

# Älvängen

constructing socially sustainable place identity through urban form



## ABSTRACT



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Älvängen

- constructing socially sustainable place identity through urban form

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Cities are attractive to people seeking diverse opportunities and benefits. However, the high cost of living, limited space, disconnection from nature, and the presence of noise and light pollutants often deter individuals from settling in urban areas. In response to these challenges, commuter towns, strategically positioned between urban and rural spaces, have emerged as a promising solution. This development is facilitated by efficient and affordable modern transportation, such as cars and trains.

Despite the convenience offered to residents and their role in supporting the growth of major cities, commuter towns often grapple with issues such as uniform layouts, a lack of communal interaction, and difficulty defining their identity between urban and rural spheres. Unlike urban and rural areas, the subject of identity in commuter towns has received insufficient attention.

This research endeavors to establish and enhance the place identity of commuter towns by designing urban forms that foster socially sustainable development. The study aims to identify the spatial elements crucial to identity-building, emphasizing their consideration during the design process.

Älvängen, a small town near Göteborg connected by both a commuting train trail and the E45 motorway, serves as a case study due to its typicality and representativeness. Site visits and analyses reveal that the centre of Älvängen, where daily activities occur most frequently, lacks opportunities for meaningful interactions despite ample unused space. The functionalistic form lacks local features, and the town's history and built heritage are often overlooked.

Integrating the concepts of "place identity" and "urban form," the design proposal seeks to reorganize the urban layout to showcase local features and heritage. In the case of Älvängen, this involves highlighting hidden local features, creating a unique sense of identity for both residents and passersby. Such an approach could make a vital contribution to the sustainable development of the town.

**Keywords : place identity, urban form, social sustainability, commuter town**

# CONTENTS

Abstract

Reading Guide

## 01 INTRODUCTION

Student Background

Glossary

Background and Problem Description

Objective

Methodology & Process

Expected Outcome & Delimitations

## 02 THEORY

Social Sustainability

Identity

## 03 INVESTIGATION

Context

History

Visit Älvängen

Insight of Älvängen: Cognitive Map Sketching

Reference Study

Findings and Inferences

Design Strategy

## 04 DESIGN

General Development Plan from Ale

Town-scale Design Proposal

Block-scale Design Proposal

Focus Area Designs

## 05 CONCLUSION & DISCUSSION

## 06 REFERENCES

# READING GUIDE

Chapter 01: Introduction

This chapter delves into the foundational aspects and discussions surrounding commuter towns and their impact on identity. The background, purpose, research inquiries, and the methodology employed for the investigation are explained.

Chapter 02: Theory

This chapter presents the theoretical framework for the thesis, focusing on the concepts of social sustainability and place identity.

Chapter 03: Investigation

This chapter examines Älvängen's geography, history, urban planning, and residents' perceptions to identify identity-related issues and potential improvements. It also reviews four case studies to establish design strategies for enhancing linear identity. The design strategies inspired by these cases are proposed at the end.

Chapter 04: Design

This chapter presents the thesis project's outcomes through drawings and text, highlighting the design elements informed by the findings from Chapters 02 and 03.

Chapter 05: Conclusion and Discussion

This final chapter revisits the main discourse, addressing the research questions and objectives outlined in Chapter 01. It also reflects on the overall process and explores future possibilities.

Chapter 06: References

References are listed in APA style.

## STUDENT BACKGROUND

### Wenqing Yang

Bachelor in Architecture  
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Previous studies at Chalmers:

Design and planning for social inclusion  
Social-ecological urbanism  
Sustainable transformation of a derelict industrial building

## GLOSSARY

### Place

A geographical space that has acquired meaning as a result of a person's interaction with the space (Hauge, 2007).

### Commuter town

A commuter town is an urban community that is primarily residential, from which most of the workforce commutes out to earn their livelihood (Clarke, 2015).

### Urban landscape

A result of the interaction between humans and their environment. It reflects communities' values, beliefs, and symbolic meanings (Kaymaz, 2013).

### Urban Form

The physical structure and organization of an urban area, including the design and arrangement of its buildings, streets, open spaces, and infrastructure. It represents the spatial layout and development patterns of a city, encompassing elements such as density, land use, connectivity, and the interaction between built and natural environments.

### Landmark

An easily recognizable and distinctive feature within a physical environment. A landmark serves as a reference point for navigation, memory, or identification of a location. It may stand out due to its unique appearance, prominence, or symbolic significance, aiding people in orienting themselves or marking a specific place in their mental map (Lynch, 1960).

### Identity

The fact of being who or what a person or thing is (Oxford English Dictionary, 2024).

### Place identity

The strong feelings we develop towards places that are highly familiar to us, i.e., places we belong to (Gifford, 2002). It is a cognitive "database" against which every physical setting is experienced (Proshansky, 1983).

# 01 INTRODUCTION

## 1.1 Background and Problem Description

If an observer devotes a day to gazing upon the central station of a major city, the twice-daily, substantial flow of people arriving and leaving could not be overlooked: they are the commuters. People all over the world are more than familiar with this phenomenon nowadays.

Cities have always been the focal point of social and economic resources ever since their existence. Before the wide application of motorized transport innovations, only a few wealthy people could live and work in the cities (Chen, Orum & Paulsen, 2018). Out of the cities was the vast rural area, where the majority of the population lived.

The distinction between urban and rural areas was evident. There was little movement of population between them. People used to travel about fifty meters a day on average at that time (Grieco & Urry, 2016).

Then, the increasing centralization of industry and commerce promoted an urgent demand for more housing to accommodate the expanding working class. Thus, cities began expanding outward. Simultaneously, the growing aspiration for fresh air and privacy led people to desire residences beyond the urban centers (Chen, Orum & Paulsen, 2018). The newly built suburban towns got a boost under this circumstance, which also blurred the boundaries between urban and rural.

The early 20th-century transportation infrastructure, notably railways, made moving between the distant suburbs and urban centers more affordable and efficient (Bissell, 2018). This enabled the daily travel between urban and rural areas for work or education and thus

introduced a new lifestyle: commuting. Car-commuting also joined the mainstream in the 1960-1970s. Nowadays, commuting is one of the most significant travel practices of our time (Bissell, 2018).

Following this big trend, a new urban form emerged in these suburbs as a result, which is the commuter town. They are in high demand because of their favorable connectivity to both urban and natural environments, more affordable living costs, and usually more spacious and habitable living areas compared to cities (Chen, Orum & Paulsen, 2018).

With the predictable future in which even more people will move, live and work around the major cities (Hall & Pfeiffer, 2013), there is likely to be a continued growth in the size and number of commuter towns, along with an increasing population embracing this lifestyle.

Unfortunately, the academic world has not given much attention to both commuter towns and their residents. Often overshadowed by the major cities they are near to, commuter towns appear as mere dots on the commuting belt connected by highways or train tracks, making it challenging to leave a lasting impression on passersby and even the residents within.

As commuter towns play an increasingly vital role in our society, it is crucial to explore the question of identity from their perspective. In an era highly focused on sustainability, especially social sustainability, understanding identity becomes imperative and cannot be overlooked.

## 1.2 Objective

For most of the time, major cities possess a vivid identity that can be easily preserved and developed into images and impressions. Simultaneously, due to an overemphasis on their function as serving the major cities, commuter towns naturally suffer a loss and consistent neglect of identity. This has resulted in highly homogeneous urban patterns, which threaten sustainable development in many aspects.

Therefore, this project aims to reshape the identities of commuter towns by applying targeted adjustments through focused attention on several urban elements in the planning process. The research question, along with the theoretical framework built around it, will be further applied and tested in the case study of re-planning the centrum of Älvängen, a commuter town close to Göteborg.

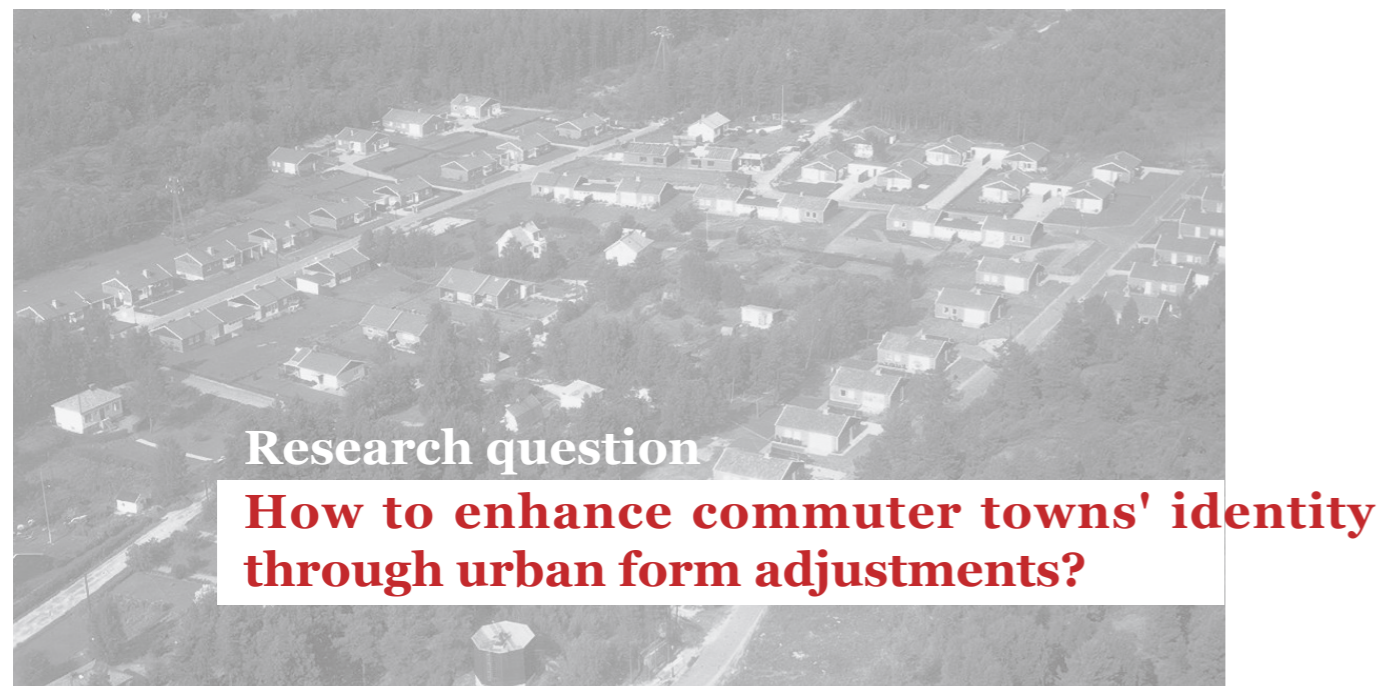


Fig 1.1: Älvängen, 1967  
Source: AB Flygtrafik

## 1.3 Methodology & Process

**The thesis employs a research-by-design approach through a single case study (Roggema, 2016). It begins with a literature review, followed by on-site interviews and analysis. The theory and findings are then translated into design strategies, which in turn frame the detailed design interventions. Finally, a summarized reflection on the theory, investigation, and design proposal will be conducted to determine if the research question has been properly answered.**

### Theory

#### *Method: Literature Study*

To interpret the definitions of social sustainability, commuter town, identity, and local identity, relevant literature was studied and analyzed.

Furthermore, a special effort was made to connect the abstract psychological concept of "local identity" with "subjective feelings" and "urban morphology," making the concept easier to understand and more practical to incorporate into the urban planning process.

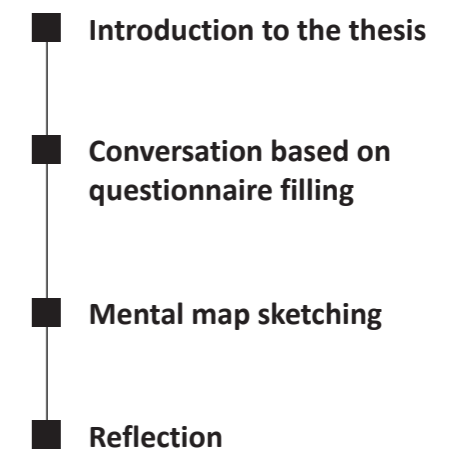
### Investigation

*Method: Site Visit Observations, Interviews with Local Residents/Visitors (including conversations, questionnaire fillings, and mental map drawings), Municipal Documents, Photographs, Sketches, Mapping, Collaging.*

After preparing the theory, several site visits were conducted to understand two different

aspects of the site: the subjective feelings of the site from people and the objective physical environment.

To capture the subjective and elusive feelings that people have towards Älvängen, a mini workshop was designed with the following process:



The workshop was conducted ten times with ten different people. Some sessions were more detailed, while others were brief. The participants had varying connections to Älvängen and came from diverse backgrounds:

- Different ages
- With/without a family history in Älvängen
- Commuting/not commuting

Some municipal documents were also reviewed to expand knowledge of local perspectives. For the second part, impressions from site visits were documented using various media, such as sketches, photographs, GIS-based mapping, etc.

To effectively narrate the story of Älvängen, mapping, sketching, and collaging were used as design tools. The findings from the previous

steps were synthesized and expressed through a consistent visual representation.

**Implementation**

**Method: Site Analysis, Collages, Illustration, Digital Modeling**

In the implementation chapter, the findings from the investigation were summarized and incorporated into the design. Based on the theory, several design strategies were formulated to guide subsequent design decisions. The implementations began on a larger town scale and then proceeded to a detailed neighborhood scale. Throughout the process, the theory was tested through the design project, resulting in an improved center for the commuter town of Älvängen.

**Discussion**

The thesis concludes with a discussion that revisits the research question and theory. The quality of the work was reviewed and enhanced based on the suggestions made during the discussion.

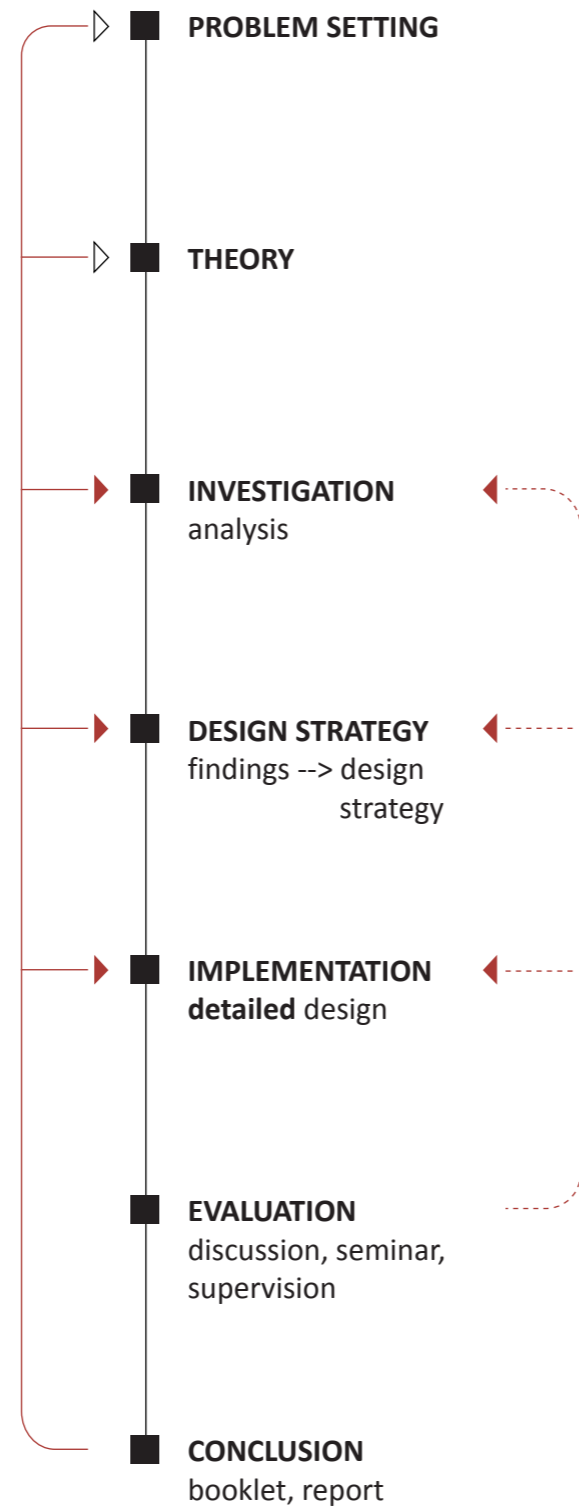


Fig 1.2: Diagram showing the process

## 1.4 Expected outcome & delimitations

**Expected outcome**

The results of this thesis can be divided into two main parts: a **general methodology** for enhancing local identity, and a **pilot project** that tests this methodology in the context of a typical commuter town.

The thesis should not be considered site-specific, as its main aim is to study and provide a broader solution to a widespread issue—the loss of identity in commuter towns during the modern urbanization process.

The second outcome, an experiment of the proposed theory, also holds representative significance. It was conducted in a typical Swedish commuter town facing a common problem shared by many others. By addressing its issues, this thesis demonstrates how the theory can be applied and implemented in practice.

**Delimitations**

**This project is about:**

- Neighborhood planning scale
- Involving local people's insights through early-phase interviews
- Local street network
- Social sustainability
- Local identity

**This project is not about:**

- Town planning scale
- Participatory design
- Massive traffic planning
- Economic sustainability
- Commuting movement patterns
- Suburban lifestyle

# 02 THEORY

## 2.1 Social Sustainability

As the well-known report *Our Common Future*, or the 'Brundtland Report' states, with the rising worldwide awareness of the challenges of environmental degradation, resource depletion, and social inequalities, the world has reached an agreement that our focus point for development should be on sustainability (Cassen, 1987).

Sustainability, derived from the Latin word "susutinerere" whose meaning is "to uphold" or "to support", has its modern meaning as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Cassen, 1987). It is almost the most popular term that is used in the widest types of fields of research, and also in this case becomes one of the most complicated multidisciplinary concepts.

As one of the three pillars of sustainability, social sustainability doesn't get as much attention as the economic and environmental sustainability do (Vallance et al., 2011). This is due to its nature that it is hard to define, comprehend, assess and incorporate into studies (Ali et al., 2019), since it relies less on objective facts and data but more on the subjective feelings (Vallance et al., 2011).

However, even though it is being one of the three pillars of sustainability, social sustainability doesn't get as much attention as the economic and environmental sustainability do (Vallance et al., 2011). This is due to its nature that it is hard to define, comprehend, assess and incorporate into studies (Ali et al., 2019), since it relies less on objective facts and data but more on the subjective feelings (Vallance et al., 2011).

Within the frame of architecture and urban planning, social sustainability has been widely discussed since we all interact with a certain physical context as well as live in the social network built on culture (Ali et al., 2019).

The way of achieving social sustainability can be different when the related work is done on different scales, but its major contradiction can be described as two: social equity issues and the issue related to sustainability of community (Bramley & Power, 2009).

Social equity issues is mostly questioning if all people have the same accessibility to the needed resources. This, in relation to the architecture and urban planning, can be the accessibility to public transportation, municipal service, jobs and affordable housing (Bramley & Power, 2009). (and it is usually at a politically national or regional scale.)

The issue to do with sustainability of community, on the other hand, is related to more varied aspects. For instance, active interaction between individuals, dynamic participation in communal activity, sense of place, reduced crime and chaos, etc, can all help to generate the positive factors helping with sustainability of community (Bramley & Power, 2009).

To summarize all the concerns above, social sustainability highlights the importance of living in ways that are both sustainable and contribute to the health and satisfaction of individuals and communities (Rogers et al. 2012), and this should orient the decision-makers, architects and planners the way of developing our cities and society.

## 2.2 Identity

### Identity & Place identity

Identity is defined by the Oxford Dictionary as

*"a distinct impression of a single person or thing presented to or perceived by others" (Identity, N. Meanings, Etymology and More | Oxford English Dictionary, n.d.).*

As Mark Mazower stated, the term "identity" has been widely applied in different professional fields since it was borrowed from social psychology. Under this broad definition, a sub-topic more related to architecture and urban planning is place identity.

With the rapid development of society, cities and their urban landscapes change quickly, which can cause residents to feel a sense of strangeness and lack of belonging. In this context, place identity has gained increasing focus, as Kaymaz states (2013).

Place is a concept that can be hard to define, even though it is commonly used in daily life. It is often confused with the concept of "space." While space is frequently discussed in design work regarding its uses, scale, and various qualities, the idea of place adds another layer of meaning. Place refers to specific locations in space that are made meaningful through human use and interaction (Chen et al., 2018). Yi-Fu Tuan describes place as the "centres of felt value where biological needs...are satisfied" in his book *Space and Place: The Perspective of Experience* (Tuan, 1977). The emotional bond to place is essential for creating a sense of belonging.

Place identity is a newer concept compared to identity. However, it is more often used in spatial planning and design work since their research object is space and place. By having various kinds of interactions with a specific physical space, an individual can develop cognition and understanding of it, thereby gaining a sense of its uniqueness: this is the definition of place identity (Proshansky et al., 1983; Hauge, 2007).

Place identity is relative at different scales. The same object can have a strong identity at one scale and a weak identity at another. For example, at a large scale, the Great Wall of China, stretching thousands of miles, is an iconic landmark with a very strong place identity. However, when observed up close, the repetitive design of the watchtowers makes it difficult for people to recognize which part of the Great Wall they are on. Conversely, in a small village, a unique local church or a distinctive street pattern can have a very strong place identity at the local scale, even if it is not recognized beyond the village.

Therefore, in the design process, it is important to consider which scale of identity the design aims to contribute to and base the design on that consideration.

These concepts and perceptions can be categorized into two types: physical structures and the feelings derived from interaction (Proshansky et al., 1987).

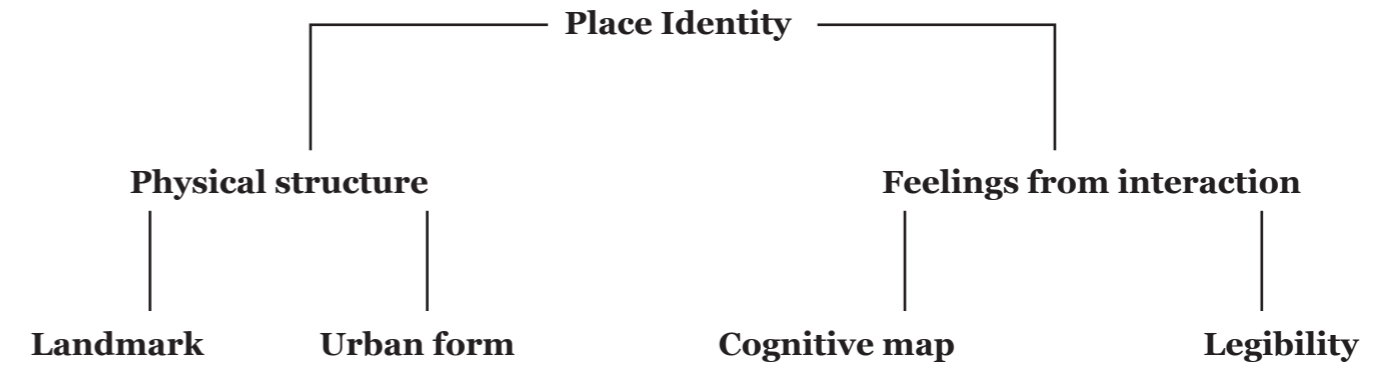


Fig 2.1: Components of Place Identity

### Physical structure

The physical structure of a city plays a crucial role as the stage for various human behaviors. It serves as the foundation for all types of interactions and, consequently, is a prerequisite for forming place identity. The urban environment functions as a complex system comprised of various elements working together. These elements are categorized into two types based on the impression they leave on people: **landmark** and **urban form**. Landmark, while it can sometimes also be part of the urban form, stands out and delivers a strong visual image to individuals. In contrast, urban form, while less conspicuous than landmark, contributes to a cohesive sense of the city through its continuous presence in the built environment.

### Landmark

When we examine place identity from a physical perspective, the most representative and prominent element is always the landmark, as the visual information of a city serves as the most immediately perceived reflection for both local residents and visitors/passersby (Kaymaz, 2013). Regardless of their scale or type, landmarks become landmarks due to their singularity and contrast with their context. Special attention must be given to managing the

landmark and its surroundings to preserve its uniqueness and allure (Lynch, 1960).

Landmark buildings are a common strategy for enhancing place identity in urban planning practice. At times, a city does not require a comprehensive and detailed exploration; a sufficiently successful and distinctive landmark is often enough to leave non-residents with a singular yet profound impression of the city. In such cases, it plays a significant role in building place identity. For example, landmarks like Big Ben for London, the Champs-Élysées for Paris, and Piazza di Spagna for Rome serve this purpose effectively.

A strong and simple landmark is not exclusive to big cities; it can also help an ordinary town stand out. Small municipalities in Sweden, for instance, invest considerable effort into creating a strong visual identity for their towns to attract new residents and foster economic opportunities (Borgegård and Niedomyśl, 2004). However, much of the early work in this area focuses on creating slogans or symbols, which are often superficial and disconnected from the locality (Cassel, 2008).

"The association of place identity with built heritage is seen as a conventional and largely unchallenged wisdom" (Gospodini, 2004). The

built heritage naturally has a unique form and a strong bond to the local historical context. Considering them primarily as landmarks can thus be beneficial to place identity. Appropriate planning methods should be applied to emphasize landmarks, such as restrictions on the height of surrounding buildings, attention to visual connectivity with the surrounding pedestrian flow, and control over the materials, design, and color schemes of neighboring structures and more.

### Urban form

More physical components of a city may not be as prominent or distinctive as landmarks, but they play a more decisive role in shaping people's experiences.

When we systematically and comprehensively examine the physical structure of a city—considering ongoing partial transformations and replacements, alongside an overall state of relative constancy—the city functions as a system and develops a continuous form. This continuous form significantly influences how people move and experience the city, as their movements often follow natural geometry (Hiller, 1996).

This urban form is defined by three essential elements: **streets, plots, and buildings** (Moudon, 1997; Berghauser Pont et al., 2019). These elements, working together in specific ways unique to each city, can sometimes become clearly identifiable and create a sense of uniqueness. These features can also be captured through various quantitative studies.

### Feelings from interaction

Different from the physical structures visible and measurable in cities, people's feelings

about cities are highly subjective and difficult to observe. Values and meanings are assigned by individuals and society and can be either tangible or intangible (Halpenny, 2010). Various factors, such as gender, age, group dynamics, and cultural background, influence how individuals interact with the same physical place, leading to diverse perceptions (Downs & Stea, 2017, pp. 131–147).

For example, when encountering the same neighborhood, aside from urban elements with strong visual impact that can leave a deep impression on everyone, children might focus more on playgrounds and candy stores, teenagers might look for places to hang out with friends, adults might pay attention to grocery stores, cafes, and restaurants, and elderly people might notice well-maintained parks for walking and the locations of health care centers. Some people enjoy socializing in open, lively squares, while others prefer solitude in private, enclosed community gardens. Therefore, different landmarks serve as reference points in people's memories of the same place, leading to varied perceptions and recollections. Enriching the urban form and function is not about creating urban buzz but about fostering as many interactions as possible between the city and its inhabitants, thereby creating more feelings and memories that can contribute to identity.

Place identity is not only about physical composition but is also closely tied to the sense of community and belonging. These feelings can only be created when individuals interact with others (Kaymaz, 2013). As stated by Carr et al. (1992), a meaningful space and its positive associations can only emerge when the space is comfortable enough to allow people to experience and form positive connections. Thus, creating physical places that support interactions among people can meaningfully improve the non-physical aspects of place

identity.

According to Lynch (1960), the city's identity, structure, and meaning are shaped by the subjective image perceived by its inhabitants. Verbal interviews and sketches of cognitive maps are essential for capturing this subjective data (Downs & Stea, 2017, pp. 131–147). By analyzing composite results, the city's legibility, which reflects how easily people can understand and identify it, can be measured.

### Cognitive map

“Make it just as if you were making a rapid description of the city to a stranger, covering all the main features. We don't expect an accurate drawing—just a rough sketch.” (Lynch, 1960)

As Lynch (1960) described in his book *The Image of the City*, where the idea of the cognitive map was introduced for the first time, the cognitive map reflects an individual's personal perception of the relative locations and attributes of phenomena in their everyday spatial environment (Rosenberg, 2019; Downs & Stea, 2017, pp. 8–26).

The urban environment comprises essential elements: space itself, events, and people. Cognitive mapping serves as a method to depict both physical spaces and abstract mental reflections, illustrating the interaction between subjectivity and objectivity. These maps influence human spatial behaviors (Downs & Stea, 2017, pp. 8–26).

Although cognitive maps are highly subjective and can vary from group to group or individual to individual—shaped by biases, prejudices, and personal experiences—there are still some elements that stand out to the majority (Downs & Stea, 2017, pp. 8–26). These could include a radical urban form, an old canal splitting the

city into two parts, or a train track disrupting everyone's daily route home. By analyzing how much the sketches overlap with those of others, the city's legibility can be assessed, revealing whether its place identity is strong or weak.

### Legibility

A place that allows people to explore without getting lost is considered to have high legibility (Kaplan & Kaplan, 1990; Yavuz et al., 2020). This environmental feature enables people to understand both the layout of the urban environment and the human activities occurring within it. By creating meaningful distinctions among the key parts of an urban environment and between these parts, urban planning can make cities more understandable, comprehensible, and safe for both residents and visitors—in other words, highly legible (Yavuz et al., 2020).

The legibility of a city is reflected in cognitive maps. When residents have clear, accurate mental maps of the city, it indicates a high level of legibility. Conversely, if mental maps are unclear, distorted, or vary significantly from individual to individual, it may suggest poor legibility (Lynch, 1960).

In practice, legibility can be maximized through a good mixture of land use, easily recognizable urban forms, well-preserved local architectural features, and distinct landmarks (Mitchell et al., 2004; Yavuz et al., 2020).

# **03**

## **INVESTIGATION**

### 3.1 Context

Sweden is a highly urbanized country, with 88% of the population residing in cities, according to statistics. This urbanization trend is particularly evident in Sweden's ten cities with populations exceeding 100,000, which collectively accommodate 32.6% of the country's total population. Despite Sweden's vast land area, the population density in these large cities is notably high, leading to significantly increased living costs.

Interestingly, behind this concentration of urbanization, a unique urban lifestyle has emerged. Many people choose to live in commuter towns on the outskirts of large cities, where living costs are comparatively lower. Thanks to a modern and convenient transportation system, residents can easily commute between the large cities and the smaller towns where they live. This lifestyle allows individuals to work or study in large cities while avoiding the high living costs and hectic pace of urban life.

The train lines and highways radiating from Göteborg provide a comfortable and convenient way of life, enabling seamless travel between cities and small towns. The Göteborg commuter rail network is a key example of this efficient system.

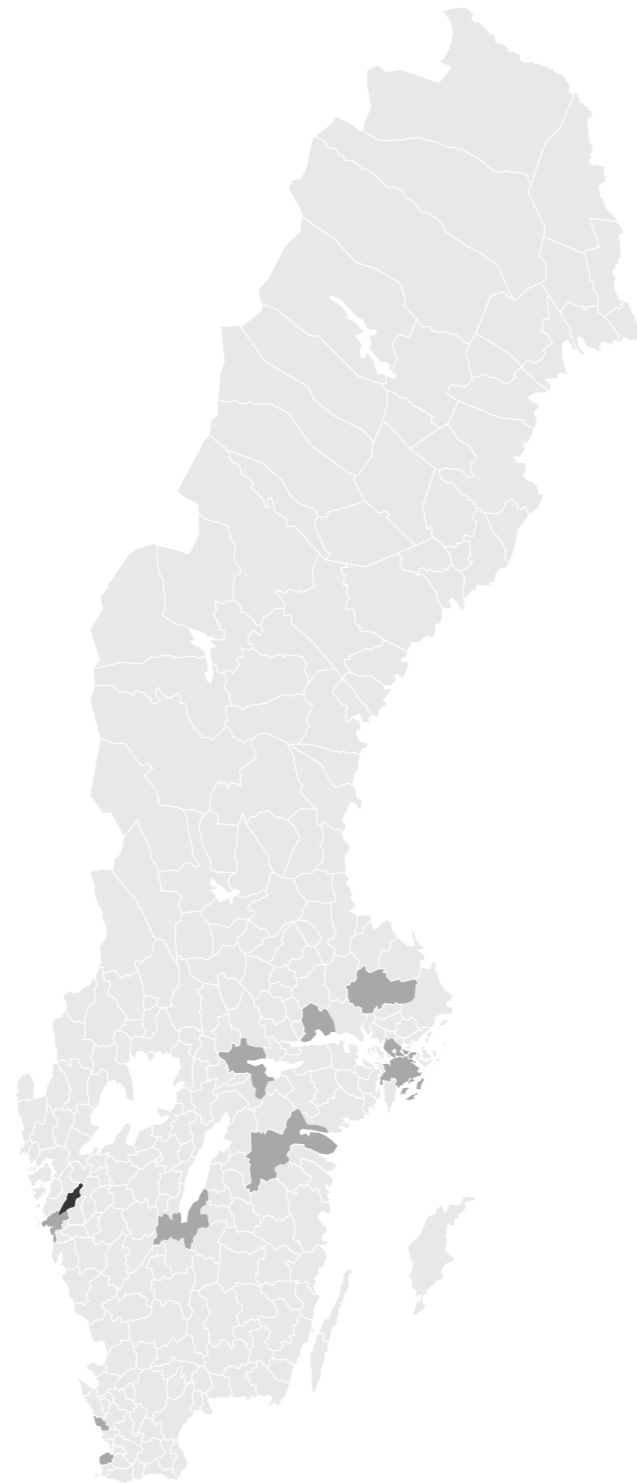


Fig 3.1: Sweden municipalities map, 2007

Source: Statistikmyndigheten

- Municipalities with less than 100,000 population
- Municipalities with more than 100,000 population
- Göteborg metropolitan area

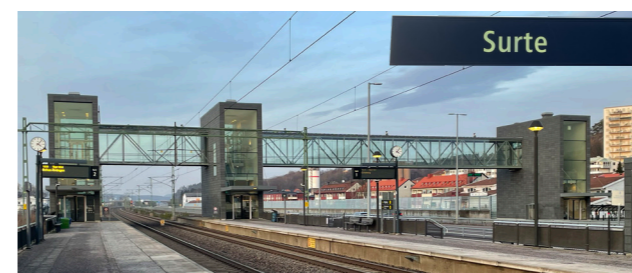
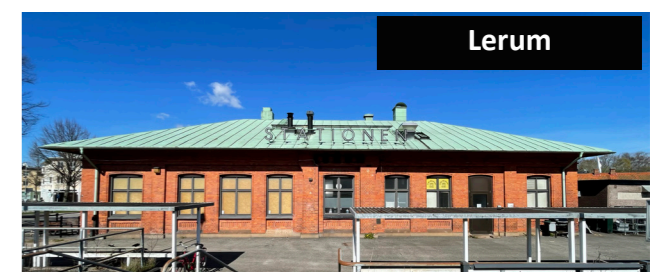
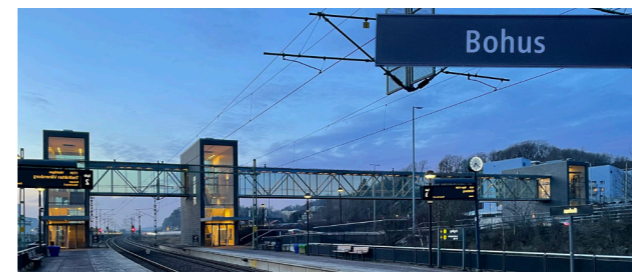
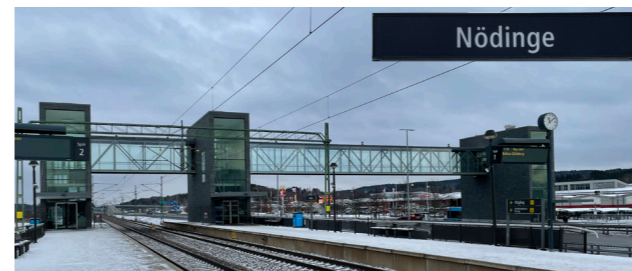
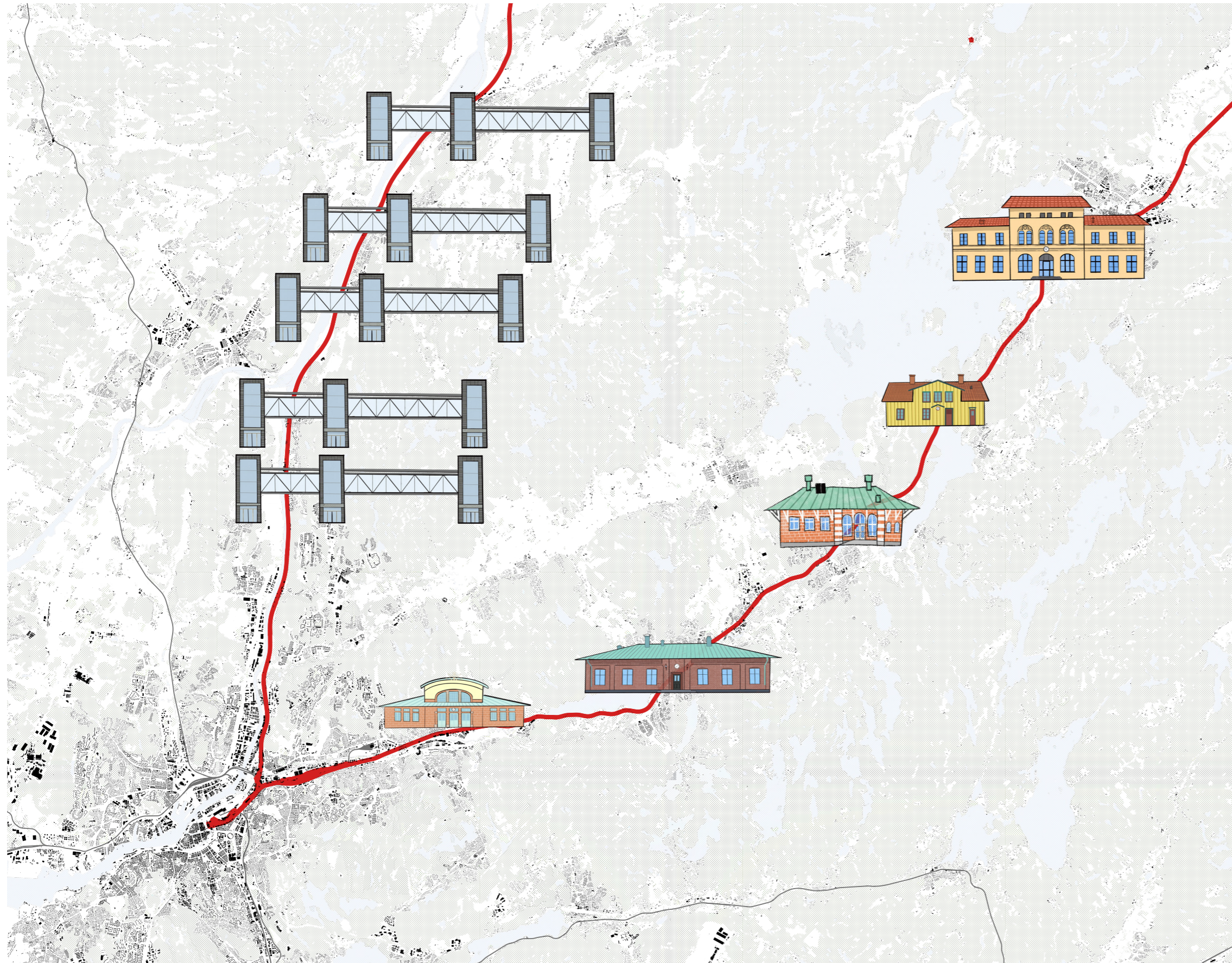


Fig 3.2: Train stations along two Göteborg commuter lines



Along the Göteborg - Alingsås rail line, train stations display local culture through varied building sizes, materials, styles, and their placement within cities. These city centers have developed distinct features that both benefit locals and attract outside visitors.

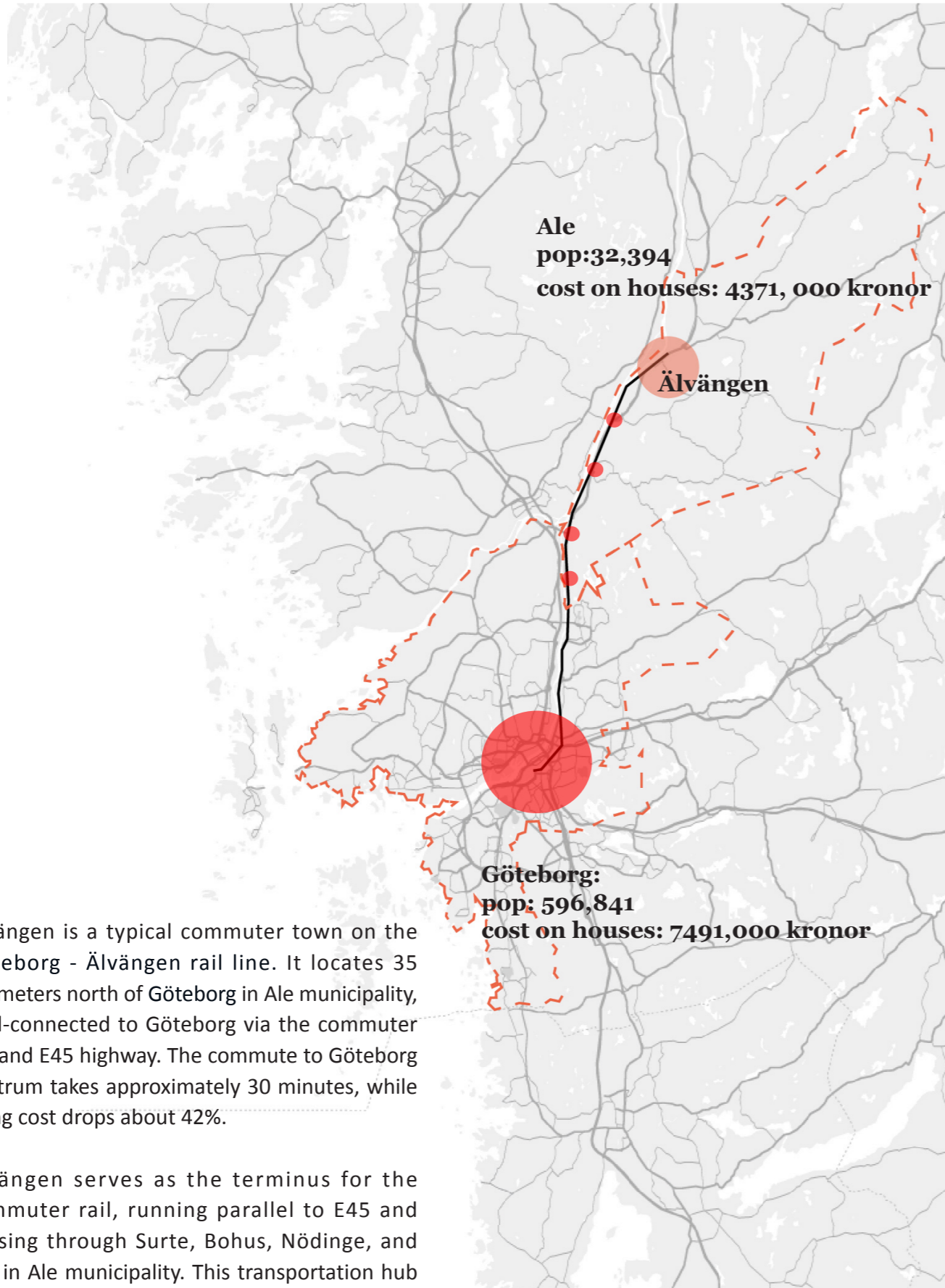
In contrast, possibly due to geographical similarities and budget constraints, train stations along the Göteborg - Älvängen rail line feature identical designs. This uniformity creates a distinctive landmark in the northern Gothenburg Metropolitan area and reinforces the towns' identities as commuter towns to Gothenburg. However, these cities also exhibit an extremely high similarity in both urban form and social identity, which makes them less attractive.

Moreover, this uniform design at the regional level, while visually striking, makes it difficult for train passengers to identify different towns at their entrances. It starkly contrasts the situation along the Göteborg - Alingsås rail line, where it is easier for passengers to identify their location by the unique look of each station they pass by.

Additionally, the E45 highway, which runs parallel to the Göteborg - Älvängen railway, is lined with a uniform noise barrier that blocks views of the towns, offering only a homogeneous visual impression to drivers.

**Although sometimes functionality must take precedence over local identity, this should not mean local character is ignored. Instead, the local identity should be emphasized to balance these sacrifices, aiming to create special features which can benefit the sustainable development.**

Fig 3.3: A overview of train stations along two Göteborg commuter lines



Älvängen is a typical commuter town on the Göteborg - Älvängen rail line. It locates 35 kilometers north of Göteborg in Ale municipality, well-connected to Göteborg via the commuter rail and E45 highway. The commute to Göteborg centrum takes approximately 30 minutes, while living cost drops about 42%.

Älvängen serves as the terminus for the commuter rail, running parallel to E45 and passing through Surte, Bohus, Nödinge, and Nol in Ale municipality. This transportation hub provides residents with a convenient blend of suburban tranquility and easy access to the vibrant city center of Göteborg.

Fig 3.4: Göteborg Stad and Ale Stad linking by Göteborg commuter rail



Fig 3.5: Göteborg commuter rail passing through Älvängen



Fig 3.6: Empty plot in Älvängen

Cut through in the northern part by the Göteborg–Älvängen commuter rail and the E45 highway, also framed by the Göta Canal at its northern edge, Älvängen has notable feature: a small, strip-shaped center in the northern part along the traffic lines, where all people enter or leave the town, and a more spread-out residential area surrounded by forests, offering numerous recreation spots. Local attractions, such as hiking trails, remain hidden from attention and are known and used primarily by locals.

### 3.2 History



Fig 3.7: Älvängen in 1960, 1960; Source: Ale Stad

Älvängen, lacking a long history, developed alongside the evolution of modern transportation. Although it was once used as a dock and station for the Göta River, its true growth was spurred by the establishment of the Göta Canal in 1933 and the construction of the Göteborg–Trollhättan railway in the 1980s. These developments provided convenient transport conditions that attracted many factories. The population increased in the 1970s due to industrial development and has stabilized in recent years as industrial growth slowed. Now, with the rise of commuting lifestyles, the town is experiencing a new period of rapid growth.

Industry not only shaped the city's network and historical division of land use but also left behind built heritage. This has formed Älvängen's earliest impressions in people's minds.

As Göteborg's influence grows, modern transportation planning increasingly focuses on closely connecting Älvängen with Göteborg to provide fast and efficient means of transportation, thereby supplying labor to Göteborg. The double-track transportation system significantly impacts the town's development pattern and the lifestyles of its residents.

**Elfängen, the old name**  
"Grassland by the Göta river"  
where had no official human settlement

**1823**

**Älvängen, the new name**  
due to the rich resources of water and grass, settlements like farms started to be built

**Göta canal**



Fig 3.9: The opening of the Göta Canal

**1833**



Fig 3.8: Agricultural cooperatives

**1852**

**Göteorgsvägen**  
the centre of Älvängen where the local commercial function gathered along

**Älvängen train station**  
on Göteborg-Trollhättan line



Fig 3.11: Old Älvängen train station

**1884**



Fig 3.10: Göteorgsvägen

**1940**

**Suspension of river traffic**  
promoted the popularity of trains

**Expansion of town**  
this growth has left many well-preserved industrial buildings



Fig 3.13: Overview of Älvängen in development

**1970**



Fig 3.12: Train passing Älvängen

**2005**

**E45**  
was renamed and upgraded to EU route

**Double track**  
the traffic model was designed with the Göteborg - Älvängen rail line and E45 running parallel to each other, providing residents with two distinct commuting options to Gothenburg

**2012**



Fig 3.14: Commuting line linking to Älvängen

**2020**

**Commuter town**

?

### 3.3 Visit Älvängen

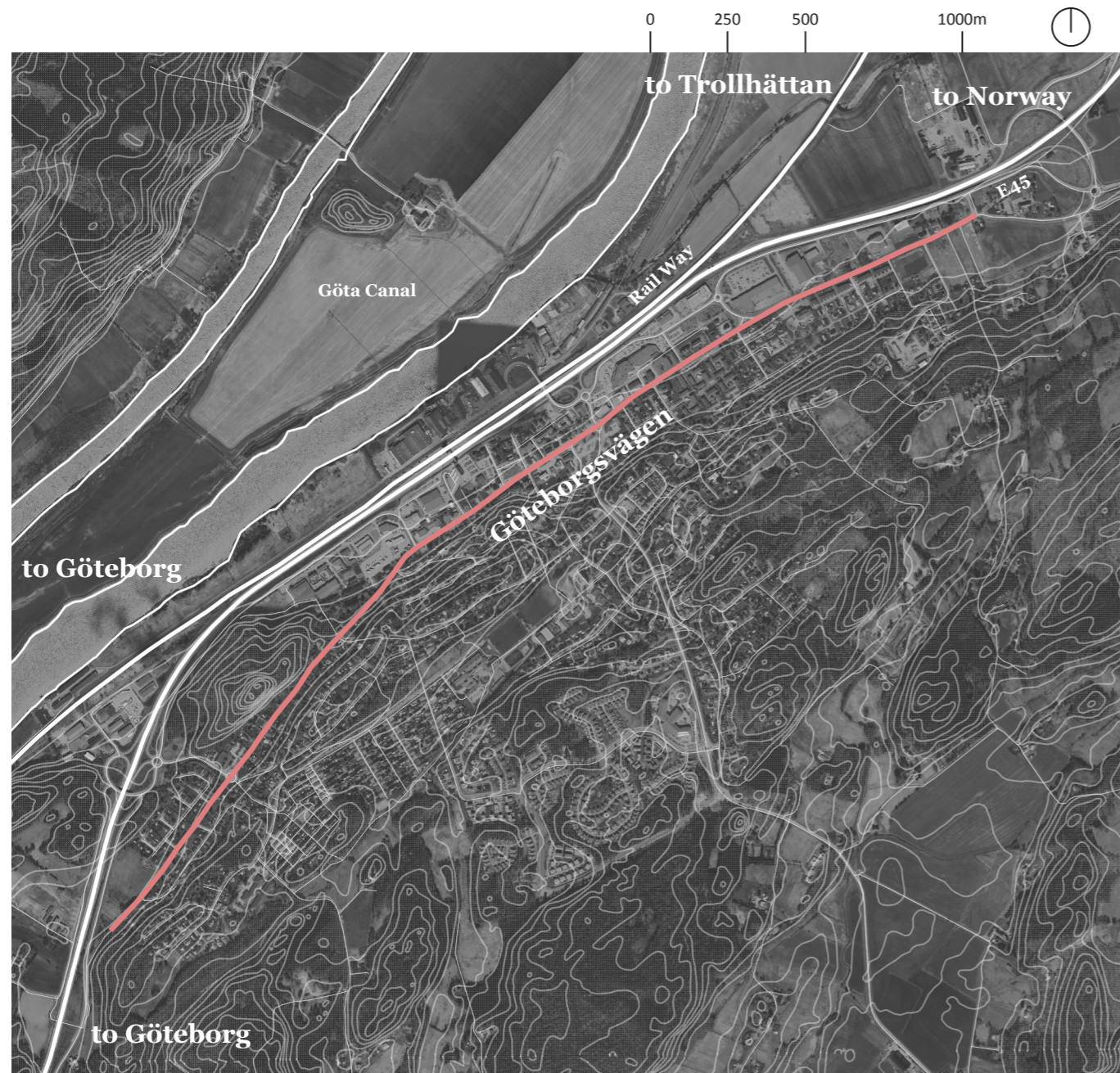


Fig 3.15: Natural and urban context

The rail line meets the highway and runs parallel to it at Älvängen. Together with the Göta Canal, they form a significant barrier to the northwest of the town, restricting potential development in that area. The southeast side of Älvängen is hilly, providing a beautiful environment for residential areas, while the town's development tends to occur on the narrow, flat land in a strip shape.

The **"Centrum"** of Älvängen is not its geographic center but Göteborgsvägen, an inner street that runs parallel to the train track and E45. Historically, Göteborgsvägen has carried commercial functions, and today local restaurants, clothing stores, pharmacies, a bank, churches, and a school still line this street. It has also been chosen as the location for newly-built large retail centers.

### Traffic

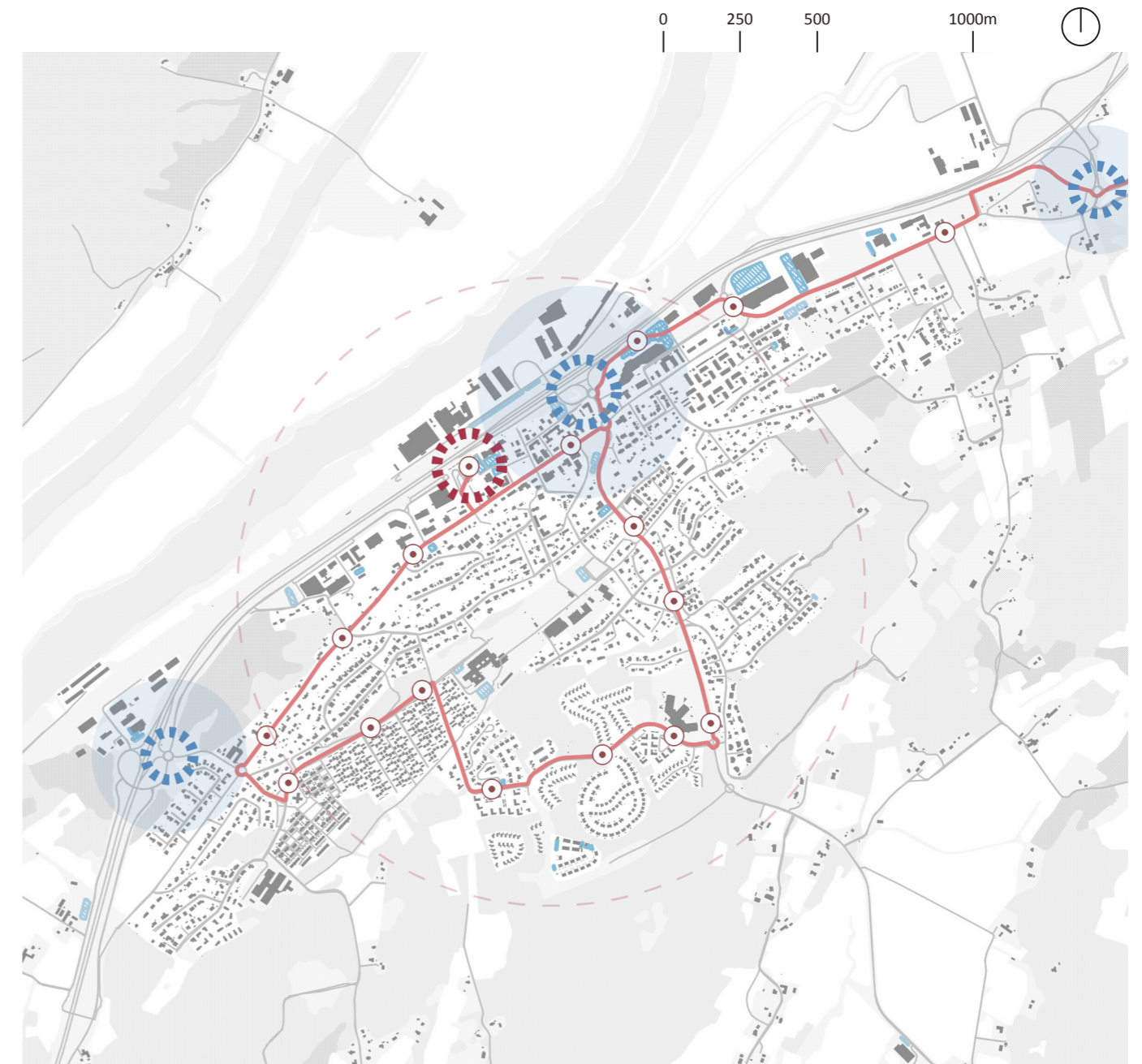


Fig 3.16: Traffic system

Residents in Älvängen commute by either train or car.

Commuters who travel by train enter and exit the town through Göteborgsvägen, passing through Älvängen centrum to reach the Älvängen train station. From Älvängen centrum, they have the option to transfer to a bus or utilize other modes of transportation to reach their homes.

Car drivers can access and leave the town through three exits, with the central one being the most commonly used. Passing through Älvängen Centrum is not mandatory for them. Most parking lots are located on the east side of the central exit, near the large retail stores. As a result, many car commuters do not pass through Älvängen Centrum during their commute.

# Street network



Fig 3.17: Non-motorized network angular integration 1.2km

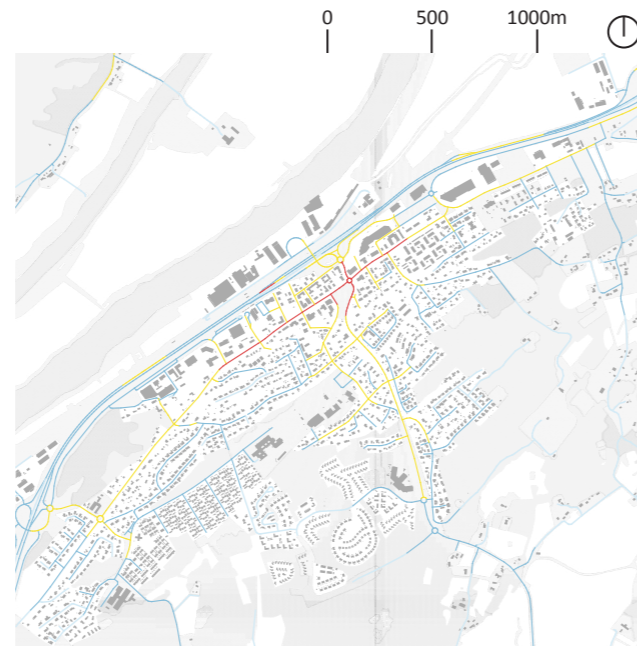


Fig 3.18: Motorized network angular integration 1.2km

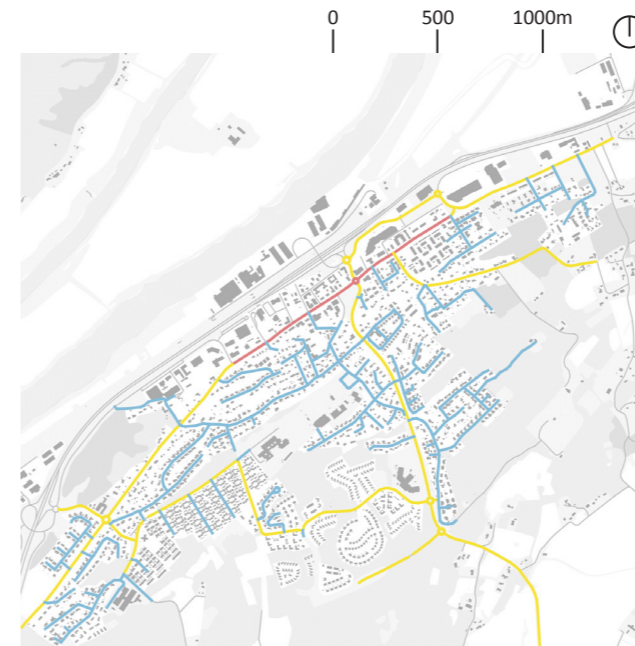


Fig 3.21: Categorized street network, with 3 types

The street structure in Älvängen is simple and clear, with main roads running parallel and perpendicular to the double-track transportation system. The accessibility of Göteborgsvägen in the non-motorized road network also has potential for improvement.



Fig 3.19: Non-motorized network angular betweenness 1.2km



Fig 3.20: Motorized network angular betweenness 1.2km

In both the motorized and non-motorized road networks, Göteborgsvägen has a certain level of centrality but not the best, which means it does not naturally attract a significant amount of pass-by movement. In this case, there is a great potential for improvement.

The street network in Älvängen consists mainly three levels: central, main, and local.

The **central street** carries the highest traffic flow. It also has diverse land uses along it, necessarily supporting some staying movement. It serves pedestrians, non-motorized vehicles, and motorized vehicles.

**Main streets** are primarily designed for through traffic and are not intended for staying. They accommodate fewer pedestrians, non-motorized vehicles, and motorized vehicles.

**Local streets** are within residential areas and carries minimal traffic flow.

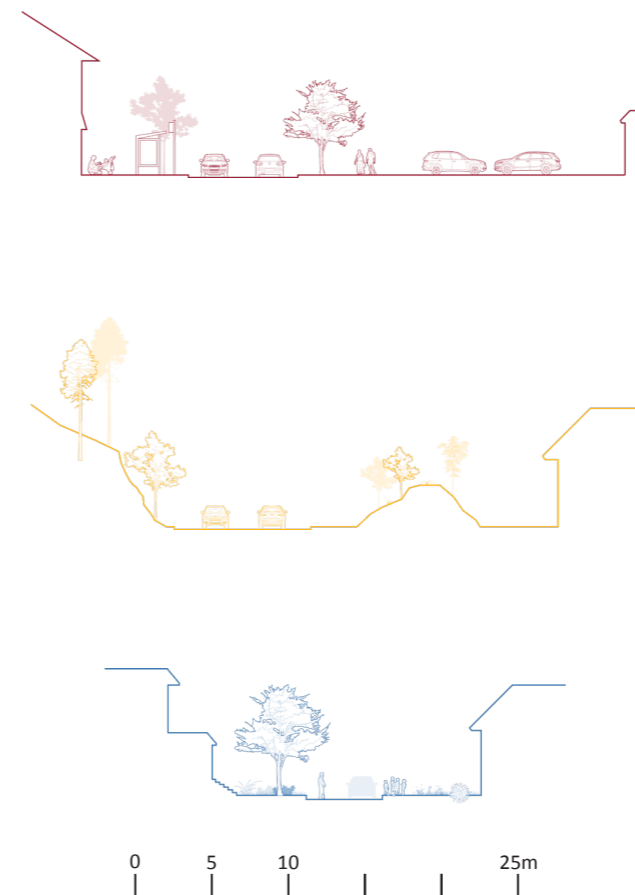


Fig 3.21: Street sections

The central street in Älvängen is approximately 36 meters wide. Along the road, there are many randomly distributed parking spaces, and there are no dedicated bicycle lanes, indicating a car-centric design. In some sections, there are vacant spaces between buildings and sidewalks, which can be as wide as 15 meters.

The main streets are approximately 18 meters wide, with vehicles traveling at relatively high speeds. Usually, only one side of the street has a shared sidewalk for pedestrians and cyclists, which can make people feel unsafe and inconvenienced psychologically.

Local streets are approximately 15 meters wide, with lanes shared by motor vehicles and non-motorized vehicles.

# Land use

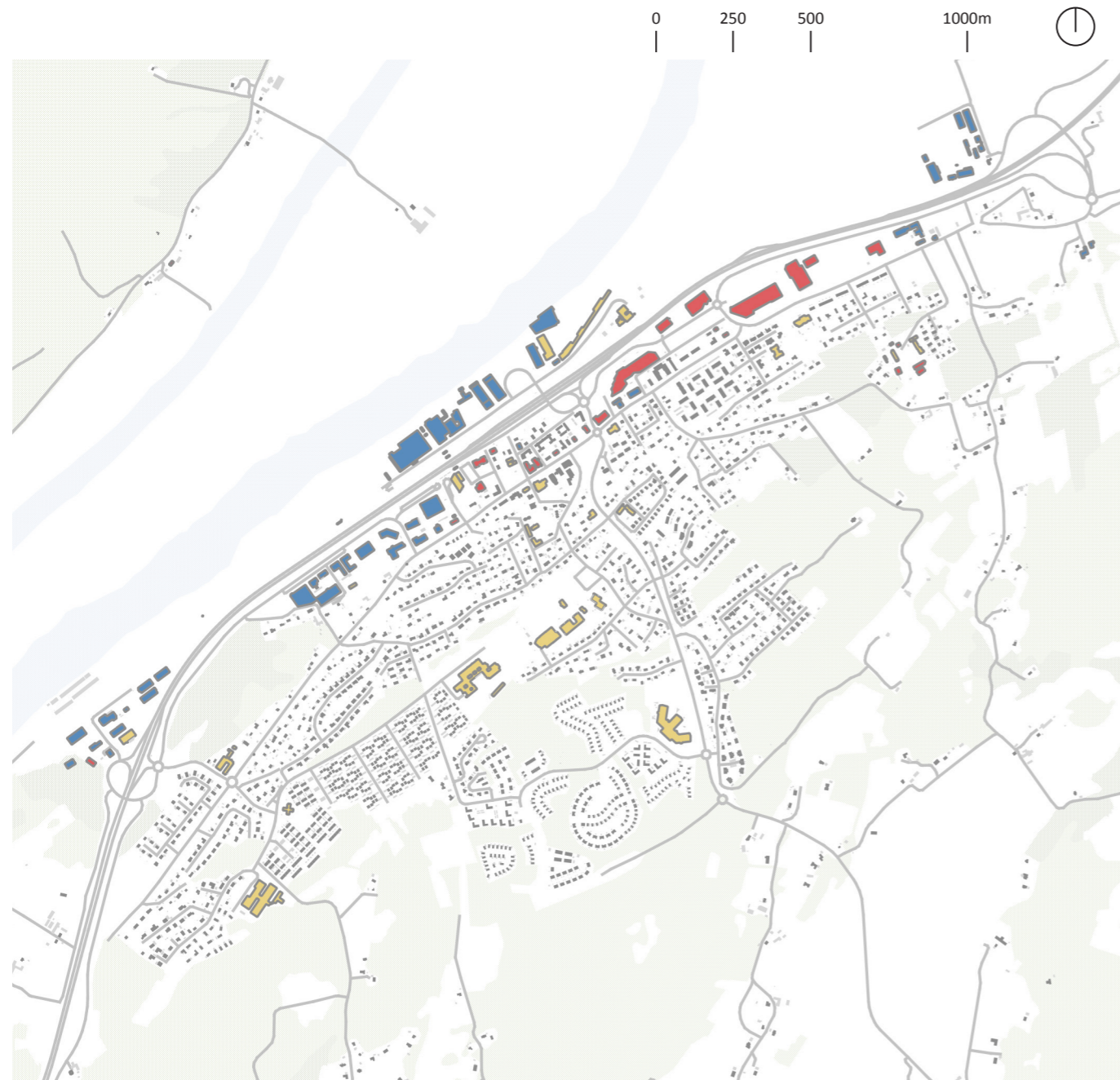


Fig 3.22: General landuse of Älvängen

The primary land use is residential, located on hills with good natural conditions across from transportation lines. **Public services like kindergartens and schools** are loosely distributed in these areas.

**Industrial and office spaces** mainly consist of logistics warehouses and factories, positioned far from residential areas yet close to double-

track systems.

**Commercial activity** varies a lot: large malls in the southeast are isolated near double-tracks, surrounded by parking lots and are the largest buildings of the town. Meanwhile, local small shops stores in the old centrum, integrating with residential and public services along the Göteborgsvägen.

# Älvängen Centre Land Use and Density

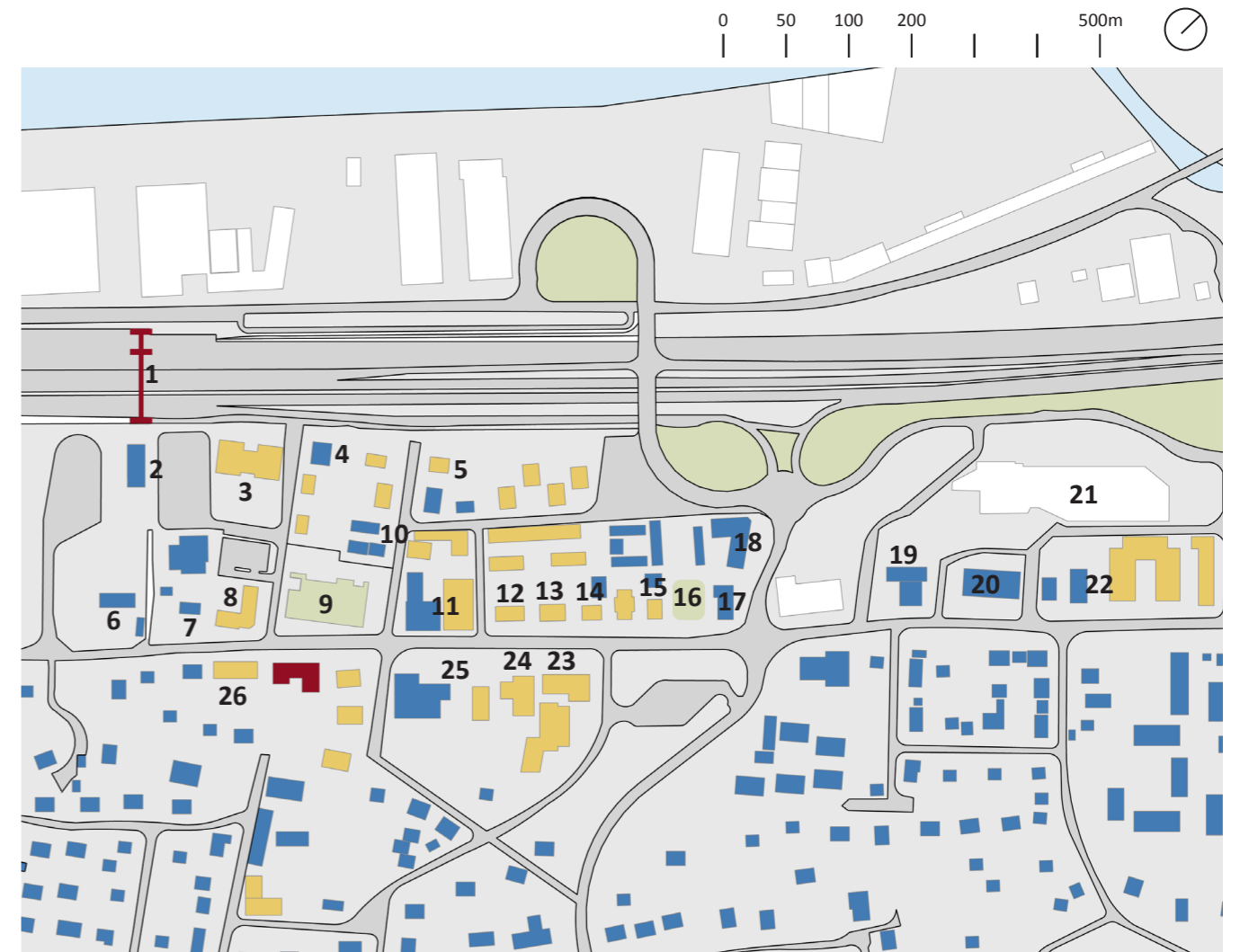


Fig 3.23: Landuse and density of Älvängen Centre

■ 1-2 floors   ■ 3-4 floors   ■ 5+ floors   □ Buildings with special heights

- |   |                                 |  |
|---|---------------------------------|--|
| 01. Train station                       | 09. Playground                  | hair salon                                       |
| 02. Älvängen centrum station, bibliotek | 10. Älvängen Church             | 19. Gas station                                  |
| 03. physiotherapy, rehab                | 11. Pizzeria, cafeteria         | 20. Office, Pizzeria, stores                     |
| 04. Restaurant                          | 12. Restaurant                  | 21. Restaurant, gym, pharmacy, ICA, medical care |
| 05. Maintenance store                   | 13. Beauty salon                | 22. Redcross second hand shop                    |
| 06. Game shop                           | 14. Textile store               | 23. bank   |
| 07. Office                              | 15. Clothing store              | 24. Clothing store                               |
| 08. Pizzeria, lamp shop, beauty salon   | 16. Park                        | 25. Second hand                                  |
|   | 17. Clothing store              | 26. Smyrnakyrkan Älvängen                        |
|   | 18. Pizzeria, dentist, florist, |  |

### 3.4 Insight of Älvängen: Cognitive Map Sketching

People of different identities, ages, and using various modes of transportation have both overlapping and slightly different experiences and impressions of Älvängen Centrum.

By asking people to fill questionnaire and sketch, their insights can be seen and understood.

By collecting the overlapping parts, we can determine which buildings and urban forms have made a significant impression, contributing to the local identity. These should be considered for preservation in the later design.

**What is Älvängen to you?**  
Cognitive Map Questionnaire

1. Please close your eyes and think about Älvängen. What do you see?

2. What is important to you in this city?

3. How much do you like Älvängen? Check the answer.

love it!  
like it a lot.  
so so...  
dont like it.  
hate it

4. What do you like about Älvängen?

5. What do you dislike about Älvängen?

6. Draw a map of Älvängen, so that a visitor could find his/her way.

7. List distinctive parts of the city. (can be added on the map)

A distinctive part might be a street, a building, a park or any physical feature which you feel has special characteristics which make it worthy being pointed out to a person who wants to become more familiar with the city.

8. What would you like to change in/add to Älvängen?

Fig 3.24: Questionnaire



#### Linus, 35 years old

He grew up in Älvängen, and moved back there 3 years ago.

**What is important to you in this city?**  
The sense of secure, my family, the forest.

**How much do you like Älvängen?**  
Like it a lot.

**What do you like about Älvängen?**  
Reachable services for kids and elderlies as well as diversified activities.

**What do you dislike about Älvängen?**  
Lack of cultural / entertaining space for middle-age adults (good coffee shop, sports bar, etc.). The center used to be alive but now it is dead.

**List distinctive parts of the city.**  
Göteborgsvägen and the retail centre.





**Karl, 78 years old**

He lives and works in Älvängen.

**What is important to you in this city?**

All.

**How much do you like Älvängen?**

Love it.

**What do you like about Älvängen?**

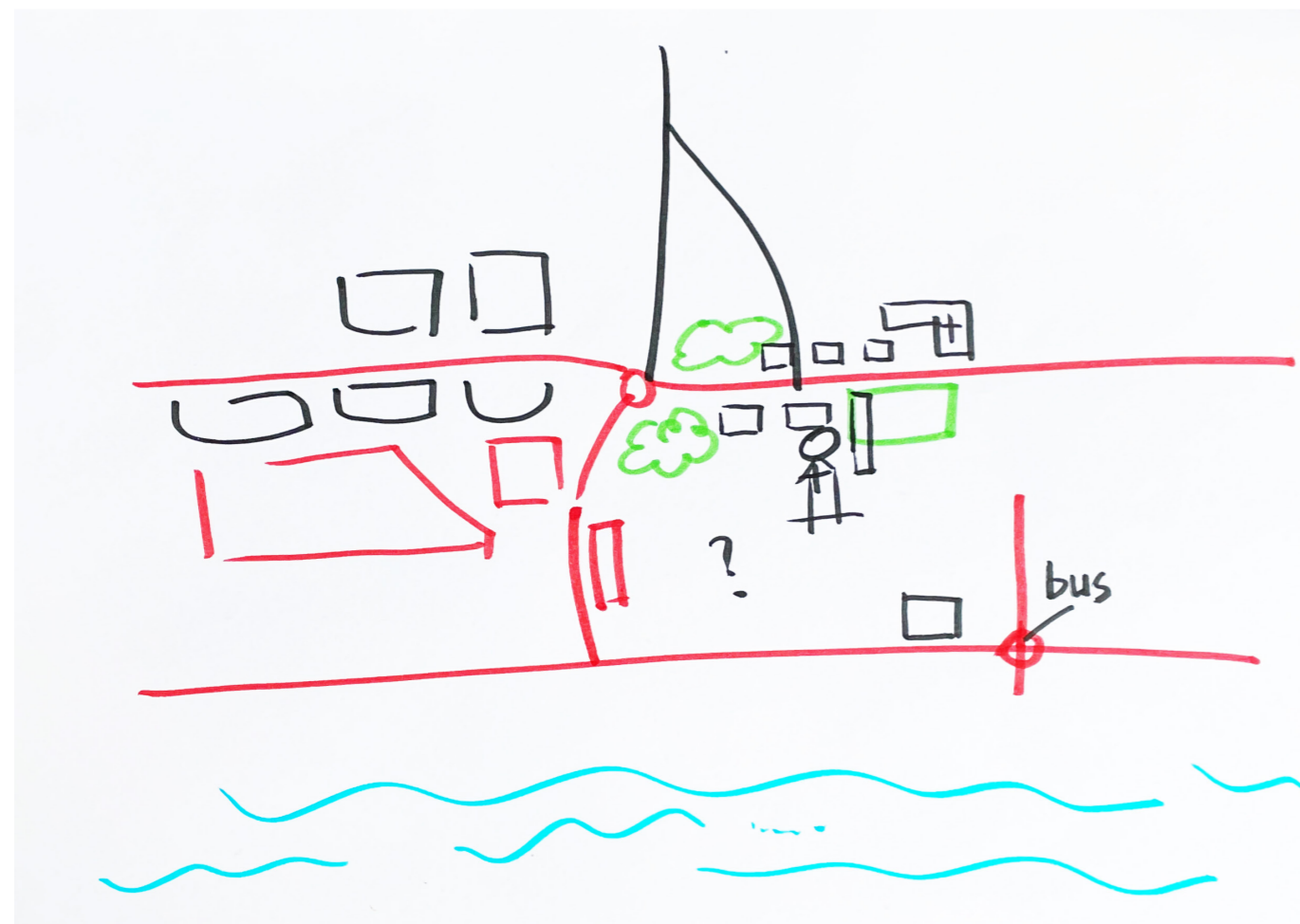
I can get convenient medical care and reachable daily groceries within 10 mins. My friends and families are all near me.

**What do you dislike about Älvängen?**

Not many new interesting things. But it is also easy to go traveling so it is alright.

**List distinctive parts of the city.**

Göteborgsvägen.



**Ella, 24 years old**

She lives in Göteborg and only went hiking in Älvängen few times.

**What is important to you in this city?**

The hiking trail, beautiful landscape.

**How much do you like Älvängen?**

So-so.

**What do you like about Älvängen?**

Natural landscape, beautiful houses, convenient for parking.

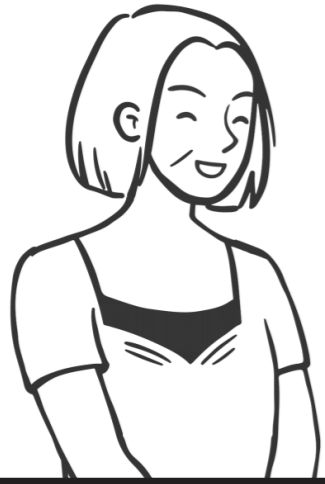
**What do you dislike about Älvängen?**

No convenience store/mini market except the central retails; no cultural attractions.

**List distinctive parts of the city.**

Nothing specific, maybe the roundabout in the center.





**Astrid, 41 years old**

She lives in Älvängen and works in Göteborg as a daily commuter by train and bus.

**What is important to you in this city?**

The quietness and beautiful landscape.

**How much do you like Älvängen?**

A lot!

**What do you like about Älvängen?**

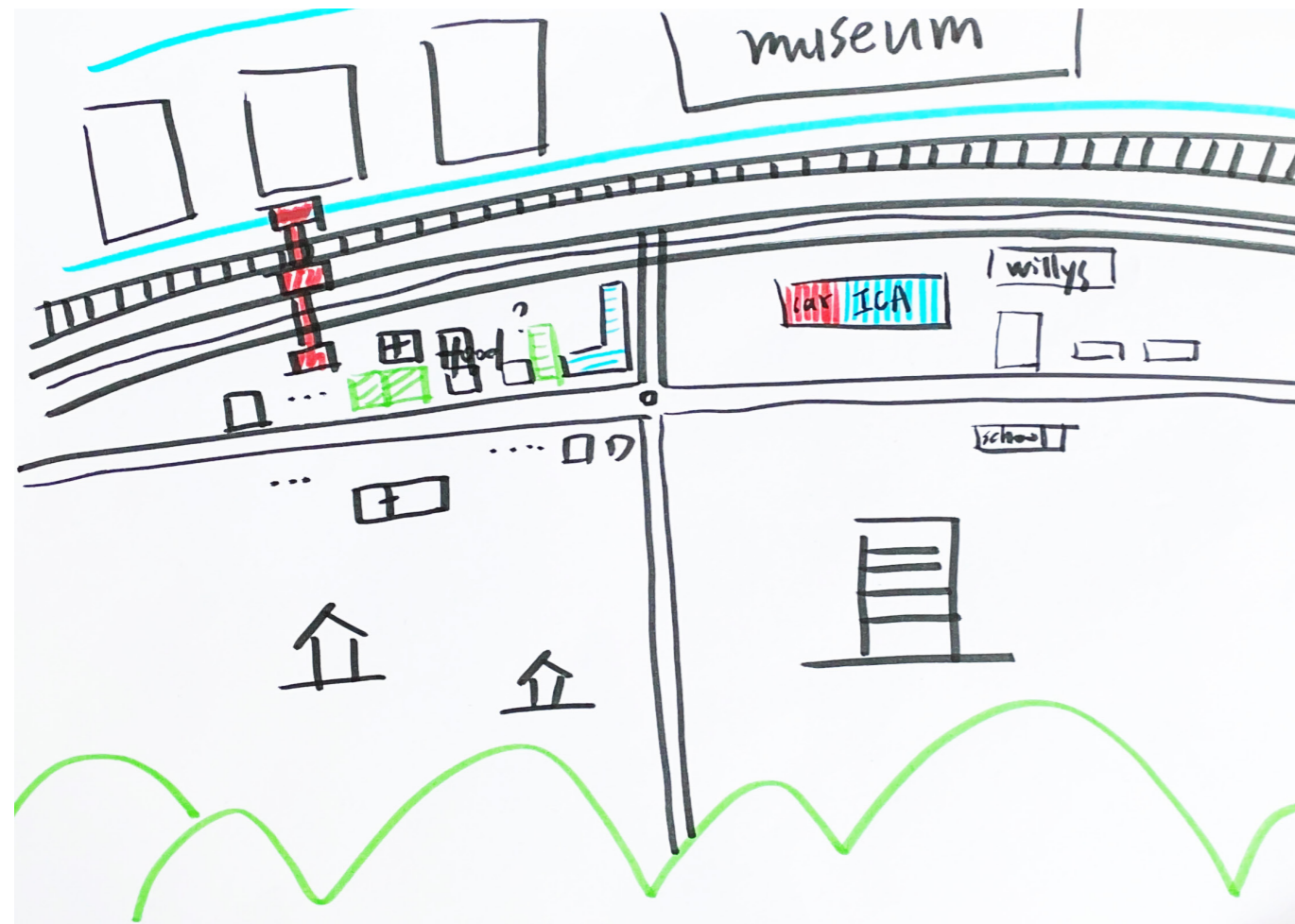
Convenient to go to Göteborg and I can have my own little garden.

**What do you dislike about Älvängen?**

I need to go to Göteborg to meet friends if I don't want to invite them home.

**List distinctive parts of the city.**

Train station with bus station, retail center.



**Conclusion**

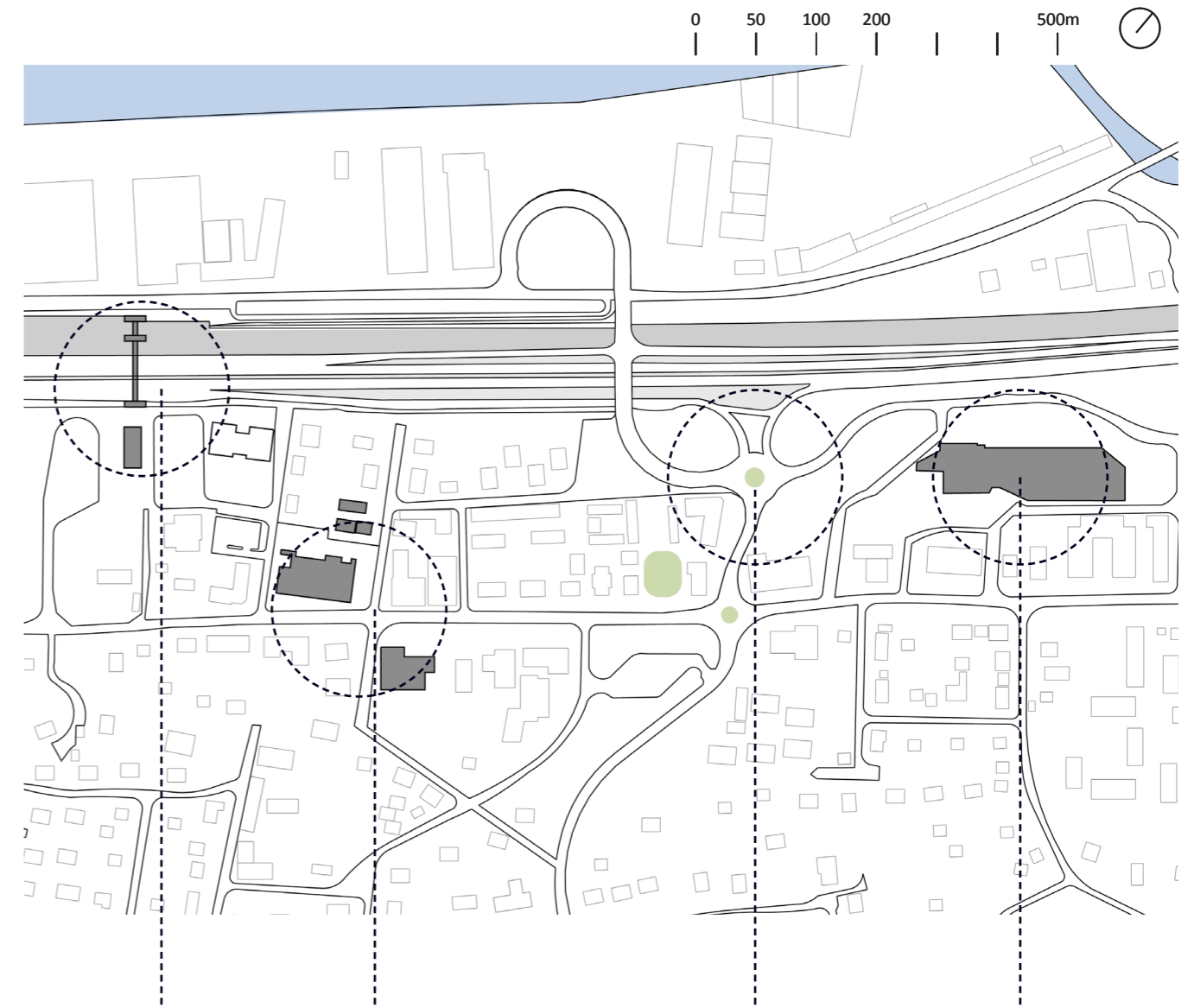


Fig 3.25: Landmarks

In summary, Älvängen Centrum has four notable nodes that leave a lasting impression. These include the transportation hub formed by the train and bus stations, the social center comprising two churches and their associated thrift stores, the roundabout serving as a major entrance and exit point for Älvängen, and the retail center supporting the daily lives of most residents.

These urban components impress people either due to their visual appearance or their significant role in the social life of the town.

## 3.5 Reference Study

To figure out the main variables that will help make design decisions later, site analysis are also applied on different sites in Gothenborg.

Four different sites (Fig.3.26) in Gothenborg have been chosen based on their outstanding linear central identity, which is exactly what are expected to be achieved for Älvängen. They are compared with their local centrality and accessibility, street design, urban density and functional program for both outdoor and indoor space.

The site varies from high density downtown area to the lower density satellite city, in order to give a full picture.

Within them, Majorna and Linnéstaden are within Gothenborg city and thus Mariagatan and Linnegatan have relatively the highest density. They also have the most number of non-residential functions.

Mölnådal is often considered a well-connected suburban extension of Gothenburg. With a dropped density, Brogatan serves as important transportation center and also holds diversified non-residential function.

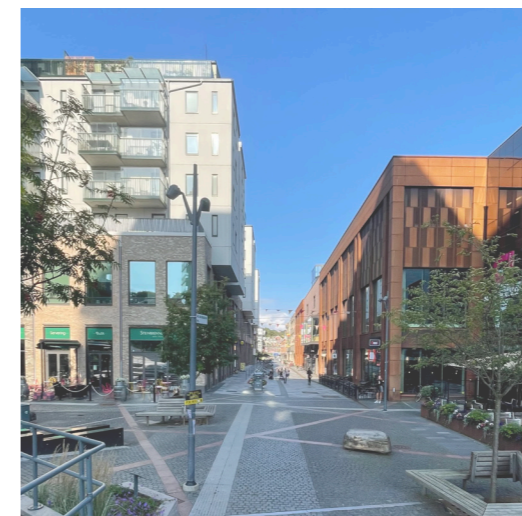
Kungälv is the one most similar to Älvängen, because of its location, lower density and less population. There is an active neighborhood developed from the well-planned Uddevallavägen, within which the residential function is the majority.



Mariagatan, Majorna



Linnégatan, Linnéstaden

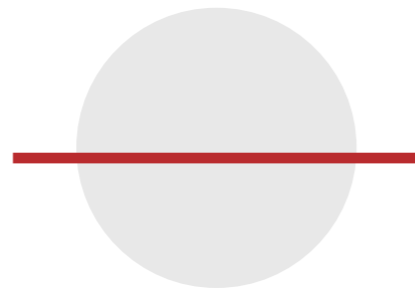


Brogatan, Mölnådal



Uddevallavägen, Kungälv

Fig 3.26: Street views of four case studies



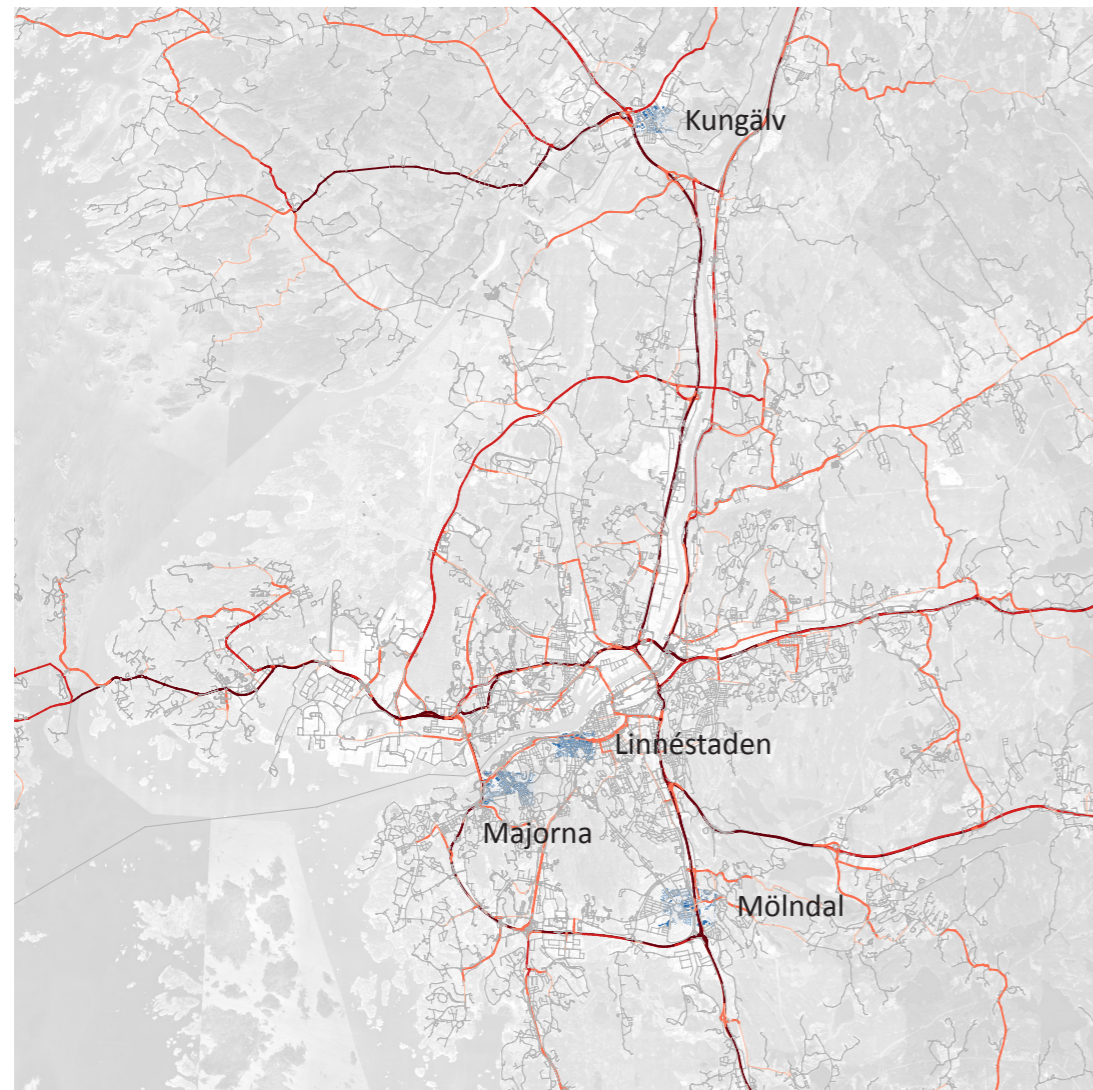
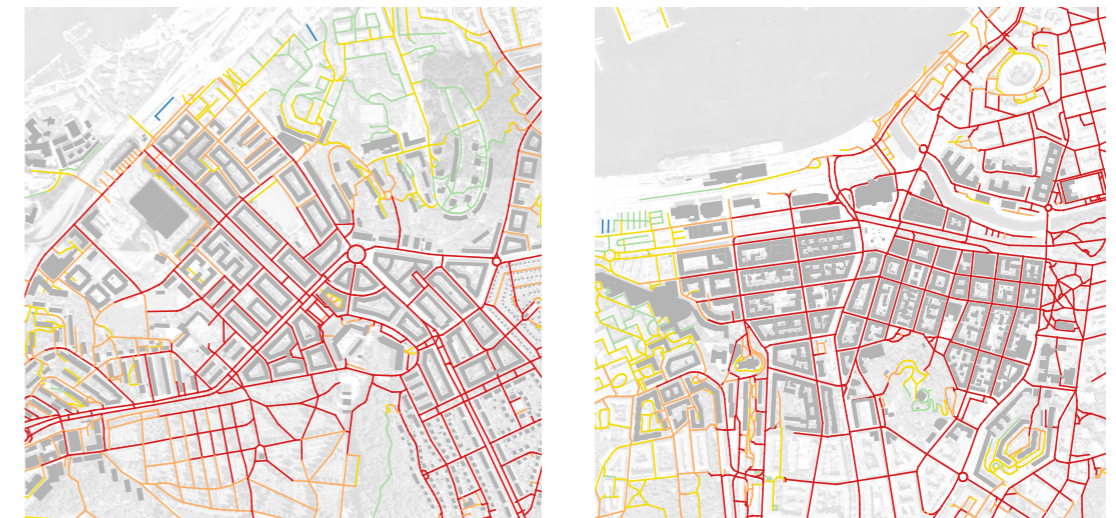


Fig 3.27: Locations of four case studies

Global Centrality  
Angular Betweenness, 5km  
High Value  Low Value

The map represents varying degrees of angular betweenness (AB) within the motorized network, indicating its global centrality. Lines in dark red show a high value of angular betweenness, suggesting these streets hold a more central position and are likely to be used more frequently.

All four locations selected for the case study are situated near streets with a high value of angular betweenness, indicating that they are positioned on main streets and are easily accessible. They are also interconnected by streets with high AB values, suggesting that they share similar functions.



Mariagatan, Majorna

Linnégatan, Linnéstaden



Brogatan, Mölndal



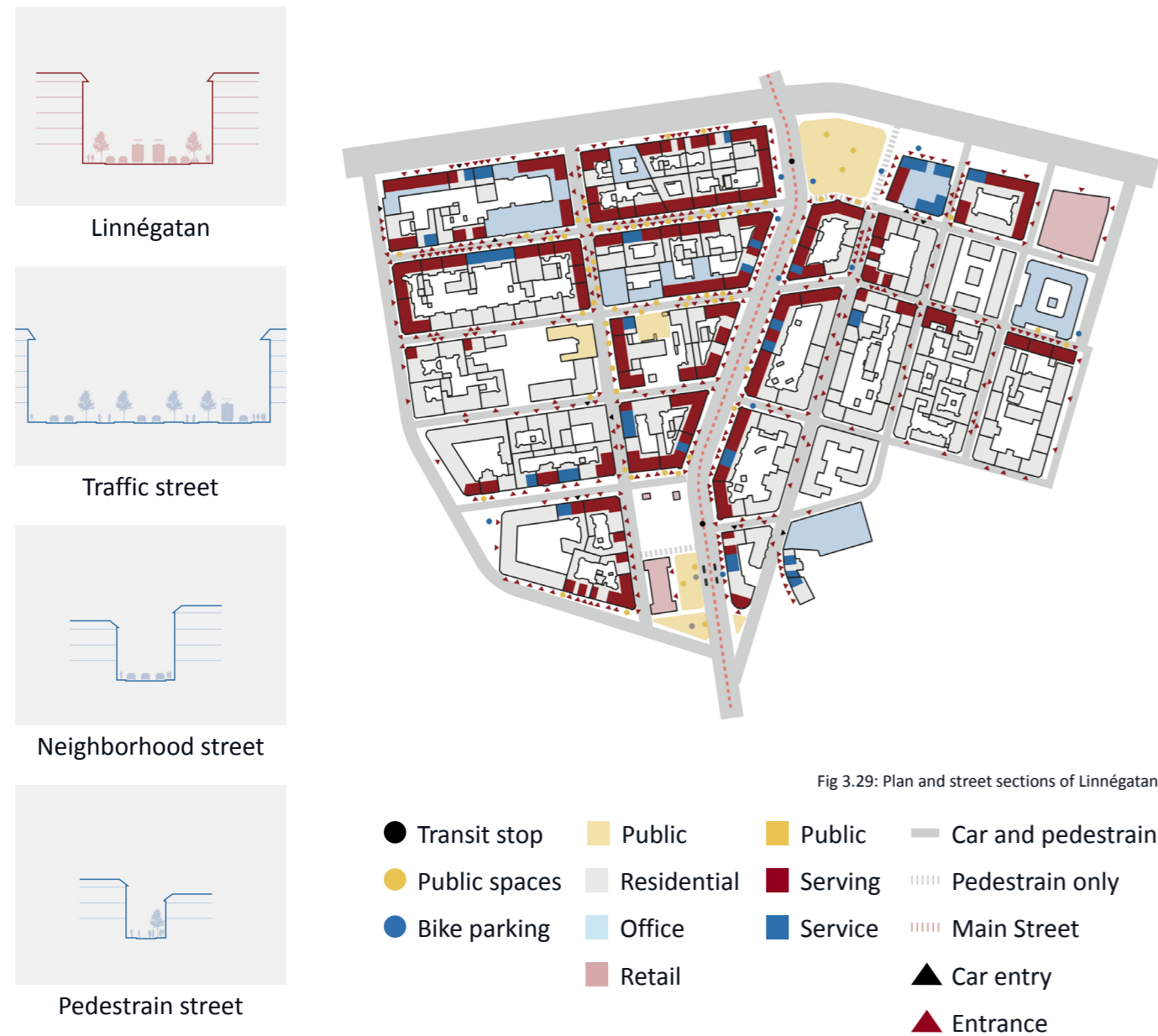
Uddevallavägen, Kungälv

Local Centrality  
Angular Intergration, 1.2km  
High Value  Low Value

Fig 3.28: Analysis of four case studies

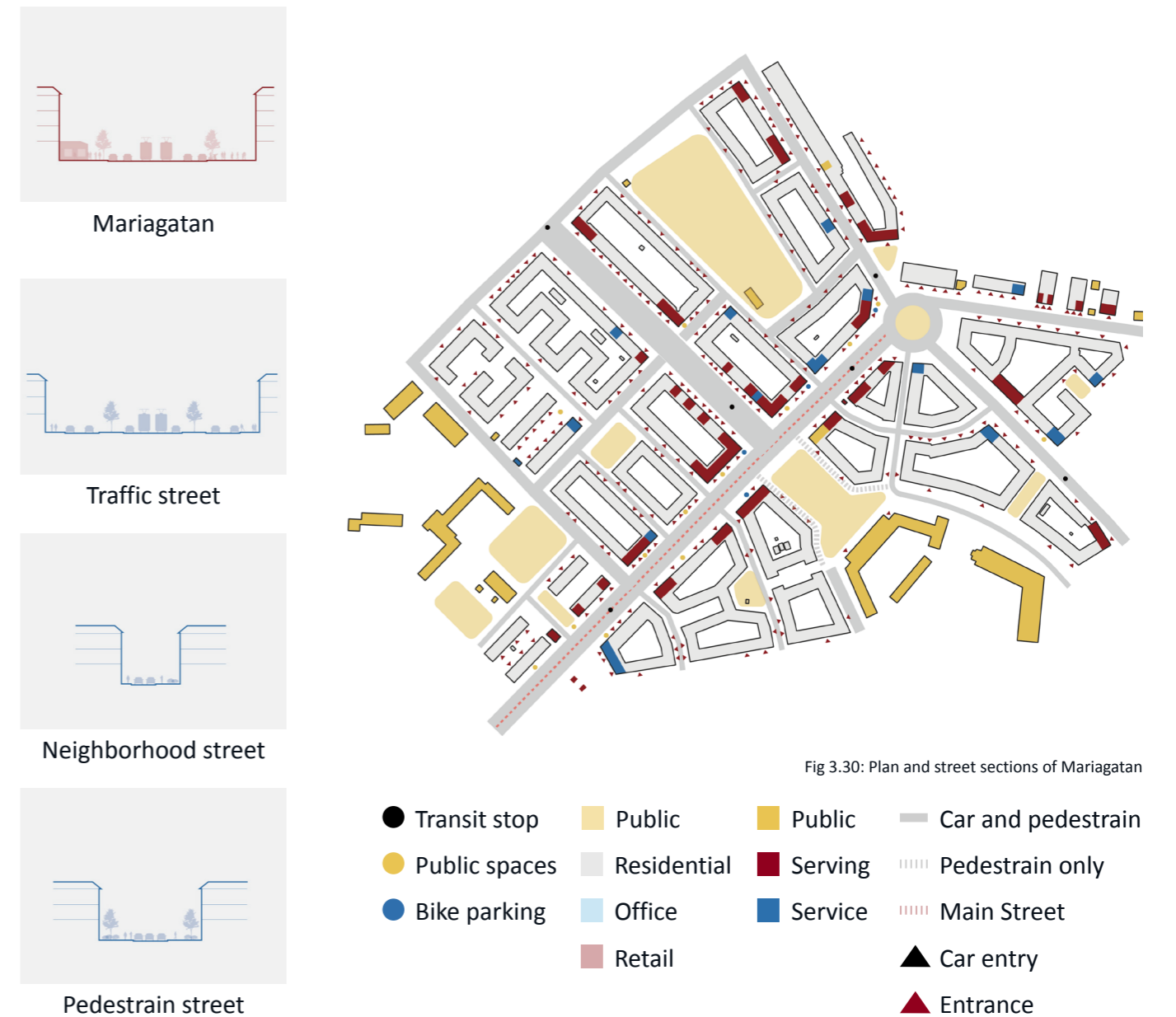
Zooming into each site at a block scale, by observing the angular integration within the non-motorized network, some blocks exhibit local centrality. All four locations demonstrate relatively high angular integration, particularly on the selected street. This suggests they possess high accessibility and connectivity, allowing pedestrians within walking range to easily reach these places. Such local centrality, combined with convenient transportation, attracts people and makes these locations vibrant socio-economic centers. These sites are ideal for public services commercial organizations, also providing pleasant experiences on a walkable scale.

### 3.5.1 Linnégatan, Linnéstaden



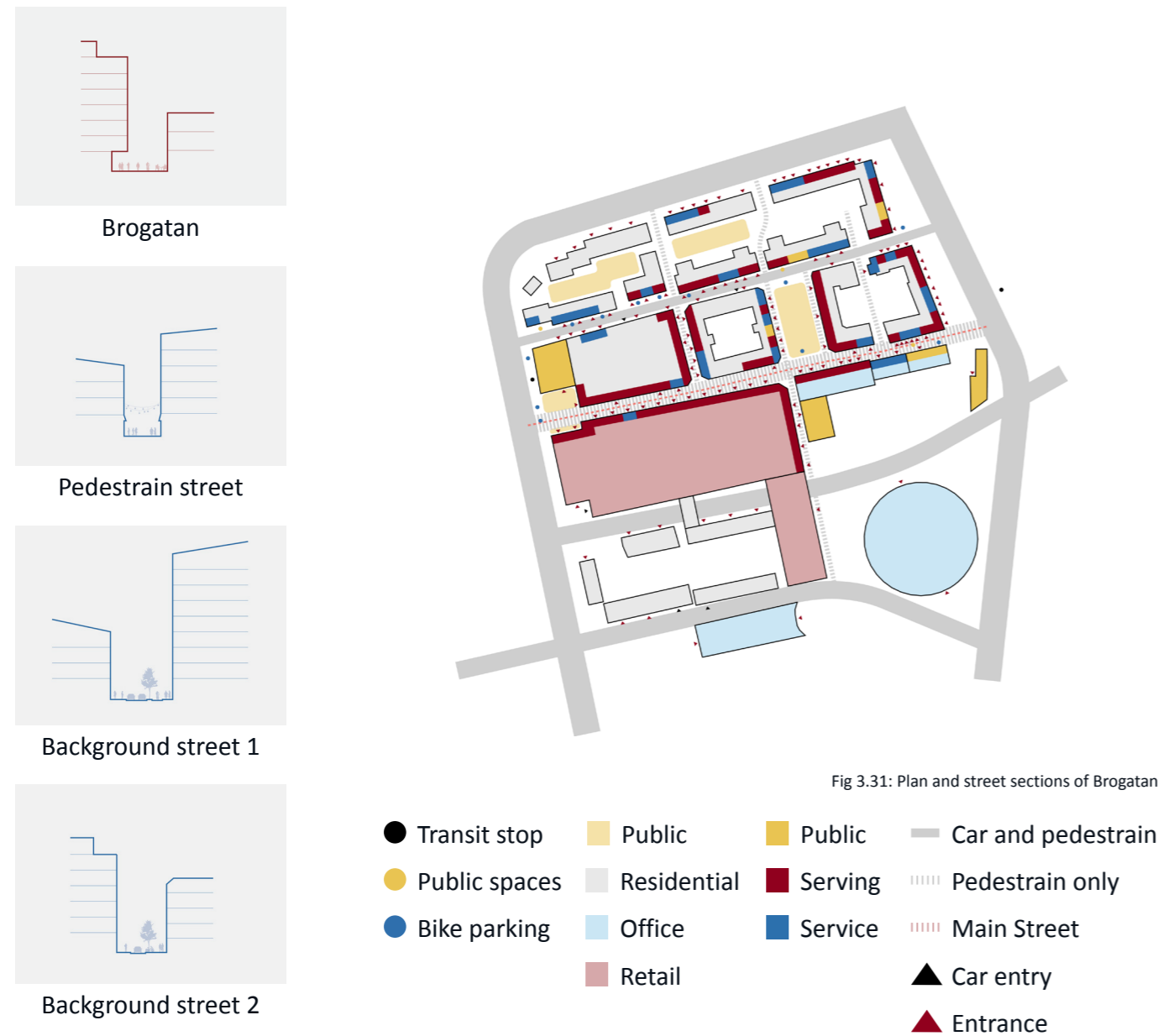
Linnégatan, located in the vibrant Linnéstaden district, is a bustling avenue connecting Järntorget and Slottsskogen. Lined with restaurants, cafes, and clothing stores, it attracts residents and visitors alike. Linnégatan supports various transport modes, including trams, cars, bicycles, and pedestrians, while Järntorget serves as a key hub for buses and trams. The street network in Linnéstaden consists of four types: primary roads with high traffic flow, Linnégatan with its unique recreational offerings, smaller branch roads with less traffic and more outdoor spaces, and small residential roads used mainly by locals. Public spaces along Linnégatan include squares, green areas, and converted gardens, providing spots for pedestrians to rest. The high residential density supports local businesses, enhancing the area's lively atmosphere. Linnégatan's linear identity and influence stem from its high flow of people, engaging ground-floor functions, and strategically placed recreational spots, which together encourage continuous movement and a connected street experience.

### 3.5.2 Mariagatan, Majorna



Majorna, a cultural hotspot in Göteborg, is known for its independent shops, restaurants, and bars, with relatively few chain businesses. Many of these places are located along Mariagatan, making this street the core of Majorna. Mariagatan experiences relatively low traffic volume. The street network here is divided into four types: primary roads that handle the highest traffic volume but see lower levels of pedestrian activity due to limited outdoor spaces, the lively Mariagatan itself where people often gather, neighborhood streets connected to Mariagatan providing parking, and smaller, greener roads primarily used by residents. Along Mariagatan, various outdoor dining areas associated with shops and restaurants add to the street's distinct and lively atmosphere. Additionally, the community pool "Plaskis" and other smaller green areas are also popular. Buildings in this area are mostly four stories tall, contributing to a relatively high population density.

### 3.5.3 Brogatan, Mölndal Centrum



Mölndal Centrum serves as a local center designed primarily for its residents. It is situated along Brogatan, which hosts a mix of large chain retailers and independent businesses as well as various public services, enhancing its role as a community hub. Although Brogatan is a pedestrian-only street, Mölndal Centrum is conveniently located near a major transport station that accommodates both buses and trams, with plenty of parking facilities provided for private vehicle users. The street network in this area is divided into two main types: non-motorized streets and motorized roads. Brogatan, the key pedestrian street, is lined with popular chain stores, while other pedestrian streets connected to it have less traffic and are home to more local businesses. Despite its relatively short length, Brogatan features several well-designed public spaces that are frequently used by both locals and visitors. The residential density here is relatively high, as the area has been consciously redeveloped as a center in recent years.

### 3.5.4 Uddevallavägen, Kungälv



Kungälv, part of the Gothenburg metropolitan area, features a local center serving its residents. Uddevallavägen, the town's main road, links various businesses like hair salons, second-hand shops, cafés, large parking lots, and chain retail stores. Along this road, there are outdoor spaces, public service buildings, and schools, creating a diverse streetscape. The road is accessible to bicycles, motor vehicles, and pedestrians, with convenient parking available. The terrain and riverside parks, along with wide sidewalks connected to squares, provide quality outdoor spaces. Although residential and non-residential areas are well separated, recent developments include more high-density apartments, adding vitality to this satellite town. Uddevallavägen serves as both a major traffic route and a central hub for shopping, socializing, and leisure, while surrounding streets remain quiet with low traffic, ensuring a comfortable living environment.

### 3.5.5 Findings and inferences

Comparing to historical records, Älvängen has experienced the highest population growth in the past decade, with even increase of six percent in the last five years. Gothenburg attracts labor forces to settle in its surrounding commuter towns, resulting in a very young age composition in Älvängen: approximately 31% are minors (ages 0-19), 54% are adults (ages 20-64), and 15% are seniors (ages 65+).

The consistently growing and stable resident population represents the increasing importance of the commuting lifestyle in modern society. Älvängen also needs to adapt accordingly to these changes.

Strengthening a local identity that has been weakened by a unified transportation plan is crucial for a community experiencing continuous growth with new residents. Old residents need to feel that their familiar environment is evolving positively rather than being disrupted. New residents require a clear urban structure to help them explore and understand the city, a strong local identity to generate the sense of belonging, and new social spaces to establish an active and strong community to meet their psychological needs.

By having conversations with residents and reviewing historical documents, Älvängen Centrum, traversed by Göteborgsvägen, has always been the most impressive urban

element. At the same time, there are also many confusions: changes in road width and discontinuous street fronts make it feel like the road is divided into several sections, unorganized parking lots along the way, overlapping land use with the new retail center leading to competition, and so on. These factors blur people's impression of the centrum, reducing their willingness to visit there.

Another reason for reducing people's willingness to visit the centrum could be poorly designed non-motorized network. Älvängen is not a big city, but the design of the street network makes it difficult for residents to reach Göteborgsvägen directly from home without using motor vehicles. New connections to the center should be build, while the bike lane and pedestrian path should be took into consideration.

These factors blur people's impression of the centrum, reducing their willingness to visit. The decreased interaction prevents people from discovering personal landmarks and forming a clear cognitive map. Over time, this widespread issue leads to a collective loss of identity.

However, the intersection between the transportation hub and Göteborgsvägen offers the great potential for urban design. The city's mobility center is very clearly defined within the urban structure, making it an ideal starting point for a clear city layout. Design should indicate

how to enter the city center, navigate within the city, and locate residential areas, allowing not only residents but also visitors to quickly understand the city.

Although commuting significantly impacts the lives of the majority of residents in Älvängen, it's strange that the surrounding of town's train station and car entrances lacks densely populated residential areas or green spaces and open areas that would encourage people to stay. This overlooks opportunities to encourage community interaction.

For the majority of the population, which consists of minors and adults, Älvängen lacks entertainment facilities. Qualitative research suggests that their entertainment choices are limited to staying at home or traveling out of Älvängen.

From interviews, it's evident that residents of Älvängen are proud and happy about the beautiful natural landscapes here. However, this beauty of nature is not extended to the city center. Low-quality green spaces significantly diminish visitors' first impression of Älvängen. Apart from the natural greenery hidden in residential areas, some well-designed green structures should also exist in the city center, providing people with accessible green experiences.

Research on successful linear center identities, such as Majornas' Mariagatan, Linnéstaden's Linnégatan, Möndal's Brogatan, and Kungälv's Uddevallavägen, further supports these findings. A well-developed regional center should exhibit both relative global centrality and absolute local centrality. It requires a clear hierarchical street network where secondary roads support the primary roads and alleviate traffic pressure. Accessibility is crucial, whether by vehicle, bike, or on foot. The area should also feature higher urban density and active ground floors with multiple entrances. This setup allows visitors to experience a blend of diverse commercial, public service, and residential functions. Additionally, well-designed outdoor recreational spaces along the route are essential, as they significantly influence people's experience of the city while moving through it.

Creating supportive conditions for people to have a pleasant linear movement along the targeted central street is key to building the desired linear identity back for Älvängen. This can be achieved through redesigning the streets, plots, buildings, outdoor recreational areas, and functional programs.

### 3.6 Design Strategy

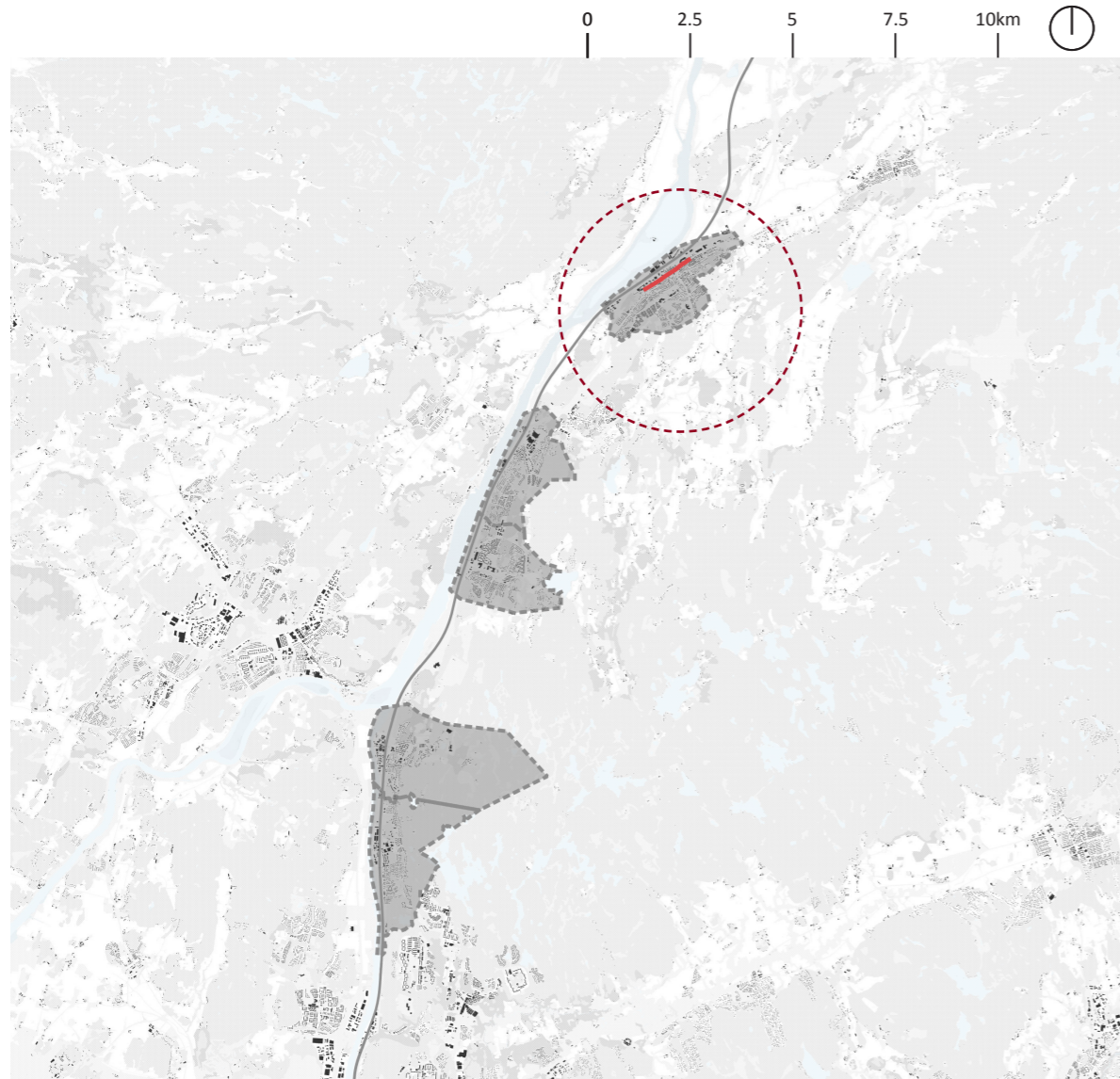


Fig 3.33: Linear identity

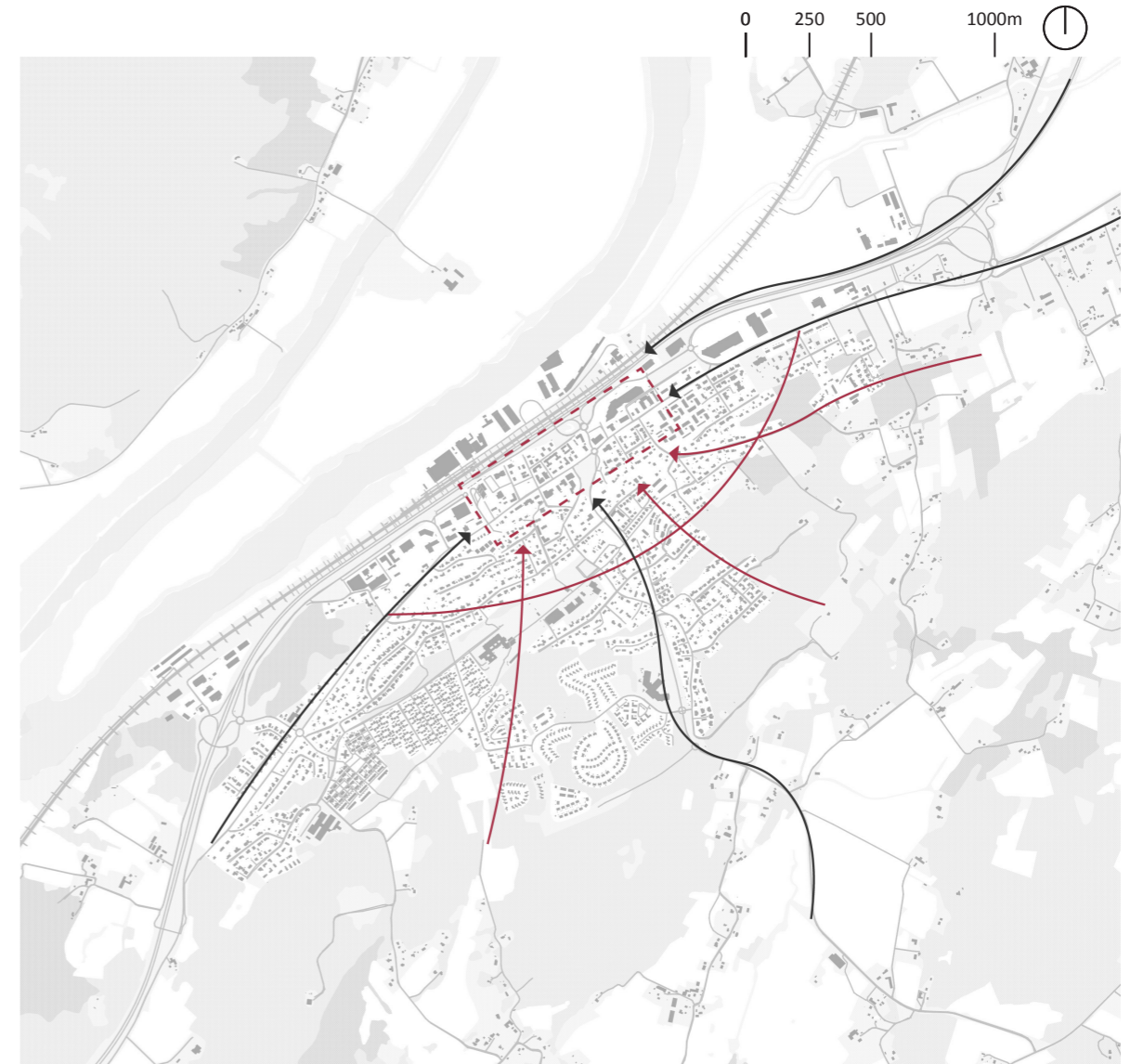


Fig 3.34: Centre of the town

The problem with Älvängen's unclear identity is quite evident, both from external and internal perspectives. This is not only because Älvängen inherently lacks a long history and distinct characteristics as a commuter town, but also because of the identical designs of its important train station entrance, as well as the identical noise barriers along E45 and function-oriented town designs.

Therefore, using the enhancement of its local identity as a tool to leave an impression on people is not only about constructing a more structurally clear town form but also, in the long run, benefiting the sustainable development of the town by developing a sense of belonging and diverse living experiences. This approach would be advantageous for those living here, ultimately contributing to the town's sustainability.

The strip-shaped centrum of the town leaves the strongest impression, whether considering the historical memory or the current urban form. Compared to the spread-out and more secluded residential areas, the centrum situated centrally on the entrance side of the town is accessible and experiential for everyone. It has historically been, and to some extent still is, a social and commercial hub, serving the residents of Älvängen.

However, analysis reveals various issues that prevent it from fully realizing its potential and attracting enough people to experience it.

While people's lifestyles and modes of transportation may not change, there are still ways to increase foot traffic in the town center, making it more vibrant.

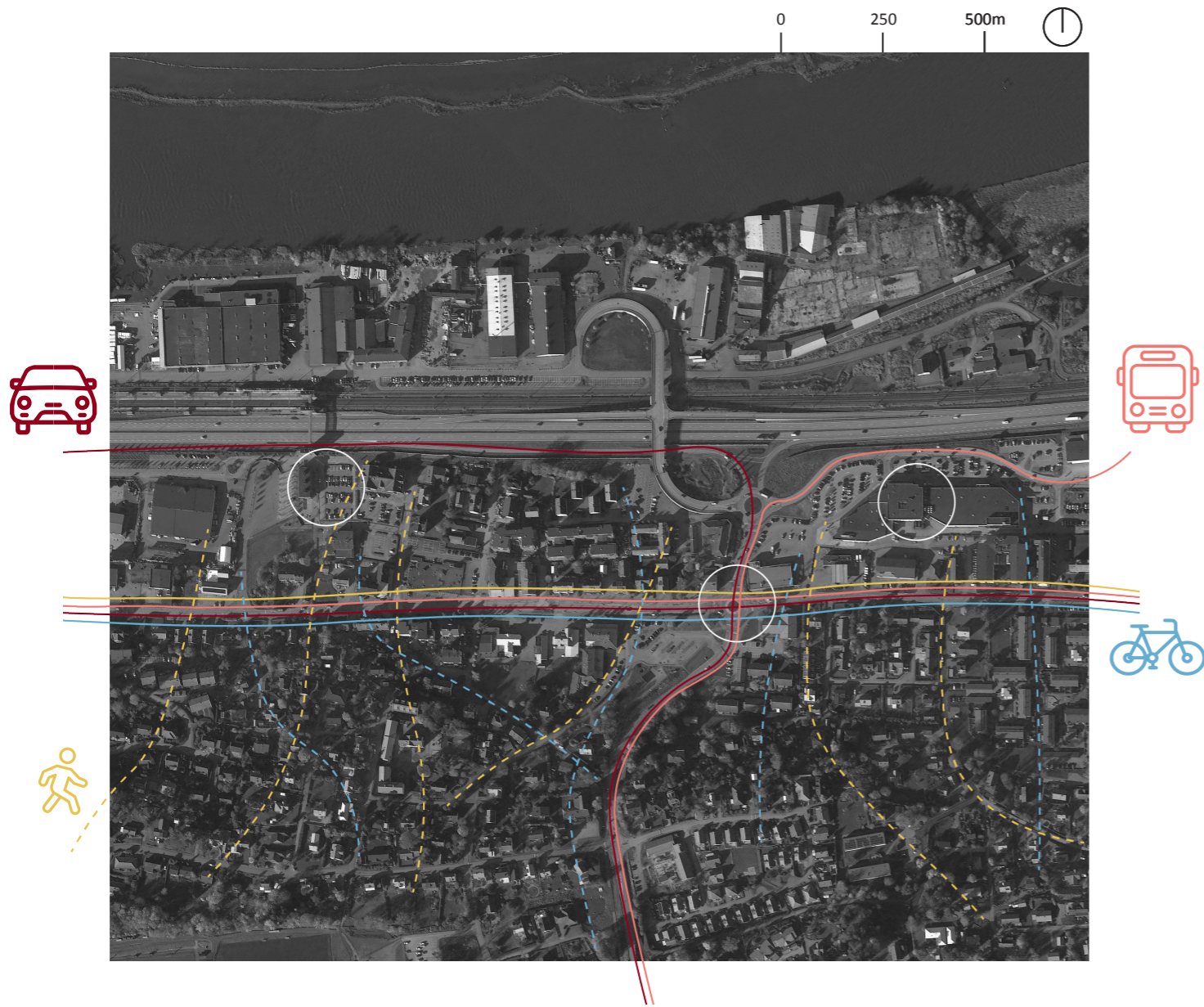


Fig 3.35: Multi-way of traffic

Considering the diverse transportation preferences among Älvängen residents, Göteborgsvägen should be designed to adjust to those using public transit, driving, cycling, and walking. It should offer easy access and opportunities for people to stop and engage with the surroundings. Pedestrians should have the choice of taking shortcuts for quick passage or staying in designed areas for longer periods.

This can be achieved through thoughtful road design, including parking facilities and open spaces along Göteborgsvägen, ensuring it serves not only as a functional thoroughfare but also as a lively social hub for multiple interactions in Älvängen Centrum.

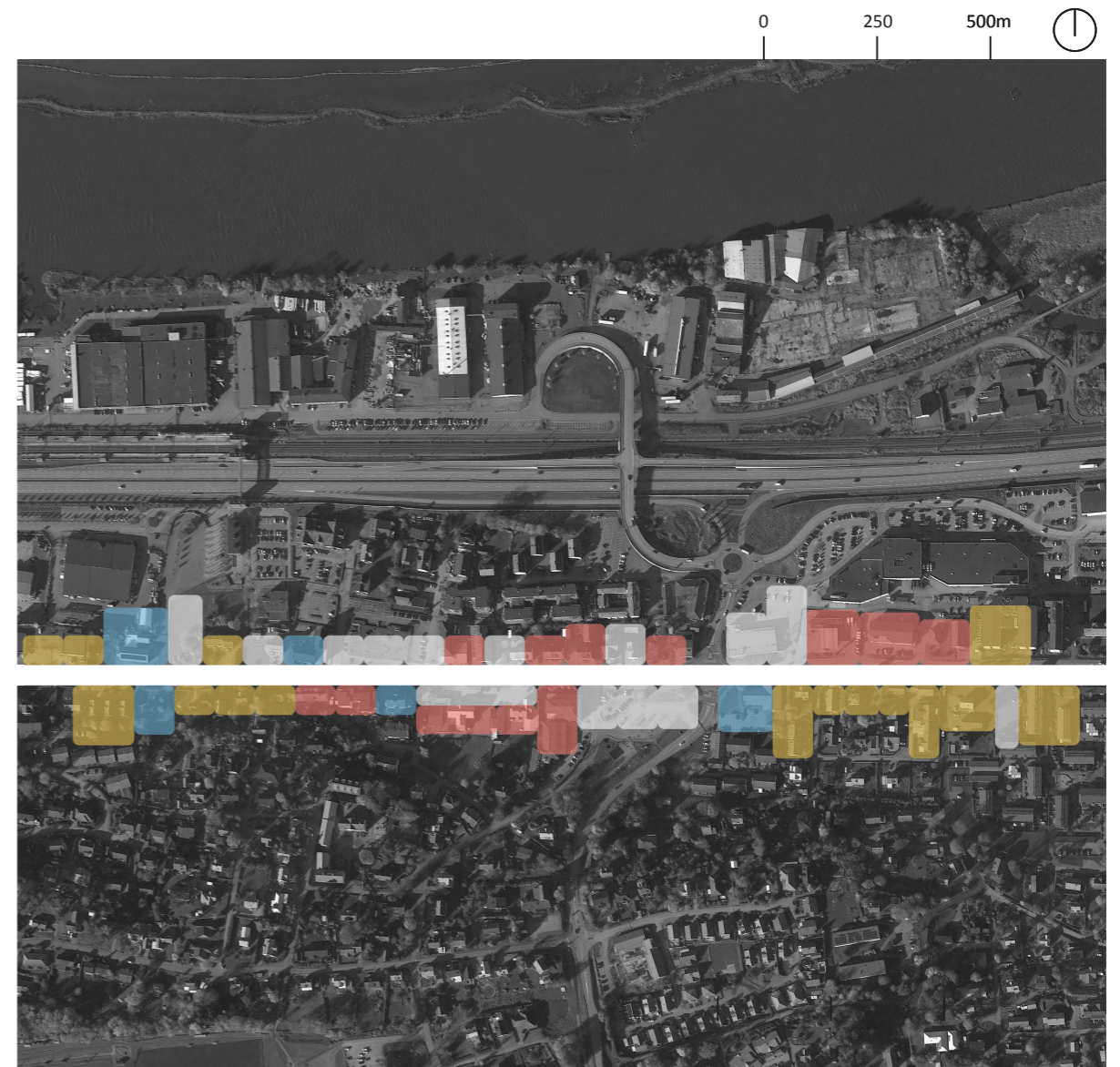


Fig 3.36: Distribution of function

The centrum should offer a variety of functions and experiences for different demographics. The strip shape should be visually and physically reinforced. Disjointed street fronts should be connected through infill to provide a cohesive experience along Göteborgsvägen.

Meanwhile, the preservation of existing landmarks is crucial, ensuring that new designs maintain a visual connection with them to preserve the town's local character.

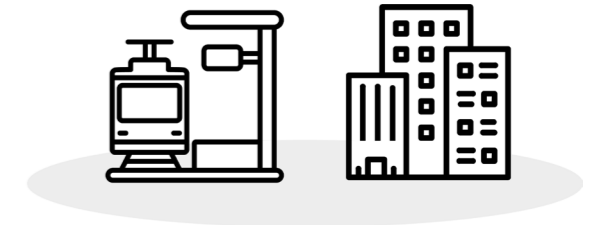
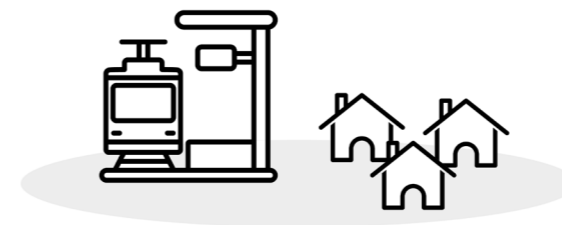
This can be achieved through replanning land use, redesigning the blocks in Älvängen Centrum, and establishing rules for street frontage.

### 4.1 General develop plan from Ale

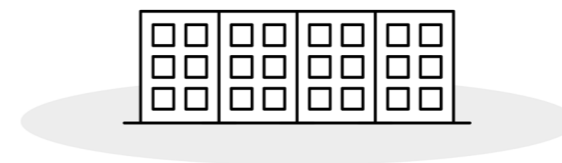
To address population growth, the Ale municipality has proposed development plans for its towns in its planning document "Framtidsbild för Ale 2050."



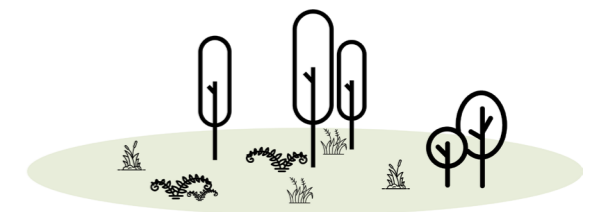
Fig 4.1: Ale's Coat of arms  
Source: Ale Municipality



Building more densified housing near the stations



Diversifying the land use and keep the ground floor vibrant, create possibility to work near home



Creating high-quality green infrastructure

Fig 4.2: Ale's Development Plan

# 04 Design

## 4.2 Town-scale design proposal

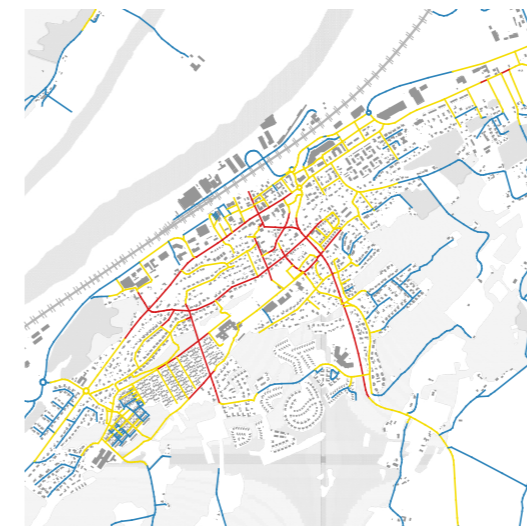


Fig 4.3: Town-scale design proposal on non-motorized network

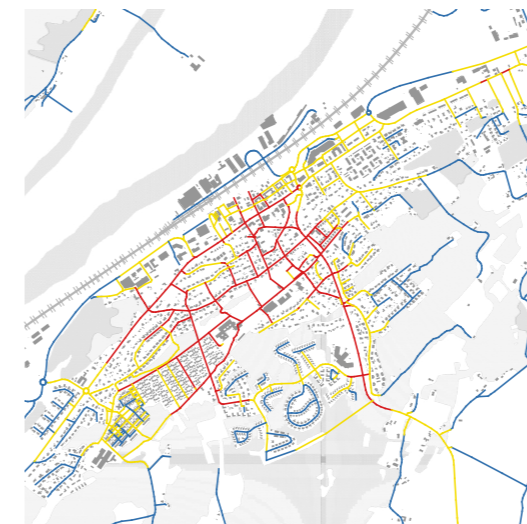
Älvängen centre has a strong global centrality within the Gothenburg network, enabling it to serve as a local hub. Major infrastructure changes are required to improve this character, which fall outside my project's scope.

However, there are things that can be done on the town-scale. More non-motorized streets are designed to improve accessibility for walking and cycling. Although shifting commuting habits is difficult, easier access to the centre could attract more local visitors, making the centre more vibrant.

Fig 4.4: AI and AD analysis on non-motorized network

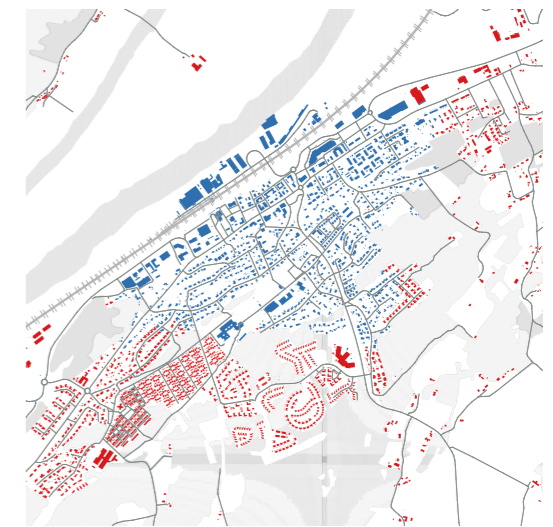


AI 1.2km Before Implementation

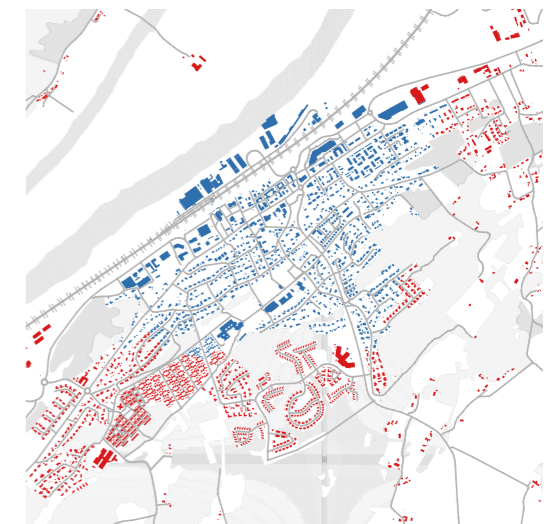


AI 1.2km After Implementation

High Value Low Value



AD 1.2km Before Implementation



AD 1.2km After Implementation

Out of walkable range

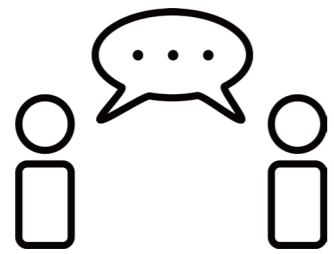
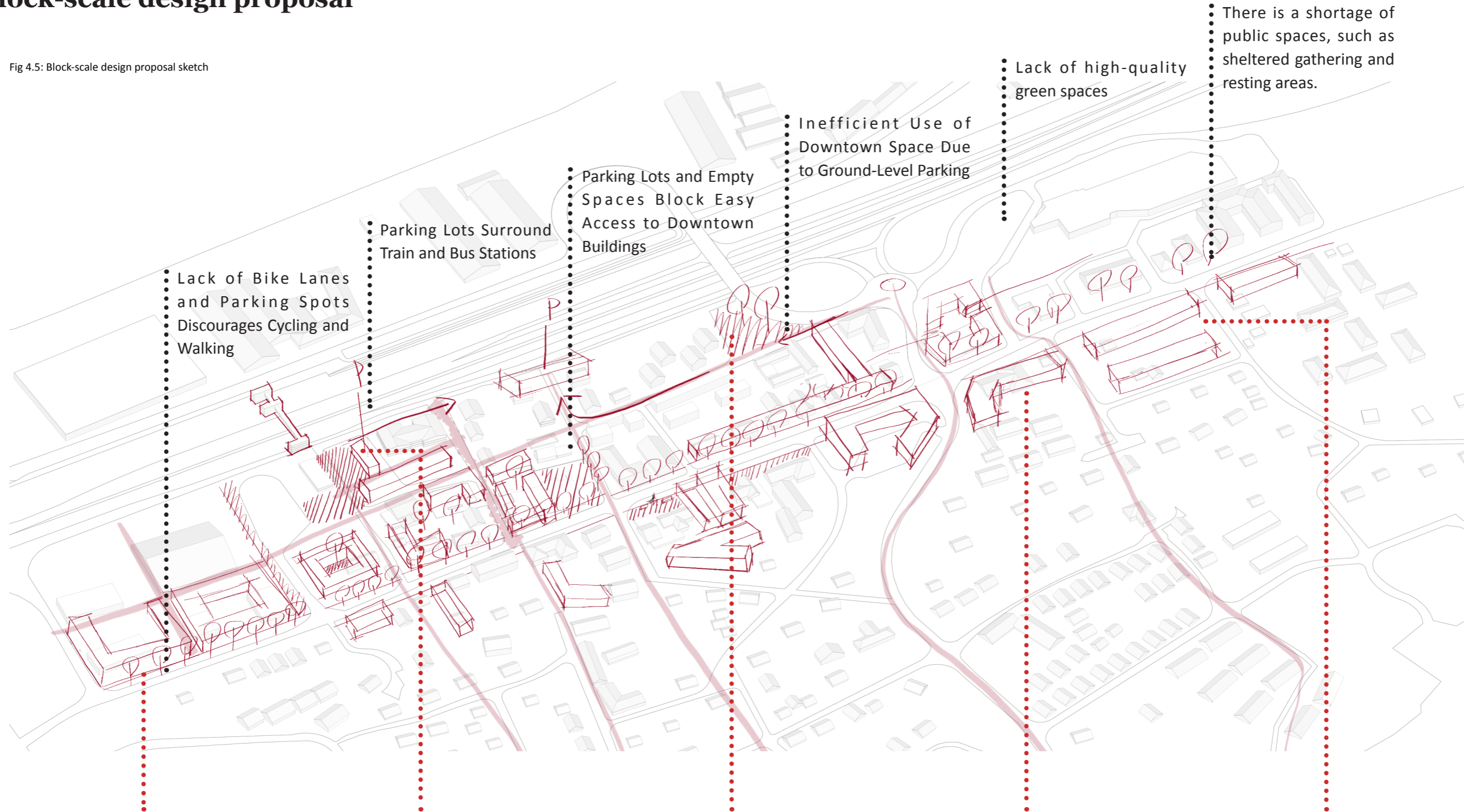
Within walkable range

The AI analysis shows that, before implementation, only a few main roads within a 10-minute walking distance had high AI values, indicating limited easy accessibility. After implementation, the AI values increased significantly, particularly in the central areas, making the street network more accessible for non-motorized vehicle and pedestrians.

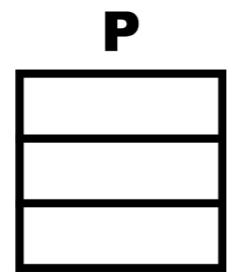
The impact of the implementation is also evident through the attraction distance analysis, which demonstrates a significant increase in the number of addresses accessible by non-motorized vehicles and walking within a 10-minute range. Following the implementation, an additional 135 addresses were brought within this accessible distance.

### 4.3 Block-scale design proposal

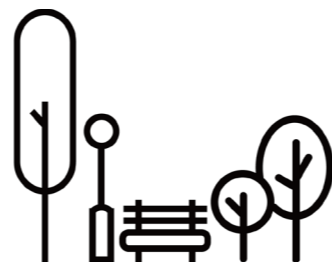
Fig 4.5: Block-scale design proposal sketch



Meeting Point



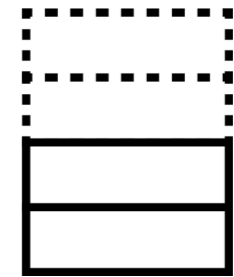
Centralized Parking System



Designed Green Infrastructure



Infilling



Increasing Residential Building Density

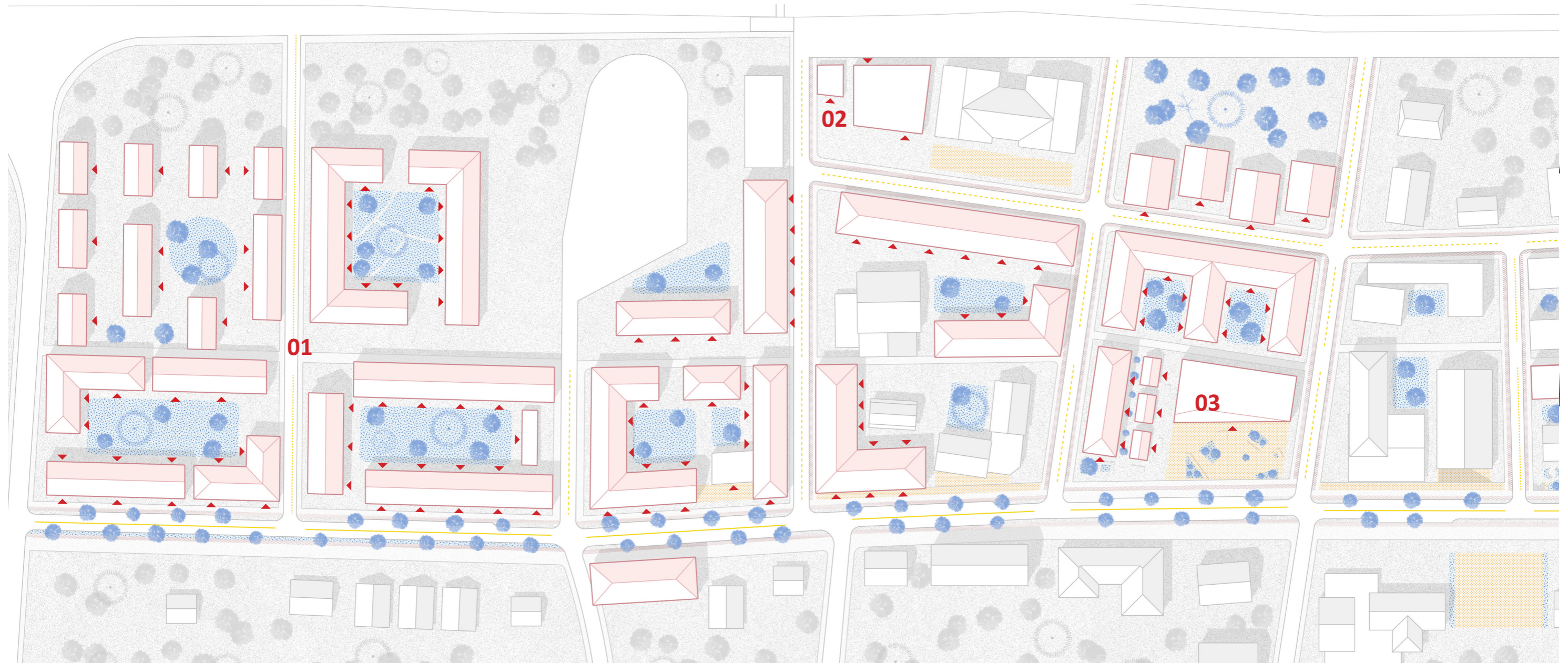


Fig 4.6: Block-scale masterplan

## 01

By densifying along Göteborgsvägen, the increased foot traffic and ground-floor shops can make the main road, Göteborgsvägen, more vibrant. This not only provides various essential services for Älvängen but also raises its centrality, and thus reinforces its linear identity.

## 02

The intersection of the bus terminal and train station serves as the gateway to Älvängen. Constructing centralized bicycle and car parking facilities nearby improves parking efficiency and optimizes land use. This not only facilitates the last 5 kilometers of commuting for travelers but also creates opportunities to repurpose the land currently used as parking lots for other functions.

## 03

The design recognizes the potential of the currently vacant lot in the center of Älvängen, located along Göteborgsvägen with very high centrality, which is temporarily used as a parking area.

Through redesign, the lot is transformed into a community center featuring a library, an open-air market, and a small plaza, providing

opportunities for various types of activities: indoor or outdoor, private or collective. By meeting the service needs of residents and attracting their visits, the linear identity of Göteborgsvägen is further reinforced in the collective perception.



Fig 4.6: Block-scale masterplan

## 04

A vacant area near the community church has been transformed into a playground, anchoring the outdoor leisure system along Göteborgsvägen. Its central location fosters community interaction and frequent use, while its integration into the road's linear layout enhances Göteborgsvägen's identity as a defining axis of Älvängen.

## 05

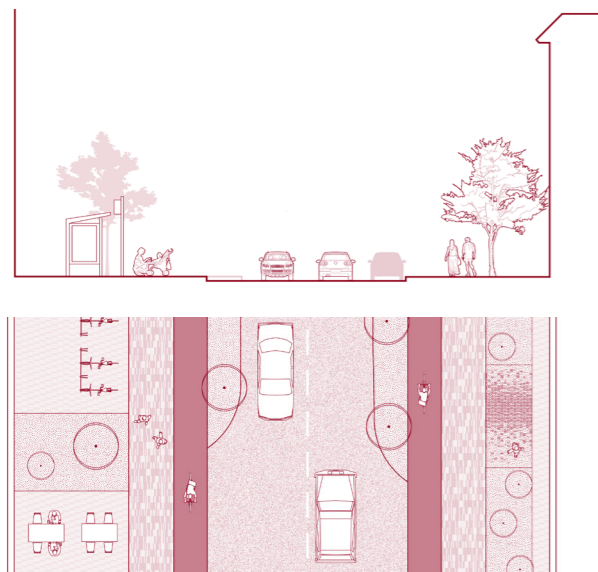
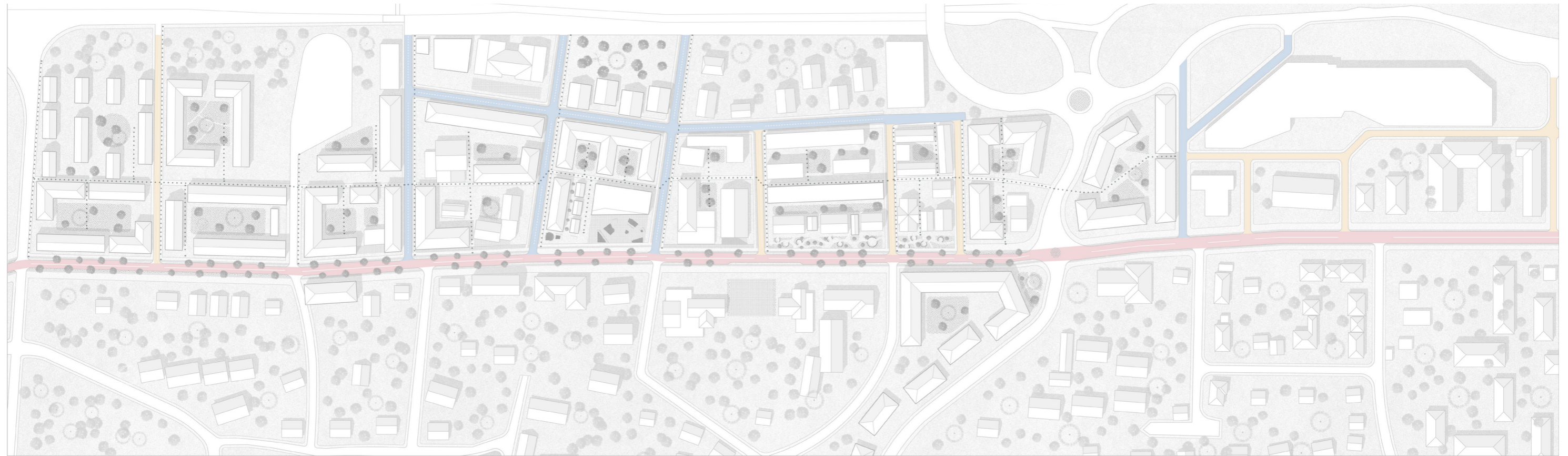
Small infill buildings have been introduced between existing structures along Göteborgsvägen, featuring independent shops and a community greenhouse. These additions create a continuous and visually engaging facade, enhancing the linear movement experience while supporting small local businesses and fostering economic growth.

## 06

As part of the continuous experience along the Göteborgsvägen, the outdoor area has been transformed into a street garden, providing accessible greenery in a town where most natural spaces are distant and wild. By connecting greenery with everyday life, the street garden becomes a social hub, inviting residents to pause, interact, and enjoy the space.

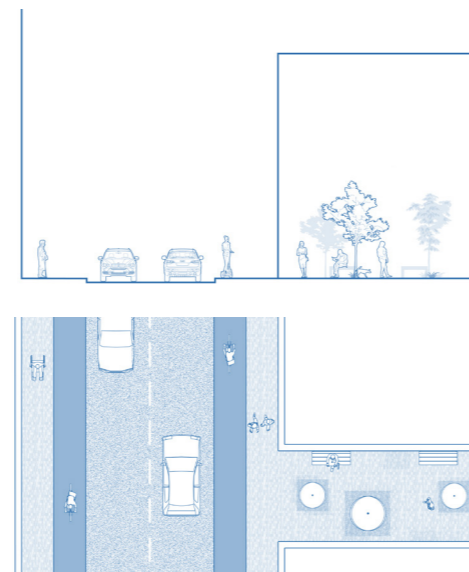
The street hierarchy along Göteborgsvägen has been restructured into three levels, enhancing safety, usability, and the road's linear identity. This design makes the street a central, memorable spine of the city, balancing function and a sense of place.

Fig 4.7: Street network masterplan and details of different street levels



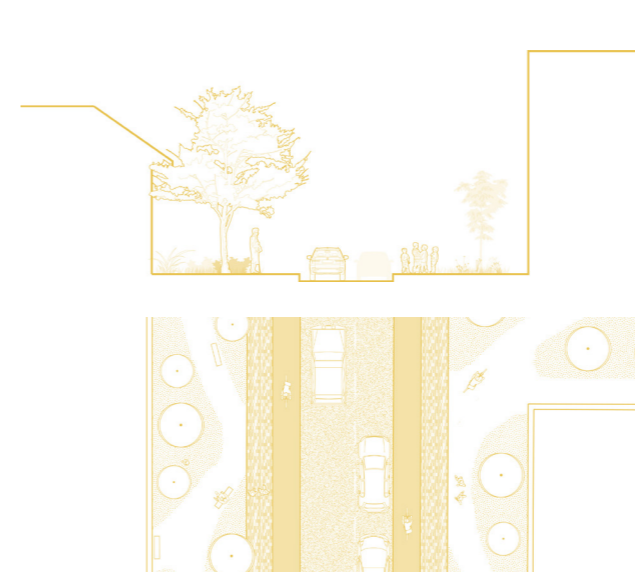
**Arterial Roads**

This street is designed to handle high traffic and connect major areas. It offers car and bike parking to encourage access to local services. Wide and accommodating, it includes spaces for people to pause, relax, or meet, supporting commerce and community.



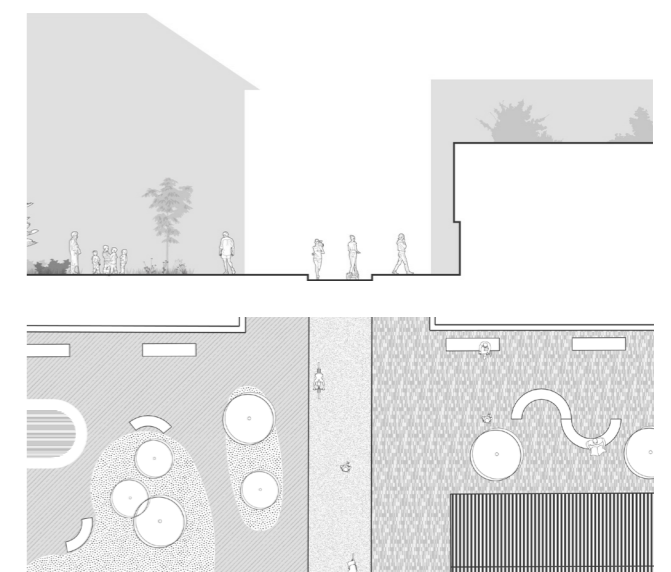
**Collector Roads**

These streets primarily function to collect and distribute traffic between main streets and smaller local roads. They balance mobility with access to adjacent properties but are not designed to encourage lingering. Thus, no ground-floor commercial spaces are designed to be located along these streets.



**Minor Local Streets**

These streets are located within residential or mixed-use blocks, providing access within neighborhoods without serving as major thoroughfares. With a single one-way lane and a parking lane, they are designed to handle low traffic volumes.



**Residential Streets**

These streets primarily offer direct access to homes, prioritizing pedestrian safety and local access. Designed for low-speed, low-volume traffic, they discourage through movement and focus on serving the immediate community.

## 4.3 Focus area designs

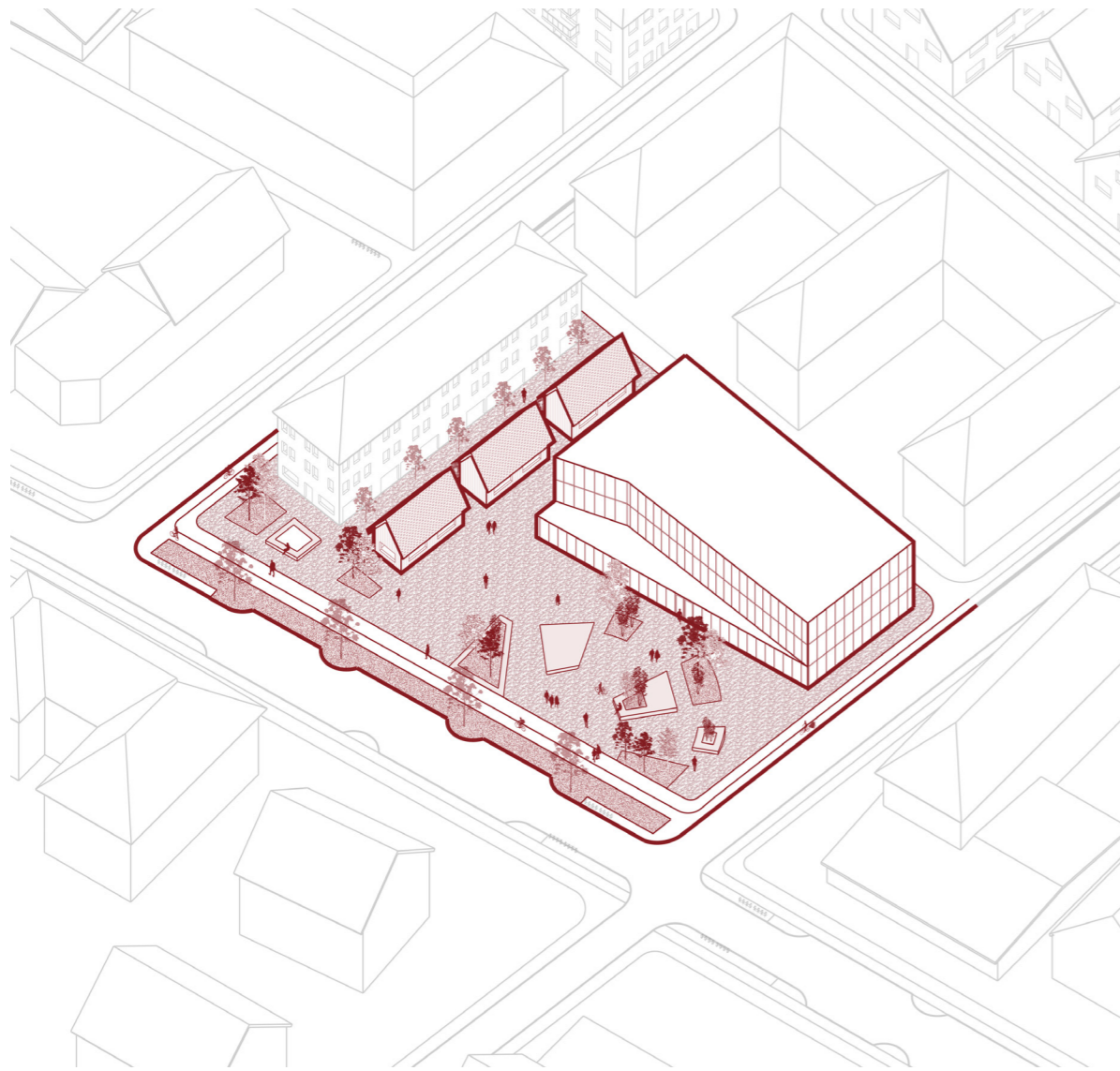


Fig 4.8: Älvängen Cultural House

### Älvängen Cultural House

The design acknowledges the community's need for a centralized cultural hub, offering diverse functions such as a library, spaces for various social interactions, municipal services, and a café. By situating these services at the town's core, the project aims to foster a stronger sense of community among Älvängen's residents.

Additionally, the thoughtfully designed architecture aspires to replace large retail

malls as Älvängen's visual landmark, creating a structure that is both culturally meaningful and distinctive.

These services are strategically placed along the main road rather than at transit points, their current location, to encourage visitors to explore the center and engage more deeply with it.

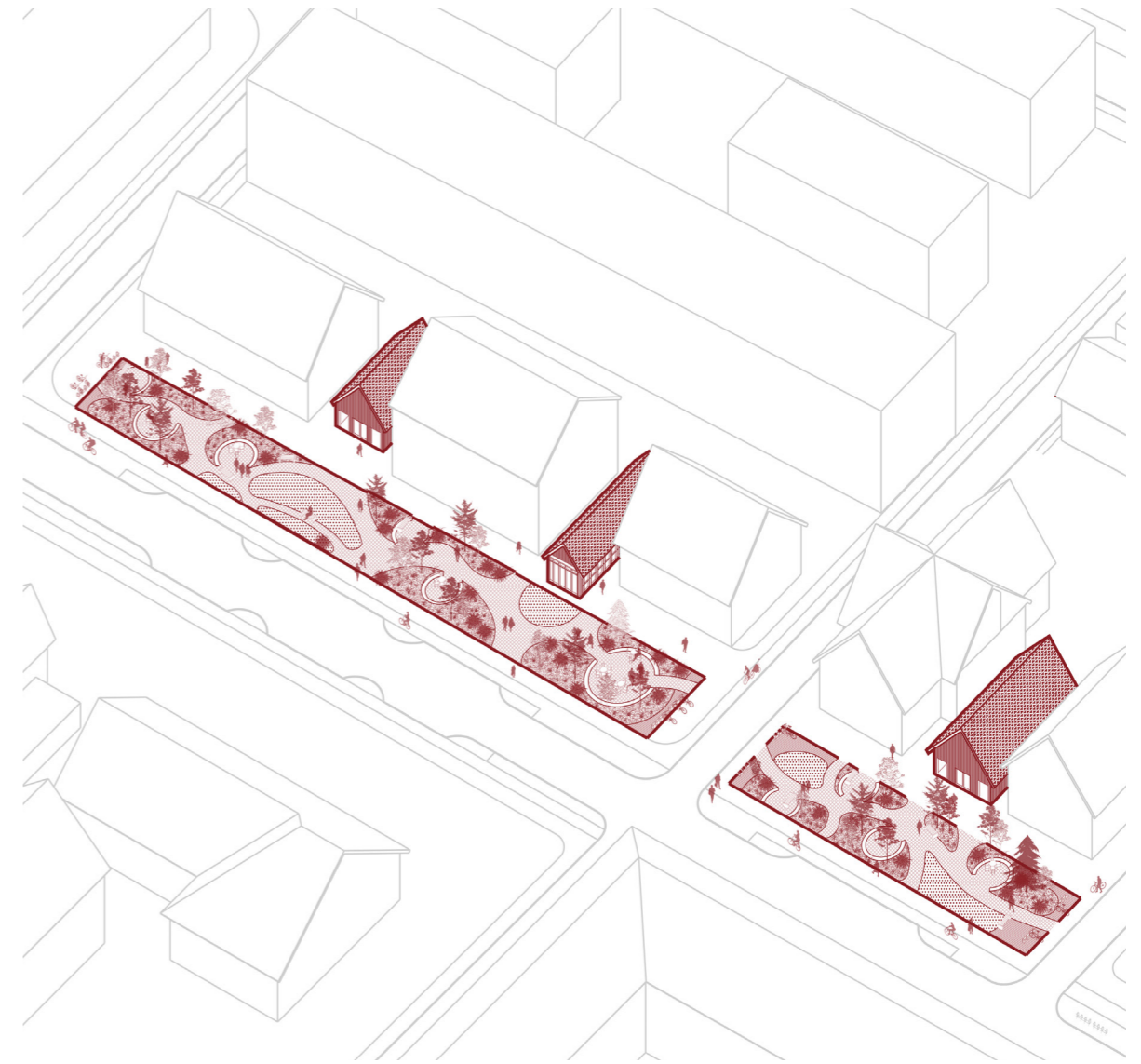


Fig 4.9: Infill development

### Infill Development with Linear Park and Buildings

A linear park has been designed along Göteborgsvägen to address Älvängen's lack of accessible and interactive green spaces within the urban core. Without demolishing existing structures, this linear park fills the void between building facades and the roadway, providing residents with a continuous pedestrian pathway that enhances urban connectivity. The green corridor traversing the city links various neighborhoods, enriching the urban landscape.

Similarly, without removing existing buildings, small store huts and a community greenhouse can be integrated into these voids, rendering the fragmented street facade more cohesive and offering pedestrians a more diverse experience.

This approach encourages linear movement along Göteborgsvägen, reinforcing Älvängen's distinctive linear identity.

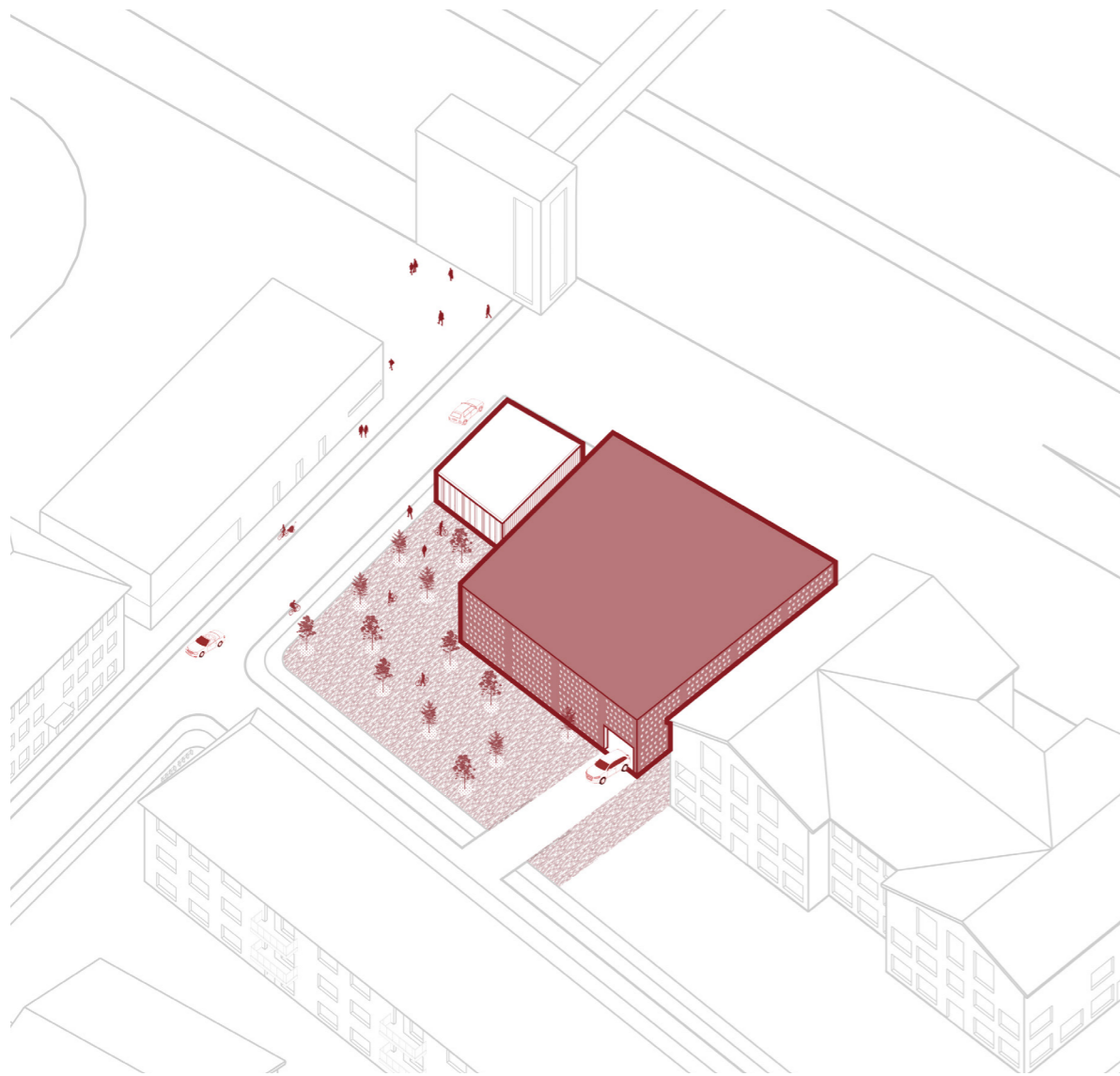


Fig 4.10: Parking garage

### Multistorey Car and Bike Park

Replacing scattered parking lots in Älvängen with a centralized multi-story parking garage near the train station offers numerous benefits. It gives more valuable space for public functions, green areas, or commercial development, helping to restore the town center's unique identity.

Thoughtfully designed, the garage could serve as a landmark and gateway, enhancing the

town's readability and appeal.

Additionally, its sheltered structure provides weather protection, encouraging people to park and complete their long commuting via public transportation and supporting sustainable development.

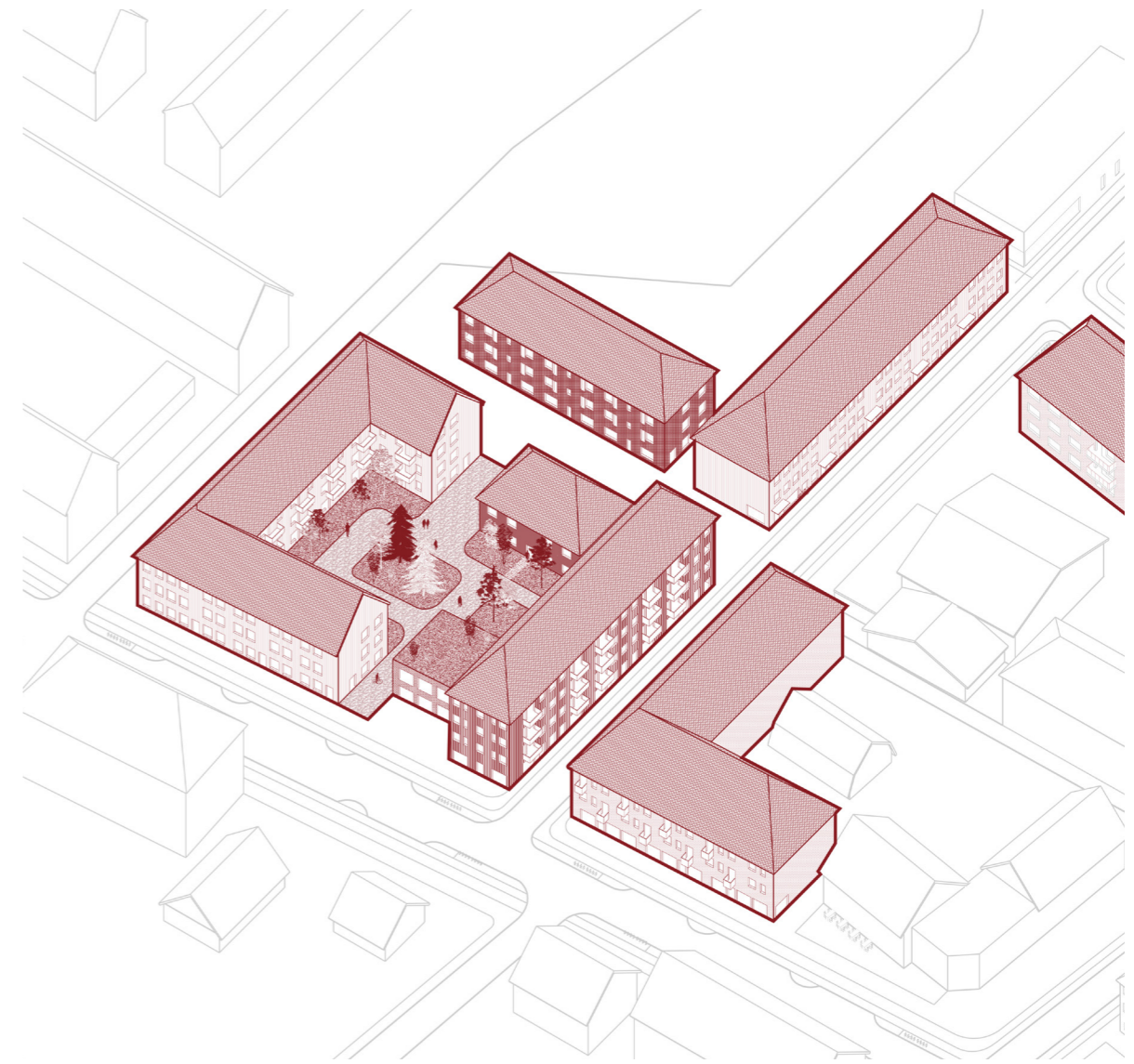


Fig 4.11: Densified residential area

### Densifying

The focus is also on densifying Älvängen Centre, especially where the bus terminal and train station locate. This initiative aims to increase the number of apartments—a rare housing type in Älvängen—to attract new residents and diversify the town's predominantly older demographic.

By increasing density, the Floor Space Index and Ground Space Index of Älvängen Centre will rise,

transitioning its building typology from street-type low-rise to block-type mid-rise. This transformation is expected to generate sufficient foot traffic to support local small businesses on the ground floor, creating more local employment and addressing unmet needs identified during the research phase, thereby enriching residents' lives.

# 05

## Conclusion & Discussion

### What was the aim/purpose/intention?

This Master's thesis investigates the local place identity and its importance for a commuters' town, which locating near metropolitans. Focusing on urban planning, it departs from the task of creating highly homogeneous new urban buzz, which is commonly aimed when a suburban area needs to be improved and activated nowadays. In this thesis, instead, I explore the inherent local place identity of the city, dig it out from its historical archive, residents' memories, present urban layout, etc. I strive to create uniqueness, feeling of familiarity as well as sense of belongs through doing minimal changes on both urban level of planning and block level of planning. The creation of these sensations is often considered the cornerstone of a secure and fulfilling life.

Established from the beginning of the 20th century, the development of commuters' town had their large-scale construction by the mid-20th century, then had the general shapes formed by the 1970s. With the leading theory such as modernism and functionalism, which underline the order, efficiency and "form follows function", the planning of most satellite cities were done with a "one-size-fits-all" solution, lead to homogenous result.

There is no doubt that, with this approach, individuals can live comfortably within their own houses, but would not feel as good when it goes to the level of the entire town. Although the towns are quiet fine for a convenient, affordable modern life, which have good balance with urban and nature. Consequently they lack the flexibility and adaptability. Their zoning show the overlook of community and public life and the neglect of informal and spontaneous urban development, especially on the commercial level. And the most important, they lack the distinctive feature which can let people remember and then build emotional attachment to.

Älvengen, as one of the typical Swedish commuters' towns locating along the E45 to Gothenburg, is chosen as the case study to perform research on the more detailed and specified current situation. And it goes evident that the potential of creating a town with more standing-out identity and serving its residents better on all levels are possible. Achieving this goal becomes only challenging when the urban form and identity are not distinct enough.

Not touching on mega-construction level infrastructure nor criticizing on the commuting-lifestyle, the aim of my thesis is to study and explore on how urban planner can build upon the existing "one-size-fits-all" urban form and create a new form with a more diversified design driven from the specific locations and historical contexts. This will improve the quality of life of the residents who live in these commuters' town on the intangible level, fill the gap that got overlooked for long.

### What have I done for the project, and how can it be used in the future?

The final primary outcome is a design project, developed through comprehensive literature review in relevant fields, fieldwork, spatial analysis, participatory surveys, and the mapping of comparable real-world cases in Gothenburg.

During the field study, several previously overlooked issues were noticed. Many of these problems are caused by large-scale planning centered around Gothenburg. Local identity was implicitly expected to give way to regional identity, with the primary function of these areas being to support and supply labor for the big city. The weaker side, both culturally and socially, was marginalized and dominated by the stronger one. As a result, the needs of many residents, particularly the middle-aged group, which constitutes the largest group, have not been properly addressed at a local level.

To address these issues, changes need to be made. However, under the current emphasis on sustainable development and cost control, large-scale construction is not considered as a proper solution. Instead, leveraging local characteristics to strengthen the local place identity and using it to guide the town's further urbanization, can be a viable approach.

Local place identity can derive from history, the existing urban fabric, residents' subjective observations, etc. In this case, a site analysis was conducted to capture the geographical and current urban layout features of the area. Meanwhile, a survey including cognitive map sketching helped to understand the residents' needs and their subjective perceptions of the town. This workflow, combining subjective and objective observations, can be applied in future projects to achieve a comprehensive understanding of the site.

In line with the broader urbanization process and the fact that an increasing number of people will live in suburban areas, the outcome of this thesis supports for the development of a sustainable local economy. Expanding and creating more continuous ground floor spaces can provide opportunities for local businesses to establish themselves, not only generating more local employment but also helping build on the local identity.

The importance of public social spaces and their visibility is also reflected in the design, as these spaces are believed to support social interactions among residents, thereby enhancing community cohesion and supporting the growth of local culture.

The focus on promoting a sustainable local economy and encouraging the creation of social spaces offers valuable insights for similar future projects, helping suburban residents reclaim their daytime and social lives from the dominance of the central city.

### What were the main limitations or challenges? What could I have done differently?

To make it more convenient for local residents to reach the town center and increase their interaction with it, some changes to the street network need to be made. The Space Syntax Theory, a tested and reliable tool for predicting the impacts of development on mobility, was used in this thesis to forecast whether the goal would be achieved when new streets are built.

However, one limitation of Space Syntax is its assumption that pedestrian and vehicular movement always follows the shortest path, without considering other factors that might have significant influence. These factors could become crucial in specific contexts. In this project, the study area is bordered by a river on one side and mountainous terrain on the other. Some residents might avoid the shortest route in favor of a gentler slope for easier walking. Moreover, pedestrian and vehicular movement patterns differ to some extent. Pedestrians, in particular, are influenced by a variety of factors when choosing their routes, such as preferring paths with better greenery, improved night-time lighting, or more active ground floor environments.

The greatest challenge I faced was attempting to explore people's subjective impressions of the town. As a non-physical element that varies from person to person, it is difficult to describe clearly. To address this, the cognitive mapping method used in Kevin Lynch's research became the final solution. Through simple sketches drawn by local residents, abstract ideas were transformed into interpretable images that could even be categorized in some cases, effectively supporting the later design process.

# 06

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**CHALMERS**  
UNIVERSITY OF TECHNOLOGY

**Wenqing Yang**

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