knowing if the train will arrive in time and entering work in a stressed mood can affect the whole working day and the workplace. (Stutzer & Frey 2008)

For a commuter time, money, social life and personal health must be worthwhile the positive effects of a commuting lifestyle. For some, commuting is not negative at all, they instead increase their well-being through planning the daily life and make use of the travel time for something found valuable. (Haugen 2005) If a commuter

socialize during the time of travel, either with co-travellers, via social medias or telephone calls, the health is affected in a positive way. (Sandow 2011) To commute with public transportation instead of car has shown good statistics on physical health. If using public transportation, one often walk or bike to the station and thereby gets moments of daily exercise during the day, something that the car commuter lacks. (Svensk kollektivtrafik & K2 2013)

"A commuter always has a strategy for moving between home and work. This strategy is ingrained and the planning happens unconsciously and without much effort."

(Sveriges Kommuner och Landsting 2008)

Reflections

We argue there is not one single answer to the question in how to reach global sustainability. Nevertheless, there is not one person's responsibility. We believe work have do be carried out from both above and beyond. To set common rules and goals is a governmental responsibility while each individual can aim for a sustainable lifestyle. We believe that we, as architects, can contribute to a change in people's patterns and behaviours, if understanding the situation and proposing changes at the right place and time. Changes which can derive from being small scale implementations to major spatial introductions, due to the circumstances.

With a trend of urbanisation, the possibility of developing sustainable choices of mobility arises. To live in a city with short distances between home, work and services makes it possible to walk and bike when movement is required. A city with high population also has the opportunity of developing an efficient public transportation system, sustainable for the environment and time efficient for individuals.

If people choose to commute from small towns to bigger cities, the question of mobility is different. As there is no option of moving by foot or bike, one is dependant upon means of transport. In order for this mobility to become sustainable, it is crucial to include this factor early in the planning process. We believe one need to consider the movement not only within the city but to the adjacent cities as well and to look to the whole region. When deciding upon which means of transport system to offer it is important to not only focus on the infrastructural parts of mobility but to look to the users and their experience.

We believe the regional perspective is important to highlight, for future changes. The connections between municipalities tend to increase and small towns' dependencies of big cities are getting inevitable. Although smaller, self-sufficient communities would be preferable of many reasons in regards to sustainable development, the development is heading another direction at the moment. Regional expansion is an existing trend which is predicted to continue. For this evolution to be sustainable, we argue, appropriate choices of movement needs to be made.

The pressures of high performance in society we believe, in many cases, are results of urbanisation and

regional expansion. We tend to, in many aspects, not be content with what we have, but aim for more, and more is found in bigger cities rather than in small towns. An increased amount of activities and organisations to engage in, more social relations to meet and stay in contact with and jobs demanding much time and high performance. To broaden the social network or be able to achieve success in the career could of course be positive for the self esteem and well-being. But a combination of several factors demanding much time or energy can easily result in stress. Many feel a press to perform at high level not only in work life but in also in relationships and in the spare time. A press to be able to portray oneself as successful in the profession as well as a good parent or an eminent youth. In order to keep up this performance at high level in all stages of a day, time is an evident factor. How well one can perform stands often in direct relation to the access of time and the lack of it can cause problems.

Time and mobility relate to each other and depend upon certain preconditions and choices. To perform a sustainable lifestyle implies making choices of movement which cause results on both individual and global level.

EVERYDAY MOBILITY

How we choose to move from one place to another and by which means of transport is a matter influencing a city on all scales - from the everyday life of individuals to the spatial planning on a large level. To commute is not a new phenomena but has through history been a natural part of people's daily routine but its performance in the city has shifted and affected the development in various ways. This chapter brings an understanding of the development of public transport and commuting, the situation today and the visions for the future.

CONTENT:

- Commuting
- Public transport
- Car use
- Reflections



COMMUTING

work commute - to travel some distance regularly between one's home and one's place of work.

Work commuting includes both people travelling by car, public transport and by bike. How people commute, how far and by which means differs in the world. Statistics show that the world average commuting time is 40 minutes one way. Eastern Asia tops the charts while North America is in the bottom, followed by Europe. (Boniface 2014)

Work commuting has during a long period of time increased in Sweden. (Sveriges Kommuner och Landsting 2008) In 1970, about half a million people commuted and in the end of the 1990s this number had passed one million. This increase is due to several reasons, one being investments in infrastructure and public transport. Another is specialisation of work which demanded greater geographical areas in order to enable matching of supply and demand of work force. Also, a changed view upon commuting and higher acceptance among the population. During the recession in the 1990s there was a decrease in commuting. When the labor market situation improved the commuting followed this development and in 1996 the commuting was at the same level as before the recession. This implies that commuting, to some extent, correlate with the economic situation of the country. (Hedberg 2005) During the 2000s the statistics imply that the growth rate is declining. This can appear remarkable as it is during the beginning of 2000s that the theories of regional expansion have been given attention among municipalities. The economic advantages of regional expansion has brought the issue to a high priority matter in many regions why it might seem a bit odd that it has not resulted in greater impact in the statistics. One reason for this could be that, compared to other Western European countries, Sweden has invested relatively little in infrastructure. This has resulted in a current transport system which in some areas is obsolete and thereby not satisfying for all customers. One interpretation is that the attitudes towards commuting to work is an ongoing process that occurs in various cycles in various municipalities (Sveriges kommuner och landsting 2008) Today, 1.4 million people are work commuting in Sweden which is almost a third of all employed. (Håkansson 2010)

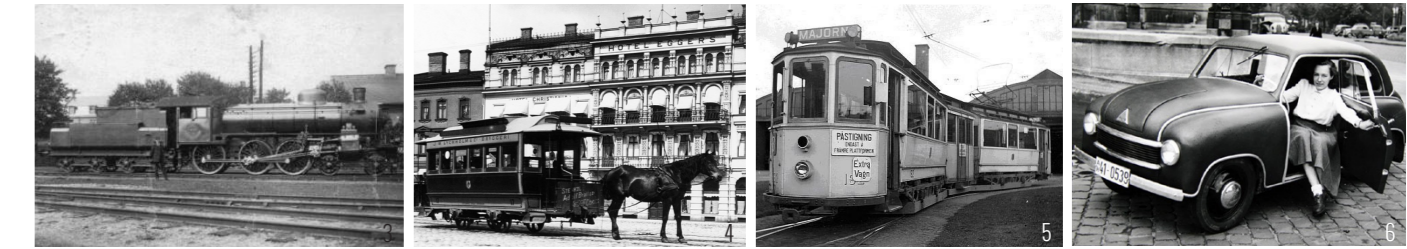
FACTORS AFFECTING WORK COMMUTING

The reasons for commuting between different municipalities varies and is affected by several aspects. Geographical and demographical preconditions such as size and population density plays an important role as well as the local labour market situation, prices of accommodation and salary rates in relation to adjacent municipalities. There are softer factors also important to consider, such as the attitudes towards commuting and the norms and values among the population. Not only geographical nor infrastructural aspects are considered when a person decides to commute but also a "mental regional expansion". Which distances are experienced as reasonable to commute? How does one value having a job demanding to commute in relation to spending this time on something else? These kinds of questions are important to consider when discussing commuting. (Sveriges Kommuner och Landsting 2008)

In Sweden, ingoing commuting is highest in the big city areas and outgoing commuting is highest in the suburbs and areas/municipalities surrounding Stockholm, Gothenburg and Malmö. An example of a region with a great commuting increase is the region of Skåne (in the years 2000-2006) which was due to an improved labor market, investments in public transport and the proximity to Denmark. In the northern parts of the country as well as in Dalarna, Värmland and the middle parts of Götaland, the rate of commuting is low. (Sveriges Kommuner och Landsting 2008)

TIME LINE

In order to understand the close relation between the historical development of public transport and the structure of society, a historical background follows.



1800S

In the middle of the 1800s, an expansion of the railway took place and in the end of the century two of the main routes were established; Stockholm-Malmö and Stockholm-Gothenburg. However, one experienced it easier to manage public transport for shorter routes by using the rails for carriages drawn by horses, an idea that derived from the mining industry and was used in several Swedish cities in the end of the 1800s. In the 1800s, industrialisation took place and many cities expanded. As dwellings and industries of various sizes were situated closely together, the housing situation was dirty and unpleasant. Due to this, people moved to the outskirts and commuted by railways. When traffic was electrified in the end of the 1800s/beginning of 1900s, the tram traffic systems flourished and a dozen cities was using this system. (Wretstrand, Danielson och Nordell 2012) The first tram run by horses came to Gothenburg in 1879 and 13 years later the trams were run by electricity. (Göteborgs Spårvägar 2014)

1900-1940

As bus vehicles developed and its systems could operate more efficient and flexible, most smaller cities established bus lines instead of the tram traffic systems in the beginning of the 1900s. These were initially privately run. In 1935, the Swedish government decided to nationalized the railway. (Wretstrand, Danielson och Nordell 2012)

1950-1960

Sweden transformed into a car based society. In the beginning, the car was mostly for leisure and one kept on walking, biking or using public transport to and from work. (SOU 2003) In 1950, public transport accounted for 70 percent of all travels and own vehicles for 30 percent but in 1960 the numbers were more or less reversed. (Andréasson 2000) During the 1950s, the number of cars increased dramatically - from 252 000 to 1 193 900 registered private cars. (Bösch och Brodén 2009) As the private car made it possible to commute, people did not have to move if they changed occupation. The community development adapted to the patterns of movement made possible by the use of car. Due to this, settlements became scattered and central housing areas in cities became scarce. Dwellings, services and other functions was located separately and often peripheral.



As the car use increased, the use of local and regional public transport decreased, apart from in Stockholm where the subway system was developed and expanded. (SOU 2003 & Andréasson 2000) While regional bus and train traffic systems had passed into state ownership the traffic systems within cities and the suburbs remained in private ownership. As a large amount of traffic businesses operated side by side, with own systems of rates and tickets, problems occurred due to lack of coordination between the various actors. Coordination work began, initiated by the Government, which resulted in a local authority responsible for the public transport. This started in Stockholm but the development spread to other cities during the 1960s and 70s and has been referred to as the “municipalization of public transport”. (Isaksson & Heikkinen 2013)

1970

A car driven society developed where the car was norm in the physical planning, which resulted in a comprehensive network of roads and large parking spaces. (Bösch och Brodén 2009) At this point, the car had become a necessity to perform daily activities such as going to work and supermarkets or taking children to kindergarden, school or sports. As workplaces and services was situated further away than before, those who did not own a car experienced greater difficulties in travelling with public transport. (SOU 2003)

In 1978, a reform establishing a head of traffic took place (*Trafikhuvudmannareformen*). Heads of traffic appointed by municipalities and county councils were to be the main responsible for public transport. The aim was to develop a countywide approach where both local and regional needs could be met, in both planning and implementation. (Isaksson & Heikkinen 2013)

1980

The use of public transport increased dramatically. Partly due to the head of traffic reform which resulted in lower fares, uniform time tables and improved traffic services etc. The national economy and price of gasoline also affected this development. The greatest increase was found in traffic from smaller towns and suburbs to larger towns. Here, public transport had previously been of small scale compared to urban areas where the position of public transport already was strong. (Wretstrand, Danielson och Nordell 2012) However, in the middle of the 1980s a stagnation in public transport was evident.

1990

The negative trend of the end of the 1980s remained also during the 1990s which resulted in decreased travels with public transport, while the car use increased. This period resulted in further changes of the management and organisation of public transport. Municipalities and county councils became responsible of the local and regional traffic systems. (Isaksson & Heikkinen 2013)

2000s

Due to the negative trends during the previous decades, the issue of public transport was given increased attention within politics which strengthened the view upon public transport as a central function in society. The Government appointed a committee to function as a forum between the Government and other actors of public transport, named the *Public Transport Committee (Kollektivtrafikkommittén)*. The committee proposed a large amount of actions to develop public transport, such as improved coordination between different means of transport and more distinctive objectives and strategies to aim for in the long-term perspective. Particular emphasis was put on the importance of better coordination of public transport and spatial planning. (Isaksson & Heikkinen 2013)

In 2006, a new government commission was appointed to *Vägverket* and *Banverket*, named *Koll framåt*. This was a national program for the long-term development of public transport which came to act as an arena of a wide discussion between various actors. In the end of 2007, a finished plan of action was presented where a common goal was to increase the share of public transport. (VV 2008)

Koll Framåt was taken further in 2008, when a collaboration of national organisations* created a common plan of action which they presented to the Swedish Government. The project is called *Fördubblingsprojektet* which main goal is to double the market share and use of public transport until the year 2020 (compared with the situation in the year 2006). The aim is to reach important goals of society in environment, employment, traffic safety and equality. Doubling the use of public transport would reduce the carbon dioxide emissions by about 24 percent and bring high socioeconomic gains. The vision of this project is that all travelers in 2020 should view public transport as a natural part of their daily travels. (Partnersamverkan för en fördubblad kollektivtrafik 2012 & Näringsdepartementet 2014)

* Svensk Kollektivtrafik, Svenska Bussbranschens Riksförbund, Svenska Taxiförbundet, Branschföreningen Tågoperatörerna, Sveriges Kommuner och Landsting, Trafikverket and Jernhusen



PUBLIC TRANSPORT

public transport - any form of transportation that charge set fares, run fixed routes, and are available to the public such as buses, subways, ferries and trains.

For regional expansion to take a sustainable path, the means of transport one commutes with are crucial to consider. In comparison with car use, public transportation is a good choice and a strategy to reach a sustainable regional expansion.

Over the last decade the view upon public transport has changed. From considering it as merely a way of providing people's need of transportation to understanding it as a strategic instrument for development of cities and regions. As a mean to not only fulfil the transport policy objectives but also other aims of society such as quality of life, accessibility, environment, energy, employment, economic growth and competitiveness. (Isaksson & Heikkinen 2013) Public transport is nowadays often explained as one of the preconditions for a sustainable transport system as well as part of the development of regions and cities. If planned orderly, public transport can bring several positive effects such as reduced congestion, reduced environmental impact, better travel opportunities and thereby improved accessibility of labor markets, education, leisure and recreation. The issue of public transport is addressed on various levels, from political objectives to initiatives by private persons, which implies its influence in today's society. Despite the positive aspects of public transport, this sector is facing many challenges which will demand development to be able to answer to all future needs. (Wretstrand, Danielson och Nordell 2012)

SITUATION IN VÄSTRA GÖTALAND

Västra Götaland is population wise the second largest region in Sweden with 1.6 million inhabitants (2013). 17 percent of Sweden's total population is found here. Of the total population, about 750 000 people live within 30 kilometers from Gothenburg. (Västra Götalandsregionen 2013 & Trafikanalys 2011)

Every day, an estimated number of 3.5 million travels are being made within the Västra Götaland region. (Västra Götalandsregionen Kollektivsekretariatet 2012). Of these, 900 000 are made by public transport. (Västra Götalandsregionen 2014) The uptake area of commuting is found within a radius of up to 150 kilometers but the greatest amount of commuters are found closer to the city. The main part of these travels are being made to and within the largest cities in the region and there are mainly travels to and from home and work. (Västra Götalandsregionen Kollektivsekretariatet 2012)

In the region of Gothenburg, the main means of transport are car and bike. Compared to Stockholm and Malmö, the usage of bikes is lower in Gothenburg while the amount of car use is high. (Trafikanalys 2011) Of all travels, 63 percent are being made by car and 20 percent by public transport.

The car use have increased dramatically over the last 40 years in Gothenburg which partly can be explained by the increasing commuting from the municipalities surrounding the city. (Västra Götalandsregionen Kollektivsekretariatet 2012)

Although a trend of using public transport can be seen during the 2000s, the public transport has had low competitiveness in Gothenburg. The main reason is that the travel speeds historically have been (in average) lower compared to travelling by car. There are also great differences in accessibility of workplaces depending on travelling by car or public transport. By car, all workplaces in the region of Gothenburg can be reached within 30 minutes while only 30-40 percent can be reached in the same time span if travelling by public transport. (Trafikanalys 2011)

In Västra Götaland, the regional public transport consists of both bus, run by Västtrafik, and train traffic, by Västtrafik, Öresundstågen and SJ. Within the region it is possible to within one hour of travel reach the centre of Gothenburg from Trollhättan, Vänersborg, Alingsås, Herrljunga, Falköping, Kungälv and Varberg. (Trafikanalys 2011)

VÄSTTRAFIK

Västtrafik AB is the third largest public transport company in Sweden. Since 1999, when the company was established, the travels have increased from 177 to 267 million travels between the years 1999-2011. During this period of time, the train travels have doubled. The greatest increase can be seen in the region of Gothenburg. (Västra Götalandsregionen Kollektivsekretariatet 2012)

Due to the new law established in 2012 (*Kollektivtrafiklagen*), Västra Götaland region turned into the authority responsible for the long-run development of the public transport of the whole region (Västra Götaland). The law implies that, apart from Västtrafik, also commercial enterprises are allowed to establish routes, for example by bus or train. (Västra Götalandsregionen Kollektivsekretariatet 2012)

GOALS IN VÄSTRA GÖTALAND

The public transport sector is developing in various ways in the Västra Götaland region. Presented below are current regional goals and on-going projects.

Regional traffic supply program for Västra Götaland - vision, goals and strategies until 2025

The base of this vision derives from goals set up by public transport programs, local authorities, governmental transport policies and public transport businesses. (Västra Götalandsregionen Kollektivsektariatet 2012)

Overall aim: The market share of the public transport should increase to create an attractive and competitive region.

Goal 1: The travels by public transport should double from 2006 to 2025.

Goal 2: At least 85-90 percent of the travellers should find the public transport satisfying by the year 2025.

Goal 3: The public transport should consider the needs of all groups of travellers.

Goal 4: The negative environmental effects should be reduced.

(Västra Götalandsregionen Kollektivsektariatet 2012)

Målbild Tåg 2035 (Objective Trains 2035)

An investigation and report through a collaboration between *Västra Götalandsregionen*, *Västrafik* and *Trafikverket Region*. Also consultations with a large amount of extern actors, such as *Västsvenska handelskammaren* and disability organisations. (Västra Götalandsregionen Kollektivsektariatet 2013)

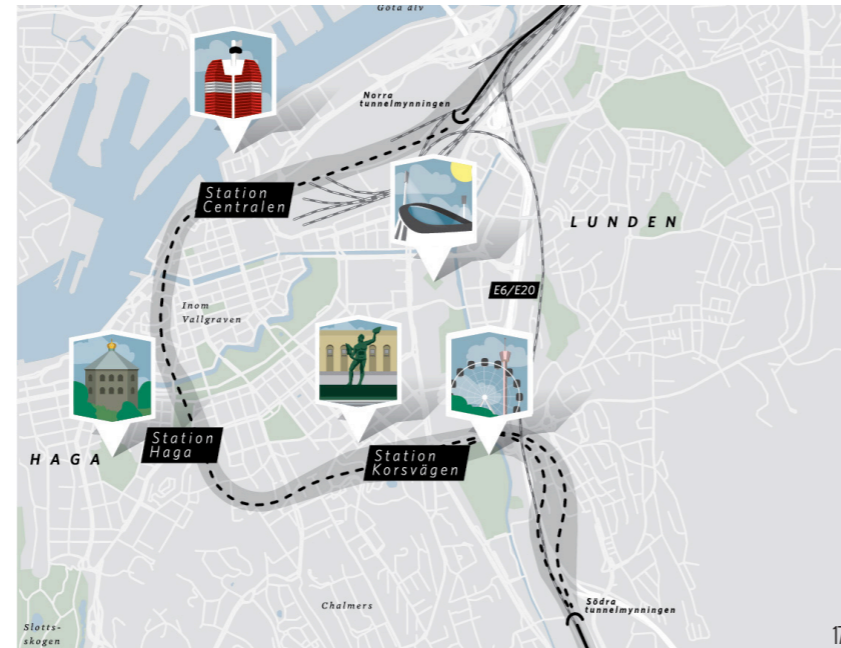
The overall aim of this report is a future society where the residents are offered increased accessibility of work, education and leisure. An increased exchange through travels between different regions results in desired regional expansion.

To reach this aim, three levels of actions needs to be fulfilled, beginning with the lowest one;

- The train travels should be tripled by the year 2035, to 130 000 travels.
- The train traffic should be dimensioned to handle an increase of travels
- The infrastructure should be developed to deal with increase of traffic.

Västsvenska paketet

Västsvenska paketet (including *Västlänken*) is one of the projects working for a more efficient commuting transport system for people travelling in the western part of the country. The project includes an eight kilometer long commuter train route in and under the city and new travel centers at strategic places around Gothenburg. The goal is to be able to travel to and from the city without changing between different transport vehicles and by this make the journey shorter and more attractive. (Trafikverket, 2014)



Vision for locations of the stations being part of Västlänken

FUTURE EFFECTS AND CHALLENGES

A number of changes in society, on both the local and global scale, can come to affect public transport and its development. These are what *Västra Götalandsregionen*, *Svensk Kollektivtrafik* and *K2* view as possible effects of change;

Population development

The population of Västra Götaland is estimated to increase by 90 000 people between the years 2010 and 2020. A majority of this increase is predicted to take place in the region of Gothenburg and the middle-sized cities which put demand on increased public transport.

Economy and funding

It is important to make clear to how the costs of public service should be financed in the future; how much the users and the society should pay by taxes.

Climate change

To reduce the emissions of carbon dioxide actions are required within several fields, such as technical development, law regulations and planning. But also a change in behaviour of individuals.

Higher costs of oil and energy

Lower assets of oil in combination with higher demands will raise the prices of oil. This can bring a higher request of public transportation.

Health and quality of life

Both individuals and society as whole is putting higher value on health issues and as norms and values are questioned, the view on quality of life is revalued. Increased awareness could result in changed view on car use and increased attractiveness of public transport.

Urbanisation

If the trend of urbanisation and regional expansion continues, the press on the regional transport system increases. A good transport system will be needed to limit the risk of unbalance between the urban and rural areas. (Västra Götalandsregionen Kollektivsektariatet 2013 & Svensk Kollektivtrafik & K2 2013)

“Public transportation is a given part of the travels in a sustainable society.”

(Svensk Kollektivtrafik 2014)

CAR USE

As a great amount of people who work commute do so by car, it is important to include an evaluation of this mean of transport when developing public transport.

PEAK CAR USE

In recent years, signs of decreased car use in the Western world have been evident and the phenomena of peak car use have been mentioned, meaning that the previously given increase of car use has leveled off and even decreased. This development is current in the US, Europe and Australia. (Trivector 2014) There are several reasons of this development;

Urbanisation

Sweden is one of the countries in Europe where the trend of urbanisation is strongest. (Eurostat 2012) This brings a city culture which strengthens the trend of public transport and makes its development possible.

Densification of cities

Brings shorter distances and less need of travels by car.

Increased fuel prices

Makes public transport a better option due to economic factors.

Increased individualism

Flexible working hours and possibilities of working from home due to increased acceptance of employers. Parallel to this, experiences of lack of time is increasing and bringing stress. (Svensk Kollektivtrafik & K2 2013)

The car is not the marker of status as it used to be

The emotional aspects connected to car use, such as the view of it as a marker of status, is decreasing.

CAR DOMINATION

The car use has decreased in recent years but the Swedish society is still dominated by the car traffic. About 50 percent of all travels in 2013 were made by car. (Svensk Kollektivtrafik 2014) When developing new housing areas and planning for service and commerce, the needs in space of the car traffic is still in priority. Despite increased understanding of the importance and opportunities of public transport in relation to the environmental and space related problems of the big cities, the measures of developing the transport systems have not been taken. Due to this, the car is still norm. If this continues, the development of public transport will be strongly prohibited. (Svensk Kollektivtrafik & K2 2013)

Several factors influence the choice between car and public transport;

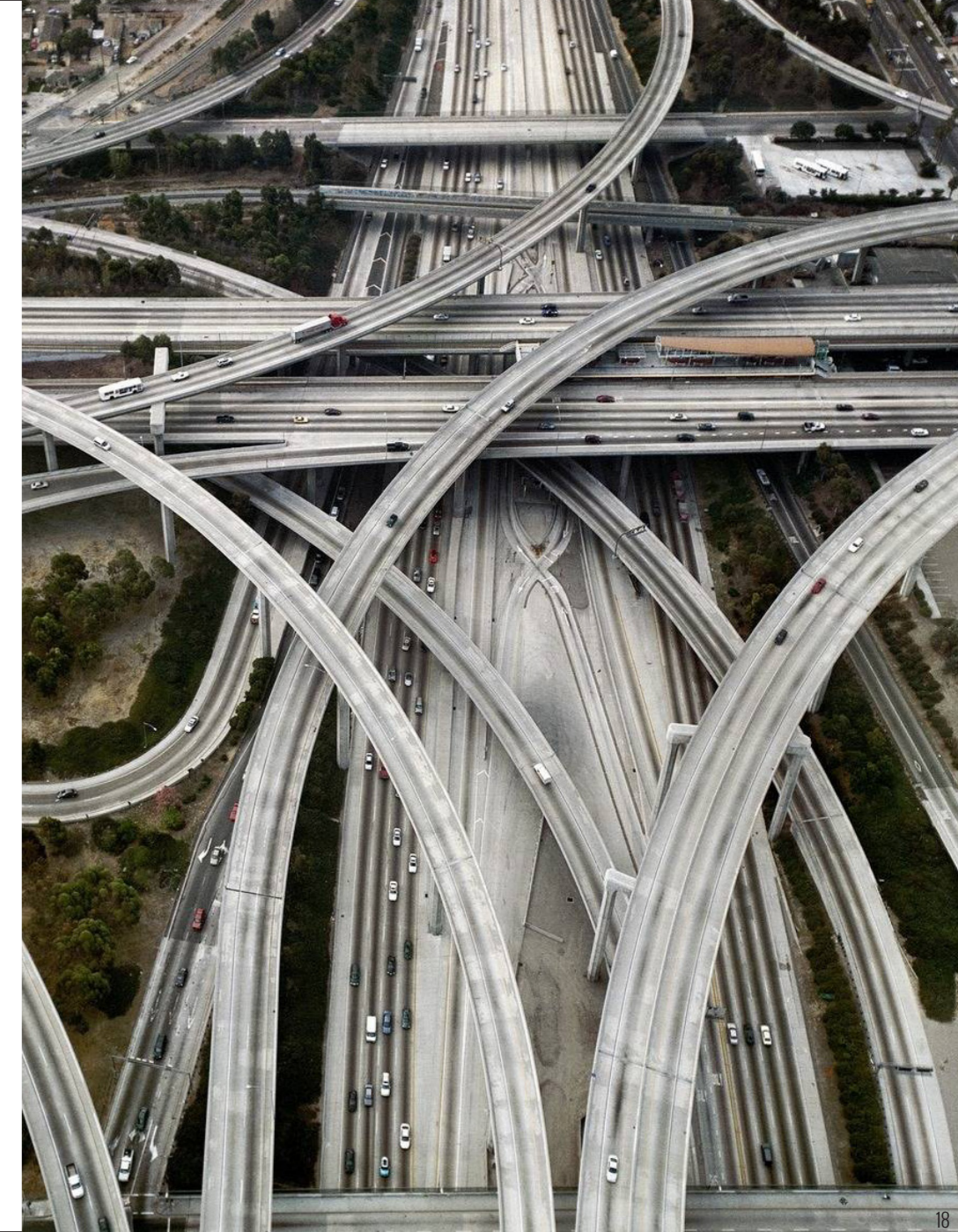
travel time	accessibility	comfort	price
frequency	reliability	safety	information

"To create a shift in norm, from car to public transport, implicate a spatial planning which makes the individual, motorized traffic less attractive compared to walking, biking and public transport."

(Vägverket och Banverket 2009)

ATTITUDE CHANGE

Although a strong mental connection to the car still exists, the view upon the car is changing. People tend to become more aware of the environmental impact of car use and the use of public transport is getting increased acceptance in all age groups. The view of the car as a status symbol is changing among the younger generation, especially during the last 20 years. Nowadays the general view is the car as a practical tool in order to ease the daily life rather than a status symbol. What is mostly appreciated with car by the young population is to in a short time get from one point to another and that car implies flexibility. They value public transport for being environmentally friendly and gentle of both humans and nature. The practical benefits of the car is thereby opposed to the ethical and ideological values of public transport. For public transport to remain in high position by the young generation it is important to overcome the practical factors also when this generation steps into next phase of life, offering better economical situation and thereby a wider choice than today. (SOU 2003)



Reflections

By looking to the historical development we find it obvious how influential the movement of people has been and still is on the structures of cities. How we choose to travel and by which means of transport stands in direct relation to planning and development of new areas. The access to certain means of transport influence the daily life of people, how we are able to or choose to move.

We found it fascinating to explore the social aspects in regards to the development of commuting. How the public means of transport has gotten increased acceptance and today is used by all groups in society. How the view upon the car has shifted from a part of one's identity to merely a functional mean. Comparing our generation (born in the 1980s) to our parents' (1950-60s) we experience great differences. How we tend to prioritise other investments before the car and often consider the environmental impact while the older generation see the car as a given product in the household.

We believe the appreciated aspects of flexibility and comfort are important to keep in mind when developing public transport. In activity, a train journey holds possibilities of being experienced as more flexible than a car ride, as you do not have to pay attention to the driving. This aspect is highlighted in current commercials of bus and train businesses and we believe this factor is vital to enhance. Comfort could be achieved in various ways and we believe one should not only focus on chair design. Light, sound and scent conditions as well as movement flows are as important to consider. However, to attract car users to choose the train we believe additional aspects needs to be considered, not only the interior. More frequent routes, ticket fares and route systems are example of factors affecting the choice.

The major influence of politics is an issue we have discovered during the research process. The elections to the Swedish Government were held in the beginning of this project and public transport and infrastructural issues were part of the manifestos of almost all the political parties, which implies the relevance of this topic. The visions and goals set up for a city derive from the local and national political authorities. This could be regarded as both optimistic, as this is where visions could be transformed to action, as well as limiting. Long processes and mandatory stages can create long periods between decisions and implementations.

We believe that the political authorities are crucial links in the development of public transport but we wish for a wider inclusion of professions to reach a sustainable result which corresponds to the needs of the society. Visions of development and goals to reach are of course important, in order to make a change and to know where to head. But one should keep in mind that solely the creation of visions take us nowhere. The goals will not be fulfilled without careful action, engagement and investments.

What we find problematic in the political discussion concerning public transport is to find visions applicable for the whole country. The development and discussions are mainly taking place in and around the three largest cities (Stockholm, Gothenburg and Malmö) but to reach a sustainable development for Sweden we believe one need to pay as great attention to the more sparsely populated areas. Different solutions might be required but as important to develop.

THE WHOLE JOURNEY

The daily routines of a commuter include more than the train ride. In order to reach the train one needs to pass by a station, which has been very influential in history and is under major development in today's society. The purpose of the station is changing and to decide upon what a future train should include, an investigation of this development is presented.

CONTENT:

Station development
Train development
Reflections





STATION DEVELOPMENT

Le Corbusier once said; *“The station is the hub of the wheel and should be located in the middle of the city.”* (Bakerson A 2010) Initially, the station was created as a symbol for industrialisation and progress. It created new bonds between cities and rural areas, between farms and factories, physically and mentally. It enabled communications for people to reach culture and recreation and it strengthened the social integration in the country. (Salomon 2012) When the amount of travellers increased, smaller stations were developed along the routes and these stations became the starting point for many new towns and cities. (Bakerson A 2010)

Later, with an increased car use, the railway station lost its importance and was no longer the point of departure for development of the city’s functions. (White Arkitekt 2011) It was looked upon as old, not flexible enough and as an industrial heritage. The car and the airplane were perceived as the future. (Salomon 2012)

Today, we travel more and longer and the importance of a travel station, or travel centre as it nowadays is referred to, centralized in the city is again of great value. It is a symbol of sustainable development. To increase the accessibility to the surroundings with a well planned city the area can potentially grow in population, job opportunities, commerce etcetera. A travel centre is a connection to the rest of the world and the increased work commuting is a result of this. (White Arkitekter 2011)

All over Sweden, in big cities and small towns, we see a development of travel centres included in bigger architectural urban transformation projects. The centre is not only developed as a place for entering and exiting a train ride, but as a node in the city. It is a travel junction, a node where all different kinds of transportation means meet, to ease the whole journey for passengers. The early station contained functions as ticket office, luggage storage, post office and post supply and waiting hall, many functions you needed to pass before entering the train. The ticket office do still exist in big cities but functions more as a service desk. The big traditional waiting hall has been transformed to areas of cafés, restaurants and smaller sit areas where internet can be reached to offer both recreation, food and drinks while waiting. In bigger cities the travel centre functions as a city in itself containing a mix of people, environments and opportunities, which people visit without the journey as the main purpose. (Bakerson A 2010) Services as grocery stores, florists, restaurants, coffee

shops, hair dressers, banks, conference rooms and offices are provided in bigger travel centres. For many addicts and vulnerable members of society the station has been and is still an important point to return to. (Bakerson 2010)

The involvement of architects in station development has increased over time. The aim is to design a space for a mix of people and activities, where the functionality as well as the form is of great importance both for the ones using the space but also as a symbol in the city. Often it is not only the centre itself but the urban settlement surrounding it that is to be developed. Strategies being used in many projects derive from the danish report, *Stationsnærhedspolitikken i hovedstadsområdet – baggrund och effekter*. Ideas of connections between home, work and travel centre have been designed to attract travellers to use public transport instead of the car. Most people who live within one kilometer from the travel centre and can walk no longer than 600 meter from the end station to work use public transportation in a larger extent than others. A commuter accept the whole journey from door to door if it’s within an hour. Commercial and public services located in direct connection to the travel node makes it easy for commuters to use these facilities on the way to and from the travel centre. (White Arkitekter 2011)

The movement through the station has developed from a common movement to a more individualized way of using the space. Two main types of travellers can be identified. One is the the accustomed, every-day traveller who holds certain routines and walks directly to the transport mode, without using the travel centre more than as a passage. A commuter is a person using the area in this way. Another is the long distance traveller, who arrives well in time to print tickets and find the platform and thereby use the centre in a wider sense than the commuter. (Bakerson A 2010) There are also visitors who use facilities not connected to the travel, who turns the space into an open lively public arena.

TRAIN DEVELOPMENT

The first passenger carriages in Sweden arrived in 1856 and consisted of a short carriage with doors from outside directly into small compartments. The train was uninsulated until the 1890s when steam heating was introduced and made it possible to travel in a new way. The light was in form of candles and oil lamps before getting electrified.

A train journey took time why sleeping carriages were introduced in the end of the 1800s. Initially standard sit carriages were modified, where you pulled out the normal chair to be able to rest, which later developed into sleeping carriages with private compartments with beds, showers and toilets.

The design of the train reflected the Swedish society, through being made up by carriages of three classes, until 1956. In third class, hard benches in wood were placed tightly together, second class offered padded chairs while first class served the travellers high comfort and service. Further on, the carriages contained mostly compartments before the open salon interior became standard. A mix of group seatings and row seatings were designed to attract both single travellers and larger groups.

During the first journeys, in the 1800s, the train made stops for the travellers to eat or buy food at stations along the route. Later, when the restaurant carriage was introduced it was perceived as exclusive, where chefs prepared and served dinner at the train. The profitability was not enough why the restaurant in most cases today are replaced by kiosks selling pre-cooked meals and snacks. Other types of special carriages that have been running on the Swedish railway are family carriages with a playroom for children, cinema carriages, piano bars and flexible spaces that can be made into conference hall, exhibition hall or a disco carriage. Some of these special trains are still operating on longer routes and by demand. (Järnväg.net 2013)



21
Restaurant carriage



22
Cinema carriage



23
Piano bar carriage



24
Playroom



25
Sleeping carriage



26
Social/café carriage

Reflections

We believe one clearly can see how the development of the station correspond to the development of the Swedish society. The station arose as a beautifully designed building that displayed the welfare of the city and today is a place open for everyone. Initially travelling was an exclusive event but today it is perceived as a matter of course for almost everyone, regardless social class, for travels occasionally or on a daily basis. The station has developed into include more functions than those merely connected with travelling and is therefore now referred to as a travel centre. It includes a flow of people of different targets and the activity in and around the travel centre area make the space function more as a city in itself. This we believe could be positive, as sustainable choices of movement could be eased (public transport), depending on the relation to the rest of the city. As many stations are located in the city centre, this evolution can strengthen the city core but if situated further away, the station might turn into a competitor to existing functions. The location also affects the attractiveness in form of distance, how easy it is to reach the travel centre.

The development of the passenger train has not followed the major evolution of the station. Functions provided in the past, as cinemas, restaurants or playrooms, have been replaced by regular seatings to fit as many passengers as possible. The restaurants have been reduced into a kiosk where you eat at your seat. Economy and efficiency are the ruling factors, why there are almost only similar seatings row after row. When taking part in a preview tour of a new train that will be running for longer routes we experienced these aspects clearly. With attempts to create something fresh, we found it rather unexciting organisation and design wise.

The target group in this project (the commuters) pass through the travel centre twice a day. They could achieve positive effects by development of the station area, for example by being able to run errands or have a meeting on the way home from work. Nevertheless, to improve the everyday life and to make use of time more efficiently, we argue the development also needs to reach the train. Even if passing by the travel centre twice a day, using the functions might only occur a few times a week or even a month. As the station has gone through great changes, we believe it is time for the train to follow this development. To develop the act of commuting and through this get closer to a fulfilled whole-journey-experience.

During our process we have had an ongoing discussion about the train as public place, as it gathers a wide range of people from different socio-economic groups. What we argue is that the train never is a totally public place, since you are obliged to buy a ticket to take part of the journey. However, despite the economic restriction, the train is where you actually spend time during the day, in company of many strangers with the same aim of getting from one place to another.

As the train is such an intimate space we realised the interaction of humans and the meeting will be of great importance. We believe the meaning of a meeting has changed over time and today is found in various forms. The traditional physical meeting is accompanied by a range of virtual meetings, through phones and computers. A meeting can also imply watching people or a flow of people, an activity many do at travel centres or squares. The introduction of virtual technology has had great affect on train travels and changed the view of the train as an isolated tube as well as the activities performed. Spatially, we argue, that the salon interior enhances the physical meeting to a further extent than the compartment interior. The current row seatings, however, are not enhancing physical social connections at all. A great variety of meetings are thereby occurring simultaneously at a public space but in the space of a train the conditions are rather unique. The physical and virtual meetings occur in various form but the fact that the space is mobile and in constant movement brings an additional aspect. This we have considered and the design proposal is thereby enhancing the different kinds of meeting through the design and organisation.

SITE & SPACE

Working with a mobile space in almost constant movement makes a site analysis slightly more challenging than in the traditional case, though as important. This chapter describes the preconditions for the design proposal and investigates the spatial situation, human interactions and the surroundings.

CONTENT:

- Route of investigation
- The Regina train
- Interior conditions
- Exterior conditions
- Reflections



ROUTE OF INVESTIGATION

In order to focus the investigations and reach more specific results a certain route is chosen. Also, to be able to experience the actual space and to take part of the daily course of events during the train ride. The route is found in the local surroundings (in the Gothenburg region) which made it possible to contact involved actors in the area, such as *Västrafik*, as well as people commuting along this route on a daily basis.

The chosen route is the train ride between Vänersborg and Gothenburg, a journey of 51 minutes. This time span is appropriate in relation to the research as it is a common travel length in the region and possible to develop. An additional reason for the choice is the movement between a small town and a large city. This situation is common in the Gothenburg area, as well as in other parts of the country, and is predicted to increase in coming years.

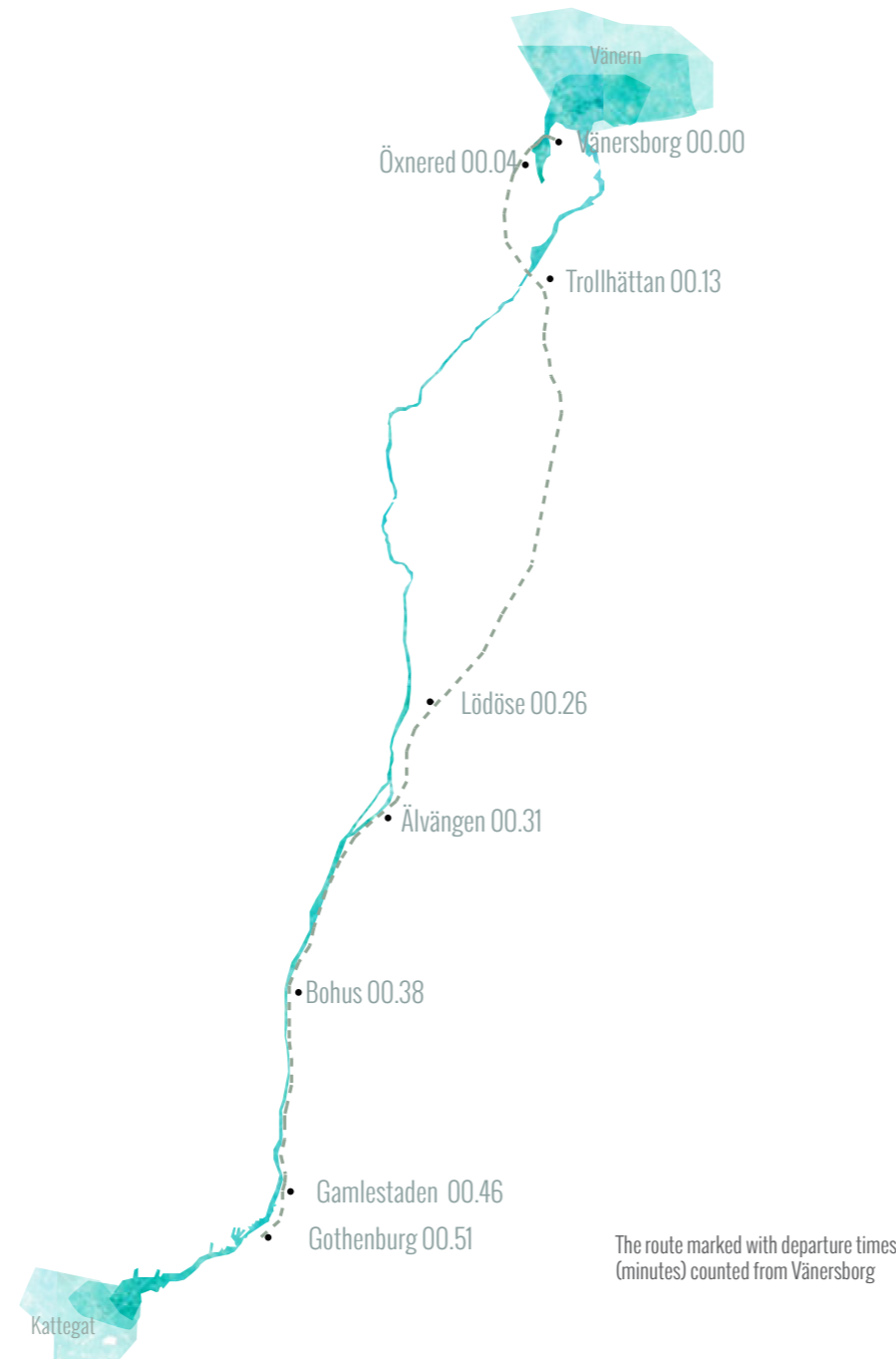
Parts of the research work and design proposal is based on this certain route and specific characteristics from this area have been enhanced. Despite this focus, the findings and results could be applicable to other Swedish contexts.

Time tables (departure times)

As our base point is commuting from small town to big city, we have focused on the morning routes from Vänersborg and the afternoon routes from Gothenburg. Between 5AM-8AM, the train departs twice an hour and the most popular routes are those between 05.39-07.09. In the afternoon, the twice-an-hour-departures only last until 6PM which is found problematic as it is a common time for ending the work day and waiting more than 30 minutes is not appreciated.

VÄNERSBORG - GOTHENBURG				GOTHENBURG - VÄNERSBORG			
00.09	08.09	15.09	21.15	00.00	09.00	15.00	19.00
05.09	09.09	16.09	21.40	05.00	10.00	15.30	20.00
05.39	10.09	16.39	22.09	06.00	10.30	16.00	21.00
06.09	11.09	17.09	23.09	06.30	11.00	16.30	21.30
06.39	12.09	18.10		07.00	12.00	17.00	22.00
07.09	13.09	19.09		07.30	13.05	17.30	23.00
07.39	14.09	20.09		08.00	14.00	18.00	

(Resplus 2014)



The route marked with departure times (minutes) counted from Vänersborg

TRAIN STATION SITUATION

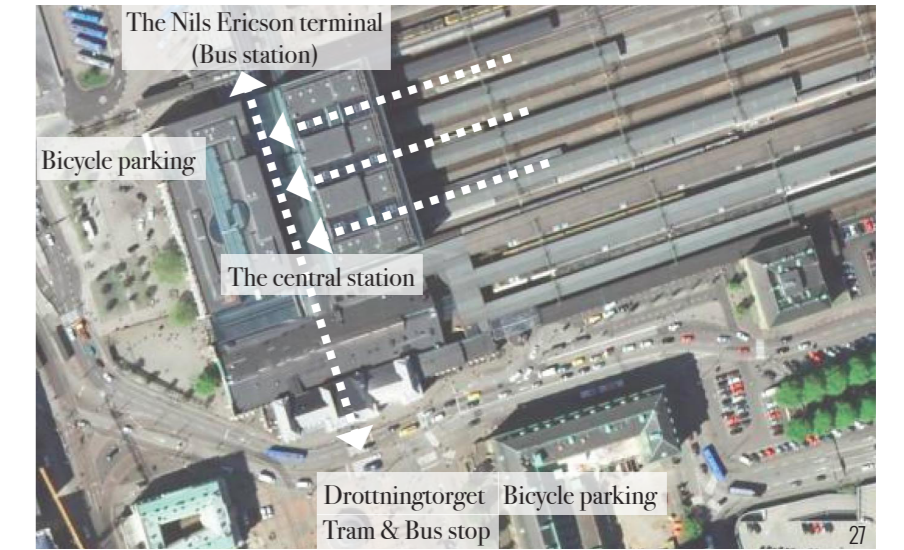
Apart from the obvious difference in size between the stations in Gothenburg and Vänersborg, the conditions for entering and exiting the train varies. The observations show that the exit situation is of great importance for many commuters why extra focus is put on this in the design proposal. The exit situation in Gothenburg takes place in the morning and in Vänersborg during the afternoon.

When arriving to Gothenburg there is a clear direction from the platform towards the station. As many commuters are to shift to another transport mean, most often bus or tram, the flow of people is directed towards Drottningtorget.

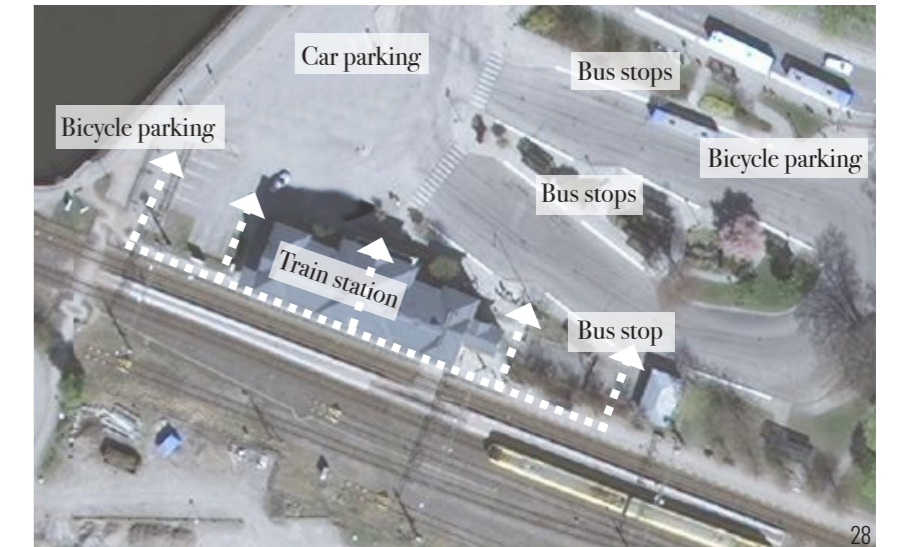
In Vänersborg, the train is not as crowded and the flow of people not as directed as in Gothenburg. The people leaving the train spreads quickly out in different directions, depending on their next destination (bicycle parking, car parking, bus stop, city centre etc.)

PLATFORMS

Along the route from Vänersborg to Gothenburg it is possible to use both sides of the train for entry and exit of passengers. This is a standard structure of a train in order to function at all stations and to be flexible. However, the observations indicates that the train along this certain route only makes use of one single side during the whole journey. At all stations it tends to use the entrance doors and platforms to the right in the travel direction. A result of this is a clear entrance side while the entrance area towards the other direction remains unused.



Gothenburg central station



Vänersborg travel centre



THE REGINA TRAIN

The train model currently used on the route between Gothenburg and Vänersborg is called *Regina*. This is a vehicle used for various traffic, as commuter train, regional train and fast train by different operators like *SJ*, *Västrafik*, *Veolia Transport* and *Tågkompaniet*. It was developed in the end of the 1990s by the train manufacturer *Adtranz*, currently *Bombardier Transportation* (Järnväg.net 2013), and the first trains were used in Sweden in the beginning of the 2000s. (Bombardier 2014)

The train carriage was adapted to Swedish conditions and has since its entry in the country been an important part of the regional development and public transport. One reason is a widened carriage (3450mm) which in combination with a decrease in width of the seatings made it possible to add a chair. This resulted in an increased capacity of passengers of 25 percent per meter of train with up to 100 passengers in each carriage. The maximum speed of a Regina train is 180-200km/h. (Bombardier 2014)

Most Regina trains on the route Gothenburg-Vänersborg consists of three carriages and the interior is mainly made up of three-plus-two chairs in width.

In 2012, development work from single to double tracks between Trollhättan and Gothenburg was completed. This resulted in significantly shorter travel time (about 20 minutes shorter) and more frequent departures. (Trafikverket 2011) This changed and enabled the situation of commuting in the area.

TRAIN MANUFACTURER

The developer and manufacturer of the Regina train is Bombardier Transportation, which is one of the world leading manufacturers of aircraft and rail industry. The company was created in Canada but is today active all over the world with more than 70 000 employees. In Sweden there are several facilities and the head office is situated in Västerås. (Bombardier 2014)

According to Johan Palm, Product Manager Highspeed Trains at Bombardier Transportations, the interior design work of the trains is developed through close collaboration with the client (for example SJ or Västrafik). Bombardier aims to cre-

ate furnishable spaces which can be organised due to the needs of the certain client. Some clients wish for a large number of seatings while others want a high level of comfort or to be able to handle much luggage. Bombardier Transportation aim to offer high capacity in terms of many seatings in combination with high comfort. Factors that are of great influence are the design of the chairs and the lighting. Materials can be chosen by the client but when working with Scandinavian actors, Bombardier often suggest a Scandinavian design approach which feels modern at the same time being timeless. This, to make the design appealing also in coming years as the interior will last for many years ahead.

When developing the interior design of a train it is important to strive for a low energy consumption and low cost of maintenance. A result of this is the choice of always using LED-lighting in new vehicles. Concerning accessibility, the TSD document (Technical Specifications of Interoperability) needs to be followed. In Sweden one can run wider vehicles than in other countries which makes it possible to offer seatings in row of two-plus-three. It creates opportunities of layout with seatings of good comfort.

Bombardier aim to offer future commuters possibilities of working and resting on the train but it always depends on the needs of the client's desires. (Palm 2014)

CURRENT REGULATIONS

The design proposal for the Regina train is in accordance to current frames of regulation, in this case the TSD (Technical Specifications of Interoperability) specifications by the European Union. The aim of the regulations is to create a standard and to enable trains to run in between different EU countries without technical problems. These regulations apply to railway, not tram nor subway systems. (Transportstyrelsen 2012)

Explained, to the right, are the aspects that have had greatest impact on the design and organisation in the design proposal.

Passages

From the entrance of the vehicle, the passages through the whole train need to fulfil a width of (minimum) 450 mm from floor level to 1000 mm in height and (minimum) 550 mm from 1000 mm to 1950 mm in height.

Doors

All entrances for passengers should have a free width of (minimum) 800 mm when in open position and a height of (minimum) 2 100 mm. The exterior should be painted or marked to create a clear contrast to the rest of the vehicle's side. Interior doors to be used by wheelchair bound needs to be (minimum) 800 mm in width.

Steps/Stairs

Steps inside the train should have a maximum height of 200 mm and a depth of at least 280 mm.

Restroom

When placing restrooms in a train, at least one needs to be an universal toilet (accessible for all). In an universal toilet, the door needs to have a full width of (minimum) 800 mm. In front of the toilet seat, a free space of (minimum) 700 mm is required. A horizontal handrail should be placed on both sides of the toilet seat and one should be possible to turn up. All equipment, such as washbasin, should be accessible for a person in wheelchair. A changing table (for changing diapers) is required.

Accessibility

Depending on the length of the train (not including the locomotive and operating entity) it should include a number of wheel chair seatings. As the Regina train is less than 205 meter, a minimum of two seatings are required. The wheel chair should be possible to be placed either with or against the direction of travel. (Europeiska gemenskapernas kommission 2008)

Dimensions

According to Svensk Fordonsprofil (Swedish Vehicle profile) the maximum dimensions of a train vehicle are a width of 3450mm and a height of 4750mm.

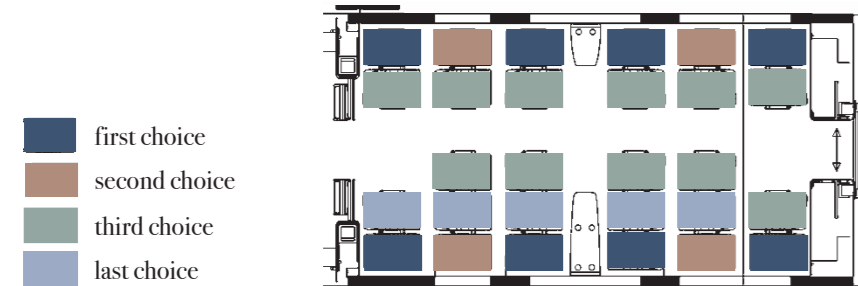
INTERIOR CONDITIONS

The inside space of a train holds specific conditions that affects the actions and activities of the travellers. As it is such a small space, the internal organisation have great influence on how you make use of and behave inside the train. In size, one train carriage consists of about 70m² which is comparable to a large three-room apartment. Here about 100 persons are placed together during the journey. There are not many spaces that gathers so many people, most of them strangers to one another. The fact the the space is in movement cause a specific experience and can give rise to certain frames of mind.



Choice of seating

The most popular seatings are located by the windows and particularly desirable are those by a table or close to the entrances. The seating chosen at last are the middle seatings. People tend to stay away from this seat as long as possible, which often causes a bit of a hassle as the person aiming for this seat needs to pass the outer seating. This makes the three row seating troublesome, although it maximises the space for the number of seatings.



Seatings & organisation

The seatings are today designed equally throughout the train although in some variations, such as table seatings. One type of chair is used which can not be adjusted, apart from the arm rests. A small table placed on the back of the chair in front is collapsible. As the seatings offer (more or less) the same situation no matter where in the train you are seated, you always know what you get. However, what you get is not optimized for any activity, apart from simply just sitting. This does not prevent people from trying to find comfortable positions and today there exists a great variation of sit positions. (See appendix for more information.)



Observed sit positions

Sound

Not only the type of chair cause limitation in activities. As the current organisation of seatings in the train provide an open environment where noise is a obvious factor, there are not that many activities that function well together.



Activities functioning together

Materials



Seatings

Wall elements

Floor

EXTERIOR CONDITIONS

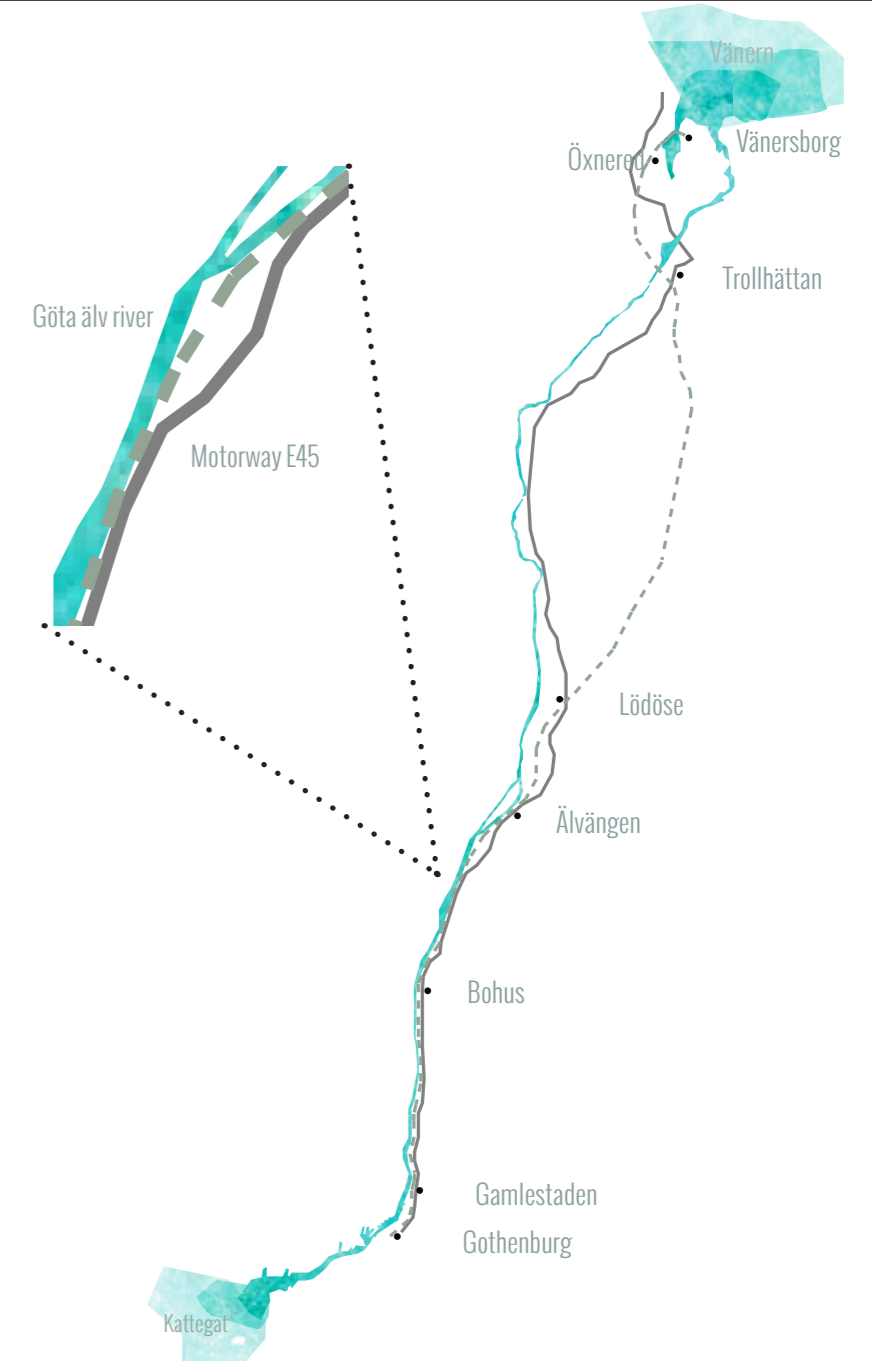
Even though the inside situation of the train have great influence on how one experience the journey, the surroundings and what one notice outside the vehicle also affect the opinion of the travel. A significant part about travelling from one point to another is that you get to view the places inbetween. The perception of passing by site after site is by many viewed as relaxing and can bring a calm state of mind. The image of flickering landscapes can be seen as a romantic depiction but is in fact an appreciated part of travelling by train.

The specific context along the route between Vänersborg and Gothenburg imply a variety of views depending on which side of the train you are positioned. When travelling from Vänersborg, the beginning of the journey offer a view of countryside landscapes on both sides. But when reaching Lödöse a division of views appear. From here, the railway stretches alongside the motorway (E45) which is the view to the left in the direction of travel. To the right, the Göta Älv river flows which provides another appearance. This visual separation persists all the way to the city of Gothenburg.

As some commuters express a tendency of favouring window seats and even seats on a certain side, the exterior view is found to be important.



Photo from part of the route between Vänersborg and Gothenburg



Reflections

What we found surprising in our research is the fact that current commuter trains are in many aspects alike the “regular” trains (such as intercity trains or fast trains like X2000) that are running for longer routes. As we view it, the needs and attitudes differ a lot from people who are commuting everyday to those who make a longer journey once in a while and we imagined this would be expressed in the organisation of the train. The amount of luggage is a graspable aspect in this comparison. As a commuter you most often only carry a smaller bag, why the luggage shelves are unused and empty in the Regina train while you when travelling longer, at times, need to fight for a space in the storage space because people at these routes bring more luggage. Some softer factors which became obvious through our observations and interviews are the routines and knowledge a commuter holds. People travelling with this train twice a day know exactly which entrance to head for in order to get a hold of the favourite seating or when to reach for the ticket as the train attendant shows up. They keep track of every minute of the journey as well as the fellow travellers, whom they often recognize and might nod to when entering but almost never talks to. The information onboard and announcements are of course given elements but the experienced commuters would probably do just as good without it. Many commuters have, consciously or not, created a certain habitual pattern that they repeat day after day. Their routines probably look different at morning and evening as their conditions have changed, for example might the urge of getting off the train be greater in the morning as they need to be at work at a certain time.

The functions and services provided onboard are to a great extent also similar between commuter trains and longer train lines. For example the access to a toilet. The fact that there are two toilets in a Regina train of three carriages could be questioned, especially as there has been a great focus of making room for as many seatings as possible. The maximum travel time along this route is 51 minutes which could be compared to the tram or bus lines in Gothenburg which run for as long but do not provide any toilets.

The fact that efficiency and economy has been the basis for the organisation of the Regina train we believe is clearly visible. The straight rows of seatings through all carriages make most use of the space in order

to fit as many people as possible, but brings a feeling of a budget aircraft or a cattle transport. And how efficient is actually the current layout in reality? People tend to avoid the middle seatings in the three-chair-rows and at times rather stand in the hallway than squeeze into the seat in between two strangers. Where is the comfort in this situation? And seatings which offer same possibilities no matter where in the train you are seated might in a sense be seen as democratic. But as there are clear limitations in what one can do in combination with an organisation which restricts certain activities, for whom is it really comfortable?

What we thus can conclude is that the spatial needs and mental preconditions differ but the structure and design of the various types of trains remain the same. Although a train needs to fulfil a standard and an organisation to be understood by a range of travellers we believe one could strengthen and improve the experience by exploring the desires and needs of the certain users. We believe one need to distinguish between the groups of travellers and see to how they actually use the space of travel.

Reflections on methods

This phase of the project consisted to a great part of observations on the train to experience the situation in real life. By travelling by the train in both directions during both morning and afternoon our knowledge about the train improved as well as our understanding of the commuter’s situation. A challenge was to put our preconceptions aside and to experience the journey as open-minded as possible. To reset and look beyond our previous experiences of train rides and public transportation is of course impossible, as we hold behaviours and habits that we can not totally control but to at least aim for this state we believe helped us in our research. Our observations concerned both on the spatial situation (furniture, functions, design features etc.) and the human interaction and activities. In order to keep our work focused we prepared forms, about aspects to notice and questions to answer, by ourselves.

THE COMMUTERS

This chapter investigates the commuting experience from the perspective of current commuters, through various methods of research. How people perceive commuting today as well as future desires.

CONTENT:

Who is commuting and why?
The experience of commuting
Outcomes
Reflections



WHO IS COMMUTING AND WHY?

Commuters are not a homogenous group of people. Their needs and desires varies due to age, sex, income, family situation, access to car, possible disabilities etc. It also depends upon where they live and what their preconditions and priorities are. (SOU 2003)

In the report *Pendlare utan gränser* four categories of commuters are identified:

Resident commuter

a person who have changed municipality of residence but kept on working in the previous municipality.

Previously unemployed commuter

a person whose commuting is due to employment in another municipality. This is most common in municipalities that have/have had high unemployment or where the conditions of commuting are good.

Career commuter

a person who has started to work in another municipality than the one he/she is living in (and remains to live in).

New work force commuter

most often young people or foreign born who has not previously been employed.

GENDER DIVISION

The differences do not only concern the reason for commuting but also between the genders. Men tend to commute more than women. (SIKA & SCB 2002, RES 2001, Hansson 2003) There are considerable regional variations in the relationship between how often and how far men and women commute. The differences are greatest in the Gothenburg region compared to other regions (Gil Solá 2013) and men are generally commuting ten kilometers longer than women. (SIKA & SCB 2002).

There are five aspects which can explain the shorter commuting distances of women (both time wise and geographically);

Men and women have different access to means of transport

Men tend to use car more often than women and women tend to use public transport more often than men. (Krantz 1999; Hjorthol 2008; Polk 1998; SIKA 2002)

Women have lower education and lower salaries than men

Highly educated people commute to a greater extent than people with lower education. Mainly because the job matching is more difficult why people with more specialized professions need to look for work outside their municipality of residence. (Hansson 2003 and Hedberg 2005)

The location of work places varies between men and women

Women's labor markets are more geographically limited than men's, which imply shorter travels. (Hansson 2003) More women are employed within the public sector and thereby often work in the municipality of residence, while men commutes to work places further away, within the private sector. (Håkansson 2010) When changing work positions, women do so within the local labor market while men more often start commuting to adjacent municipalities and their labor markets. (Hedberg 2005)

Men and women search for work in various ways

The social networks varies in geographical sense between the genders, where women's networks tend to be more local than men's. (Gil Solá 2013)

Women have greater responsibility of the household and are more attached to the home than men

Women tend to take on the role as both employee and the main responsible for the household. The time budget of women becomes more strained than mens as they need to perform a greater variety of activities, even though these might be performed within the same time span as men's fewer activities. Making several stops and/or a change of transport can be experienced as more burdensome in comparison with a longer, uniform journey. To perform both these roles can make them more attached to the home and make them value aspects of work in another way than men do. (Gil Solá 2013)

THE EXPERIENCE OF COMMUTING

METHODS

The reasons of commuting differs and so does the opinions about the journey as well as the needs and wishes for improvements. In order to grasp how people look upon their current situation and what their future desires are, three methods of research have been used in this part of the project.

National survey

To reach a wide perspective and thoughts from current commuters questions concerning the situation of today as well as future wishes were asked. Social medias, such as Facebook, were used to spread the online web survey but as the questions were i Swedish, only Swedish speaking commuters could participate. The response was quick and quite extensive. In a few days 200 persons had answered the survey. (See survey and results in appendix.)

Previous research

When researching previous studies and literature on the subject, several reports within the field of cultural geography were found to be relevant and interesting. One report that has been of particular interest and very helpful in the work is "*Restidens bruk och mening*" by Daniel Fahlén. Fahlén studied the time of commuting of people travelling by bus and train in regional public transport in the region of Gothenburg during the late 2000s and beginning of 2010s. The aim of the studie was to investigate how people use the commuting time and to put focus on an essential part of people's daily life which previously have been neglected in previous research. To investigate the value of the commuting time and study the relation between stationary activities and movement, taking place simultaneously. The report is made up of two parts; one part consisting a survey of 400 persons and one part of 24 in-depth interviews.

Interviews with commuters

As the online survey aimed for a wider group of commuters we also wanted to investigate the perceptions and desires of a more specific group - the ones who are currently commuting by the Regina train along our chosen route. Once again we made use of social medias to get in contact with commuters from the Vänersborg area. We held interviews and a workshop with interested volunteers. This group corresponds to the general group of commuters in age, gender and family situation. For example, a majority were men or various ages and almost none had children still living at home. They got to answer some forms (see appendix) and questions and a wide discussion arose as they all had interesting opinions and knowledge about commuting.



Photo from workshop with commuters

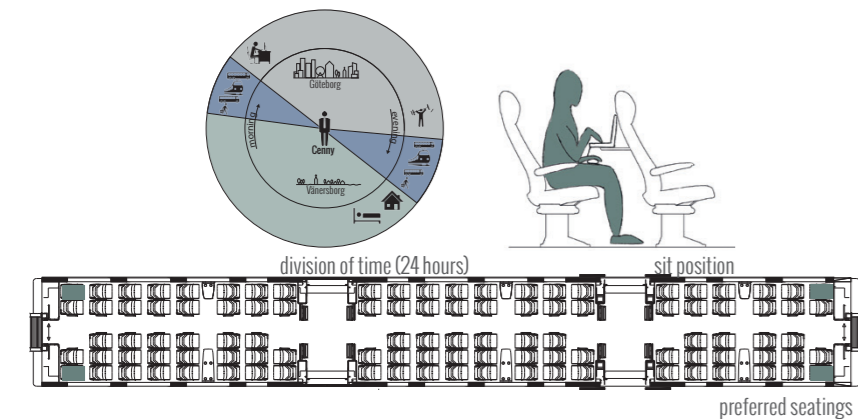
INTERVIEWS WITH COMMUTERS: RESULT

Cenny

Cenny, 51, lives in Vänersborg and commutes to Gothenburg four days a week. On Fridays, he works from home. Cenny lives about two kilometers from the travel station in Vänersborg and works outside the city centre of Gothenburg, in Mölnlycke. His journey to work thereby implies a bus ride of 5-10 minutes to the train station in Vänersborg, the train route of 50 minutes to Gothenburg and a bus ride from Gothenburg central station to Mölnlycke of about 20-25 minutes.

During his travels Cenny use the time for work. He makes work related phone calls and uses his computer. Nevertheless, Cenny finds it a bit problematic to work on the train today as the internet connection on the route is poor, the tables are not adjustable enough and the electrical outputs are badly located.

As he steps on the train in Vänersborg he most often has the possibility of choosing his favourite seat. This is situated by the connection point of the carriages but where there is no entrance. A calm and quiet place with a view out of the window, which he enjoys. He does not choose to sit by the restrooms due to noise from the doors and as he finds it unpleasant by this area, nor close by the entrances as it is windy and often crowded.

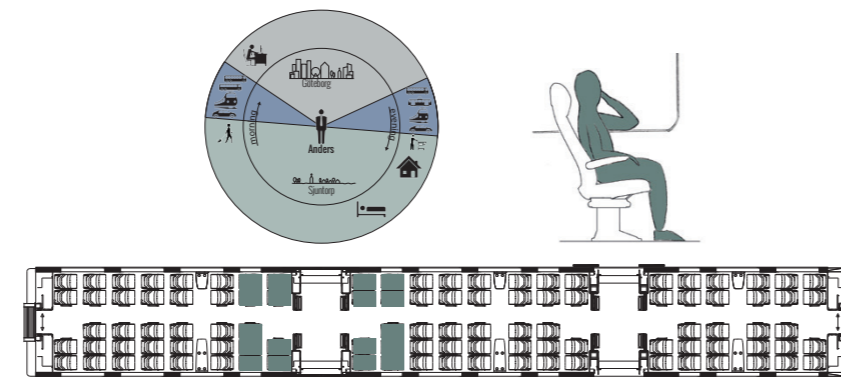


Anders

Anders, 28, lives in Sjuntorp, between Trollhättan and Lilla Edet. He commutes on a daily basis to Gothenburg where he goes to either Chalmers or Västra Frölunda. He alters between taking the bus to the train station, a ride of 30 min, or by car which takes him about 15 min. When he gets to Gothenburg, he goes by tram or/and bus to get to his final destination.

In the morning he seldom has the possibility of choosing a seat, as there are a lot of people on the train. He avoids to sit by the restrooms since the doors tend to swing back and forth. In the afternoon, there are fewer passengers and he picks a seat in carriage 2, to get off at preferable place on the platform.

Anders would like to be able to work on the train but the current situation is not suitable for this activity. It is hard to focus and the seats are too small, especially the tables. He simply can not find room for computer and notebook and without these it is not possible for him to work. He would also like be able to make use of the travel time for physical exercise, such as half an hour of gym exercise. This to not have to spend time on that when getting home. Today, he most often uses his phone for games, that do not require good internet connection as it is poor and tends to disconnect during the route.

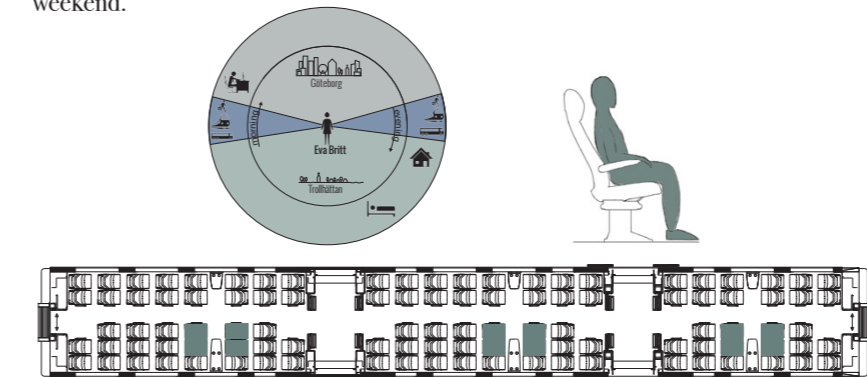


Eva Britt

Eva Britt is 54 years old and lives outside Trollhättan. Eva Britt used to work in Vänersborg but since changing job she commutes to Gothenburg, which makes her a carrier commuter. As she lives 15 kilometer from the station, she alters between taking the bus and going by car. Eva-Britt has the alternative of commuting by car all the way but she argues is not a preferable option as it takes a lot of time.

In the morning, Eva Britt is in company with a woman she has gotten to know through travelling the same route together. Previously, they were a group of five persons. The two of them tries to get the same seats every morning and most often succeed. She finds it interesting to get to know people she otherwise never would have met nor talk to. In the afternoon, she travels alone and does not sit in a particular seat because she gets on the train in last minute. She checks her phone and social medias. She would appreciate more comfortable seatings for resting and better opportunities of talking on the phone.

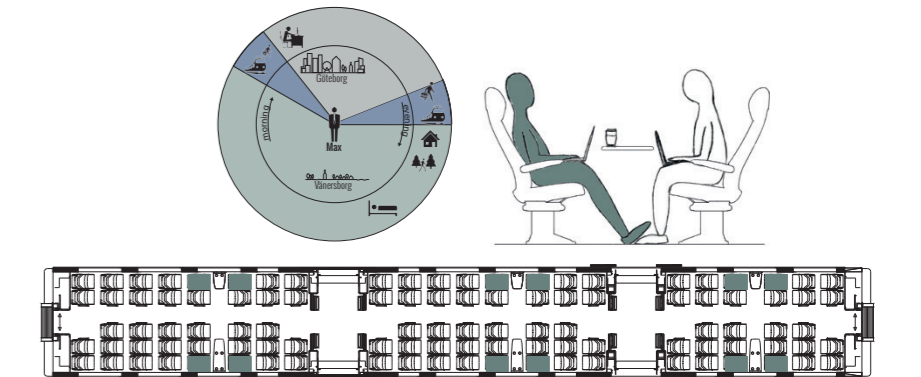
Eva Britt experiences the travels as a good way of letting go of work but also very time consuming. She would like to have more energy when getting home in the evening. She does not find the energy to do anything, mainly because of that she works long hours (10 hours) and many of the household chores have to wait until the weekend.



Max

Max, 28, moved from Gothenburg to Vänersborg not long ago but he still works in Gothenburg. He found the move more profitable both time and economy wise and he therefore commutes to work. He is a resident commuter. He lives only a few minutes walk from the station in Vänersborg. When getting to Gothenburg he walks for about 25 minutes from the central station, along the river, to his office.

As he is allowed to count the travel time to his working hours, he uses the time for working on his computer. He prefers to sit by the window in front of a table, though not using the table for the computer but because of the extra space for the legs. He keep the computer in his lap and use the table for a cup of coffee and the cell phone, because he found there is better internet connection if placing it there. At times, Max is too tired to work and then just looks out the window and use the window shelf for the arm. He prefer to sit on the side of the train towards the river to be able to enjoy the nature while travelling.

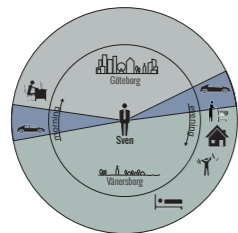




Sven

Sven, 53, lives in Vargön outside Vänersborg and commutes by car to work in Mölnlycke. Between Vargön and Gothenburg he finds the traffic tolerable, but in the city it can be a lot of traffic which he does not appreciate. After driving about a total of 900 kilometer during the week he prefer to not use the car during weekends.

He drives alone, which he sometimes thinks is boring. News, audiobooks and private phone calls makes the trip feel a bit faster. On the way home he is at times too tired to drive the whole way in a row and needs to take a break halfway, to prevent the risk of falling asleep while driving.

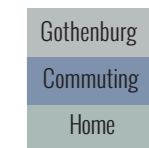
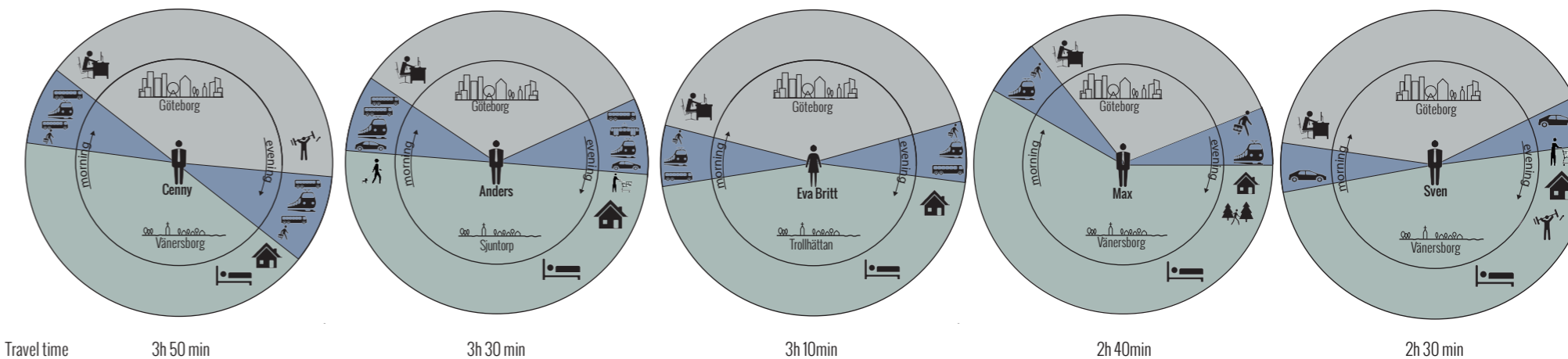


Summary of result

Concluded from the interviews is that commuting often implies several means of transport why the combination of these are important, for example how well the time tables match together and where the stations are situated. It is a challenge to plan for a functioning travel schedule, especially if living on the countryside where public transportation often is limited. Many of the interviewees therefore have a back-up-plan in form of an own car or someone who can pick them up at the station.

Due to the time spend on travels, the commuters spend little time in the municipality of residence. Although it might look rather extensive in the diagrams (marked in green) one need to remember this includes the time of sleep. If comparing the situation of Max and Anders this becomes obvious. Max is able to work during the journey and allowed to count this time in to his working hours. Due to this, he spends less time at his office in Gothenburg and can be flexible in when to go to work. As he lives close by the train station in Vänersborg, it only takes him a few minutes to get to and from the train ride. In the case of Anders, he needs to get up early in the morning to make it to work/school in time. He lives further from the station and his workplace is located a while from the central station in Gothenburg, why he needs to catch several means of transport to get to and from work. He can not use the travel time for work and he gets home late in the evenings. What can be concluded is that if the commuter can make use of the time of travel it clearly affects the everyday life and how time is used. Also where one lives in relation to the station determines which and how many means of transport are required.

Looking to the situation of Sven, who today is commuting by car because travelling by public transportation would imply a longer commuting time. His current total travel time is comparable with Max's and once again one can see how crucial the relation between home and station is.



OUTCOMES

Following is a summary of outcomes of the three different methods of research (survey, interviews and previous research) concerning the current perception of commuting and future desires. These results, together with previous research, form the basis for the design criterias which are used in order to create a design proposal. The quotes below derive from the national survey.

The current situation - activities

The possibility to relax during the travel is appreciated by many and the travel time is found as important for the well-being. To be able to have a moment for oneself, to let go of the stress and work-related issues before entering home. As a way of readjusting from work to home or the other way around.

"To be able to take a break, to sit down and watch people and the city"

Another current activity is to use the time for work but the view upon this action varies. Some see the commuting time as an integral part of the work day and might even be able to count the time to the working hours. For some, work taking place on the train is experienced as the most efficient time of work. Others view the time rather as a buffer of potential working time, where there are no routines but view the travel time as an opportunity to use if needed. Some see the time as an asset when creating good routines in relation to work or studies, such as finding inspiration or preparing for the day.

"I get a moment to relax on the way home before the stress with cooking, put the kids to bed etc. is starting. In the morning, it is to be able to read through all e-mails and prepare for the day"

A time for social interaction is another activity taking place while commuting. To spend time with or contact other persons, either face-to-face or virtually. Some perceive the commuting time as enabling social connections, for example with colleagues, which otherwise can be hard to find time for during the work day.

Many who answered the survey are biking to work and appreciate the exercise and the feeling of freedom while biking. One commuter, who use public transport, wrote that more frequent routes makes it easier to be flexible and she/he does not have to plan the travel in advance. Someone else wrote that it is preferable to avoid traffic jams but it has nowadays been replaced by train jams.

The current situation - disadvantages

The most negative aspect of commuting is found to be the time it consumes of the day. Many commuters also get stressed about the uncertainties of being in time or not. Some feel like they can't be flexible and spontaneous and have to make a strict plan for the day due to the commuting. Other negative aspects regards the environment inside the transport mean; the light, sound, smell and climate situation. A stressful and crowded environment is something that is not appreciated.

"Commuting takes a lot of time of my day"

The current situation - spatial experience & atmosphere

The perceptions of the mood and space are less uniform than the previous categories. Some experience the environment as nice and clean while others think of it as dirty, sterile and too basic. The materials and colours are mentioned as boring and there are wishes of more art, colours and graffiti. The seatings are described as too uncomfortable for relaxing and sleeping, especially without a headrest.

"It has looked the same for 25 years"

"Classic, simple, functional"

The atmosphere is described to be of different character in morning and afternoon. In the morning many experience a sleepy mood while it during the afternoon is louder and more lively. Some find people who are talking to each other annoying while other view it as interesting, enjoys speaking to fellow passengers and appreciate the sound. If only a few are talking some experience it difficult to concentrate while it is a good working environment if quite many are talking. This also makes it "allowed" to make sound, such as speaking on the phone, as the sound blends together instead of being disturbing. If a mean of transport is late another atmosphere often is created. People are getting frustrated and irritated and because of these feelings might start sharing the thoughts with fellow passengers.

"Too many people who are speaking loud and without respect for those who don't want to listen. I bring ear plugs - but I get so isolated and that is not always working..."

Desired future activities & experience

All methods of research have resulted in a great desire of being able to work during the travel. One main reason for not performing this activity in the current organisation is due to poor internet connection but apart from this, the limiting factors varies. Some experience the space too crowded and have difficulties in getting a seat. Some experience the seatings as too tight and the tables too small. Some need to make phone calls or have a secrecy job and are due to this prevented from working in public where other people might see or hear.

Although working is the main desire there are a number of other visions for future activities on board a commuter train. Many wish to be able to use the time for sleeping but in more comfortable seatings. To be able to buy basic groceries while travelling in order to save time, for example by ordering while commuting and picking up the bag on the way home are ideas mentioned. Some would like to be served breakfast, coffee or dinner during the travel, also with the purpose of saving time. To eat together would also make it easier and inspire to a conversation with fellow commuters, argue a few of the respondents of the survey.

"I am dreaming of an ICA on a commuter train. Not a "buy something very expensive" but a smaller shop where you can buy milk, yoghurt and bread, "basic commodities", so I don't need to do it when I get off the train."

For some, physical exercise and possibilities of a work out is preferred, like a gym or swimming pool. Many would like to bring their own bike on the transport as the possibilities of this are limited today.

"The dream would be a carriage where you could use the time for exercising, with for example treadmills/bikes, but that is too utopian I guess, even though I think people actually would pay for it."

Another wish is to be able to choose between getting a private seat and a more social place where you have the possibility of meeting new people. More flexibility through adjustable furniture to adapt the vehicle for both many and a few travellers.

To introduce other functions are also found among the visions, such as a restaurant, a bar, a shop, an exhibition hall, a library and a SPA.

Ideas about using the culture and local knowledge from the area would improve the commuting experience, some argue. By using other materials, more fabric and colours some believe the space could bring in a calmer atmosphere and a more quiet space which could result in a more relaxed state of mind when leaving the train. One respondent in the survey even wished for such a restful space from where one do not want to get off when arriving to the station.

Collection of quotes from survey

“light natural materials “

“more things that activates people, quiz maybe, things that touch like art, stories...something that removes the individual atmosphere and improves participation”

“less industrial feeling”

“videogames-carriage. videogames everywhere.”

“art exhibition...where local/regional artists or amature photographers can showcase”

“rooms for meditation”

“I would have my own space to close myself, cut off from sound, people who talk in phone, people who smell and dogs that hares down my clothes. I would have big windows towards the nature, the bus would drive soft and quiet and when I arrive I would be so well rested and refreshed, in the speaker it would be birdsong”

“seatings you can turn to be able to choose yourself”

“like a cosy library where you can read books and relax”

“a sofa-carriage wouldn’t be bad. a place where you can really relax”

“the possibility of standing/bar tables to be able to work and “meet” people”

“information/pictures about places passing by”

“more colours”

“feeling of home”

“a more flexible/adaptive furnishing, more standing space when it is crowded and more sitting space when it is slow hours”

“more elegant, wood, brown leather and brass”

“beautiful decorated..maybe soft carpets”

Reflections

One main conclusion we can draw from this part of the research is that whether commuting is found to be positive or negative depends on how one experiences the usage of time. This is affected by several factors. One being the initial reason for commuting; whether you have a choice of commuting or not and if it is part of a your own life strategy, like being able to get the dream job by commuting. Another factor being if it is possible to use the actual travel time for what fits your needs and wants. Also, if the time of commuting matches your anticipations and is according to what you have planned, or not. The uncertainties of making it to the final destination in accordance to the time table and the consumption of time is what we have found to be the main down parts by commuting, which both deals with the issue of time.

We have realised, that we do not find a commuter train to be only a room on rails, moving from one place to another. The space of a commuter train is today an inevitable part of people's daily life and although a diverse collection of people share a minor area, they all hold an own perception of what the travel should include. As we view it, a commuter train is not simply a mobile space but an in-between opportunity. An opportunity lasting for a limited period of time but where you have the possibility of being who you want or need to be. An opportunity of shifting from your profession to your private self, an opportunity of feeling as part of the city through enjoying the view and blending into the gathered inhabitants in the carriage or an opportunity of fulfilling your productive self through finishing what you have not had the time to do at other places during the day.

Our research made it clear, that desired activities for a future commuter ride are almost solely activities already occurring in their daily life, though at other places during the day. This brings us back to the issue of time. The commuters wish to, during a whole day, be able to perform the same activities as in the current situation but want to have the option of changing the time and place of some. The purpose could be to extend the time devoted to the desired activity or to be able to put time on something else that today is impossible to squeeze into the schedule. Either or, enabling these desires we believe could be a way of improving the everyday life and to customize a time due to individual needs. In the design proposal, three

of the activities (work, rest, social meeting) are current while one is an addition (physical exercise). This, to improve the situation but also to show the possibilities and inspire for future changes. As physical exercise often is an activity that has to go in times of low time budget, we believe it could fill an important function taking place on the train.

Reflections on methods

Beside the survey and the workshop/interviews we initially planned to make spontaneous connections on board the train but realized the response could be more extensive and thoughtful if performed on an optional basis. The interviews with the commuters were valuable in our work of several reasons. We received information and opinions we never would have been able to get from a survey or through literature, as a conversation in person gives rise to explanations and following questions which bring a deeper understanding. This was also an opportunity for us to receive feedback on our process and reflections upon our own ideas.

Concerning the survey we were astonished about the major response and engagement. The respondents really put effort into answering and we received lists of comments, opinions and ideas which have been inspiring and helpful in our work. Though, we realized we should have been more careful in which questions were asked and that clearer limitations would have been of value. If we were to do the survey again at this point, we would formulate it in a different way, for example by not including people commuting by bike.

Reflections on research

What surprised us was the fact that the gender division among commuters mentioned in previous research is valid also in reality along our route of investigation. We experience a clear division in the number of men and women where the percentage of men is in majority. Also when inviting commuters to join our workshop and interviews the majority of those who answered were men. This has caused us

to reflect upon if, how and when this situation is to change. Gender equality is an actual matter in most fields of society, for example concerning occupations and work life and there exists a strong aim to equalize this division. If this development continues it will affect the statistics of commuters, which we believed already was ongoing but were proved wrong in the research in observation phases. One can wonder in which period of time we are to notice a change?

Another issue we reacted on and found a bit obsolete in the literature research, which mainly is written in recent years, is the fact that when referring to a family situation, the only constellation described is the traditionally mentioned "standard family" of two adults (most often one man and one woman) and about two children. Maybe because this composition allows for one of the adults to work commute while the other person works closer to home and can handle the duties of home and family and by this distribution the family functions well. The question of commuting is in most cases probably not an alternative for a single parent or adults of many children or other challenging conditions. But to only base the descriptions of an image which does not correspond to the modern society, the reality, we find a bit naive and unrealistic. Family situations of today does not equal one man, one woman, one boy and one girl but appear of different compositions and characters which we believe is important to include when researching these matters.

PART III: RESEARCH AS DESIGN

DESIGN PROPOSAL

In this chapter a design proposal, deriving from the research in previous chapters, is presented. The design is an exploration of what possibilities a small mobile space hold and the aim is to inspire and bring a new perception upon space and time of a train ride.

Through research, including several methods of public participation, the basis of the design are needs and desires expressed by commuters today travelling by train or other means of transport. The design is specified to the existing train (Regina) and the specific route, between Vänersborg and Gothenburg.

The design proposal is adapted to commuters who travel the whole or a longer part of the route. Passengers who enter the train late and only have a short travel time (10-20 minutes) have other needs and desires than those travelling longer (40-50 minutes). Short time commuters can therefore be attracted to some, but not all, of the spaces in the proposal as some demand a longer period of time.

The design process began with investigations and mappings of the existing train, for example looking into movement patterns and spatial conditions. To be able to translate gained knowledge from the research, design criteria were formulated to function as base for the sketching process and in developing a final proposal. To explain the process of the formulated criteria a diagram of one criteria is presented to the right. The criteria are both qualitative and quantitative and includes both activities, hard and soft factors of the interior of the train. On the next page a revised list of the most influential criteria is found. (The full list of criteria is found in the appendix.)

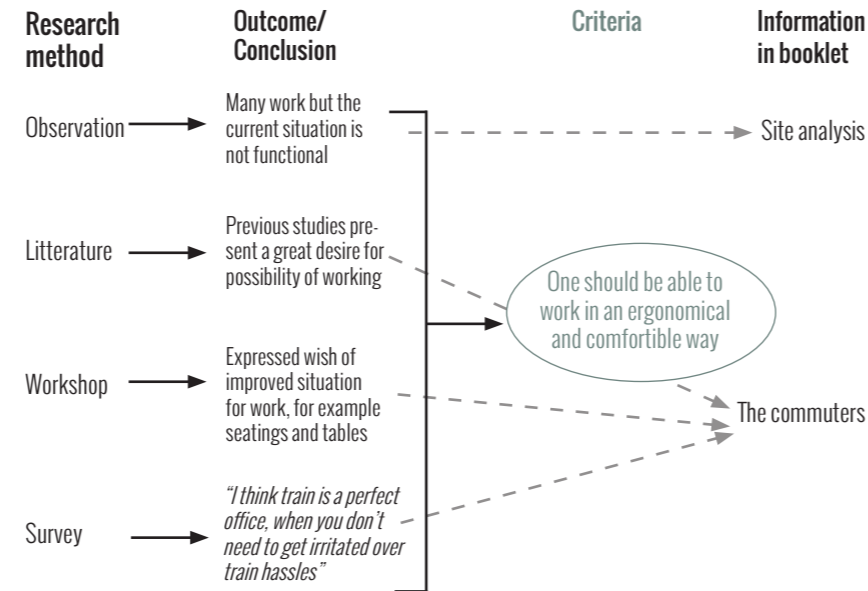
Three of the proposed activities are already taking place in the train but as the interior does not fully facilitate it, the ambition has been to improve these. These activities are *working*, *resting* and *social meetings* in various ways. The new activity introduced deals with performing *physical exercise*.

An enabling of using the travel time can bring two main results, depending on the specific needs of a person. One is to be able to perform activities currently taking place at other times and at other locations, to ease the time pressure of the day. Another result would be to use the travel time to prepare, gather energy or recharge

which would strengthen the rest of the day.

The activities have been developed both one by one, in order to investigate each activity's preconditions, and in combinations which have resulted in a final organisation of the four activities. The organisation of the three carriages aims to take advantages of the train as a public place with a mix of people and activities.

The aim of using a certain route for the proposal is to make the train place specific - to bring an identity to the space. When developing other places or buildings, the place is developed accordingly and in relation to its surroundings. The ambition is to make the train be perceived as a place rather than merely a transport mean. This makes it obvious to consider the surroundings which in this case is the whole area of the route between Vänersborg and Gothenburg.



ACTIVITY CRITERIA

- Places for relaxation/reflection should be improved.
- One should be able to work in an ergonomical and comfortable way.
- Social meetings should be enabled, both physical and virtual.
- One should be able to perform physical exercise.

SPATIAL CRITERIA

- The entrances should be efficient and function well at boarding and exit.
- The seatings should be comfortable and ergonomically adapted for the activities.
- The standardized and sterile organisation and environment should be replaced by a more welcoming and personal planning and design.
- The space should function for a combination of the different activities to enhance a mixture of people and lifestyles.
- The feeling of rootlessness should be eliminated by bringing an identity to the train.

ACTIVITY: REST/RELAX

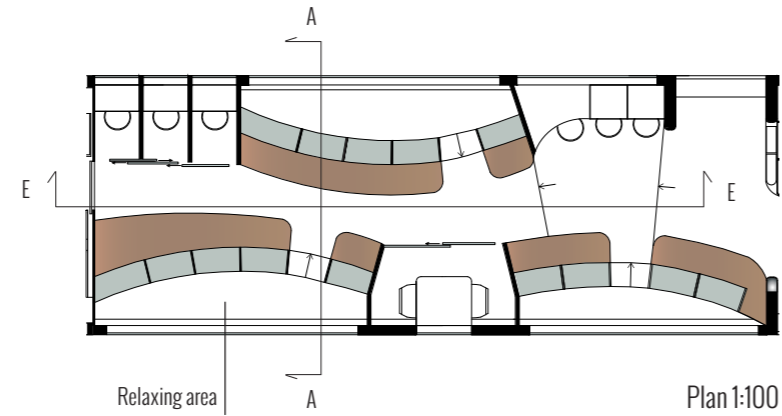


Places for relaxation/reflection should be improved.

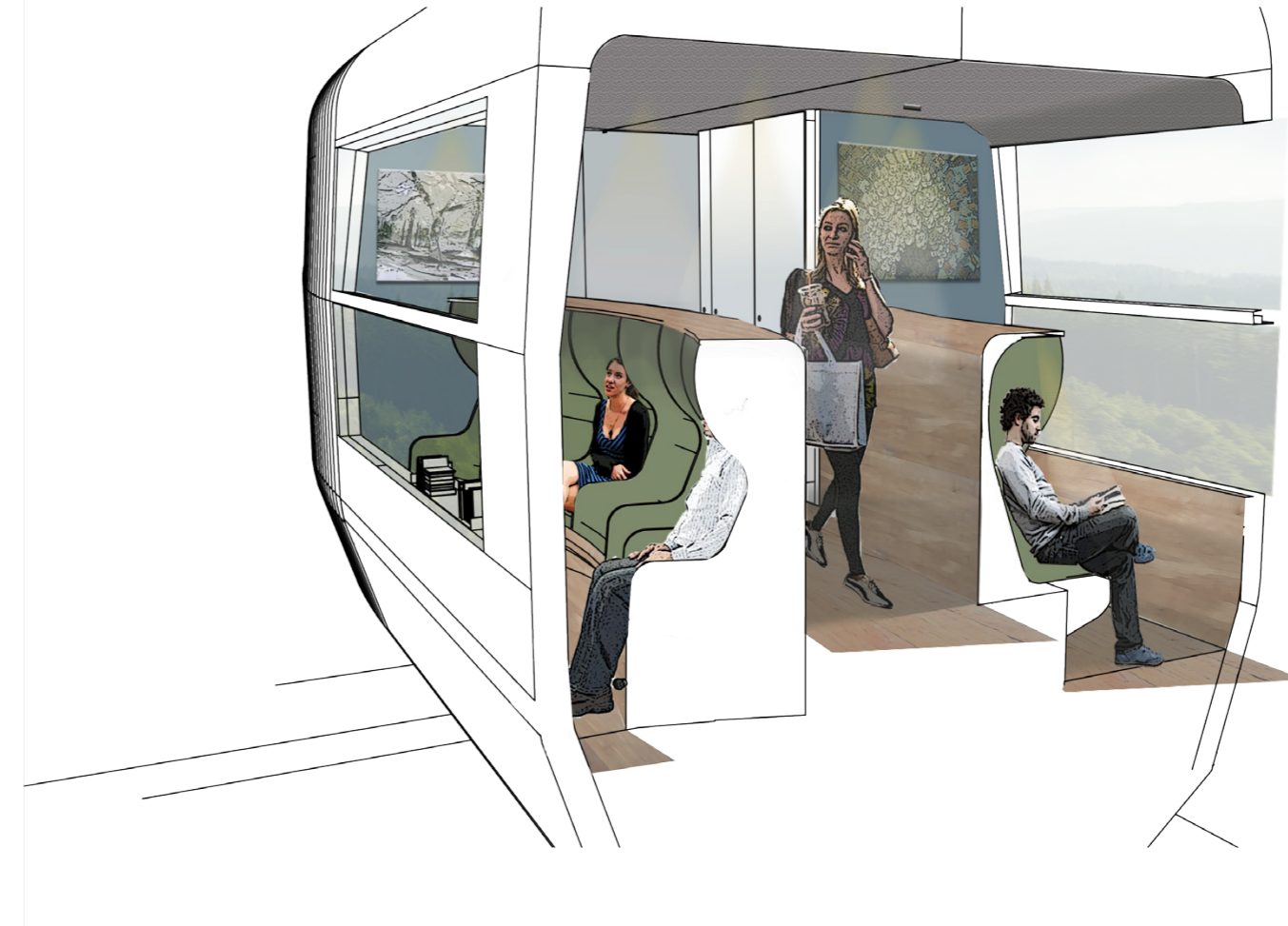
The research implies that many commuters look upon the travel time as a valuable period in between work life and private life. A moment of reflection needed to process the day or simply a time for oneself to reload. Some wish to be able to sleep during the morning route while others want to lean back and enjoy the scenery passing by.

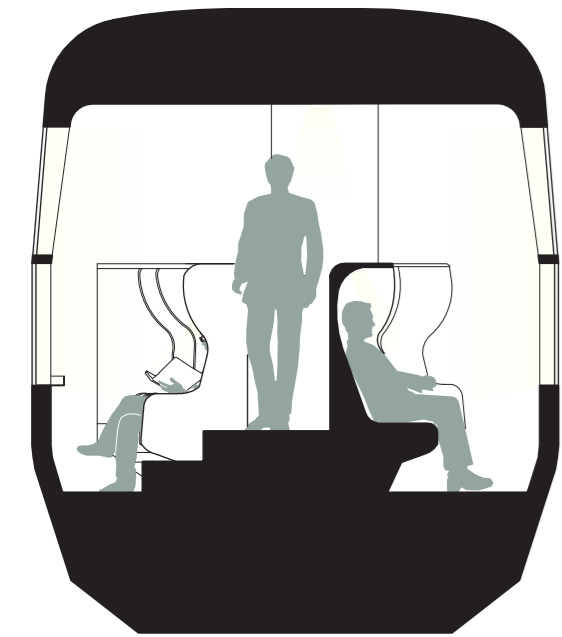
The seatings for rest are organised in groups where you sit together with others, all wishing for a calm travel time. The groups are enclosed from its surroundings and consists of private seatings separated in the furniture. All seatings are directed towards the windows for best possible view. With inspiration from other trains and according to observations, this direction of seating is desired and functions well.

In each section you find a bookshelf where books, magazines or daily newspapers are provided. In each seating light is included to be adjusted by each user.

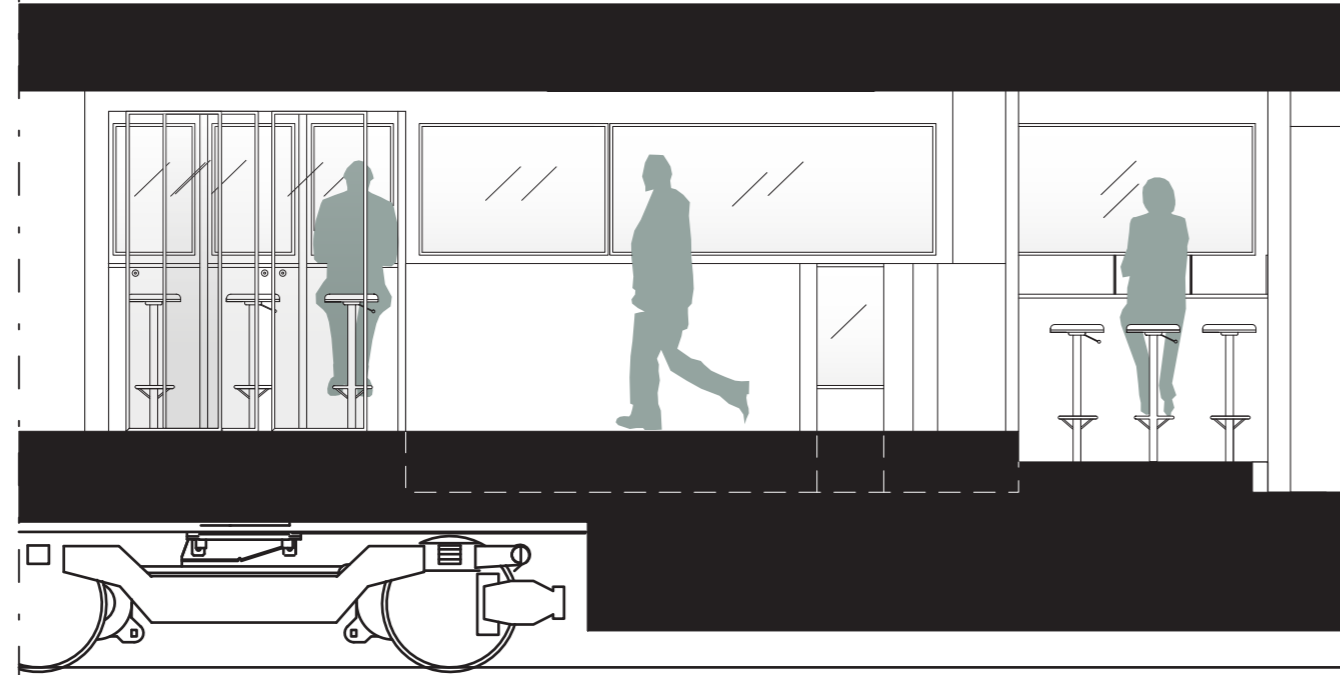


Inspiration



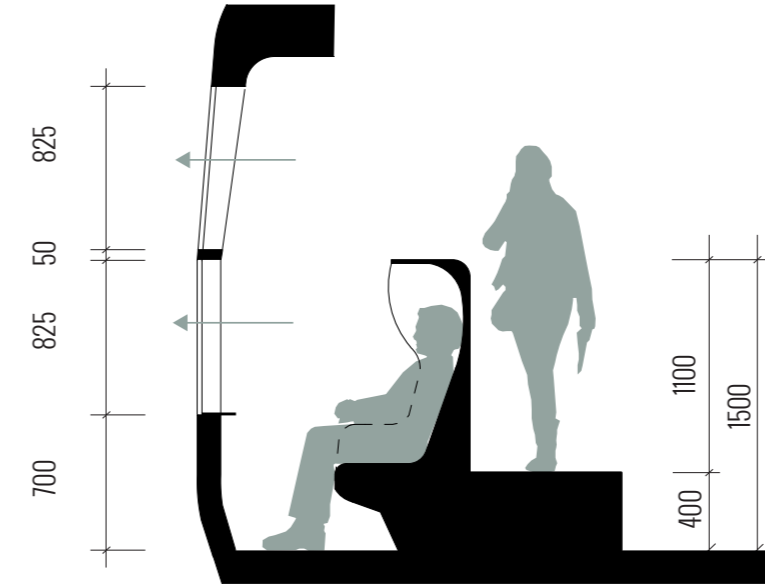


Section A-A, 1:50



Section E-E, 1:50

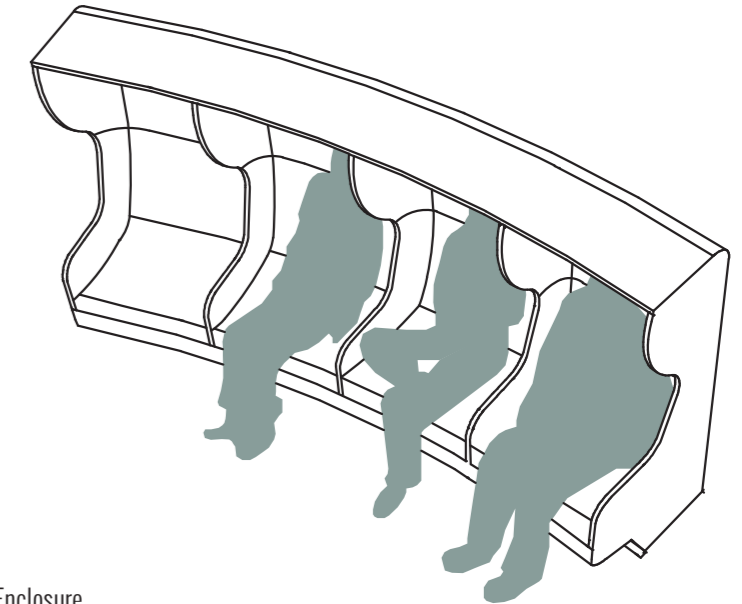
The area for resting is lowered to enhance the feeling of enclosure. In the section above, the resting area is hidden behind the furniture and one can see the relation to the surroundings.



View

All seated in the resting furniture have full view towards the outside, without the need to turn the head or look past the neighbour. Wide windows are placed on two levels, the lower window for the ones resting and the high windows to let light in to the path behind the resting areas.

The resting sections are lowered from the normal height of the floor to emphasize the enclosure of the group.



Enclosure

The resting area consists of a uniform furniture with private seatings. It is separated by head, shoulder and arm rests that makes the user feel comfortable and enclosed. The head is hidden from the neighbour but you can oversee the body and legs of fellow commuters. The aim of the furniture is to feel private but still part of a group. The design is to establish a level of respect among the people seated and to keep a calm and quiet atmosphere. The level of privacy is important to consider, in order to prevent disturbing phone calls to occur or travellers in company to choose a seat in this part of the train.

ACTIVITY: WORK

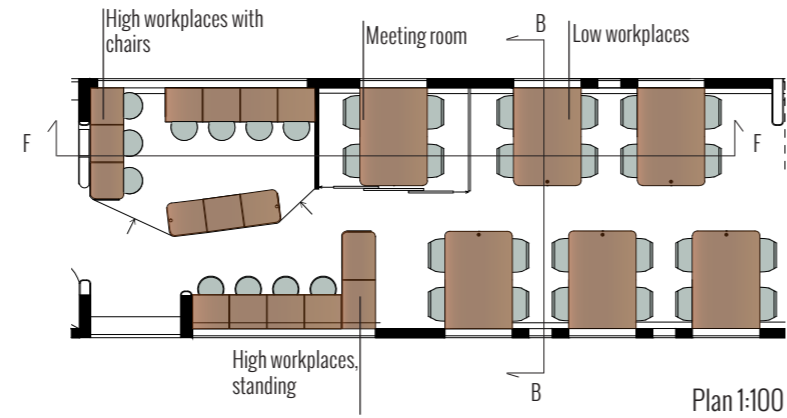


One should be able to work in an ergonomical and comfortable way.

The research resulted in a great desire to be able to work during the travel. The aim of the workplaces is to improve the situation of those wishing to work or study and thereby have the possibility of shorten the day at the office, workplace or school. Inspiration have been found at modern office spaces of open landscape structures where it is common to work at flexible (non-personal) places.

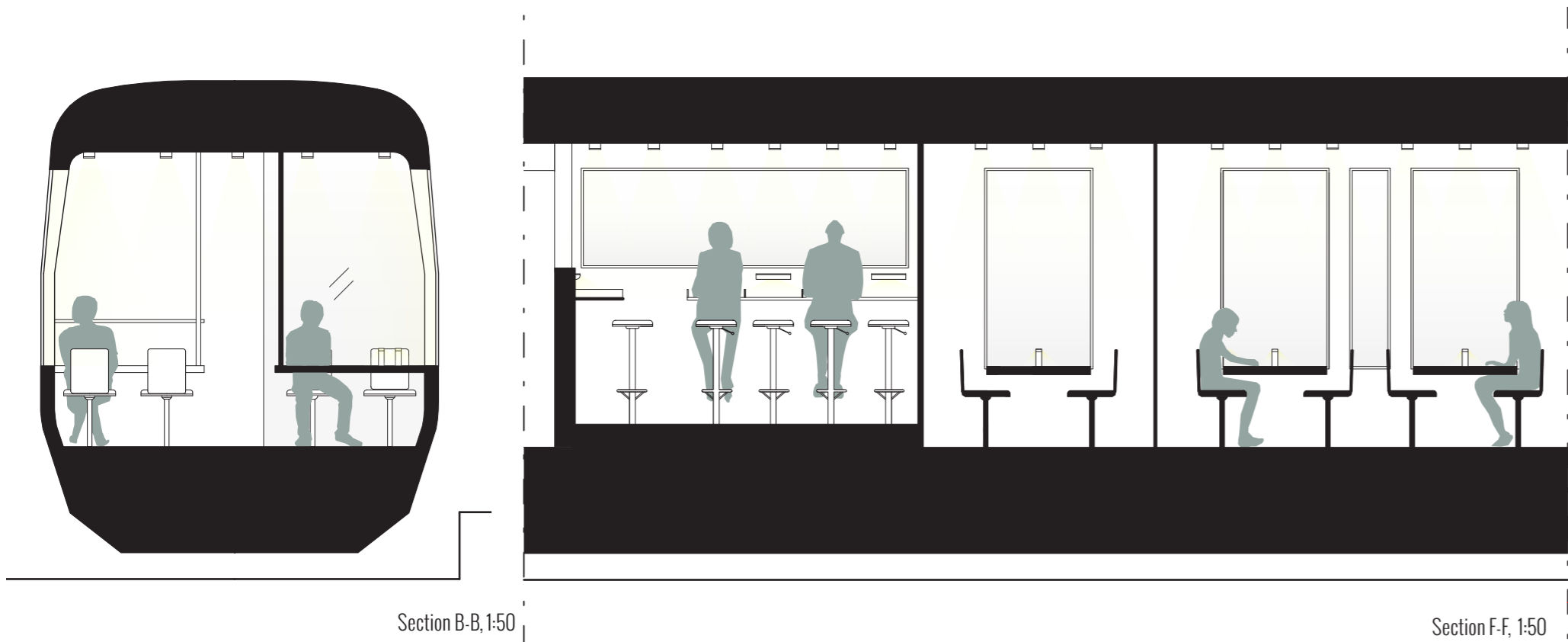
Four variations of workplaces are offered in the proposal;

- *Low workplaces* - spaces for sitting by a wider table for either working privately or together
- *High workplaces* - private spaces for those with less equipment
- *Meeting rooms* - spaces for meetings
- *Private rooms* - small personal compartments where work or telephone calls can be made in private



Inspiration



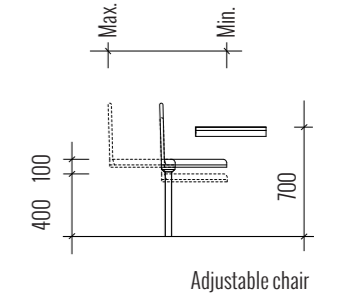
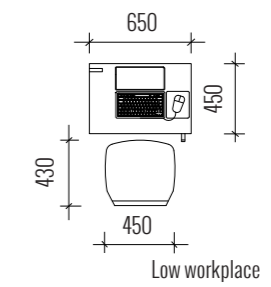
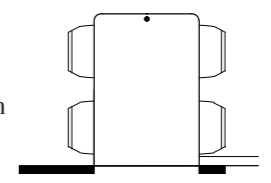


Section B-B, 1:50

Section F-F, 1:50

Workplaces:

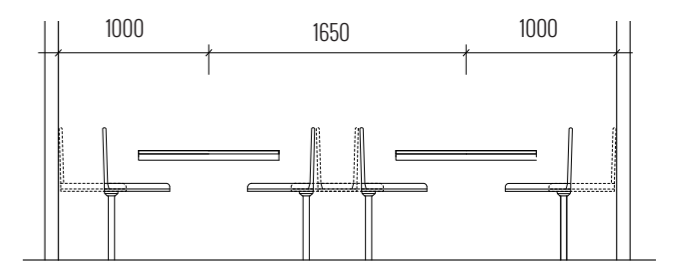
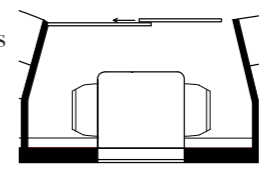
The investigations result in a desire to work on the train, with computer or/and other equipment but many experience the current table space to small. The low workplaces therefore provide enough space for both computer and books and offer light and electrical output at each seating. A simple but comfortable chair which can be adjusted in height to provide a proper seating situation for all. The chair leg is fixed to the floor while the seating is flexible back and forth.



Adjustable chair

Meeting rooms:

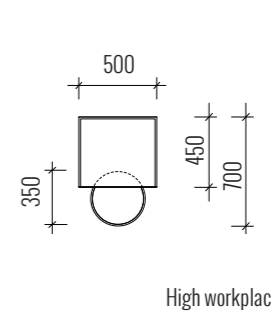
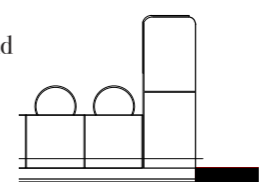
Meeting rooms of two sizes (two persons and four persons) to be used by colleagues commuting together. The rooms have, at parts, glass walls and wide sleiding doors to feel open and as a part of the office space when no one is using them.



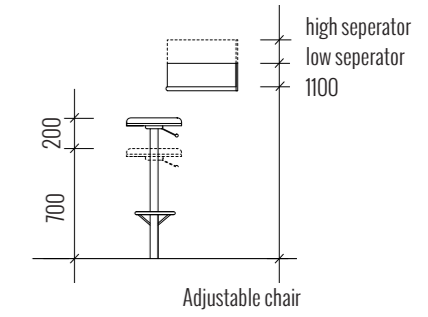
Two groups of low workplaces

High workplaces:

High tables, a bit smaller than the low tables, aim at people travelling for shorter distances, who wish for a more private sphere or due to health aspects wants to stand up. Some desks come with bar chairs while some are for standing. Between the desks, separators in different heights are placed, for various levels of privateness. Electrical output and light are found at each desk.



High workplace



Adjustable chair

ACTIVITY: SOCIAL MEETING

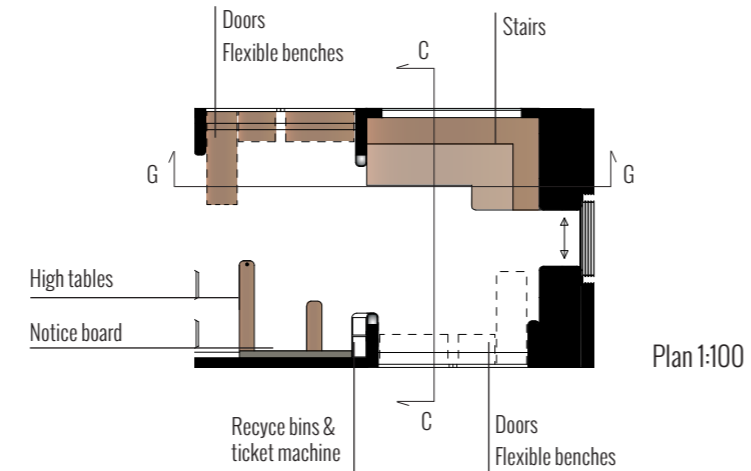


Social meetings should be enabled, both physical and virtual.

The train is a place which gathers a great amount of people from different groups of society, enclosed together for a specific period of time. The train is a public place. Here, you can choose to take part of the open atmosphere or enclose yourself in more private spheres. At the entrance area an open place, a “square”, is located which emphasizes meetings, a feeling of liveliness and invites to conversations.

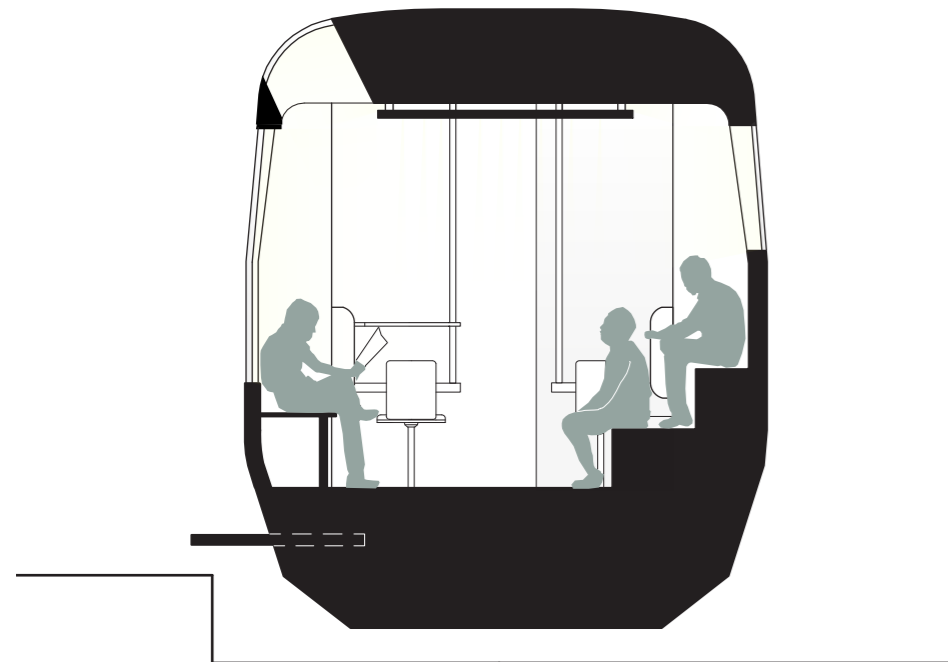
The square provides both fixed and flexible seatings and high tables for standing. The seatings are placed to encourage different kinds of meetings; physical meetings through conversations or watching people and virtual meetings through usage of smart phones or such.

The characteristics of the train being in constant transformation is emphasized through a notice board and art pieces on the walls. These meet the need of bringing a place identity to the train. The notice board, filled with information and notices by commuters from the whole region, create a feeling of belonging to the region and the cities along the route. The art could be made by local artist to enhance a local identity to the train.

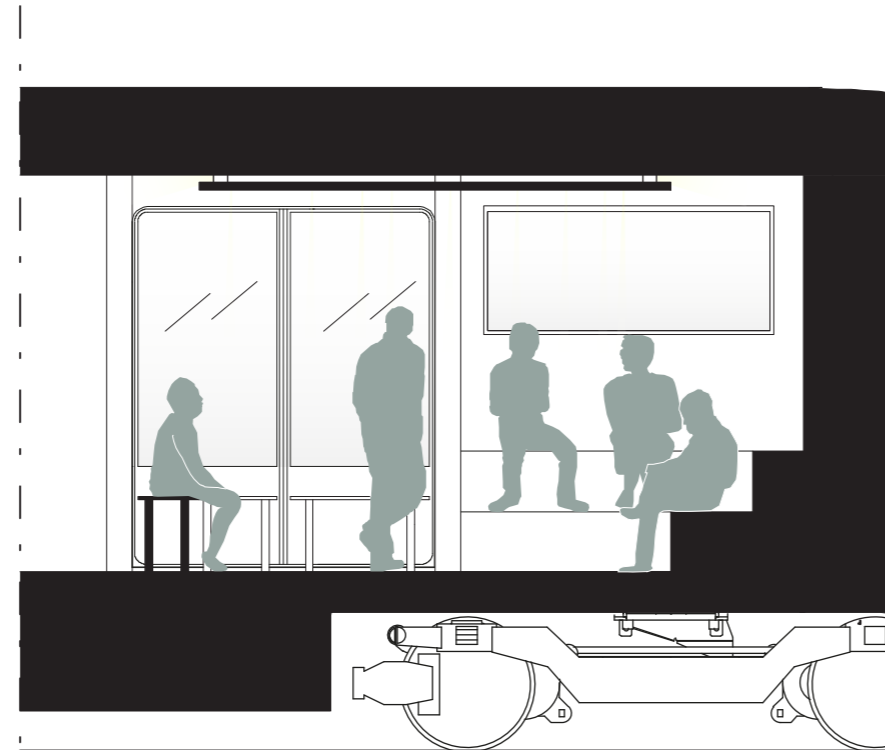


Inspiration





Section C-C, 1:50



Section G-G, 1:50

Stair for sitting

A stair for sitting is situated in the corner of the entrance area and invites people to sit on two levels. When sitting here you have a good view and can enjoy the movement of people arriving and leaving the train during the route. The stair also functions as a space for people travelling in company.

Flexible benches

The entrance area include one enlarged door on each side of the train and according to the investigations, in most cases, only one side is used during a journey between Vänersborg and Gothenburg. This makes it possible to use the opposite, unused side, as a flexible space where benches can be folded from the doors. When one of the benches, on either side, are in use the whole sitting area creates a U-like formation which enables conversations between friends or unknown commuters.

High tables

A couple of small tables are placed in the square where groups of people or single travellers can gather. These places can invite commuters who arrive late during the route and wish for a defined space, something to hold on to and a table for a cup of coffee. The standing spaces are placed in front of the notice board as the information flow can trigger a conversation or simply function as something to look at.

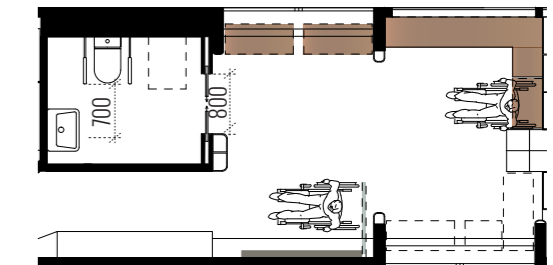
Light

The ceiling includes a hanging structure with soft light directed in different angles to define the open space from a distance. On the morning route to Gothenburg many commuters tend to prepare the arrival and head for the entrance before the train has arrived the platform. The light structure defines the entrance area.

Wheelchair spaces

One of the carriages have a wheelchair accessible entrance, where the floor and the platform hold the same height. At the accessible entrance square, two wheelchair places are organised in the direction of travel. In direct relation to the wheelchair places fixed and flexible benches are found where company or other travellers can sit. When there is no wheelchair-bound commuter present, flexible seatings can be used at these places.

An accessible restroom is located by this entrance. The restroom follows current regulations and contains a toilet, sink and a changing table.



Accessible entrance square - Plan 1:100



PLACE IDENTITY

The investigations indicate that many commuters lose the connection to both the municipality of residence and the municipality they work in. The feeling of not being an active member and not knowing about nor having time for activities taking place in the city is common. This affects the municipality of residence as well as the commuter in a negative way.

The proposal therefore includes three ideas of bringing an identity of the region to the train, to strengthen the commuters' connection to the bigger area of residence, the region. The square in the train could be referred to a "regional square", a meeting point connecting different parts of the region.

Notice board

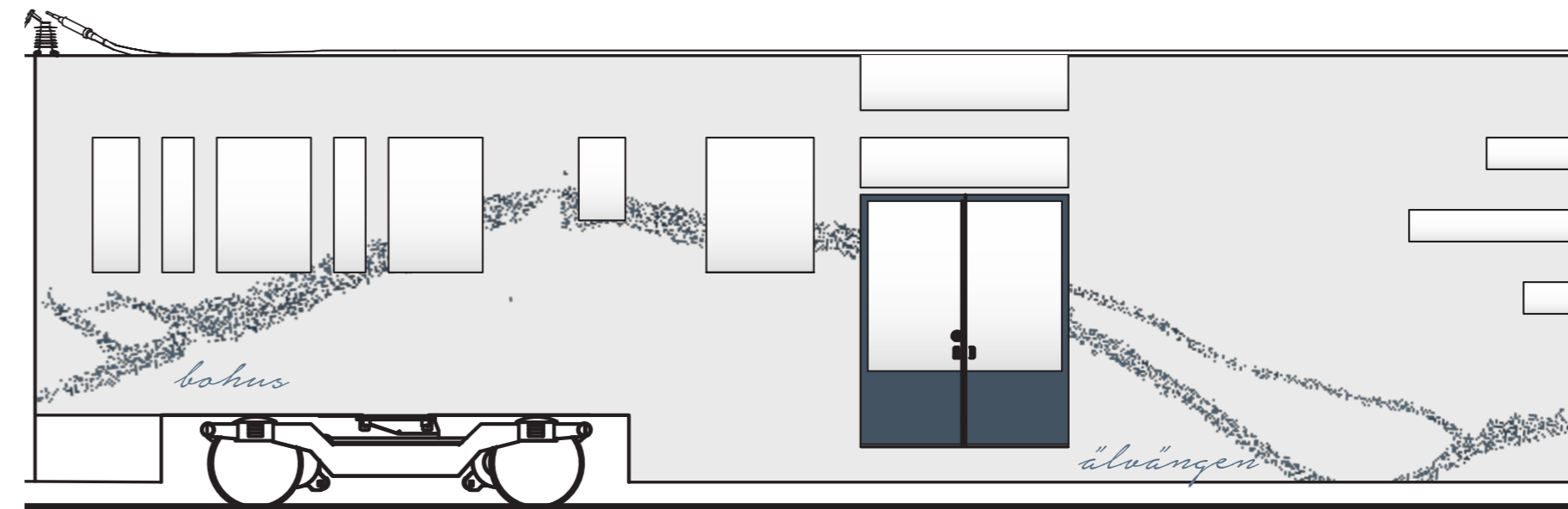
The characteristics of the train being in constant transformation is emphasized through a notice board located by the square. In a city, a notice board acts as a democratic platform used to share messages and information between residents, organisations and authorities. The notice board in the train, filled with information and notices by commuters from the whole region could create new bonds between the inhabitants of the region as well as to places in the region. The strategic position of the board in the entrance area where most of the commuters pass by when arriving or while waiting to arrive at the destination makes it easy to read and take part of the information.

Art

Art from local artists decorates the walls in the train to strengthen the feeling of a place specific train. The art can be changed occasionally to make the space exciting and evolving.

Exterior decoration

The proposed exterior design derives from the natural characteristics which connects the destinations; the river Göta Älv. The specific formation of the river makes one recognize her hometown and favourite places situated along the water. The irregular pattern and the names of the towns can also ease orientation from outside to inside.



The exterior with patterns of Göta Älv

ACTIVITY: PHYSICAL EXERCISE

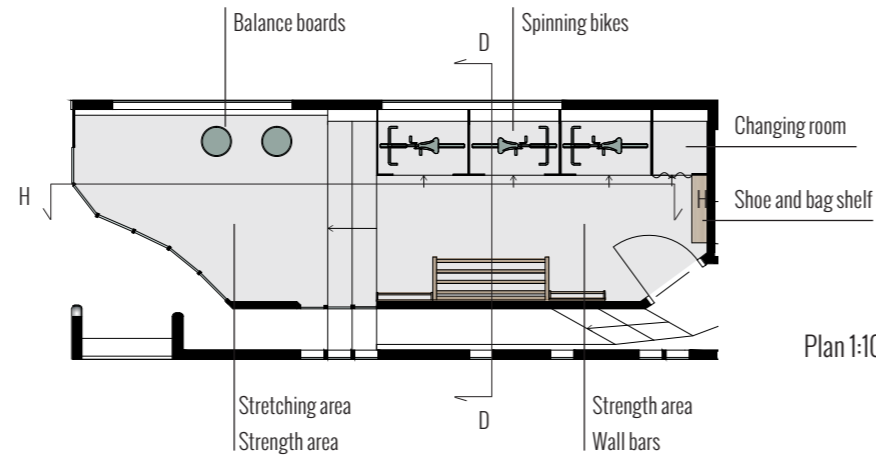


One should be able to perform physical exercise.

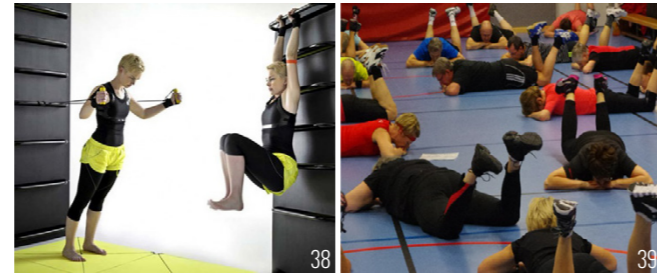
Physical exercise is the only activity not taking place in the train today but at other places during the day. There exists a desire for this function during the travel, why a gym is introduced in one carriage.

Physical exercise is a typical activity currently taking place on the way to or from work. Many walk or bike to the train while others pass by a gym on the way from the station. For many, the time for exercise is an activity often getting sorted out from the daily schedule in a stressful day. The aim is to offer a high-intensive work out where both cardio, strength, balance and stretch exercises are possible to perform. A gym at the train makes it hard to blame the lack of time for not taking care of the health and body.

The floor in the gym is lowered to reach a maximum ceiling height of 3160/2610 millimeters. The room is separated (because of technical devices in the floor) with a stair which can be used for exercises. Spinning bikes and balance boards are placed by the windows to emphasize the speed and irregular movement of the train ride, when biking and balancing.

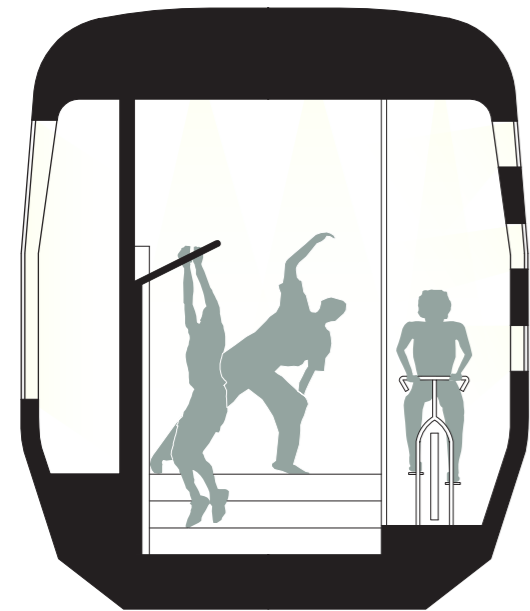


Plan 1:100



Inspiration





Section D-D, 1:50



Section H-H, 1:50

Considerations have been taken to which kind of exercise is possible to perform in a moving vehicle due to safety and which characteristics could favour the training. Four types of exercise are offered to be able to challenge the whole body and to attract different groups of people.

Cardio

The factor of speed is exaggerated by placing spinning bikes by windows, creating an extra feeling of rapidity. The bikes are space-efficient and safe, since the user is sitting down and can hold on to the handlebar while biking.

Balance

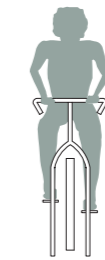
Irregular shakes occurring during a train ride are used for exercise by balance boards located in the floor. Here, one can challenge the balance of the body and through this strengthen the core muscles and body posture.

Strength

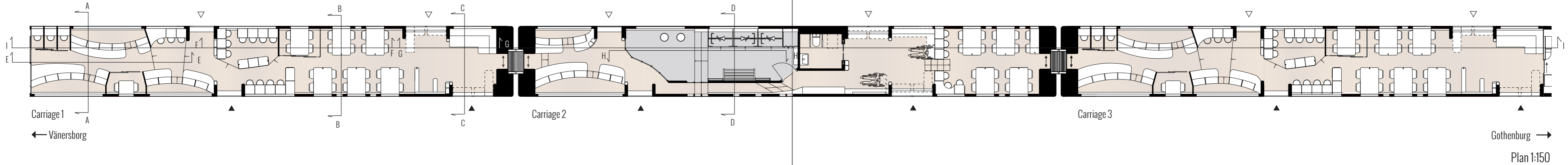
There are spaces where you can use your own body weight in desired ways in combination with suitable equipments such as TRX-laces and rubber bands. The equipments provided can be attached to either the ceiling, wall or floor in order to keep the gym safe from objects moving around and to keep the area flexible for various needs and amount of people.

Stretch

The gym offer floor spaces, empty walls, wall bars and a stair which can be used for stretch and yoga training. The floor is soft for easy and comfortable training without extra mats.



ACTIVITIES: COMPOSITION



The introduced activities; work, rest, social meeting and physical exercise all derive from investigations concerning needs and desires by train commuters. The distribution of the different activities are divided according to the statistics of the investigations and have functioned as a base for the design proposal.

The distribution:

Activity	Number	Percent in proposal (percent in research)
Work	120	55 % (50%)
Rest	37	17 % (20%)
Social (square)	52	23% (20%)
Physical exercise	10	5 % (10%)

Total number of travellers: 219

The total number of passengers in the design proposal answer to 75 percent of the current layout of the Regina train. In the proposal, 219 passengers are offered a defined space; a seating, a standing space by a table or a space in the gym.

The activities are designed according to certain spatial qualities in the tube like space, to restrictions of height and width of trains in Sweden and to the specific preconditions of a space in constant motion. The width of the Regina train is already the widest possible while the ceiling height in the proposal is raised and the floor in some parts is lowered. Different floor levels create spatial differences and the experience of the long tube structure is broken. The constant movement makes safety an important factor. Something to hold on to or stand by has been a requirement. The working tables hanging from the ceiling are attached by bars, that also function as handrails while walking through the train. This is an example of how consideration have been taken to safety issues.

The composition of the different activities derives from the activities' preconditions, light and sound situation, atmosphere and the demand of feeling enclosed or part of a group during the activity. Of the three carriages, the two in each end are identical. These hold a collection of three of the activities: work, rest and social meeting. The

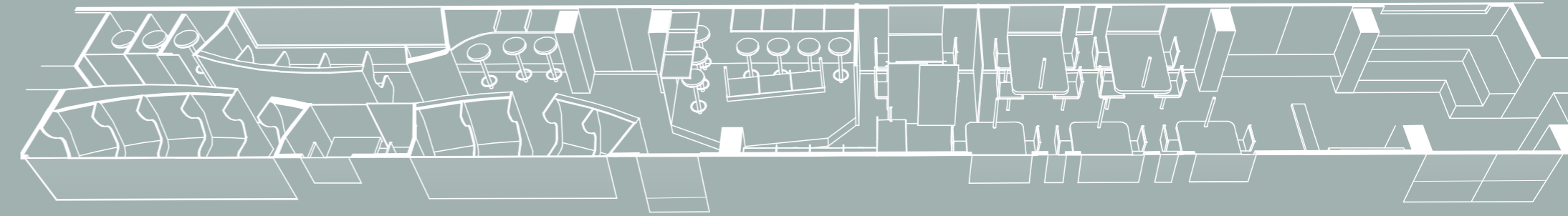
middle carriage has a different organisation where all four of the activities are found. This is also the carriage which is accessible for wheelchairs.

The mix of as many activities in each carriage possible derives from the idea of the train as a public place and makes people from different groups, with different background and interest to meet in the carriages.

Travelling by bus, subway or tram might not invite to social connections but public means of transport is a social environment shared by the people found in it. Those travelling by public transportation are also more exposed to people of different social backgrounds, possible because the bus or tram route is passing through areas of various social status. To travel by car, particularly if driving alone, can imply reversed effects, such as isolation, individualisation and segregation."

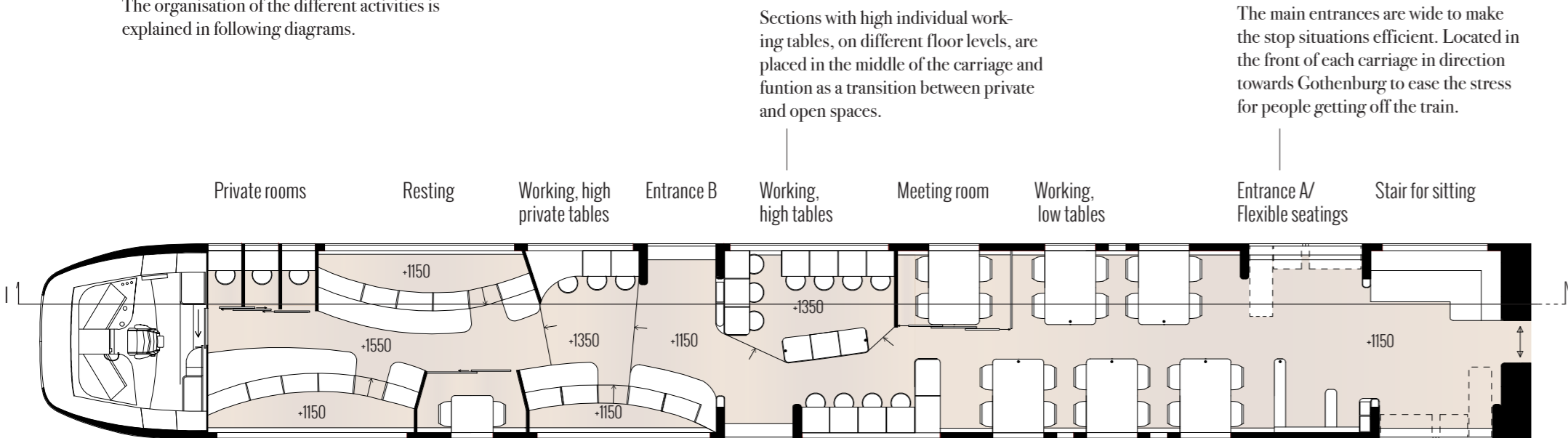
(Sveriges Kommuner och Landsting 2008)

The sound conditions and level of liveliness have been considered in the composition of the train where the most private and enclosed seatings are situated in the end of each carriage and the level gradually increases towards the bigger entrance square, in the front of each carriage in direction towards Gothenburg. The entrances situated in the fronts makes the arrival to Gothenburg fast and efficient and the doors at these entrances are widened to create more efficient stop situations at each station. The doors on opposite side are pushed sideways in opposite directions to create new spatial situations. When entering one is met by activity, people and flows, instead of a closed door on opposite side as in the current organisation.



ORGANISATION

The organisation of the different activities is explained in following diagrams.



Sections with high individual working tables, on different floor levels, are placed in the middle of the carriage and function as a transition between private and open spaces.

The main entrances are wide to make the stop situations efficient. Located in the front of each carriage in direction towards Gothenburg to ease the stress for people getting off the train.

Resting Meeting room Resting Entrance B Working, high tables Working, low tables Bar tables Notice board Entrance A/ Flexible seating

Groups of seatings for rest are located in the end of each carriage. There are more seatings situated on the right side in the direction of travel to Gothenburg because of the enjoyable view of the river on towards this side.

These entrances are more narrow and not as defined as entrance A and function as complementary entrances.

Tables for working individually or in group are placed next to the entrance area. Sitting here demands some acceptance of sound and movement.

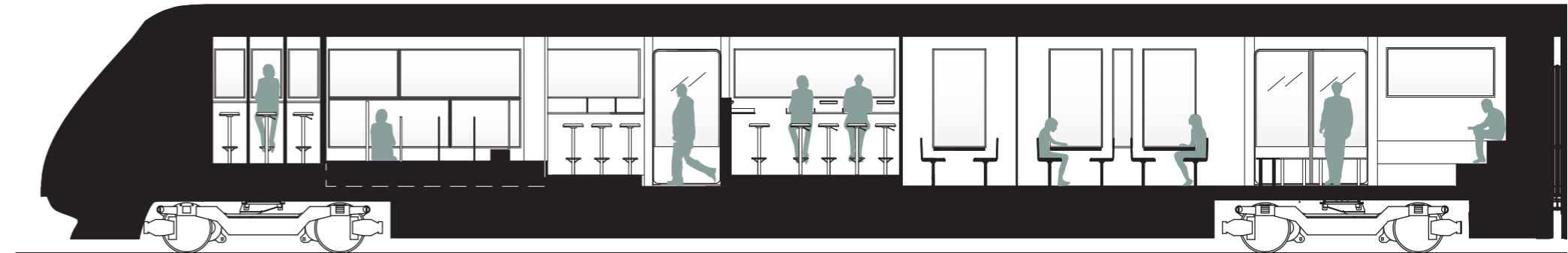
A notice board placed in front of the entrance, accessible and visible for all.

Plan, carriage 1 (and 3) 1:100

Height

The roof is raised 400 mm in all carriages. The floor height varies from 1150, 1350 and 1550 mm above the rails.

Technical devices are placed in the floor in carriage 1 and 3. Air conditioning, lighting and cabling is placed in the roof of each carriage.



Private rooms Resting Working, high private tables Entrance B Working, high tables Meeting room Working, low tables Entrance A/ Flexible seatings Stair for sitting

Private rooms & meeting rooms
Small rooms with walls in between the sections for resting makes this part of the train calm and quiet.

The tables have 30 mm high separators in between each other, to invite only single workers and to keep the area calm.

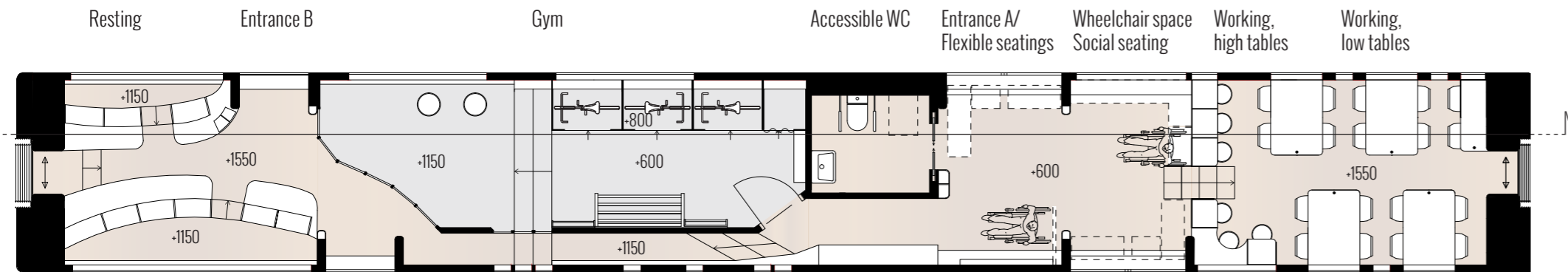
Larger meeting room situated in between private and open workplaces to act as sound barriers and to lower possible noise. When no one seated, sliding doors open to invite passengers.

Benches are placed in the square for sitting down and socializing.

Section I-I part 1, 1:100

The space for physical exercise is situated in the middle of the train, where the ceiling height is at maximum, 3160 mm. Part of the gym is accessible for wheelchairs.

Accessible space
Entrance A in the middle carriage is accessible for wheelchairs. Here two spaces for wheelchair-bound are found and an accessible rest room.



Resting

Entrance B

Gym

Accessible WC

Entrance A/
Flexible seatings

Wheelchair space
Social seating

Working,
high tables

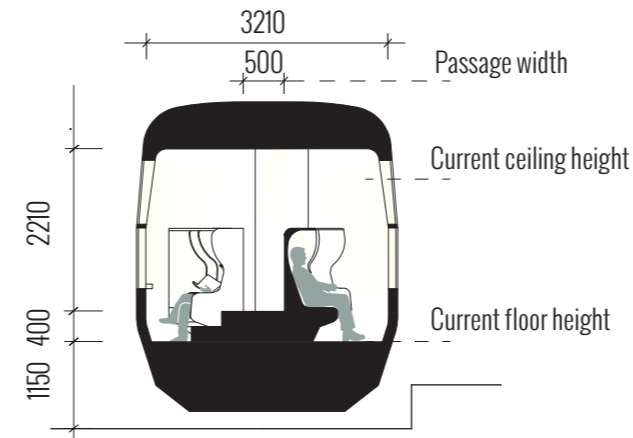
Working,
low tables

Larger resting area situated on the side towards the river.

If travelling with much luggage, space for placing it is found here.

Tables that act as a transition between the working area and the social area, where you have a good view of the entrance square.

Plan, carriage 2, 1:100



Height
The roof is raised 400 mm compared to current train, in all carriages. The floor is lowered in the centre of the middle carriage to 600 mm above the rails, as there are no technical devices in the floor in the middle carriage. In this carriage the floor varies from 600, 1150, 1350 to 1550 mm high above the rails.

The section to the left shows the part where the floor height is at maximum, 1550 mm above the rails.



Resting

Entrance B

Gym

Accessible WC

Entrance A/
Flexible seating

Wheelchair space
Social seating

Working,
high tables

Working,
low tables

Raised floor: 1550 mm
Ceiling height: 2210 mm

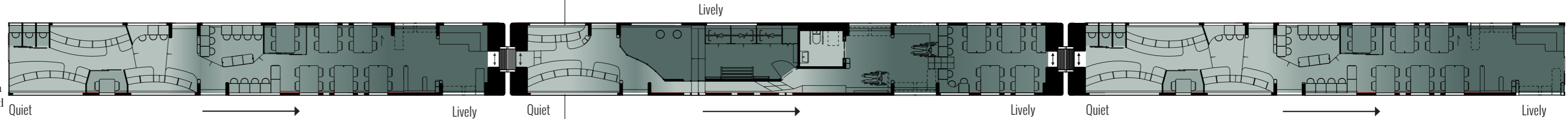
Current floor height: 1150 mm
Ceiling height: 2610 mm

Lowered floor: 600 mm
Ceiling height: 3160 mm

Section I-I part 2, 1:100

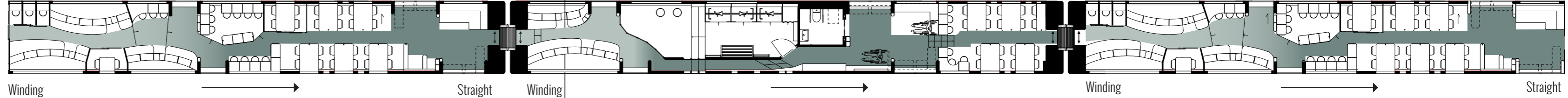
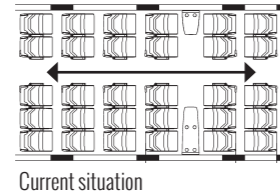
SOUND

The different activities demand and cause different levels of sound and liveliness. The most quiet parts are situated in one end and the level increases towards the other end of each carriage. The square enhances conversations between people and is a good place to sit if travelling in company of others. Open workplaces are situated next to the entrance where people who work together or prefer to work in a more busy surrounding can be seated. Private rooms and meeting rooms are located to act as barriers for the sound.



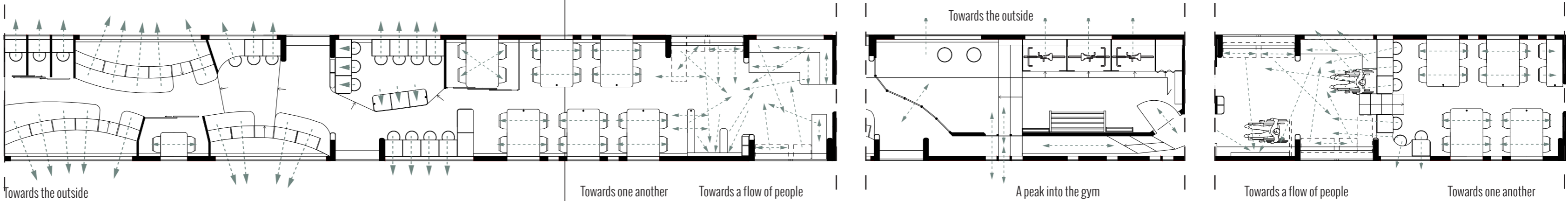
FLOW

The straight and monotonous movement in today's train is turned into a more winding pathway. The winding flow is straightened towards the entrance to function efficiently when many aims to get off at a station.



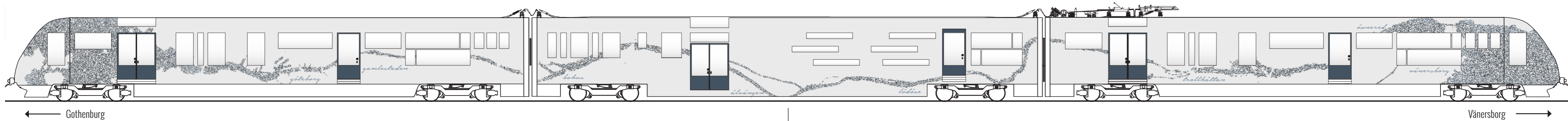
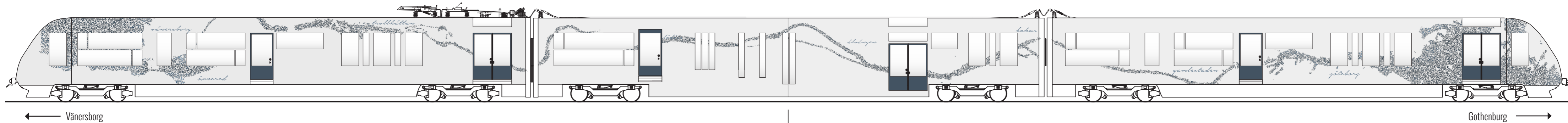
SIGHTLINES

Where to look and what to see have affected the organisation of the interior. The resting area demands a view to the outside while the working activity is focused towards the table. An open atmosphere is strengthened by the view inwards where one can lay eyes on people and flows.



EXTERIOR EXPRESSION

The exterior expression reflects the inside; the mix of activities taking place in each carriage. The placement of the windows are according to the different activities' need of light and view. The pattern of the exterior makes the train unique and connected to its route, where the river and the stops along the route is expressed on the walls. These can guide the traveller to preferred carriage and entrance.



PART IV: CONCLUSIONS

CONSEQUENCES OF THE PROJECT & DESIGN DECISIONS

We began the thesis by formulating a question:

Can the time of travel be better valued and integrated into commuters' everyday lives, through spatial implementations that serve various needs of individuals?

Through the process we have been researching subjects connected to this question, from the perspective of the individual to the larger scale. A discussion where we reflect upon the consequences of the project (if it would be implemented) follows.

The issue of lack of time is of high relevance in today's society and is causing problems for many. During the work with the thesis we have been faced with this fact in several ways, one of them being through the medias. Swedish television has been broadcasting a program called "Tidsakten" where professional time experts are to help people troubled by stress and lack of time. They map out where time is spent and find solutions to ease the daily life and minimize stress. The people taking part in the show are men and women, young and old, singles and families of various constellations. The program makes it obvious that stress, lack of time and daily struggles are actual and acute problems in society and that it concerns all groups of people, regardless age and profession.

The target group for this thesis is work commuters, a group also including a wide mix of people. Profession, background, interests, age and reason for commuting differs. A common ground is that they all live in one municipality and work in another which implies that time they spend, awake, in their city of residence is limited. What surprised us during the research is that a great amount of commuters do not live nor work close to the stations but often depend on several means of transport for getting back and forth to work, which consumes a lot of time. Although shifting means of transport, the main amount of time is spent in the vehicles. Thereby concluded, that the time spent in the space of the train, could improve the day of a commuter. This would not affect only the commuter herself/himself but also his/her family and friends.

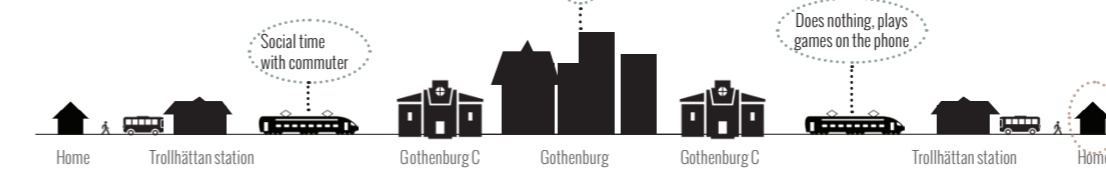
By returning to the commuters we met during the research we can imagine how their situation would change if our proposal would be implemented (see diagrams on next spreads).

For Eva Britt, this would imply a possibility of getting a valuable time of rest on the way home from work, which could make her feel more alert when arriving home. If having more energy, she would be able to deal with some household chores during the evening or spend time with friends or family. The laundry would not have to wait until the weekend and she could receive new energy from doing things she finds enjoyable, during both evenings and in the weekends.

For Anders, a new organisation of the train would imply being able to either work or perform physical exercise during the travels. This would bring him extra time to spend on a new activity or a prolonging of an existing activity.

Due to the possibilities of getting a more social period of time as well as being able to rest properly during the travel, Sven could be attracted to choose public transport over the car even though it might take him a bit longer to get to work. The advantages apart from a more enjoyable travel time would be the possibility of getting some physical exercise (walking/biking) to and from the stations as well as feeling less tired when getting home in the evening.

EVA BRITT



Current situation:

Too tired when getting home in the evening. All household chores needs to be done during the weekend.

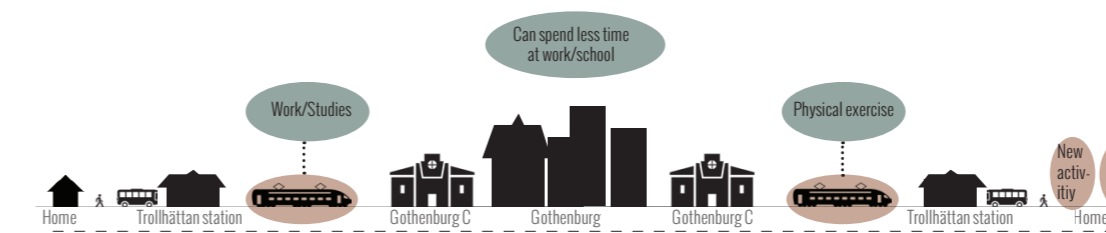
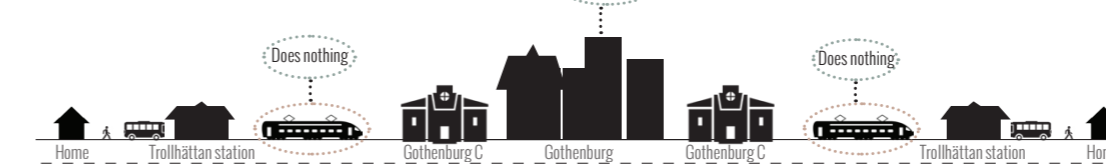
Improved situation:

Through getting new energy by resting on the way home, have the energy to do things in the evenings.

Strengthens the everyday life

The possibility of using the time in an improved way strengthens the mental state and affects the everyday life.

ANDERS



Current situation:

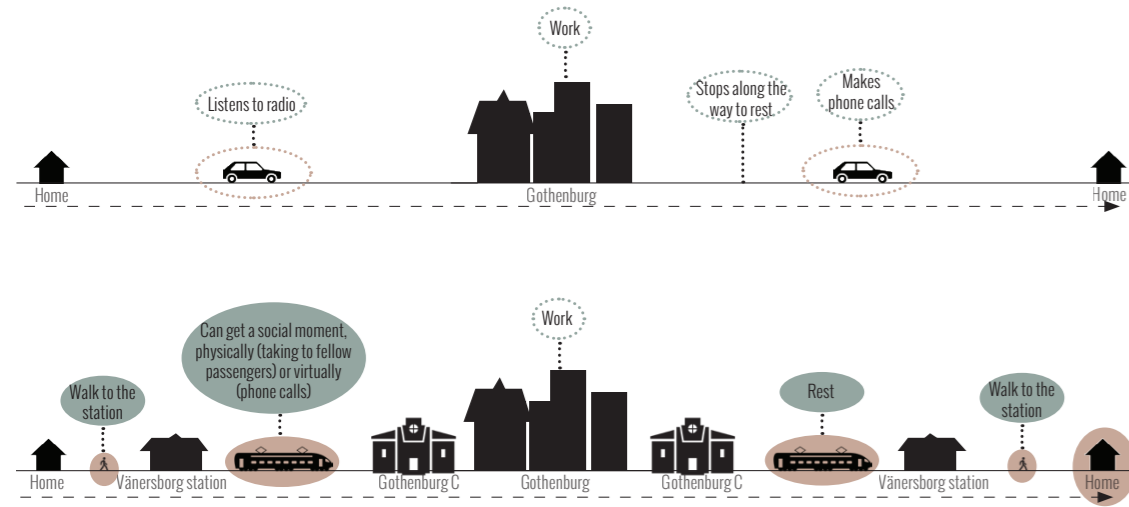
Can not use the travel time for anything he finds valuable.

Improved situation:

Being able to work and to count the travel time into his working hours, makes it possible to spend more time at home or at an added activity. By the possibility of using the travel time for a work out, results in more time at home as he does not need to visit the gym.

Makes the everyday life more efficient

An enabling of desired activities brings a more efficient use of time which results in possible new activities or more time to spend in the municipality of residence.

**Current situation:**

Spends a lot of time of the day on his own and miss the company. Gets tired during the journey.

Improved situation:

Shift from car to public transport. Feels less lonely as he gets a social period during the travel. Also less tired as he can rest on the way home and due to the refreshing walks to and from the station.

Strengthens the everyday life

By perceiving the commuter train as more attractive, social and mental values are added. This result in a strengthening of well being in the everyday life.

The result of the thesis affects the commuters but it also strengthens the act of work commuting between cities and by this, also the trend of regional expansion. For people living in small towns, commuting provide an opportunity to find occupation in other, often larger, cities. This goes in line with the modern person, who tend to hold high demands on career and is not satisfied by choosing a job next door if not matching the preferences or level of education. We believe the development of regions (including regional expansion) will be of major importance in the future, especially looking to the population structure of Sweden. Even though it is the country where the trend of urbanisation is among the strongest in the EU, there still exists a division of big cities and small, rural municipalities. Due to this division, the movement between the different areas is crucial to consider and the development of public transport will be of major importance. The thesis would not only improve the situation for those already commuting, but hopefully also attract more people to choose public transport over car. By this, we believe the result of the thesis also could contribute in reaching environmental goals on both national and global level. Even though we believe the consequences would be favouring the strive of sustainable development from an environmental point of view, we wish to highlight the importance of putting focus on the social aspects. To not forget about this perspective when discussing the large scale and terms such as regional expansion.

Stated by many, is the importance to consider “the whole journey” when working with infrastructure, travels or commuting. To do this one need to see to the perspective of the person travelling. The reasons behind the travel and how it fits into the daily schedule. Where one waits for the mean of transport and for how long. The actual travel, the type of vehicle and what happens when getting to the destination. All these factors are part of getting from point A to B. As we argue there exists a gap of development in this “whole-journey-perspective” - the space of the train - we believe the result of the thesis will fill this gap. By improving the time of travel there will also be a development, and even completion, of the experience of the whole journey.

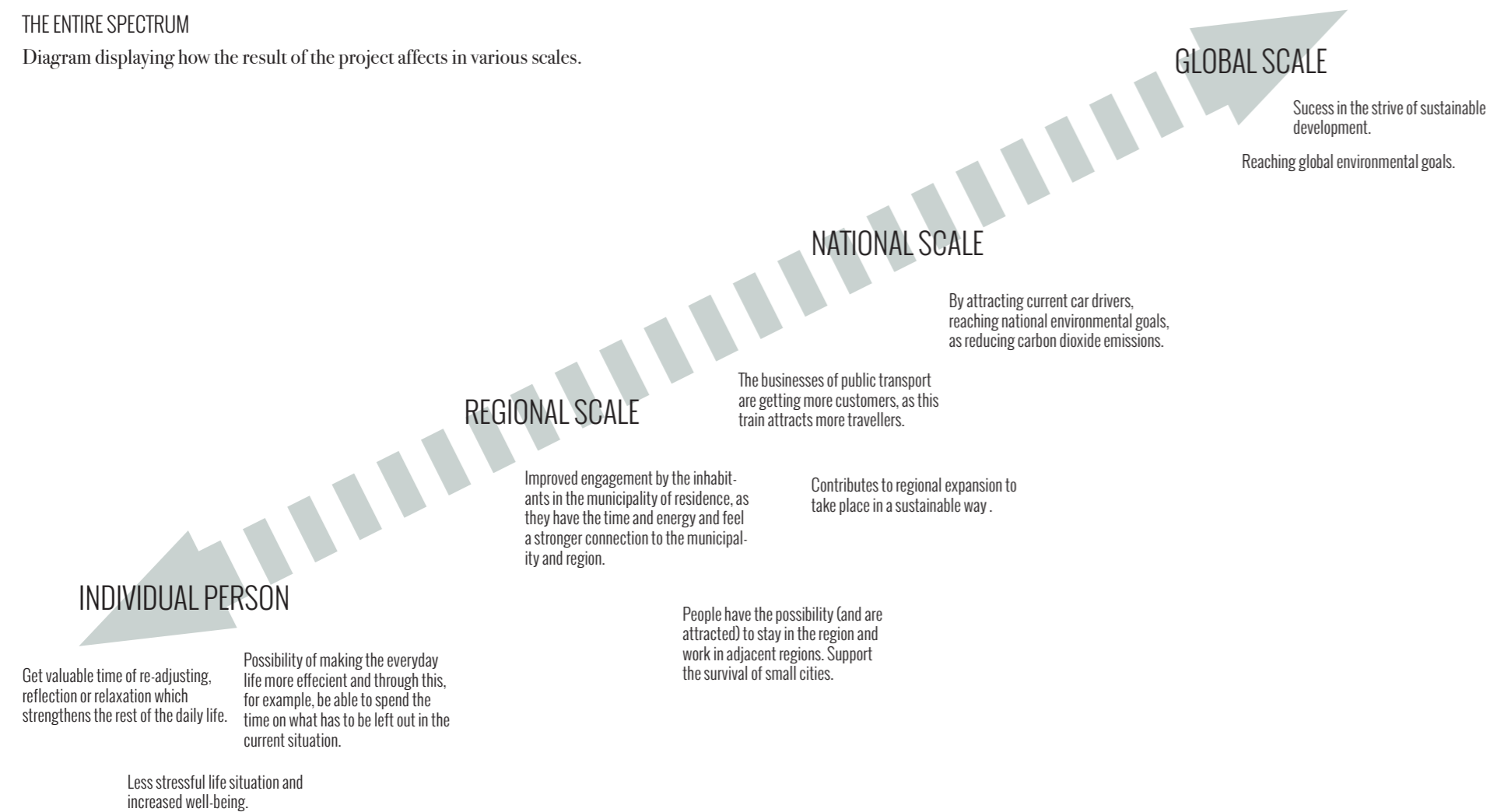
Design decisions

During the development of the project work we have been facing a conflict in how to combine the different activities our research led us to introduce in the design proposal. Part of our critique of today’s spatial organisation of the train lies in the fact that all seats offer the same possibilities, more or less. It does not matter if you pick a seat in row three or seven because the chairs and tables function in the same way. You know what you get but what you get is not optimized for activities other than simply sitting, perhaps listening to music or looking out the window (see appendix). Our struggle has been to decide whether we should aim for a similar solution, where every seat provide conditions for the same activities. However, we realized the desired activities demand different spatial characteristics and requirements. One response to this finding could be to place each activity in one carriage each. This solution would not create any disruptions in-between the various activities and could probably function well. Though we do not find this being the answer to our research nor our aim with this project. Our goal was to challenge the current organisation and create a spatial experience not offered today, where the uniformity is replaced by variety and spatial qualities are created due to the different activities. Also to highlight the train as a public place, where people gathers and mix. This made us decide to combine the various activities and create carriages which includes a mix of them.

As three of the activities in the design proposal already are performed in the current train space one can question whether this express the future vision of a commuter train. One might expect or hope for more experimental design decisions or an inclusion of rather exciting activities, when mentioning future train design. During the process, we have found several proposals of train interiors that really express a futuristic feel in details and materials and from we have been inspired. Nevertheless, our aim has not been to introduce a brand new train which is merely futuristic but to provide a space in accordance to the needs and desires of current (and hopefully also new) commuters. We argue the activities concluded from the research and expressed in the design proposal are those that should set the frames for the design. Our aim has been to present an organisation that represents what the people who will be using the space wish to do and experience. We believe the modernity lies in daring to perceive the space for what it actually is and to change the experience from merely a vehicle into an actual place.

THE ENTIRE SPECTRUM

Diagram displaying how the result of the project affects in various scales.



THE NEED OF AN ARCHITECT

In the beginning of this project we were questioning how come the architectural profession have not been a greater part of the development of train spaces. As commuting it is such a significant part of the daily life of people we find it of major importance to consider from a spatial perspective. We can still not give an answer to why the involvement has not yet taken place but we continue to argue for this to occur. Though, we hope this project can bring light to the issue and act as inspiration for future changes.

The aim of the project was to put forward a proposal which embodies the desires of real people and which could take form in reality. The focus has always been to let the wishes of the users be reflected in the design. Not only to create a proposal which could be appreciated but to display what could happen if architecture, instead of economy and efficiency, ruled the development of the train organisation. To work from the individual's perspective we know lies in the interest of many in the field of public transportation.

We, now even more than initially, believe that the mindset of an architect (in cooperation of other professions) could act as an important part of developing this view upon public transport, commuting and train space.

OUR ROLE AS ARCHITECTS

We believe that the kind of project we present is a good reflection upon how we prefer to work with architecture. Our major interests are not mobile spaces nor small scale solutions and we have never before been working with vehicles. What triggers us is to link the perspective of an individual and find a spatial solution which meets the need also of a larger question in society or even at the global scale. No matter in which scale or context the change is needed. In this case we found a space which a great number of people spend time in every day. A space which through spatial development could affect the daily lives of people as well as fulfilling regional and global goals.

We see ourselves as being part of a larger composition of professions where we can contribute with our specific mindset and methods of working. And to give ideas of a spatial dimension in order to make a change. We often find motivation for a project by ensuring the relevance in various fields and at a starting point it does not have to be clearly related to architecture. To explore the subject and work in the actual field of study we find as crucial, as well as including affected groups as much as possible. Also that an architectural project does not have to result in a complete building but rather raise a discussion and act as an eye-opener of a specific issue.

PROJECT PROCESS

Ever since our first discussion about the master thesis and this subject, we have experienced a growing interest and importance of the basis of the project. Instead of getting weary of the issue we have constantly found new areas to explore, which has been very inspiring through the process. We have experienced our chosen subject as very engaging also among the general public. No matter who we have explained the project to, he/she has been able to relate to the matter and expressed several ideas or opinions. This has been a very enjoyable part of the project as well as we argue for the relevance of the project through all this engagement.

Due to the enlarging interests and the fact that time is limited, we found a great need to create boundaries. It would have been impossible, and probably would not have favoured the project, to include everything we found interesting during the process. This, we realized in the very beginning of the process and the limitations we made at that point have helped us to direct the work and keep us focused. Nevertheless, we are aware of the fact that other aspects could have been included and that the limitations could have been formulated differently.

An important part of our work, and why we believe we have found it interesting through the whole process, are the various methods we have chosen to work with. To perform a mix of research and create a variety of work have not only prevented us from getting tired of the project but has fed in new ideas and information along the way. To know that every week contains different tasks and even various locations of work have kept us inspired and willing to continue to develop the project.

What has struck us several times in the process is our capability of planning our time and estimating the effort needed. During our years in architecture school, we have experienced long nights of anxiety and stress because of broken deadlines and lack of time. Previously, we have felt it impossible to plan and structure a creative process, as it demands inspiration and ideas in order to evolve, which does not come on request. Despite, or maybe thanks to, these experiences we devoted time and effort into making time plans (both weekly and for the whole project period) in the beginning of this project. And these have functioned as great help in the work, not

least mentally as we have known what to do and when to do it. The fact that we have been able to stay within our planned time frames and not experienced the work as stressful, even though we have put a lot of effort into it, implies that we have been able to learn from previous years. By this, we have proven to ourselves that we hold the potential of organizing a project on our own, which has been a positive outcome in a personal sense.

The process has included an educative part of explaining thoughts, ideas and opinion concerning architectural changes to people without specific knowledge about our work or profession. To discuss architecture outside the walls of an architecture school demands you to reflect upon how you put your words and how to gather the information you set out to search for. We believe this is an important part of stepping out of the academic environment to the profession in reality.

What we believe could have strengthened the project and our working process, is to have reached out for more reflections and thoughts upon the design proposal. Opinions from different kinds of people; fellow students, commuters, friends etc. Through letting more eyes take part of the ideas and sketches we believe the project could have come a bit further.

We can conclude that it is crucial that the basis of the project engages you in order to keep motivation through the process. In order to ensure this motivation stays on a preferable level until the end planning, a variety of methods and inclusion of other people is recommended.

AFTER THE THESIS WORK

The semester has come to an end and the work with the thesis at Chalmers Architecture is soon to be over. We look back at the project process and the semester as a period of independant work where we have had the possibility to test our own capacities in several ways. Beginning with an idea concerning a field which we did not know much about has brought us new knowledge which we will carry with us and hopefully build upon in future work. An idea which continuously has been raising new questions, ideas and opinions during the process and which still does.

We believe the thesis could be extended and further developed. The presented design proposal is in accordance to the research we have carried out and we argue it fulfils the criteria we set up to follow. But as design always can be improved, we believe this proposal could be further explored and developed. Our aim was never to deliver complete drawings of a train model. This would demand more technical and constructional knowledge and requires a further inclusion of economic and flexibility aspects. We chose to set these factors aside as we found that we would not have enough time to consider everything we wished. To strengthen the concept and to be able to express our abilities as architects, we decided to focus on how we could explore the spatial conditions and create a visionary organisation of a commuter train. Therefore, the proposal implies weak parts when it comes to a discussion of turning it into reality. We are aware of the fact that there is a great distance between our proposal and the possibility of implementing it. If aiming to develop the proposal for realistic use one would have to consider aspects mentioned above but also include a wider spectrum of users and conditions of various routes etc. One can imagine that since our aim was to raise a discussion, we could have presented a proposal less connected to the current design. Thereby possible uncertainties about technical aspects would be eliminated and we could have had more time to focus on, for example, flexibility.

To develop the design proposal further could be one part of a continuation of *The journey as a destination*. Another is to highlight the issue and continue the discussion we have been aiming to raise. A discussion upon how one can perceive travel time differently and the importance to work from the perspective of the users. To

highlight the meaning of commuting in today's society and its influences at all levels. We believe this discussion should take place among manufacturers and operators of public transportation of all kinds as well as in municipalities, within city planning and infrastructure. Mainly to create an awareness of how the daily situation of travelers could be improved and the importance of consider the spatial conditions inside means of public transportation.

We hope our work can inspire to future changes and we will continue to spread the knowledge we have gained through this master thesis. We will summarize the most important information in a smaller complementary brochure, in Swedish, to be able to leave a footprint of the thesis idea when visiting companies or people of interest.

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APPENDIX

PROCESS TIME PLAN

	RESEARCH / WRITE	SITE / INTERVIEW / WORKSHOP	DESIGN	SUM UP!	TUTORIAL (WITH TUTOR OR OTHER STUDENTS)	PRESENTATION	
36	INTRODUCTION + FIRST CRITIC Plan the report, make dummy, find literature. Plan the first period, make schedule, make dummy for Mid-crit, contact people	THE CONTEXT Investigate commuting and ongoing projects: -on the route -in the region -in Sweden Observe, map, analyse the route Diagrams of observations Sum up THE CONTEXT	THE SPACE Investigate train design: regulations, dimensions etc. Interviews with 3 commuters from Vänersborg about their situation Design criterias from restrictions and interview analysis Sum up THE SPACE	THE ACTIVITY Investigate work commuting: effects on humans, habits, needs, norms, interactions Survey with work commuters from Vänersborg to Gothenburg Design criterias and sketches from survey Sum up THE ACTIVITY	SUM UP: the context, the space and the activity Formulate and sketch on design criterias Tutorial with other students	Sum up and plan pre mid-crit 8/10 PRE MID-CRIT Sum up and plan for mid-crit SUM UP: the context, the space and the activity Tutorial with other students	MID-CRIT
44	Plan the next period, make schedule, make a dummy ect. Time for interviews with Trafikverket, Sweco, ect. Test design criterias in sketches and models	REPORT Time for interviews with Trafikverket, Sweco, ect. Test design/implementation on the train - Workshop	REPORT Interview nr 2. with the 3 commuters from Vänersborg Drawing / Models ect. Tutorial with other students	RESULT & CONCLUSION Drawing / Models ect. Plan and prepare for pre-final seminar	2/12 PRE FINAL SEMINAR Plan the next period	FINALIZE REPORT FINALIZE MATERIAL Tutorial with other students	FINAL SEMINAR

WEEKLY SCHEDULE - EXAMPLE

TIME PLAN DAILY

	RESEARCH / WRITE	SITE / INTERVIEW / WORKSHOP	DESIGN	SUM UP!	TUTORIAL (WITH INGER LISE OR OTHER STUDENTS)	PRESENTATION
WEEK 39	THEME: THE ACTIVITY					
MONDAY	Plan the week Continue on diagrams and sketches from analysis of observation and interviews.					
TUESDAY	Sum up the analysis and diagrams Sum up for tutorial Plan and print for tutorial					
WEDNESDAY	TUTORIAL 9-10 Inger lise room 2286 Discuss outcome Plan & make survey online and later on on the train					
THURSDAY	Work commuting - effects - society/city, everyday life -mobility -norms and rules in society/work place -norms and rules on the train -the train as meeting place, interaction of commuters etc. -gender					
FRIDAY	Stress - Generally in Sweden - difference car commuters and public transportation commuters? Sum up the week: Activity - fill in log book, - discuss the week, - plan for next week					
WEEKEND						

Enkätundersökning angående pendling

Man

Kvinna

Ålder:

Yrke/Utbildning:

Familjesituation:

Hur ofta pendlar du?

Vilken/Vilka sträckor pendlar du?

Vilket/Vilka färdmedel nyttjar du?

Hur lång tid tar din pendlingssträcka (dörr till dörr)?

Hur reser du?
 Ensam I sällskap av vän
 Med partner I sällskap av kollega
 Med barn Annat _____

Vad gör du under resan? (fler än ett alternativ får väljas)

läser (arbete) surfar i mobiltelefon/
platta (privat) lyssnar på musik
 läser (privat) pratar i mobilen (arbete) äter/fikar
 använder dator (arbete) pratar i mobilen (privat) annat (ange vad)
 använder dator (privat) pratar med andra resenärer
 surfar i mobiltelefon/
platta (arbete) sover/vilar

Var vill du helst sitta under resan?

vid fönster nära toalett långt bak i färdmedlet
 vid bord långt fram i färdmedlet tillgänglighetsanpassad plats
 närmast gång/passage i mitten av färdmedlet väljer att stå
 annat (ange vad)

Hur vill du helst sitta under resan?

ensam bredvid annan passagerare mitt emot annan passagerare annat

Hur ofta pratar du med andra resenärer?

varje resa sällan annat
 ibland aldrig

Vad tycker du är bäst med din pendlingsresa?

Vad tycker du är sämst med din pendlingsresa?

Hur upplever du färdmedlets insida och utformning?

Hur upplever du stämningen i färdmedlet under resan?

Skulle du vilja kunna utnyttja restiden på annat sätt än vad som är möjligt idag? Hur/På vilket

Om du fick välja att stiga på en av följande vagnar, vilken skulle du välja?

"kontorsvagnen"

"gymvagnen"

"SPA-vagnen"

Om du fick skapa insidan av valfritt färdmedel, hur skulle det då se ut och vad skulle man kunna göra?

DIN VARDAG

Namn:
Kön:
Ålder:

Aktivitet

kl. 04.00 kl. 08.00 kl. 12.00 kl. 16.00 kl. 20.00 kl. 24.00

Plats

Känsla

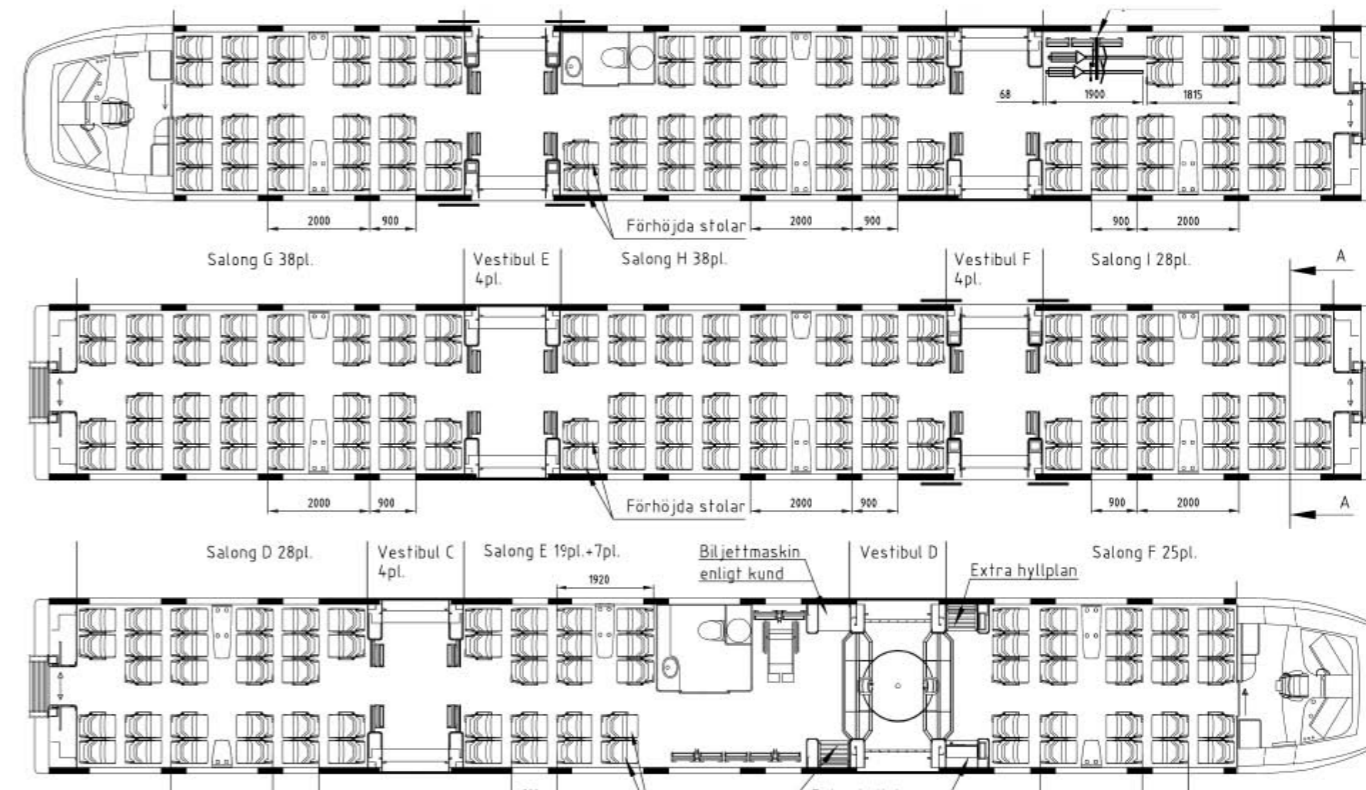
DIN RESA

Namn:

Vart sitter du på tåget?

Hur sitter du på tåget?

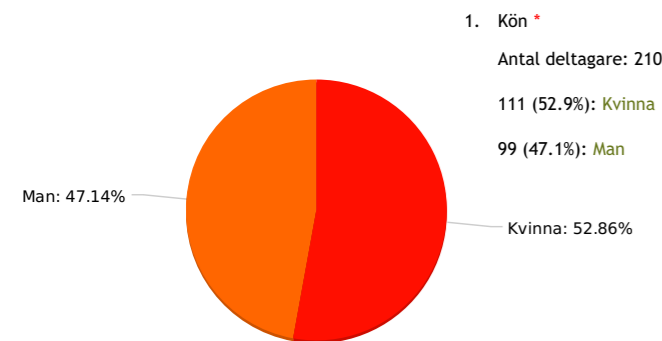
Vad gör du helst när du reser?



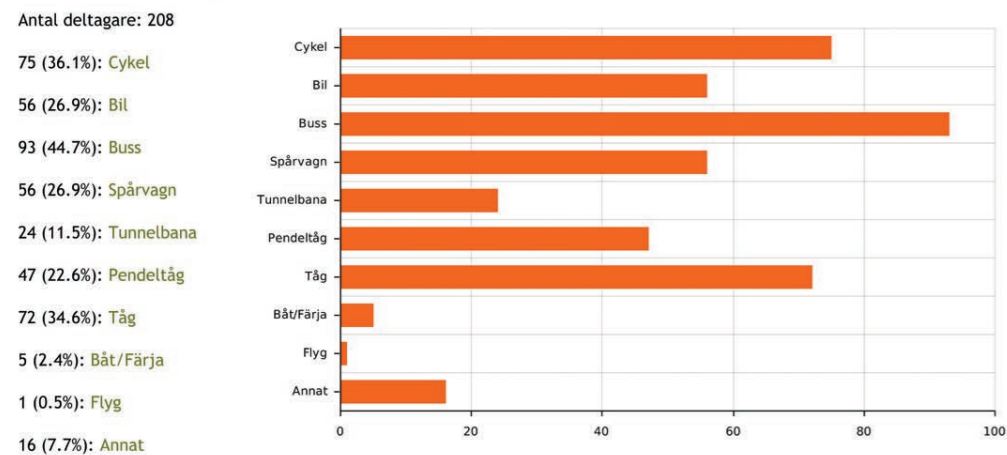
RESULTS SURVEY AND WORKSHOP

Presented below is the result of the check questions of the national web survey.

Könsfördelning



Vilket/Vilka färdmedel nyttjar du?



Hur reser du?

Antal deltagare: 207

198 (95.7%): **Ensam**

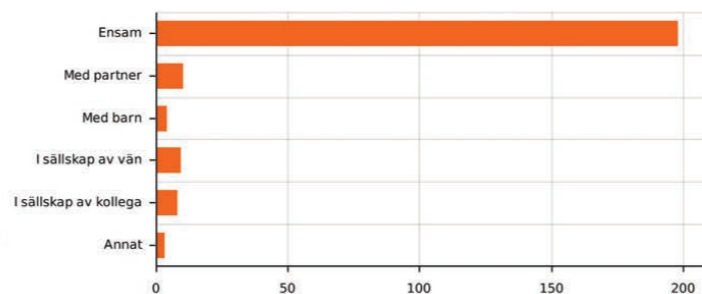
10 (4.8%): **Med partner**

4 (1.9%): **Med barn**

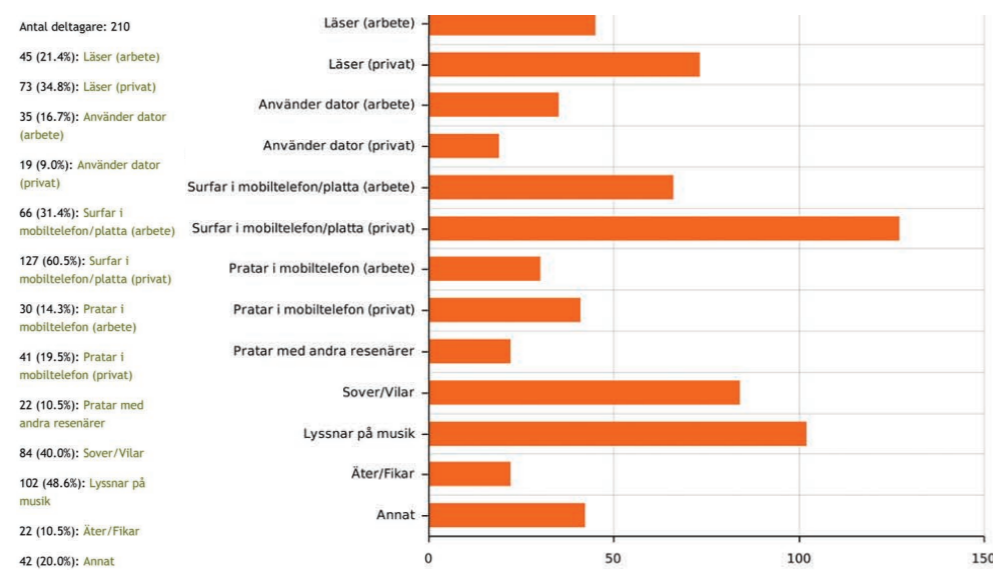
9 (4.3%): **I sällskap av vän**

8 (3.9%): **I sällskap av kollega**

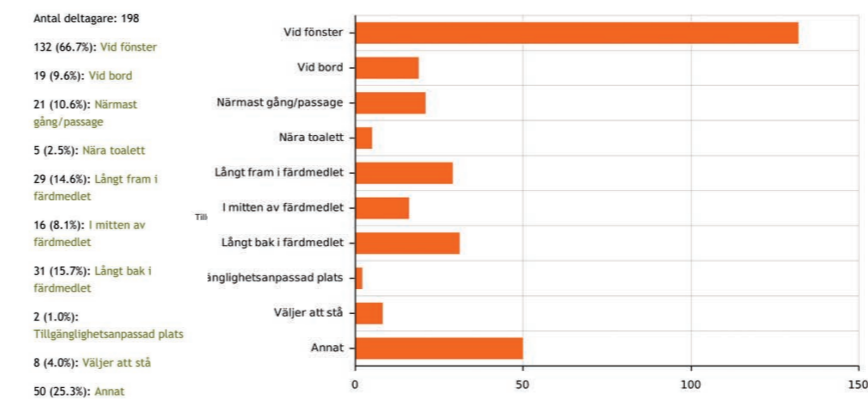
3 (1.4%): **Annat**



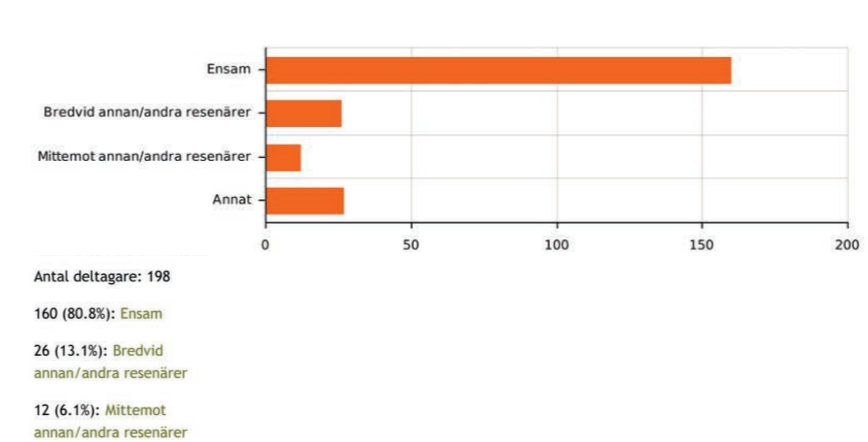
Vad gör du under resan? (fler än ett alternativ får väljas)



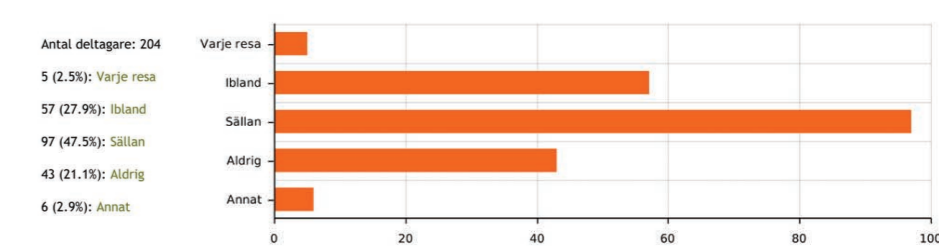
Var vill du helst sitta under resan?



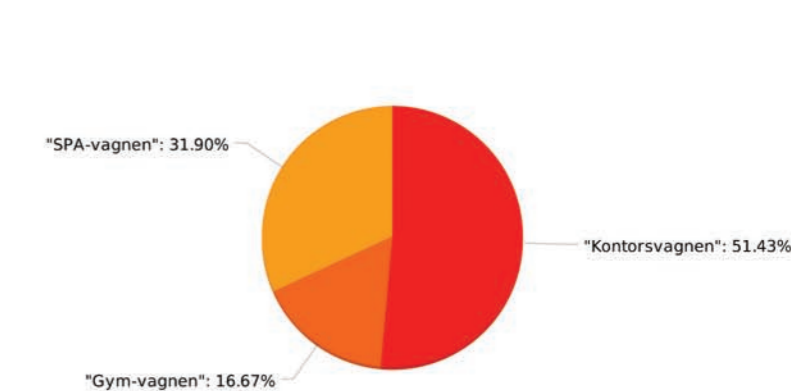
Hur vill du helst sitta under resan?



Hur ofta pratar du med andra resenärer?



Om du fick välja att stiga på en av följande vagnar, vilken skulle du välja?

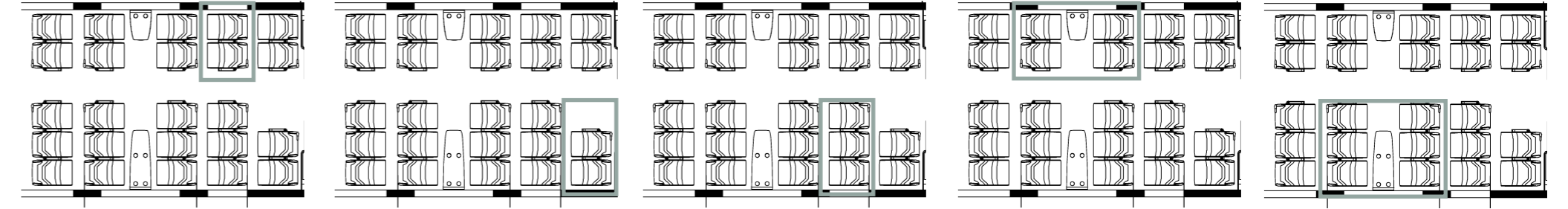


SWEDISH VEHICLE PROFILE (SVENSK FORDONSPROFIL)

CURRENT SITUATION: ANALYSIS



SEATING ALTERNATIVES



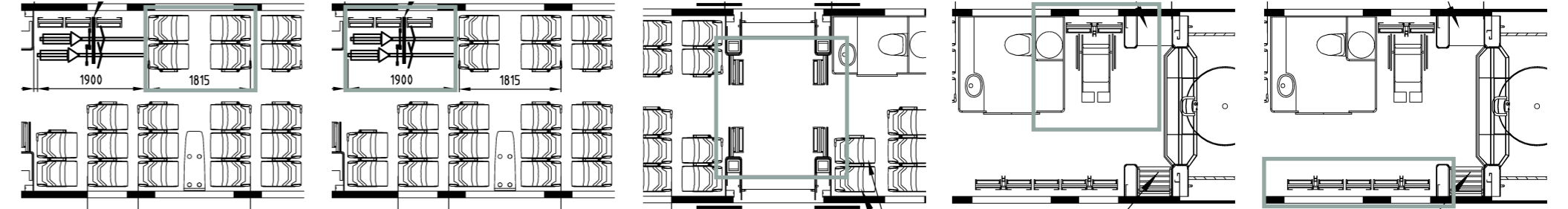
Type 1: Two chairs
One chair towards the passage and the other towards a the outer wall, most often towards a window. Flexible table on the back of the chair in front and possibility of small storage.

Type 2: Two chairs (behind three)
In all units apart from unit I, there are at least one of this type of seating. Compared to type 1, there is one chair wide space besides the outer chair which creates a distance to the passage. Flexible table on the back of the chair in front and possibility of small storage.

Type 3: Three chairs
Three chairs on a row adds a further distance between the window seat and the passage, compared to type 1. Flexible table on the back of the chair in front and possibility of small storage.

Type 4: Four chairs by table
This type is located where the shift in chair direction takes place and is f. eg suitable for those travelling in company and would like to sit opposite each other. The table is only reachable for those in the window seats.

Type 6: Six chairs by table
Same conditions as type 4, though one more chair. The table is only reachable for those in the middle and window seats.



Type 5: Four chairs without table
This type only exists at one place in the train, in wagon 1, unit C. This arrangement is 185mm more narrow than type 4, why there is no table. ble is only reachable for those in the middle and window seats.

Type 7: Flexible seatings/bicycle storage
Three flexible seatings where you are seated with the back towards the outer wall and the view is therefore towards the inside/the passage. Straps for two bicycles which when used occupies the seatings.

Type 8: Flexible seatings in entrance
Collapsible chairs located in the entrance, close to the door so that the passage from the units can continue through the entrance. When folding down your view is to the entrance area.

Type 9: Flexible seatings/wheel chair
Two collapsible chairs in unit H, right by the accessible entrance. Straps are attached to be used for wheel chair.

Type 10: Flexible seatings, 5 in a row
Five collapsible chairs with the back towards outer wall/window and a view to the accessible toilet.

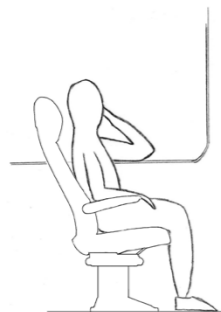
OBSERVED SIT POSITIONS



“Standard”



Leaning back



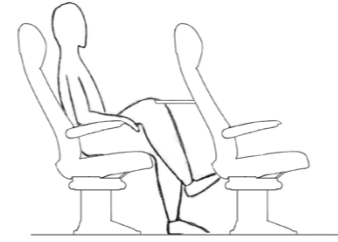
Looking out the window



Reading



Resting legs



Legs crossed



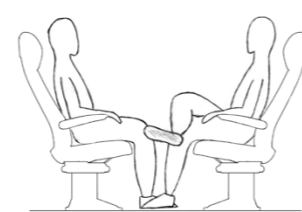
Using single table



Using common table 1



Using common table 2

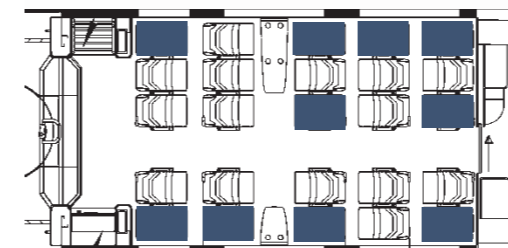


Legs/feet integration

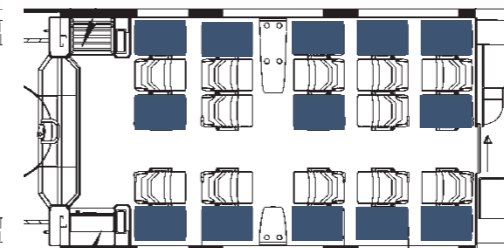
CHOICE OF SEAT

Vänersborg - Gothenburg 07.09-08.00

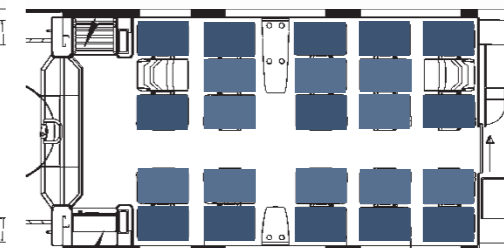
Vagn 3, unit I



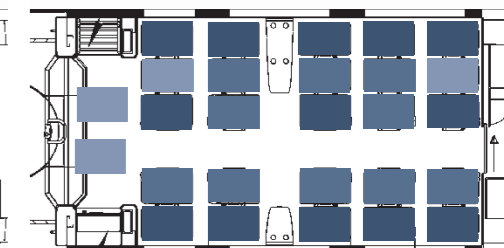
Departure Vänersborg 07.09



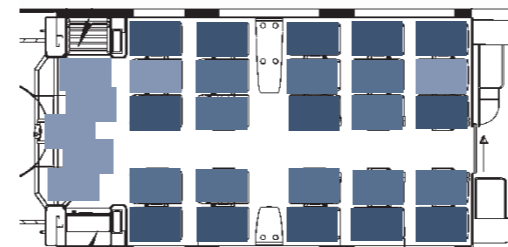
Departure Öxnered 07.15



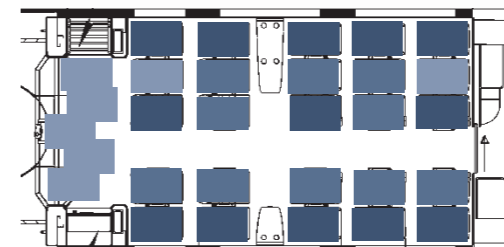
Departure Trollhättan 07.22



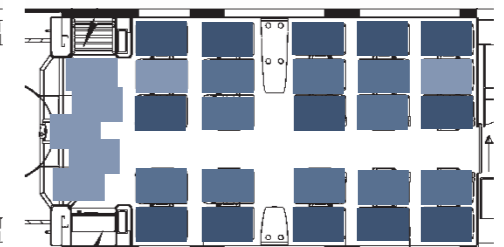
Departure Lödöse 07.35



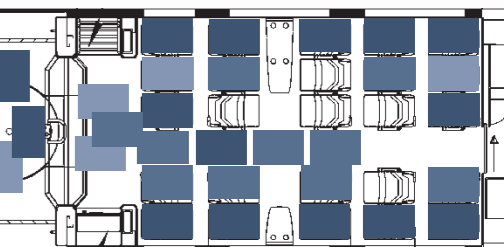
Departure Älvängen 07.40



Departure Bohus 07.47



Departure Gamlestaden 07.55



Arrival Gothenburg 08.00

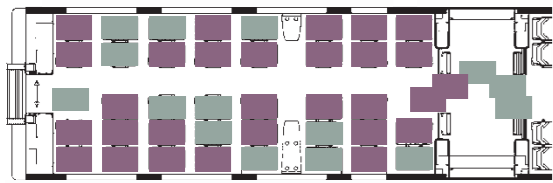
GENDER DIVISION



Morning routes

Vänersborg - Gothenburg 07.09-08.00

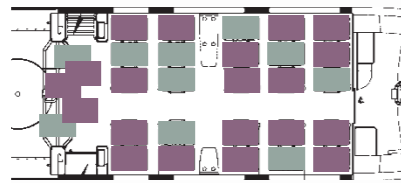
Carriage 2, unit D



29 men/15 women = 66/35%

Total: 49 men/ 25women = 66/34%

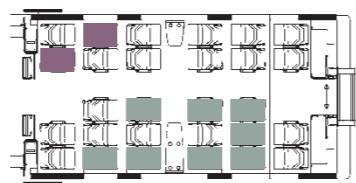
Carriage 3, unit I



20 men/10 women = 67/33%

Vänersborg - Gothenburg 08.09-09.00

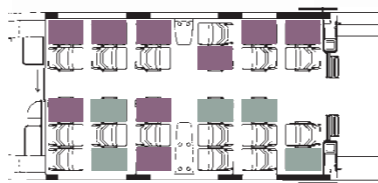
Carriage 2, unit F



2 men/8 women = 20/80%

Total: 11 men/13women = 46/54%

Carriage 1, unit A



9 men/5 women = 64/36%

Evening routes

Gothenburg-Vänersborg 15.30-16.21

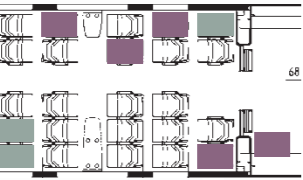
Carriage 3, unit G



5 men/4 women = 56/44%

Total: 13 men/12women = 52/48%

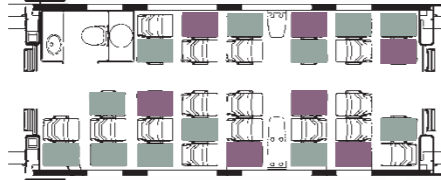
Carriage 1, unit B



8 men/8 women = 50/50%

Gothenburg-Vänersborg 18.00-18.51

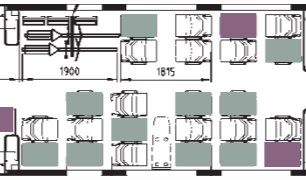
Carriage 1, unit B



7 men/12 women = 37/63%

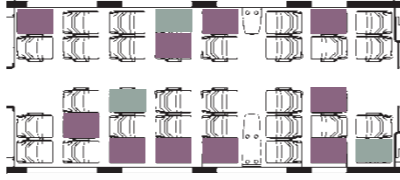
Total: 20 men/ 25women = 44/56%

Carriage 1, unit C



3 men/10 women = 23/77%

Carriage 1, unit D



10 men/3 women = 77/23%

CURRENT ACTIVITIES

These diagrams explain the current activities and how the function together due to the aspects of sound, scent and movement. Faded implies that the activity is disturbing if some kind.

ALL CURRENT ACTIVITIES



SCENT



SOUND



MOVEMENT







DESIGN CRITERIA - PROCESS

Full list of criteria presented at the midterm seminar from which a number have been selected and used as the basis of the design proposal.







HARD CRITERIA

-  The entrances should be efficient and function well at boarding and exit.
-  The height of the space should be used more efficiently.
-  The organisation of the seatings should express and enhance the activities.
-  The seatings should be comfortable and ergonomically adapted for the activities.
-  The light condition should be adapted for the activities.
-  Windows should be better placed in accordance to the seatings and activities.
-  Storage space should be located close to the seat and be accessible.
-  The possibilities of recycling waste should be improved and more easily accessible.
-  Toilets should be easily accessible and function well in the planning.
-  The space should be accessible due to current regulations.
-  Materials and colours should be chosen according to the soft criterias.
-  A new design should be realistic in terms of efficiency (seatings etc.) or other strategies should be suggested.

ACTIVITY CRITERIA

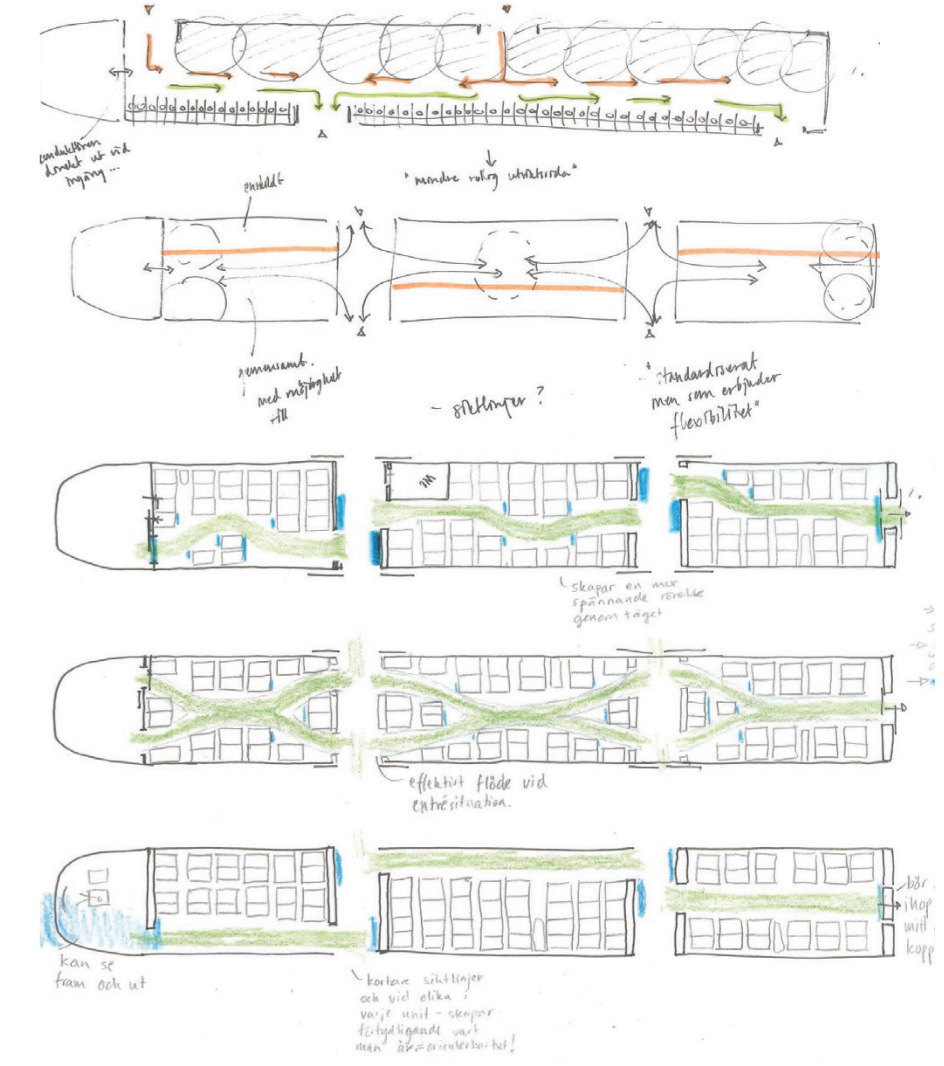
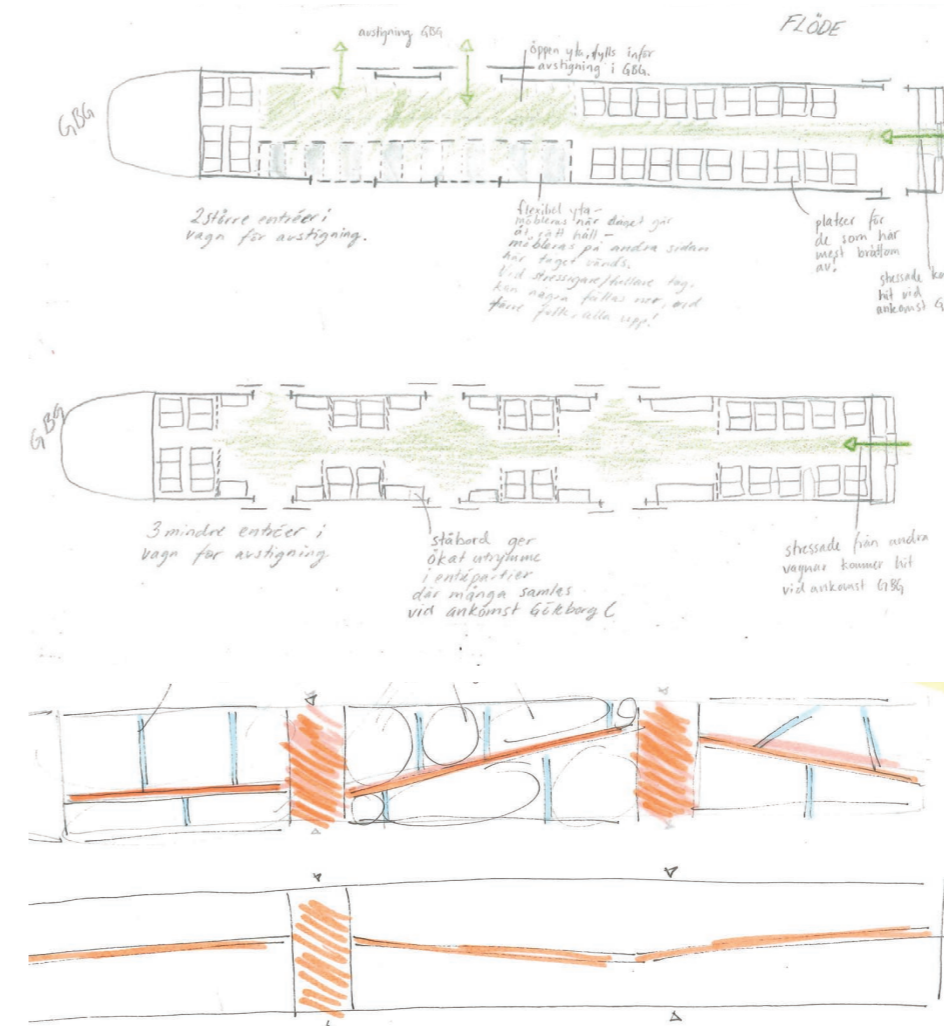
-  It should be possible for more people to work in an ergonomical and desired way.
-  The possibility of using the time for relaxation/reflection should be improved.
-  Social meetings should be enabled, both physical and virtual. Something that triggers conversations could be implemented.
-  It should be possible to perform physical exercise.

SOFT CRITERIA

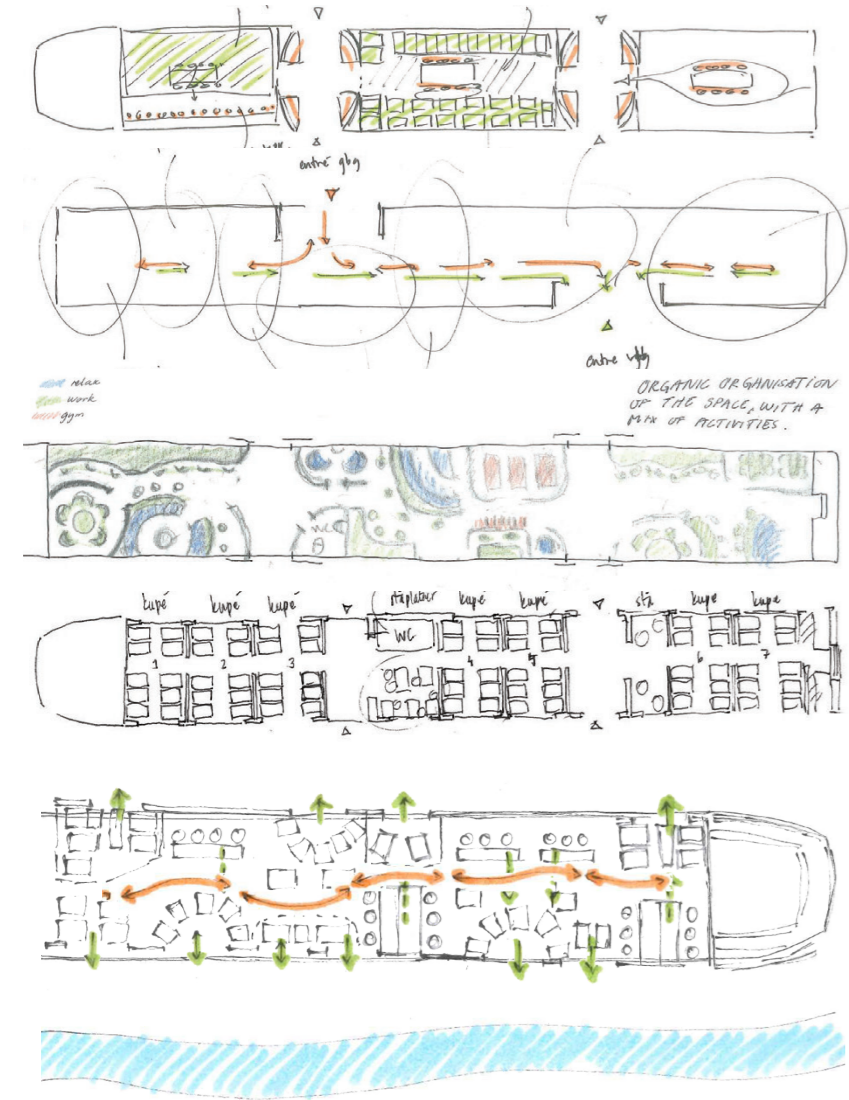
-  The standardized and sterile organisation and environment should be replaced by a more welcoming and personal planning and design.
-  The space should function for a combination of the different activities to enhance a mixture of people and lifestyles.
-  A spatial atmosphere that increases the will to perform the chosen activities should be created.
-  The feeling of rootlessness should be eliminated by bringing an identity to the train. It should be experienced as connected to the certain route by using specific characteristics.
-  There should be a choice of spending the time enclosed (on your own) or as a part of a group of other commuters (together).
-  The flows and movements of people should enhance the spatial atmosphere while efficiency remains.

SKETCHING PROCESS

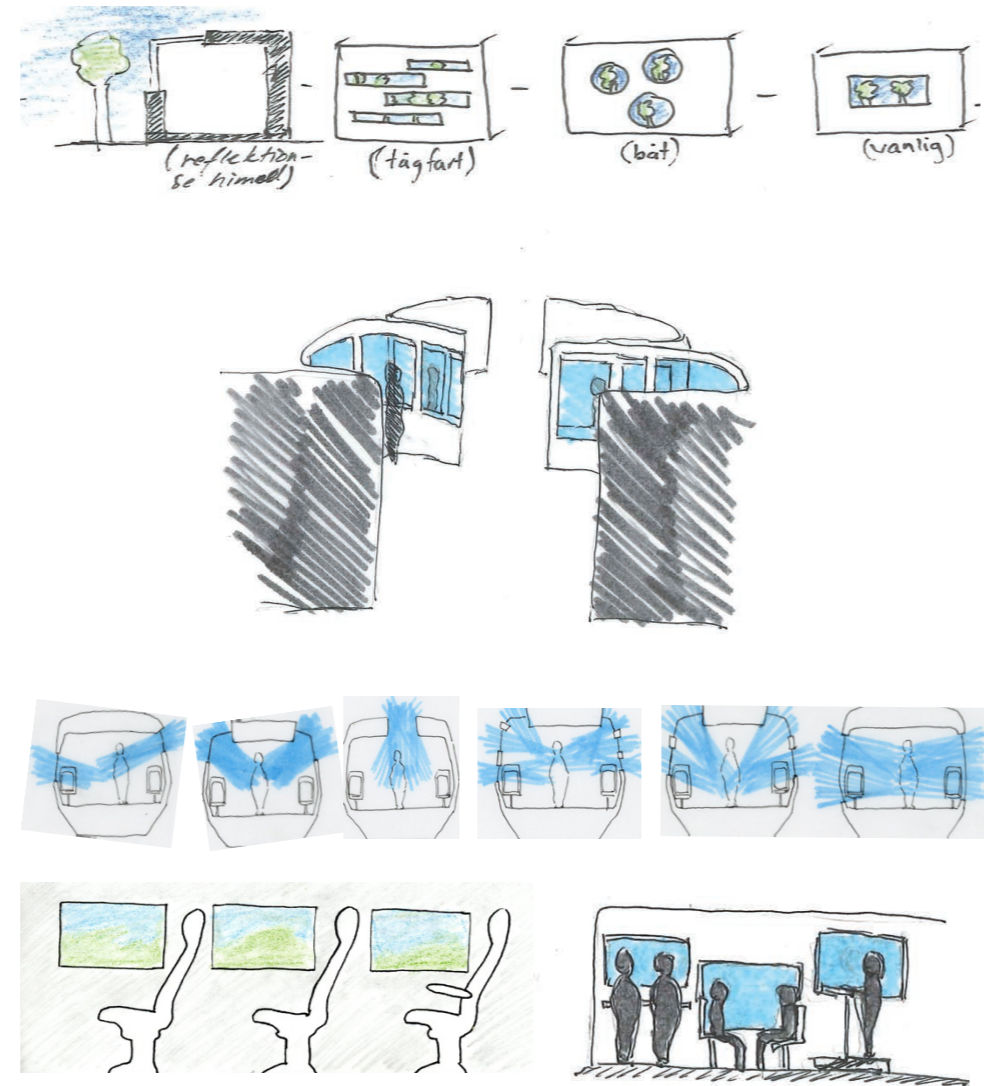
FLows & MOVEMENT PATTERNS



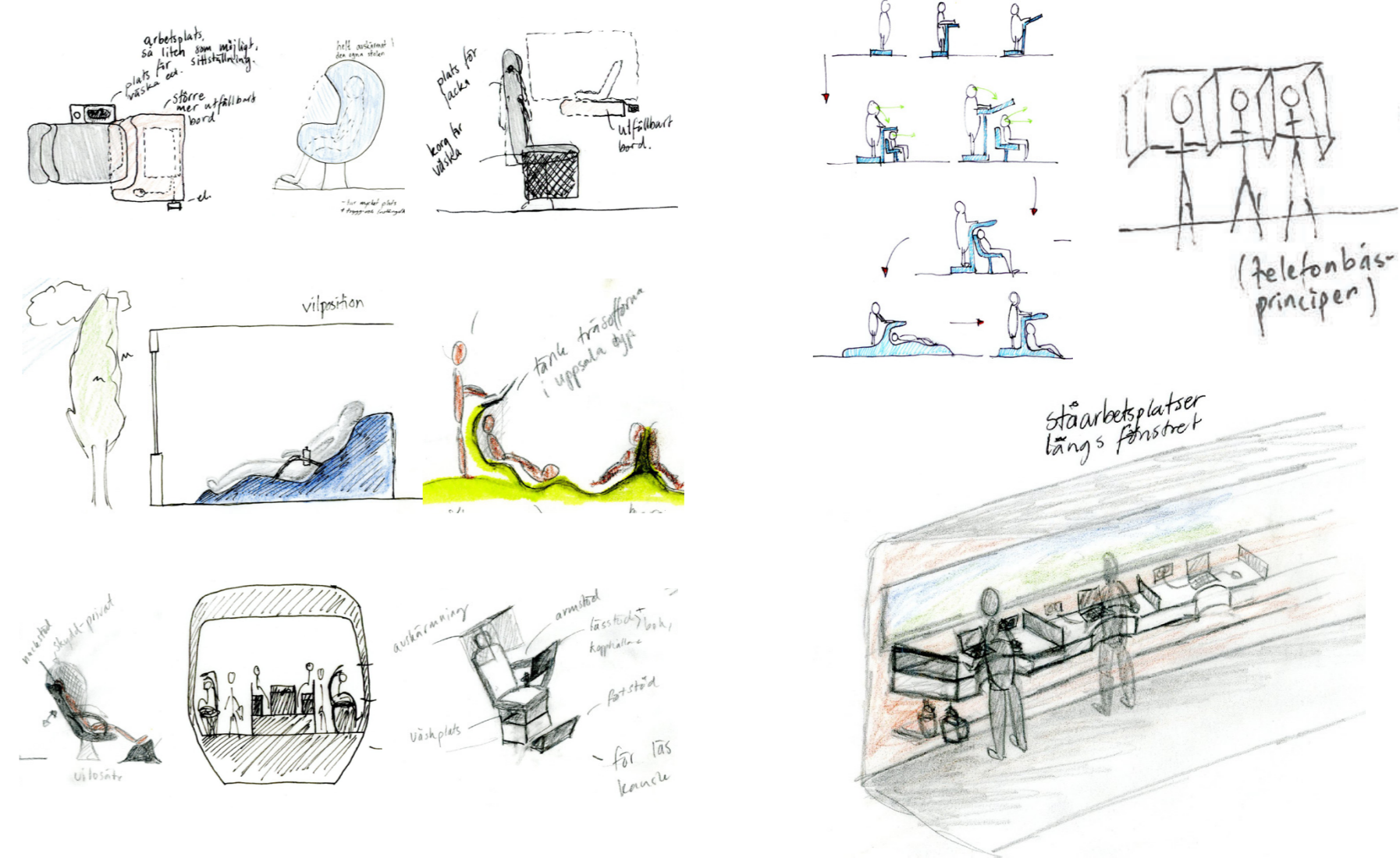
ENTRANCE SITUATION



LIGHT SITUATION



ACTIVITIES & SEATINGS



INSPIRATION & REFERENCE PROJECTS

