UNIVERSIDAD POLITÉCNICA DE MADRID
Escuela Técnica Superior de Arquitectura de Madrid

De la Ciudad Funcional a la Ciudad Sostenible: Evolución del Espacio Suburbano en Estocolmo Entre 1975 y 1995

DOCTORAL THESIS

Submitted for the degree of Doctor by:

Jaime Montes Bentura
Architect and MSc in Sustainable Urban Planning and Design

Madrid, 2025

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Doctoral Degree in Sustainability and Urban Regeneration

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Abstract

This thesis examines the evolution of urban design through the case study of Hammarby Sjöstad, a prominent example of sustainable urban development in Stockholm from the 1990s. It critiques the traditional approach to sustainability, often confined to technical solutions, and instead explores sustainability as a process; an approach that incorporates principles of aggregation, participation, and contextual responsiveness. By tracing the historical development of the suburban model, from the 17th-century bureaucratic state to the welfare state, the thesis highlights how urbanism has evolved through four key phases: internal aggregation, external intervention, core regularisation, and territorial expansion.

The study argues that the sustainable development is not a departure from functionalist urbanism but a continuation of it, shaped by larger political and economic forces. It follows its evolution from examples of late functionalism, through two precedents, the housing areas of Kv. Dalen and Skarpnäck, that situate already in the late 70s the block in the suburb, putting it in relation with slab typologies of late functionalism, but also with the garden city.

The suburban block evolves from the linear slab buildings that are regrouped to embrace the park inside and recover the street in the perimeter. This has lead to name it the park in the block. A notion that connects with with the well known house in the park characteristic of the garden city of the beginning of the century. Between both, evolves gradually the slab-house in the park, the isolated lineal building of functionalism. The thesis further proposes suburban regularisation as a crucial next step in urban sustainability, advocating for a more integrated approach to urban growth that fosters active citizenship. The research suggests that sustainability cannot be seen as a singular model but as a set of guiding principles and practices—such as dialogue, aggregation, and adaptability—that contribute to a more sustainable urban future.

The aim of the thesis is not to produce a descriptive analysis, but to develop ways to confront the practice of urban design. Drawing on disciplines related with history, the cases studied are put in relation to their time to understand better the mechanisms behind the materialisation of the space. Through the research are discussed driving forces that influence urbanism (aggregation, the bureaucratic and centralised state, capitalism, and individualism) and paths for urban design (romantic-expressionism, rationalism, a middle ground between them, and utiliatrianism). The thesis proposes to read each urban area not as a generic model, but as the convergence of driving forces that influence form, the dominant style of the period, and the path chosen to confront urban design.

By reinterpreting the urban development of Hammarby Sjöstad and its predecessors, this work offers a framework for understanding contemporary urban transformations and the ongoing tension between design, policy, and societal change.

Resumen

Esta tesis examina la evolución del diseño urbano a través del caso de Hammarby Sjöstad, un prominente ejemplo de desarrollo sostenible en Estocolmo en los años 90. Critica la aproximación tradicional a la sostenibilidad, a menudo confinada a aspectos técnicos, explorando en cambio la sostenibilidad como un proceso que incorpora principios de agregación, participación y respuesta al contexto. A través de la explicación del desarrollo histórico de modelos suburbanos, los cuales evolucionan desde el estado burocrático del siglo 17 hacia el estado del bienestar, la tesis pone de manifiesto cómo el urbanismo se ha desarrollado en cuatro fases: procesos internos de agregación, intervención externa, regularización del núcleo y expansión en el territorio,

El estudio defiende que el diseño sostenible no es una desviación del funcionalismo, si no una continuación de él, definida por fuerzas políticas y económicas. Se sigue esta evolución desde ejemplos del último funcionalismo, a través de dos precedentes, los barrios residenciales de Kv. Dalen y Skarpnäck que sitúan, ya a finales de los 70, el bloque perimetral en el suburbio, y lo ponen en relación con las tipologías lineales del funcionalismo, pero también de la ciudad jardín.

El bloque suburbano evoluciona a partir de edificios lineales que se reagrupan par abrazar el parque en su interior, y recuperar la calle en el perímetro. Lo que ha llevado a acuñar el término park in the block para referirse a él. Este termino conecta con el conocido house in de park , que caracteriza a la ciudad jardín de principios de siglo. Entre ambos evoluciona de forma gradual el edificio lineal aislado del funcionalismo, slab-house in the park. La tesis propone la regularización suburbana como el próximo paso hacia la sostenibilidad urbana, abogando por una concepción más integrada del urbanismo, que promueva el ejercicio activo de la ciudadanía. El estudio sugiere que la sostenibilidad no se puede concebir a través de un modelo, si no de principios y prácticas – diálogo, agregación y adaptabilidad – que contribuyan a un futuro más sostenible.

El objetivo de la tesis no es producir un análisis descriptivo, si no desarrollar formas de afrontar la práctica del diseño. Apoyándose en disciplinas relacionadas con la historia, los casos estudiados se contextualizan en su tiempo para entender mejor los mecanismos detrás de la materialización del espacio. A través de la investigación se discuten fuerzas motoras que influyen en el urbanismo (agregación, el estado burocrático centralizado, capitalismo e individualismo), e itinerarios para el diseñp urbano (romático -expresionist, un término medio, e utilitarismo). La tesis propone leer e interpretar cada área, no como un modelo, si no como la confluencia de las fuerzas motoras que operan, el estilo dominante en el periodo y el itinerario elegido para afrontar el diseño urbano.

A través de la interpretación de Hammarby Sjöstad y sus predecesores, este trabajo ofrece un marco para comprender las transformaciones urbanas actuales y las tensiones entre diseño, regulaciones y cambios sociales.

And what are the best answers?

None of them is best without the others.

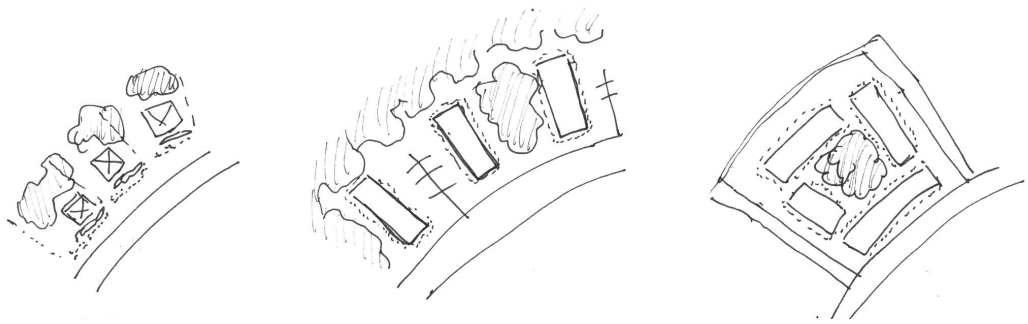
So there's no panacea.

How can there be?

(Aldous Huxley, Island,, 1962)

FROM THE FUNCTIONAL TO THE SUSTAINABLE CITY: EVOLUTION OF THE SUBURBAN SPACE IN STOCKHOLM BETWEEN 1975 AND 1995

De la Ciudad Funcional a la Ciudad Sostenible, Evolución del espacio suburbano en Estocolmo entre 1975 y 1995



Doctoral thesis: Jaiime Montes Bentura
Supervisor: Javier Ruiz Sánchez

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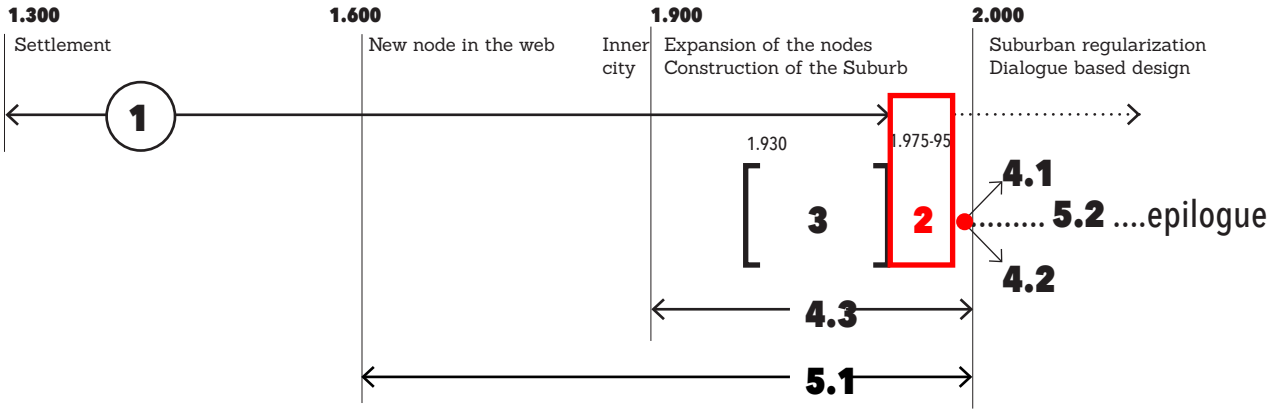
Fig. 01
Temporal Scope of the Chapters



Introduction

The thesis addresses urban design discipline and has evolved through the interaction of research with actual practice and teaching. It aims to produce knowledge that helps to inform the future design of the city, and how urbanism is explained and interpreted in a historical context. For which it relies in other disciplines related with history, not to intervene in them, but to explore how they can help to inform urban design.

The point of departure was to study the transition between the so called functionalist city, taking as reference the developments around Järva, to the north of the city, that represent the late mass-housing functionalism, and Hammarby Sjöstad, that was the first district labelled as sustainable in Stockholm, becoming a reference worldwide. The date of 1995 is chosen because it comes right after the sustainable profile was incorporated, while the urban scheme was in place before that year. The period between 1975 and 1995 is one of reformulation of urbanism as response to some excesses associated to functionalism, that comes with the re-introduction of the perimeter block as the basic typology in urban design. This transition period is studied through two precedents, Kv. Dalen and Skarpnäck, that situate the perimeter block in the suburb already in the late 70s, connecting it to Järva, but also to the garden city of the beginning of the century.

The initial hypothesis was to question the block typologies and the urban grid scheme as applied in Hammarby Sjöstad in two ways. First, it was questioned that any typology should be considered intrinsically sustainable, as a starting point to reflect, by contraposition, from what other angles can then sustainability be addressed. Second, it was questioned to read the block as a rupture with the repetitive slab-typologies of functionalism, a rupture that implies to look back to the block typologies implemented in the urban core during the 19th

century (fig 02). Instead, it is proposed to study the suburban block as a typology different from the urban block. It is seen as an evolution of slab buildings that get reorganised to embrace the garden in the interior, and to recover the street in the perimeter, while keeping the transition elements that protect the domestic space from the public, characteristic of the suburb and of a hygienist urbanism tat searches for light, air and sun.

Even if the thesis departs from an architectural background, I consider that urban design needs to be addressed as a separate discipline, where can operate different expertises. So to speak, architects can be educated in the design of the city, but urban design shall not be treated as an architecture project in a larger scale. In fact, it is not a matter of scale, as an urban design can be rather small. It is more a matter about the methods and the tools, the needs and questions put to design. The consideration about the process, time (not only of the project, also its permanence and use), and who is engaged. The designer becomes a choreographer that articulates multiple perspectives and questions from a diverse range of actors and users, human and non human, known and unknown, present, past and future.

I consider that the approach to history of urbanism based in a sequence of models, styles and historical periods is useful to describe and understand what has been done, but it is not fruitful in order to inform actual urban design. I propose to look to the city in continuity. Evolution can entail either to follow, replicate, transform, adapt, contests, change or substitute. In order to study the evolution is more revealing to look to transitional periods, where characteristics get intertwined. This approach is based in the believe that the sustainable city is not to be discussed as urban models or best practices to be replicated, but from how it is conceived, how are defined its values and principles and who is incorporated in the different stages of the process. Besides, the sustainable city should not produce new areas or enclaves, it should rather have an impact in the already existing city.

The thesis avoids top-down bottom-up dichotomies by exploring the driving forces that operate and influence how the city is shaped. The designer cannot exercise control over them, but can be aware to deal with them in a conscious way in the different stages of the process. Therefore, the formulation of driving forces should not lead to a deterministic

narrative that concludes that the city works in a specific way to be assumed. The historical account of the evolution of driving forces, styles and paths in which design is approached shall precede a critical attitude towards how we want to integrate or confront them. And towards the definition of what city we want to live in, including the values, principles and ethics that shall guide our design.

In the course of the research became apparent that the main interest of Hammarby Sjöstad as a case study is not being a model for the sustainable city to be replicated, although important lessons can be extracted from it. What has resulted most revealing is it falls in the middle of several changes of paradigm that help to explain how urbanism has evolved. This point of departure has allowed to: (1) contextualise it as part of the construction of the suburbs and to study the definition of the suburban block as a distinct typology from the urban block implemented in the inner-city; (2) to explore those changes of paradigm that allow to trace back design paths and project them into the future; (3) to build a narrative of the construction of Stockholm suburbs as a process contained within the 20th century; (4) to propose an account of the construction of cities as part of bureaucratic and centralised state between 17th and 20th century; and (5) to propose suburban regularisation as the next step in the evolution of the suburb.

It is specific of this approach to position Hammarby Sjöstad not as a continuation of the inner city but as part of the construction of the suburb. For what has been important the finding of a not well known preliminary study from 1987 that presents many characteristics of the final plan. Besides, have been studied two precedents located in the same area of the city that incorporate the block since the late 1970s. Kv. Dalen and Skarpnäck.

Methodology

The methodology adopted implies to look to the history of urbanism not as a sequence of independent projects but in continuity, as an evolutionary process that can be explained by putting it in an historical context, embracing urban design as an alive process subject to constant transformation and adaptation during its conception, implementation and subsequent

use. Continuity is understood temporally, how the design is part of a larger historical sequence, and physically, how urban developments are connected to larger urban webs and defined by the role they play in them.

The historical approach has been an important part of the methodology in order to contextualise the studied period. The aim was not to became a historian, but to explore how architects and designers can make use of history, including aspects of urban history, economic history and archaeology as disciplines that can help to inform the understanding of the existing city and project it into the design of the future city.

The work starts by interrogating maps, preferably of the resultant city, and questioning why they look the way they look and what are the influences behind them. In the different chapters have been studied cities as a whole and specific housing areas. They have been visited, photographed and drawn. Drawing has been an important method to understand the transformation of cities. Furthermore, to draw different suburbs in a similar way facilitates to compare them and to contextualise the changes between them.

Compared studies allow to contextualise and understand the growth of Stockholm. The choice of Stockholm and Umeå allows to compare the central node of the web, and one characteristic regional node. Beside, their different latitude and climate helped to question how the decisions about planning had been taken. The choice was based on previous knowledge of the two cities, but also on experiences explaining to students of architecture the development of both cities. The preparation of those lectures made me realise that existed coincidences in the key moments of transformation and how they were materialise in the urban space. This was revealing in order to question to what extent formal planning was conditioned for being part of larger webs and networks, where ideas and knowledge spread. Comparative studies have proven to be fruitful to localise driving forces that shape cities beside the intentions of the designer.

Too often, the history of urbanism of the 20th century has been explained to students of architecture as a sequence of models, almost as independent projects, each forming a unitary entity where all the elements form an indivisible unit. Specially Stockholm offers a

very clear pattern that allows to define the models applied almost each decade and to identify them. But this is a look into the past. In order to project the knowledge into the future in the form of design proposals I consider methodologically more relevant to, first, study how has been the process to arrive to this point, to then consciously project how we want to continue that process into the future.

The process has been to rely on existing accounts of the sequence of periods and styles of urbanism of the suburbs of Stockholm to confront them with other historical narratives. Equally important has been to put the local experience in relation to international trends and experiences that have influence Swedish urbanism, analysing Dutch, German, English and American influences in different periods, that change in coincidence with shifts in political and economic relations and power balance.

The study of the transition between 1975-95, as said, questions sustainability in one end, but also what is meant by functionalism in the other. The figure of Ralph Erskine has been used to mirror the dominant trends during functionalism. The finding that a rather expressionist architect, defined himself as functionalist has helped to frame better the term in relation to modernism or rationalism. Also to connect the Swedish context to international experiences that questioned the approach of the Modern Movement. More specifically through the relation of Erskine with the Team 10. I thus looked to early formulations about functionalism and modernism to finally find Adolf Behne's seminal work from 1923 that presents functionalism as thinking method that can take multiple forms as a perfect starting point to trace the evolution of different paths to approach urban design through the century.

There have been very important two interviews with Leif Blomquist about his direct engagement as municiap architect responsible of Kv. Dalen and Skarpnäck, and who did preliminary studies for Hammarby Sjöstad. He was the author of the aforementioned proposal for Hammarby Sjöstad which is not well known, or published as far as I known, and that show that the main elements of the urban scheme were on place in an early date.

At last, I have also relied in my professional practice, that is connected indirectly to Ralph Erskine through my work with Arken arkitekter, an office formed by former

collaborators of Erskine. My collaboration at Arken arkitekter and conversations with the two founding partners Torbjörn Einarsson and Per-Öve Skånes have helped to understand better Skarpnäck (where Arken designed six blocks), and the approach to design of Ralph Erskine. Somehow this thesis started when, in 2011 I interviewed Per-Ove Skånes about Skarpnäck and he transmitted the craft of design, and the value of the small decisions, what opened me the door to look to urban design beyond styles and pure formal definition, from what it does, how it performs and how it relates to people, landscape and the environment. Torbjörn Einarsson introduced me to the dialogue based method Urban Step for participatory urban planning and design.

Sequence of Chapters (fig 01)

The nature of city is not linear. The thesis is an attempt to embrace its complexity, thus the resulting narrative is not linear, it is composed of different threads that get intertwined and sometimes necessarily overlap between them. Each chapter gives a different perspective and, to a large extent ,can be read independently although are better understood as part of a whole. They could have been organised in more than one way, what entails a certain degree of overlapping of themes. However, the review of similar topics is not literal, it is done in each chapter from different angles that complement each other.

The second chapter, where are studied the three main cases and the genealogy of the suburban block, is the core of the thesis is from where the rest unravels. The first three chapters together deal with the analysis of the suburban block in Stockholm between 1975 and 1995 and its historical contextualisation. The fourth chapter discusses lessons learnt from the analysis and focalises in the construction of the suburb between 1905 and 1995, so to speak, between the garden city and the suburban block. The fifth aims to tie together the previous chapters, and propose ways to confront the future design of the suburb contextualised in the city product of the bureaucratic and centralised state between 1620 and 1995. After the conclusion has been included an epilogue based in my own practice to present design as one possible path for the design of the sustainable city.

Each chapter begins with a map contextualising the areas treated, a diagram that visualises the time-frame of the chapter, and a paragraph introducing the main ideas and the relation to other chapters. Each chapter is summarised in an table or a diagram.

The first chapter contextualises historically the urban development of Swedish cities by comparing Stockholm with Umeå. Compared studies between cities of the same urban system but a different role, allow to localise common elements and driving forces that define their growth. It also serves to study them as part of a network, and question the different urban structures that have been applied through history, which reveals how ideas about ideal cities are disseminated. In chapter 2 is analysed backwards the suburban block, starting by questioning Hammarby Sjöstad and then introducing the precedents that allow to explain it. Chapter 3 is a closer look into functionalism aiming at a more nuanced understanding of the period, while defining different paths for how urban design can be approached.

In chapter 4, the previous questioning of functionalism allows to outline a taxonomy of the suburban block and to describe changes of paradigm in urbanism that can be traced during the implementation process of Hammarby Sjöstad, that contextualise it as part of the process of construction of the Stockholm suburbs between1905 and 1995.

Chapter 5 becomes propositional, first by going a step further tracing back in time the different paths or approaches to design, and proposing a lecture of the construction of the city from mid 17th century to the end of the 20th. This overview tie together the different chapters of the thesis, and precede the proposal of a suburban regularisation as next step in the evolution of the suburb.

The conclusion chapter reviews the findings and contributions of the thesis and introduces possible ways to further develop the research. Finally, being the spirit of the thesis that of addressing design practice, the epilogue introduces a possible path for sustainable urban design, to add to those identified in previous chapters. It proposes to apply the notion of dialogue to the whole design process, based in Urban Step method, and the philosophy of “the feeling of the meeting” attributed to Ralph Erskine.

Literature

In order to understand in a wider context the processes and dynamics of urbanisation in Stockholm I have relied in other disciplines, most of them introduced in chapter 1. Geographers such as Ian Morris (2011) who offers a lecture about history as a non-linear alive and continuous process, and Edward Soja (2000) that was a point of departure to question what cities are. Historians John and William McNeill (2003) provide with an understanding about human webs, and with a historical classification of periods of web formation. From economic history Maarten Prak (2018) writes on pre-modern cities and citizenship, what allows to define different urban structures and how people relate to them, and Ellen Meiksins Wood (2017) has been the guide to understand not only the origins of capitalism and industrialisation, but also the processes of land redistribution and its connection to the actual urban form.

Anthropologist David Graeber and archaeologist David Wengrow (2011) have a revealing way to look to the past not as an inevitable nor as a unitary sequence of events. The work of archaeologists like Colin Renfrew (2009) and his definition of peer-polities interaction help to understand relationships between political entities. And many others that are not directly quoted have helped to understand processes of city and state formation, and to reveal patterns about what is the essence of cities. The podcast Tides of History by Patrick Wyman, has been an entry point to history and archaeology disciplines, to state formation and possible urban arrangements, as well as to the work of relevant scholars.

More specifically about urban history in Sweden and Stockholm, the book by Mats Berglund, ars Nilsson and Per Gunnar Sidén (2023) edited by the Institute of Urban History is a very good introduction and overview of Swedish Urban History and how people related to the city in different periods. Nils Ahlberg (2012) has thoroughly collected all the Swedish cities in a systematic and informed way. Badeloch Noldus (2004) explains Stockholm through its relations with the Dutch republic in the 17th century in a crucial moment that sets the ground for future growth. For understanding the processes of construction of Stockholm Thomas Hall (2008), who also discusses crossed influences with England and Germany. A

very clear classification of the different moments of growth is found in Magnus Andersson (1998) that I have used as a guide to produce the maps of Stockholm that illustrate this thesis. Johan Rådberg's doctoral dissertation analysing urban density through history (1988) is also a very good relation of the European doctrines influencing Swedish urbanism, he has also produced fundamental work on Swedish garden cities (1994). The book edited by Daniel Movilla Vega (2017) is a comprehensive study of the housing question in Sweden during the 20th century. Architect Karin Grundström, Karin and cultural geographer Irene Molina (2016) explain the transition from the welfare state towards liberalisation and how it affects urban planning and design.

Chapter 3 deals with functionalism, the book edited by Arkitekturmuseet (1980) for an exhibition is a point of departure that provides with a time frame and description of its different phases, ending with a diagnosis of its problems as perceived at that time. In her comprehensive book about the suburb of Hammarbyhöjden, Ulrika Sax (1989) includes a good framing of the transition from the overcrowded city of the 19th century, to the first garden city suburbs, and the first multifamily housing developments. Monica Andersson (2016) traces the line between the garden city of 1900s and the new empiricism of 1950s. Lucy Greagh (2011) has analysed the transition from 1931 to 1954. Thomas Hall and Sonja Vidén (2005) contextualise and make a nuanced description of the period of the Miljönporgramm and the Rekordår, while Lisbeth Söderqvist (1999) discussed the big scale multifamily housing after 1960, including the shared responsibility of architects, constructors, developers and authorities in the resultant urban space. Anders Hagson (2004) has a complete thesis on the traffic planning based on SCAFT 68, which is a handbook that has influenced Swedish urban planning and design since the 1960s.

The garden city and the neighbourhood unit have become important to understand and to trace the origin of many of important elements of design incorporated in the suburbs, how the doctrines have evolved through the century and how the driving forces have shaped them. It has been approached through its proponents Ebenezer Howard, Raymond Unwin, Clarence Perry and Lewis Mumford, and discussed through the work of Michael Mehaffy, Serio Porta

and Ombretta Romice (2015) dissecting and questioning it. Daniel Koch (2021) does not deal directly with the garden city or the neighbourhood unit but describes similar processes contextualising modernism in relation to the dominance of the car in urban design and the creation of the image of the sustainable city.

To understand functionalism and its different ramifications I draw on two seminal texts. Reynar Banham's "Theory and Design in the First Machine Age" from 1960, that explains the codification and evolution of modernism in the first half of the century. And a key reference to define approaches to functionalism has been Adolf Behne's "The Modern Functional Building" from 1923, including the introduction by Rosemarie Haag Bletter to the 1998 edition, that explains well the context in which it was written. Other seminal works have been used through the chapters. Françoise Choay (1969) about the city of the 19th century. Robert Fishman (1980) about influential urban utopias of the first half of 20th century. And Annie Pedret (2013) about Team 10 has been also important in mirroring the processes in Stockholm with an international perspective.

Ralph Erskine (1982) is mostly quoted from a lecture he gave explaining his approach to design. Besides, his whole work and philosophy has been an important counterpoint to modernism to understand better the different paths of functionalism. His relation to other members of Team 10, collected in a series of interviews by Celia Tuscano (2005) are useful to understand a moment when modernism was contested. And the work of Heidi Svenningsen Kajita delves in the relation between Erskine as designer and the users.

The magazine Arkitektur has been very important to understand the case studies at the core of this thesis (Hammarby Sjöstad, Skarpnäck and Kv. Dalen), to get insights from those directly engaged in the projects, and how they were thought, conceived and received at the moment of their design and completion. In this respect have served as an important complementt the two interviews with Leif Blomquist referred above.

Early versions of the two chapters have been published or accepted for publication. Chapter 1 in Montes 2023 and chapter 3 in Montes 2026.

The suburban block as a continuation of the traditional urban block (?)

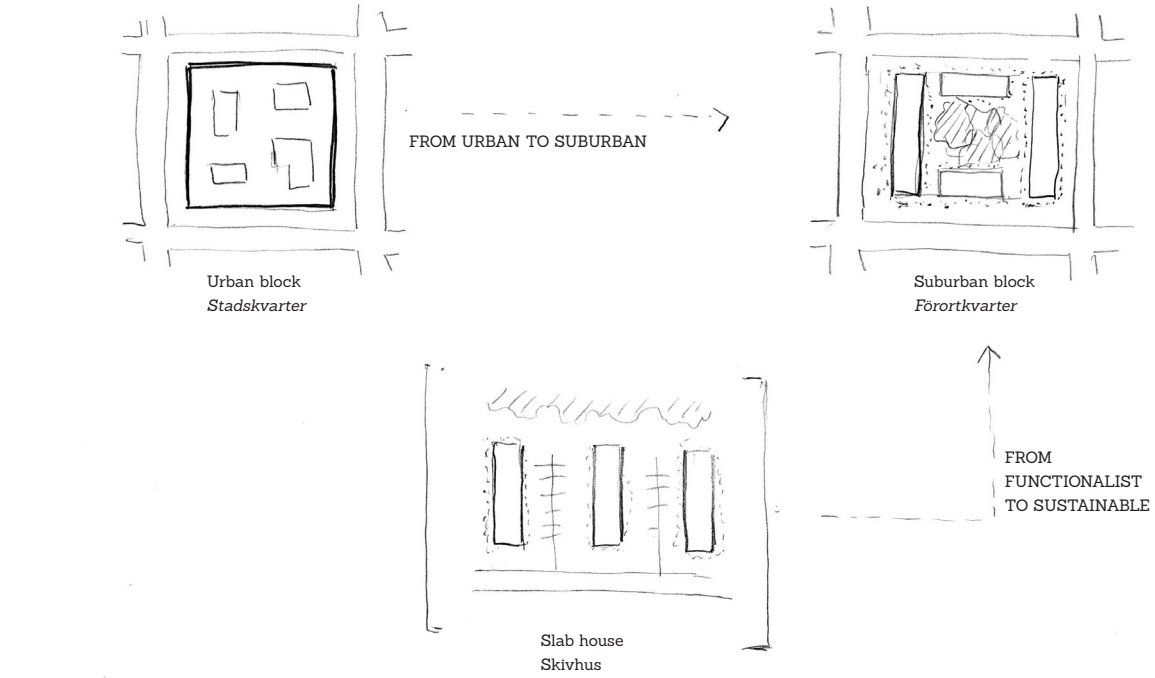


Figure 02

Questioning the narrative about the genealogy of the suburban block.

Chapter 1

Driving Forces in Swedish Urban Development:

Four Moments in History in Two Swedish Cities: Stockholm and Umeå

This chapter aims to give a historical context to the construction of the suburb between 1975 and 1995. It discusses the need to redefine how we read and understand cities in order to formulate the specific questions and goals that inform the design of the sustainable city. Looking to history as a continuum and to the city as an evolutionary process, Stockholm and Umeå are studied from the perspective of their connection to a common web of towns, which leads to trace influences and processes that have shaped them, to identify four historical moments that explain key urban transformations, and to localise driving forces that shape urbanism. Chapter 2 expands on the period after 1975 that follows functionalism, which is the central part of the thesis, while chapter 3 delves deeper on the different approaches to functionalism. Chapters 7 and 8 connect pick up again the notions introduced here, to reformulate and contextualise the construction of the suburb during the 20th century introduced in the part II of the thesis.

Figure 1.1

Physical and temporal scope of the chapter

Umeå and Stockholm during the four historical moments studied in this chapter.
The drawing includes the areas mentioned during the chapter.

1.1. Making Sense of History

Swedish cities offer a clear pattern of growth; that is, each new piece of town was built alongside the previous as a sequence of urban models that reflected the ideas of each historical moment. However, studying urban growth as a sequence of isolated moments, frozen in time, with characteristics that seem to remain unaltered, has inherent limitations when we try to project knowledge into the future in the form of design proposals. Instead, we shall consider that cities are not just one piece of town after another, the same way as, in the words of Ian Morris (2011), “history is not just one damn thing after another. In fact, history is...a single grand and relentless process of adaptations to the world that always generate new problems that call for further adaptations” (p.560).

If the way we read and conceive cities influences the way we design them, architecture and urban design benefit from incorporating the perspective of history, because it can help us to (1) understand the city as an evolutionary process; (2) contextualise the forces shaping that evolution; and (3) read the city as a process of adaptation, in line with John Habraken (1998), whose work discusses change as the only constant in the built environment. This approach reminds us that our interventions will evolve and that we inevitably will face the consequences of what we build, both positive and negative. Furthermore, past decisions that today seem problematic likely made perfect sense in the time they were taken – a point we would do well to bear in mind as we design today, because what we design and implement now will need to change and be adapted to needs and circumstances that we cannot predict. Therefore, when designing cities, to again borrow from Habraken (1972) “we should not try forecast what will happen, but try to make provision for what cannot be foreseen” (p. 42).

If cities cannot be disconnected from history, neither can they be disconnected from the territory and the web of cities they are part of. Comparative studies of cities in the same urban system but with different roles in that system, such as Stockholm and Umeå, reveal common patterns in their formation, their meaning, their functions, and their morphology. The comparative study goes beyond the analysis of historical maps that consider urban form, structure, and location; to superimpose moments in history also make us question the

forces that shaped the cities, and can aid our understanding of the processes of change and transformation.

The aim is not to create a definitive list of the forces that drive urban development. Such a list would always be incomplete and never the same for any two cities. Instead, the aim is to explore and interrogate their maps as a methodology to penetrate the complexity of the city and the processes that converge in it. Ultimately, the goal should be to project the lessons we learn into the design of the sustainable city. Rather than provide with a universal formula or a generic solution that all designers can apply, is discussed the need to redefine how we read and understand cities to be able formulate the specific questions, goals, and issues that will inform the design of each individual project. Therefore, the perspective is not that of the historian, but to explore how urban design as a discipline can make use of history.

Moments of Transformation

During my research on Stockholm and Umeå, I identified four moments that help explain core transformations of the city, moments that coincided in time for both cities (fig. 1.1). Further research should investigate whether such common trends and pivotal moments are identifiable in other towns, whether in Sweden, in other Nordic countries, or in European states beyond the Nordic region.

The two cities are analysed from the perspective of their connection to a common web of Swedish towns and the role each of the two cities plays in it. This web is characterised by its physical layout and by the relations and exchanges produced in it. The physical manifestation of the web is materialised in various infrastructures throughout the territory, particularly in transport infrastructures. The trends and ideas that dominated urbanism at the time development plans were produced reflect the relations and exchanges distributed within the web. The chapter begins with an analysis of urban webs, moves to the analysis of the two cities, and concludes with a discussion of what can be learnt from reading the city as an evolutionary process.

1.2. The Web: Transport Infrastructures, Flows of Trends, Ideas, and Power Relations

In *The Human Web*, to trace a short history of humanity, historians John R. McNeill and William H. McNeill (2003) consider the construction of a global web of settlements:

> A web is a set of connections that link people to one another. These connections may take many forms...They also communicate or transfer items, information...but also viruses or armies...[T]he exchange of such information, items, and inconveniences, and human responses to them, is what shapes history. (pp. 3-5)

The global web is formed in different stages. The first loose human exchanges became regional connections around denser settlements sustained by fishing and agriculture. “The Old World Web, spanning most of Eurasia and North Africa, formed about 2,000 years ago by a gradual amalgamation of many smaller webs”. Around the year 1500, “oceanic navigation united the world’s metropolitan webs into a single cosmopolitan web” that intensified and accelerated exchange. After 1900, “the cosmopolitan web became increasingly electrified, allowing more and far faster exchanges” (pp.3-5).

These moments in the formation of the global web happen to concur with the moments localised in the present chapter: the first Swedish settlements grew as a process of aggregation, located in relation to maritime trade; followed by a web of towns planned and built as part of the formation of the Swedish bureaucratic and centralised state; finally, exchanges intensified after 1900 as the industrial city emerged, followed by a moment of urban expansion of those same towns.

The formation of the web follows two processes: geographical extension and intensification of exchanges. Each moment of extension is followed by a process of intensification before the next moment of expansion. The current global extension of the web, by putting virtually all people in contact with a heretofore unseen quantity and velocity of exchanges, has led to homogenisation, to societies becoming more uniform and less diverse:

> Seen slightly differently, human history is an evolution from simple sameness to diversity towards complex sameness. . . . Interactive webs reduce cultural diversity – fewer languages and religions, fewer polities, and fewer political formats. As

> the webs grew and fused, complexity became the rule – the new uniformity. Best practices spread: societies settled on a narrower range of traits, beliefs, institutions, all compatible with life inside far-ranging interactive webs. Societies that resisted were wiped-out. Diversity declined. (p.322)

The Geography of the Web

A town in the web is conceptualised as a node; it connects to other nodes, and its character is defined by the role it plays in the web. Within the web, networks of relations and distribution operate at various levels and intensities. Nodes like Stockholm operate simultaneously within global, local, and regional webs.

Towns become specialised, providing certain services to the web and becoming dependent on the infrastructure network that supplies them in turn. Thus, the web tends to disconnect towns from their geographic territory, redefining their character, means of production, and subsistence.

The spread of best practices allows towns to deal with the increasing complexity of urban systems. As knowledge and solutions are distributed through the web, however, the urban models applied do not relate to the specific local conditions, and indigenous adaptations may be abandoned. The web, that is, can induce dependency, leaving towns reliant on the web to provide them with a role, resources, and solutions. In turn, dependency can make towns vulnerable if they are incapable of producing their own means of subsistence or their own solutions for adapting to changing circumstances.

In what follows, I differentiate between settlements that rely on their immediate territory to produce food, materials, goods, culture, and identity; and nodes, which are towns and cities that rely on the web and its capacity to distribute resources, knowledge, culture, even identity.

Patrick Geddes (1949 [1915]), in *Cities in Evolution*, lays out a theory of the topographical, social, and historical integration of cities in the region. He describes the relation between town, territory, and lifestyle through the Valley Section

> ...and its resultant occupations and corresponding types of settlements. Note the Miner, the Woodman and the Hunter on the heights; the Shepherd on the grassy slope; and the rich Peasant on the plain; finally, the Fisher (sailor, merchant, etc.) at sea-level...[C]ities retain the essential character, conditioned by their environment or occupation. (p.166)

Geography shapes history and, in turn, historical development shapes the meaning of geography (Morris, 2011). In the global web of towns, geography still defines lifestyles, but geography is no longer that of the region; rather, it is a global geography of networked nodes. The web works as a self-referencing geography that assigns to each node roles and possibilities. For example, in the case of one European capital such as Stockholm, while its geographical location explains the original settlement, its character and functioning is conditioned by its role as capital rather than by its geographical location. It has characteristics that are more recognisable in any other European capital than in a neighbouring town.

Infrastructures connect nodes, but the reverse also applies: nodes are shaped by the existence or absence of infrastructure. Steve Graham and Simon Marvin (2001) argue in *Splintering Urbanism* that urbanisation, despite being isotropic and universal, despite unifying lifestyles and influencing all people, should not be read as a continuum but as a splintered landscape of interconnected towns. The networked infrastructures of the web (transport, water, electricity etc.) are not homogeneously laid over the territory; instead, they have access points and thus are subject to power and control, which affects territorial balance. Global networks connecting people in distant nodes often bypass those who are geographically proximate but not close in other ways: “there is often a palpable and increasing sense of local disconnection in such places from physically close, but socially and economically distant, places and people” (p. 15).

Distance Is Measured in Time

The web has a clear hierarchy wherein transport infrastructures are laid to connect core nodes. In the space between such destinations, intermediate nodes may emerge that

depend on flows and access to the web. Historically, the distance between nodes was typically the distance that could be covered in one day: words referring to travelling as the English *journey*, the French *journée*, the Spanish *jornada*, and the Italian *giornata* all have at their root the word *jour* (day). The introduction of faster communication and transportation methods, however, greatly impacted territory, as the distance one could cover in one day increased as speed increased. Today, faster transport infrastructures that connect destination nodes tend to bypass intermediate nodes. If we look at the connection between Stockholm and Umeå as a territorial system, one's relation to the geography between them changes significantly with one's mode of travel. Whether by horse along Norrstigen, the old path going from Stockholm to the North, which crossed towns and could be accessed at any point. By car on the modern E4 motorway, separated from towns and having specific access points. By train, that crosses towns and depends on regulated schedules. Or by aeroplane which is the extreme case wherein the whole in-between territory is neglected (fig. 1.2).

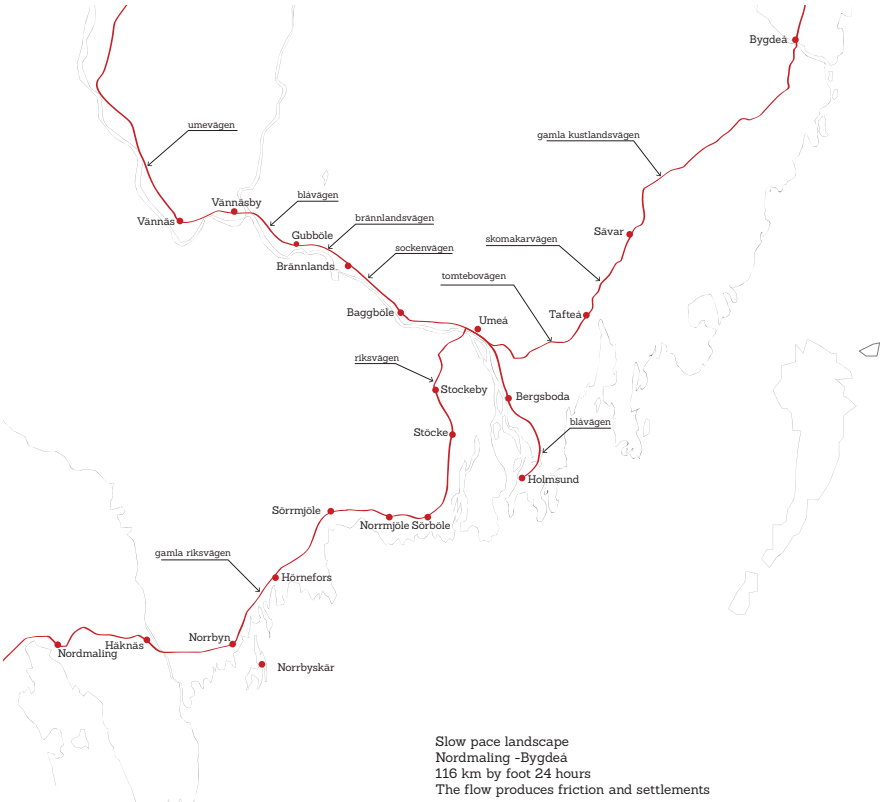
1.3. Urban Form in Umeå and Stockholm: Four Moments in History

Around 1300, Stockholm and Umeå were trading settlements tightly connected to water systems that could serve as a source of freshwater and communication. Later, in the 17th century, the two towns were rebuilt, consciously planned as part of the construction of a bureaucratic and centralised state. They thus changed from being organic trading settlements to planned nodes in a web and were given administrative and taxation functions. Closeness to water was still important, although new road systems materialised the presence of the state in the territory. Around 1900, together with the development of rail infrastructures, the industrial city became increasingly regularised. What we now recognise as the inner city was consolidated in this period, starting a process of emptying urban cores of their productive function so that, over time, they began to focus on services, leisure, finance, and political administration. The final moment involved expansion of those same nodes into the suburbs during the 20th century, facilitated by the widespread adoption of automobiles.

Figure 1.2

The effect of transport in the territory around Umeå.

Top: slow motion movement in 17th century, the produces friction and settlements. Horse and walking.
Down: fast motion movement in the 20th century bypasses old settlements. Motorways and train.



Slow pace landscape
Nordmaling -Bygdeå
116 km by foot 24 hours
The flow produces friction and settlements

Fast speed landscape
Nordmaling -Bygdeå
93 km by car 1 hour
Fast flow bypasses settlements

Moment 1. Settlements: Trading Enclaves Around 1300

At this time, Umeå was located five kilometres upstream from its present location. It settled next to the conjunction of two water elements: Ume-älven (the Ume River), an artery that crosses Sweden from west to east into the Baltic Sea, and the small Ume-ån (the Ume stream). Umeå's evolution can be traced by following the tensions generated by two perpendicular axes (fig. 1.3). A west–east axis followed territorial patterns along the Ume River from Norway through Sweden and into the Baltic Sea and on to Vaasa, Finland. Today, this territorial axis follows the Blåvägen (Blue Road) that runs parallel to the river, prolonged by the E12 motorway that continues across the Baltic Sea to Vaasa and all the way to Helsinki. Another south–north political axis articulates the Swedish state, is contained within its political borders, and follows Norrstigen (Path to the North, significantly named from the perspective of the central power located in Stockholm) that connected the capital with the cities in the region of Norrland along the Baltic coast and today corresponds to the E4 motorway.

Umeå: Backen (fig 1.4). In both cases, the first settlements were built in strategic locations that connected the trading routes of the Baltic to the inner land via a river or a lake. These settlements were organic, they did not follow a predefined plan but grew gradually in response to needs and uses. A map of the church estate of Umeå parish from 1686 offers a glimpse of the early settlement's contours. The map, probably drawn by Jonas Persson Gedda, shows Backen's wooden church next to the Ume stream on the north bank of the Ume River. Close to the river is Prästön (the island of the priest), the harbour, and agricultural land. The settlement included a church and was a trading point for resources (mainly wood) extracted from the forests, transported down the river, and shipped from the harbour into the Baltic Sea.

Stockholm: the old city (fig. 1.5). In the 1300s, Stockholm was not yet the capital of Sweden. It was then occupying what is today its central island, Gamla Stan (the Old City) and was a trading enclave between the Baltic Sea and Lake Mälaren, along the route into the interior of the country. The period was marked by Danish rulers (who exerted political and

Figure 1.3

Stockholm and Umeå in relation to an east-west geographical axis and a south-north political axis.

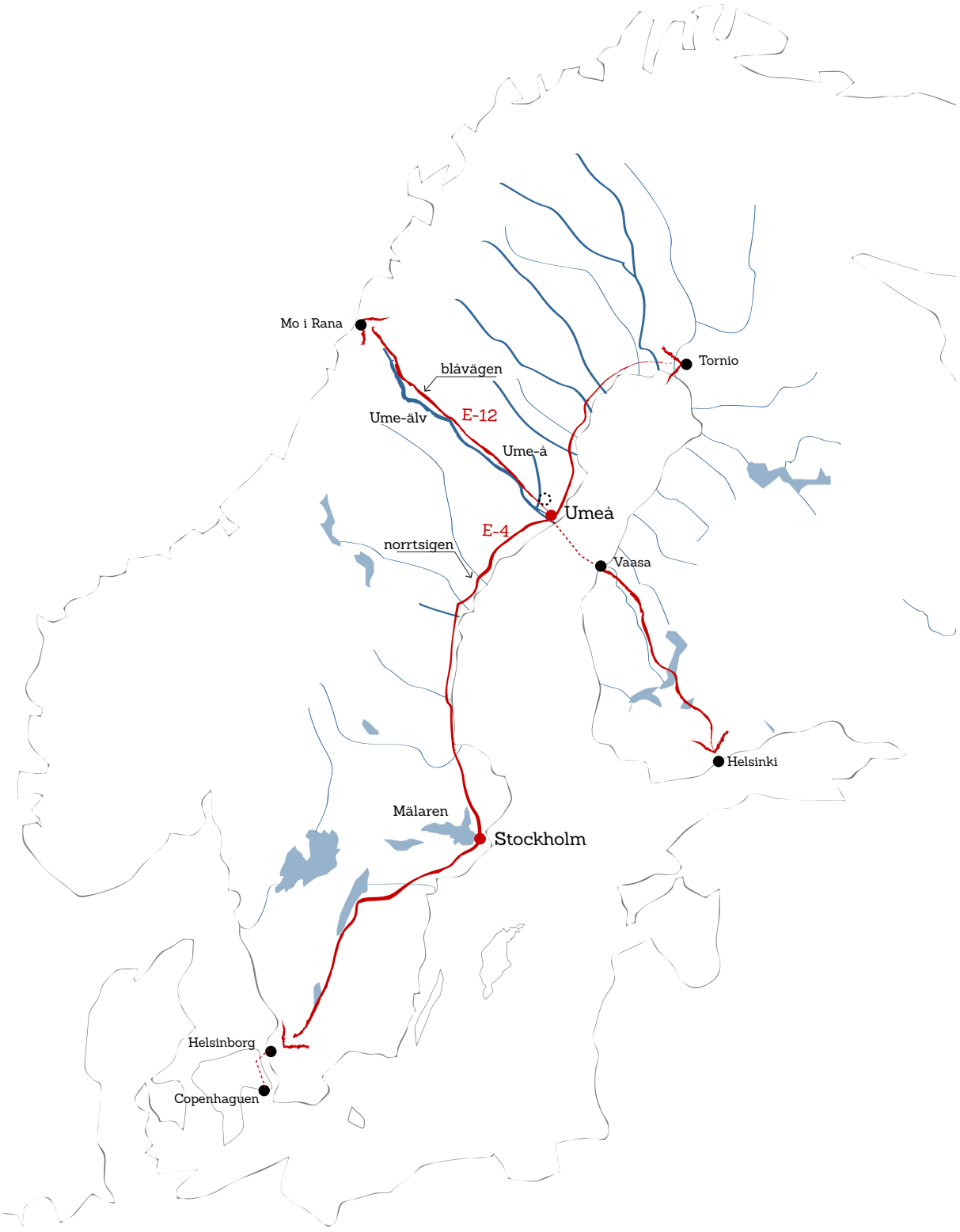


Figure 1.4

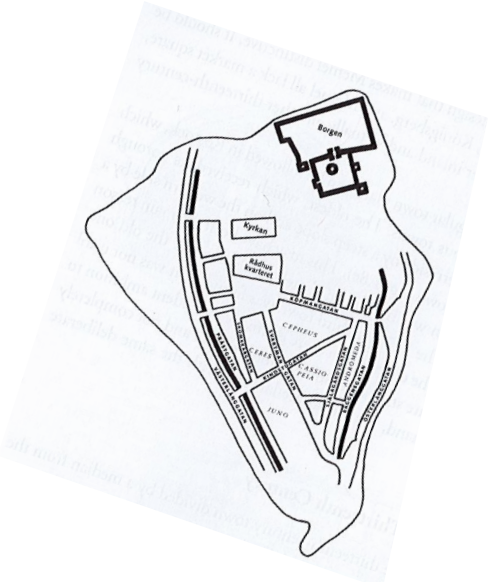
Map of the first settlement of Umeå

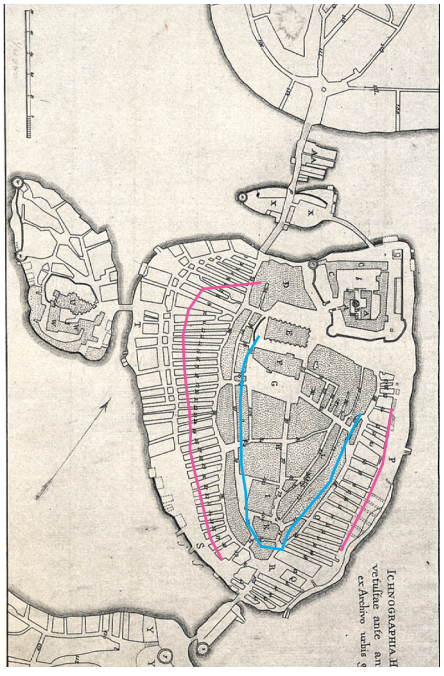
The drawing is from 1.686. Lantmäteriet, Umeå socken, Geometrisk avmätning 1686, Aktbeteckning Z31–76:1, https://historiskakartor.lantmateriet.se/hk/viewer/share/Z31-76:1/4c4d535f5a33312d37363a31/lms2/LMS/Ume%C3%A5%20socken%20Kyrkobordet%20nr%201-3/Geometrisk%20avm%C3%A4tning.

Figure 1.5

Stockholm: the old city around 1300s reconstructed by Thomas Hall (2008, p. 20).

Right: A map of Stockholm from 1547 can be found at Dissertatio historica de ecclesia teutonica et templo S:ta Gertrudis Stockholmiensi, Resp. J. A. A. Lüdeke (Upsaliae,1791), reproduced in Runeberg project, Nordisk familjebok 1917, http://runeberg.org/nfcf/0818.html.





military influence), and by the Baltic merchants from the Hanseatic League and the Dutch Republic (who exerted commercial and financial influence).

Thomas Hall (2008, p.19-29), in reconstructing what the city looked like around 1300, describes an organic pattern of growth wherein trading spots were established in accessible locations and paths were then formalised to reach them. The spots became market squares and the paths, streets, consolidated in time as buildings were constructed framing them.

This growth was not instantaneous but the result of the aggregation of a series of actions. Squares were not located at the junction of two perfectly laid streets; instead, streets were twisted to reach the squares. The architecture and toponymy of the streets today reveals what once were the main actors. Street names refer to the artisans who occupied them, to the goods traded, and to the church. The adjective *tyska* (German) in the names of several streets and one church illustrates the influence of the Hanseatic League. In the architecture of the main square is visible the influence of the Dutch Republic, that was beginning to build a maritime empire, trading Swedish timber and minerals as one of the pillars of its economic development, and would become later a key influence in the planning of the royal city.

Moment 2. From Settlement to Node in the Web: the Royal City arund 1640

In the first half of 1600s, both Umeå and Stockholm went from being organic trading settlements to planned nodes part of a bureaucratic and centralised Swedish state. Stockholm, as the capital city, was the national administrative, economic, and political hub. Umeå was a regional hub representing the state's presence in the north. Taxation became an important factor in the re-signification of the cities. In 1621 and 1622, Piteå, Luleå, Torneå, and Umeå received from the king town rights and were rebuilt as a sequence of regional nodes articulating the northern regions of Sweden, rich in forests and mining. All are located next to the Baltic Sea, and connected to rivers that cross Sweden from west to east. Norrstigen, the path connecting these cities, was denoted a landsväg (country road) in 1600 and reinforced to handle the displacement of horses and carriages. These nodes formed a territorial pattern, a regular sequence of towns located at the intersection of two systems, one geographical, the west–east rivers, the other political, the south–north road (fig. 1.6).

Map of Umeå from 1643 attributed to Erik Widman (fig 1.7). A new Umeå was planned and built five kilometres from its original location, closer to the mouth of the river but still 18 kilometres from it. The city was designed by a planning commission from Stockholm, under the direction of Olof Bureus, who took charge of the plan not only of Umeå but also of other new cities in the north, such as Sundsvall, Luleå, or Piteå, each of which had similar characteristics, functions, and structure (Ahlberg, 2012; Herva & Ylimaunu, 2010).

A map often attributed to land surveyor Erik Widman clearly shows a fence and Norrstigen, which runs parallel to the river and crosses the fence at two toll gates added to control the movement of goods. The fence does not strictly follow the shape of the city, instead is rigidly geometrical. Herva and Ylimaunu (2010) suggest the plan might have been drawn at an earlier date, before construction was completed, by some collaborator of Bureus. In that case, the map does not represent the built fence, which probably was irregular and closer to the actual city; instead, its shape might communicate the importance of the municipal land's administrative border, what reflects the importance of bureaucracy. Three longitudinal streets parallel to the river form three lanes of long, narrow blocks that generate six transversal streets. The main square was formed in a central location that still remains as the core of Umeå. Closer to the river, a line of small constructions corresponds to huts for the harbour workers. These small huts are organised and regular on the map but we can assume they were built much more irregularly. The goods and materials were taxed in the city gates, and shipped into the Baltic Sea from the harbour located at the core of the town's activity.

Map of Stockholm from 1642 by an unknown cartographer (fig. 1.8). By the mid-1600s, the medieval trading town built on an island had become too small and crowded. The capital of an imperial Sweden demanded more space for new institutions but also to represent royal splendour. Like Umeå, the new administrative city was not built atop the existing. Unlike Umeå, which was built at some distance from its original site, Stockholm grew alongside its original core, however, with the trading enclave and the administrative city having clearly differentiated characters and purposes.

Figure 1.6

The colonization of the north by the State from Stockholm in the 17th century.

The construction of cities and roads assure territorial control.

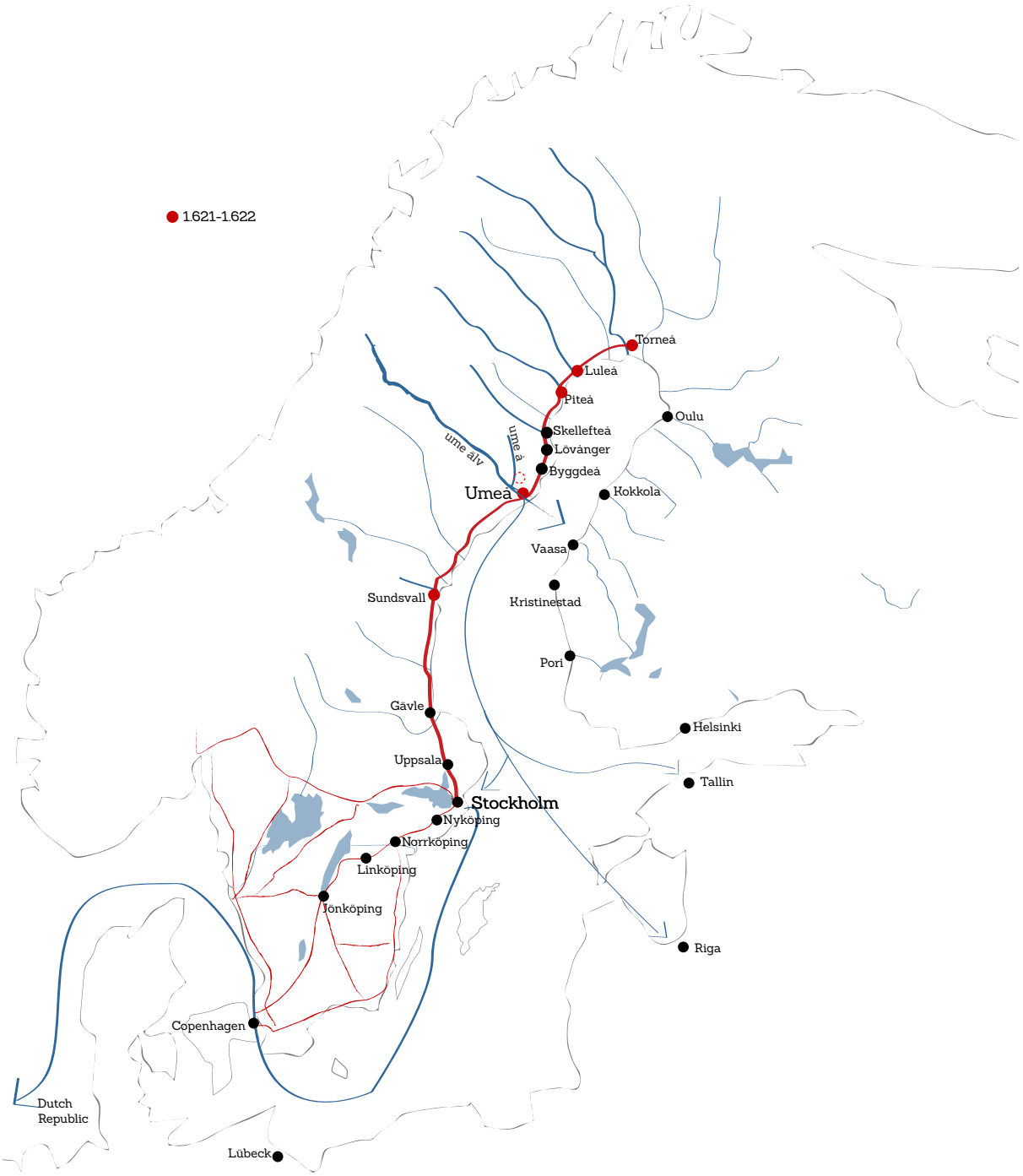


Figure 1.7
Map of Umeå from 1643 attributed to Erik Widman
Lantmäteriet, Karta över Umeå stad 1643, Aktbeteckning Z32–1:1, https://historiskakartor.lantmateriet.se

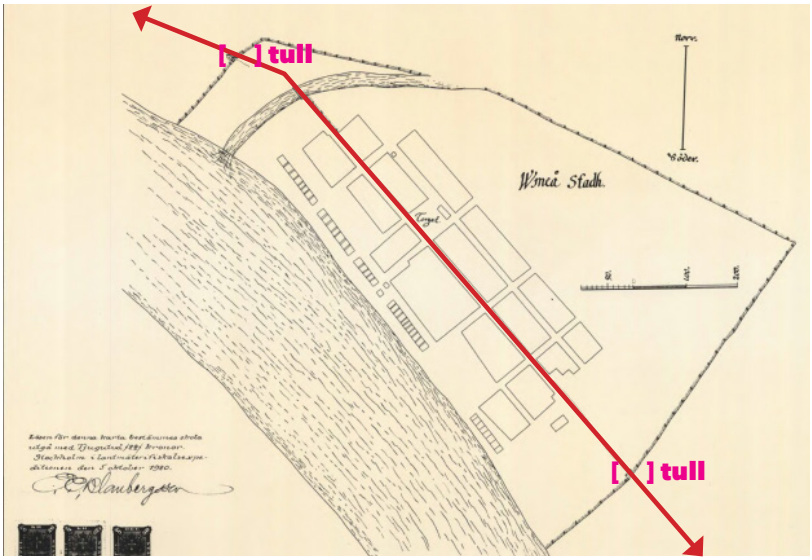
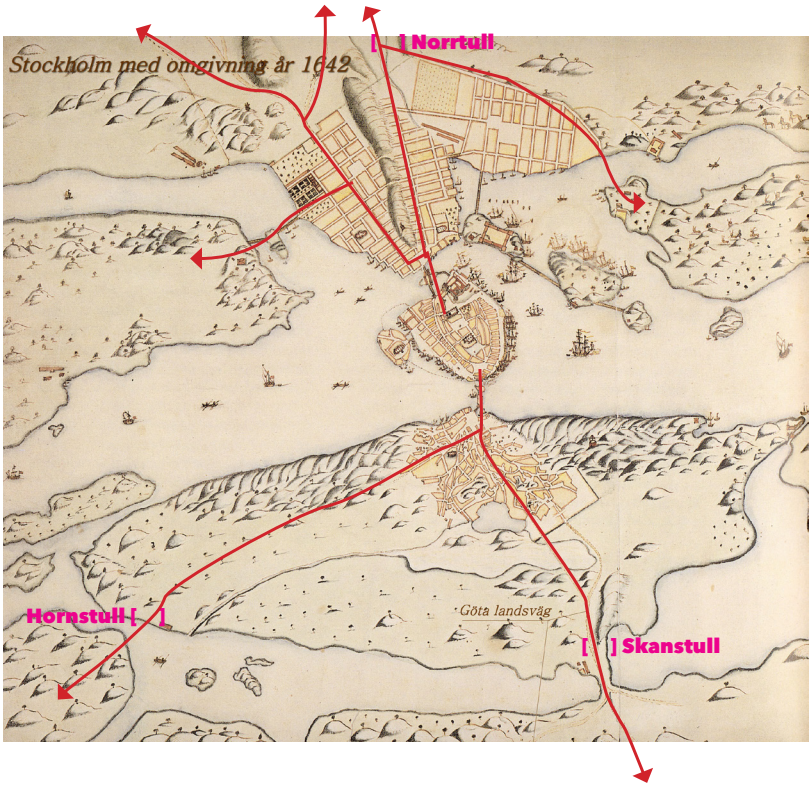


Figure 1.8
Map of Stockholm from 1642 by an unknown cartographer.
The National Library of Sweden, online at Stockholmkällan, Karta över hela Stockholm troligen ritad 1642, https://stockholmskallan.stockholm.se.



In Stockholm, the planning process was not as straightforward as in Umeå, a reflection of the complexity of the interests concentrated there (Hall, 2008, pp. 32-54). What is today the district of Norrmalm was formed as a regular grid of long, straight, rectangular blocks, a pattern altered by the existence of a pronounced ridge dividing the grid in two. Around Gustav Adolf square (still surrounded by government buildings today) were located the institutions of power and decision-making needed to administrate a centralised state, as well as banks (the financial centre will be relocated to Sergelstorg in the 20th century) and, a bit later, an opera house representing royal splendour. The old town still hosted the harbour and the city's commercial activity, that farther to the south the city had begun an informal expansion into the island of Södermalm.

Certain streets become roads running out of the city. Today, these are recognisable avenues, named with the suffix *-väg* (road), that articulate the street pattern. Also at this time *tullarna* (the tolls) were established around the city. The locations of some of these tolls (Skanstull, Nortull, Hornstull) are still reference points that define the perimeter of today's inner city, popularly referred to as *stad inom tullarna* (the city inside the tolls).

Vägar – Staket – Tullar/ Roads – Fences – Tolls

Why did Umeå have a fence if it was not for defensive purposes? Why was the planning of Swedish cities inspired by Dutch planning? Why were similar principles adopted for both Umeå and Stockholm, despite the differences in latitude, climate, topography, context, size, and function? Both newly planned cities incorporated elements that relate to administrative and taxation functions characteristic of the bureaucratic and centralised state: roads that structure the territory, clear boundaries to control access, and gates with tolls to aid the taxation of goods.

The creation of modern Sweden is dated to 1521, when Danish rulers were expelled. Under Gustav Vasa's rule took form the centralised and bureaucratic Swedish state, a process already underway in England with Henry VIII, in Spain with Charles V, and in France with Francis I. Under King Gustav II Adolf (1611–1632) and Queen Christina (1632–1654) the state was consolidated. The military alliance with the Dutch Republic and France during

Figure 1.9

Web of towns founded or reconstructed by the Swedish centralized state around the Baltic between 1550 and 1800.

Towns mentioned in the chapter are highlighted. Those towns that were not part of Sweden are in grey.

Source: Drawing by the author, based on a list of towns from Ahlberg 2017, pp. 144–9.

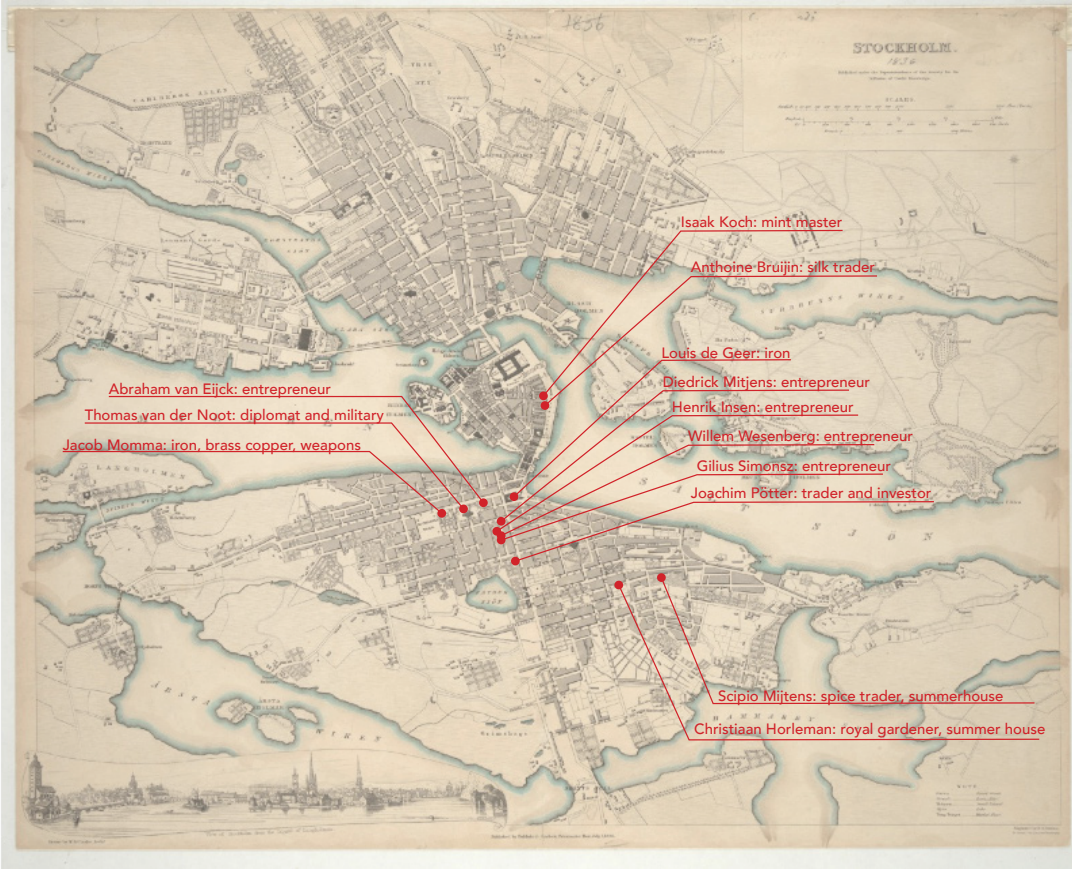
the 30 Years' War brought with it increased diplomatic, economic, cultural and intellectual exchange. The Swedish monarchy conquered new territories to form a Baltic empire, carrying an intense urbanisation programme,[1] forming a new web of towns that was a network of extraction of resources, trade, taxation, and military control (fig.1.9). The planning of the new cities was influenced by the ideal city of the Renaissance, the French boulevards, and the neoclassical town planning of the Dutch Republic.

During the Dutch Golden Era, from 1581 to 1672, commerce and art flourished in the Netherlands. Badeloch Noldus (2004) explains the intense exchange and interdependence between the Dutch Republic and Sweden and how trade relations also brought political and cultural exchange. Noldus argues that the Dutch Republic was not a mere receiver of culture but developed its own characteristic forms of neoclassical architecture and planning that influenced Sweden. Dutch merchants settled in Swedish cities, engaged in economic and political life, and built urban palaces inspired by Dutch examples (fig. 1.10). Dutch architects moved to or visited Sweden. Swedish aristocrats, who, "according to the rules of their class, were not allowed to be involved in trading activities", engaged in civil service following military and administrative careers that required an education (Noldus, 2004, p. 32). They travelled and studied in universities across the continent, including Leiden in the Dutch Repubic, which was the main reference for town planning in Europe at the time (Ahlberg, 2012, p.26).

The increase in exchange allowed for the dissemination of best practices and made possible the development of tools for dealing with more complex urban problematic. But widespread application of best practices also leads to a decrease in the diversity of practices and concentrates decision-making in fewer hands. This is clearly seen in the case of Umeå, which was not planned locally to meet the demands of the local climate or the needs of existing inhabitants. Instead, development was superimposed on the territory based on an idea brought from continental Europe of what a city should be.

1 For a detailed relation of the cities built in Sweden in this period, their maps, and a thorough discussion on the context and how they were built, see Ahlberg 2012.

Figure 1.10
Palaces built by Dutch entrepreneurs in Stockholm during 17th and 18th century.
Drawing by the author based on the palaces described in Noldus 2004.



Moment 3. Consolidation of the Inner city: the Industrial City Around 1880

Françoise Choay (1969) in *The Modern City: Planning the 19th Century* describes two main responses to the overcrowding and unhealthy conditions of industrial cities in the 19th century. First, existing structures were regularized following the plans and ideas of Georges-Eugène Haussmann in Paris or Ildefons Cerdá in Barcelona. Second, movements to escape the city emerged in England, France, and Germany as reformers sought fresh air and better living conditions for workers. The evolution of transport strengthened communication between nodes and facilitated to move industries and housing areas out of urban cores.

For example, Norrbyskär (1895) on the Swedish coast south of Umeå, built around a steam sawmill and well connected by steamboat routes, had precedents in worker's towns built along the Rhine Valley some years earlier. The urban village of Gamla Enskede (1907),

close to Stockholm and connected to it by a light train, was inspired in the garden cities built in London and Germany from 1900.

At the railway arrival to each city, it was set a virtual limit on its urban core (fig. 1.11). If the 17th century was a moment of geographical expansion of the web, when new nodes and roads were created to consolidate the presence of the state in the territory, the 19th and 20th centuries were a period of intensification (i.e. growth) of the already existing nodes.

Map of Umeå from 1899 by city engineer Wilhelm Stolpe (fig. 1.12). Umeå's first period of industrialisation was characterised by the development of steam power and sawmills upstream on the Ume River, such as in Baggböle, built in 1813. Later, an electrified train infrastructure was built following the same territorial occupation pattern as the road system: running south to north from Stockholm, parallel to the coast but some kilometres inland. The train did not at first go directly to Umeå but to Vännäs, about 30 kilometres upstream. A track from Vännäs was built running parallel to the river reaching Umeå in 1866, and later extended to the mouth of the river at Holmsund.

The train ru along the northern front of the city, with the station in a central position aligned with the city hall, in the southern front. The urban pattern became formalised as a homogeneous and continuous urban grid contained in the space between the river and the train. Even if its main guidelines are recognisable, the 17th-century grid is not visible because Umeå was reconstructed after a fire in 1888 following hygienist principles and new fire-protection measures, with wider avenues (that follow the same direction as earlier streets) and the central square in the same location.

At first, before the extension to Holmsund, the train tracks were extended from the station one kilometre to the east, embraced the city perimeter in a pronounced curve, making a 180-degree turn, and paralleled the river before reaching the core of the harbour in front of the the façade of the city hall facing the river. On the other façade was built Rådhusesplanaden (the Town Hall Esplanade), a straight and wide avenue that crossed the city connecting the train station with Rådhustorg (the Town Hall Square).

When in 1885, a sawmill was built at the mouth of the river in Holmsund, much of

Umeå's industrial activity will be concentrated there (the sawmill in Baggböle closed in 1897). In 1922, train service was extended there and, in time, the river would lose its role as transport artery, and the harbour in the city centre eventually would lose its activity. As a consequence, Rådhustorg and Rådhusesplanaden would became the central spaces of activity in a city that will give the back to the river for many decades.

The wide curve traced by the rail lines was finally removed in the early 1970s, but its footprint is still recognisable in the urban pattern at Järnvägsgatan (the Railway Street) and Östra Strandgatan. Nowadays, this footprint is not only physical but also the limit to what can be considered the consolidated inner city. European cities often show traces of their medieval past, a dense core, the footprint of a former defensive wall, and later expansion *extramural* in patterns that become less compact in each period of expansion. Umeå does not have a medieval core but does have a central urban grid contained within the limits set by the old tracks and, beyond that, *extra-track* growth that is less compact, defined by the automobile, zoning, and sprawl.

Map of Stockholm from 1885 by A. R. Lundgren (fig. 1.13). The Stockholm portrayed in A. R. Lundgren's map of 1885 is the result of the so-called Delegates Plan from 1876, which had emerged from a complex, multi-year development process involving numerous discussions and alternative versions—e.g. plans by A. W. Wallströms from 1863; and the Lindhagen Committee from 1866 (Hall, 2008). Lundgren's map shows how the railway reinforced growth along the roads that converge on the city. Trams helped the city expand into Södermalm, to the south and to the west. As in Cerdá's regularization plan for Barcelona, Stockholm's urban grid expanded until it met geographical limits (hills around Barcelona, water around Stockholm), absorbing and integrating earlier growth. Norrmalm was consolidated as the nation's administrative and economic centre. Initially, instead of crossing the city, all train and tram lines from north and south ended there, a manifestation of the hierarchy of the web, where nodes relate to the centre.

Figure 1.11
Swedish state structured by train infrastructures around 1920.
In red is shown Norrstigen, In black, the new system of railways..

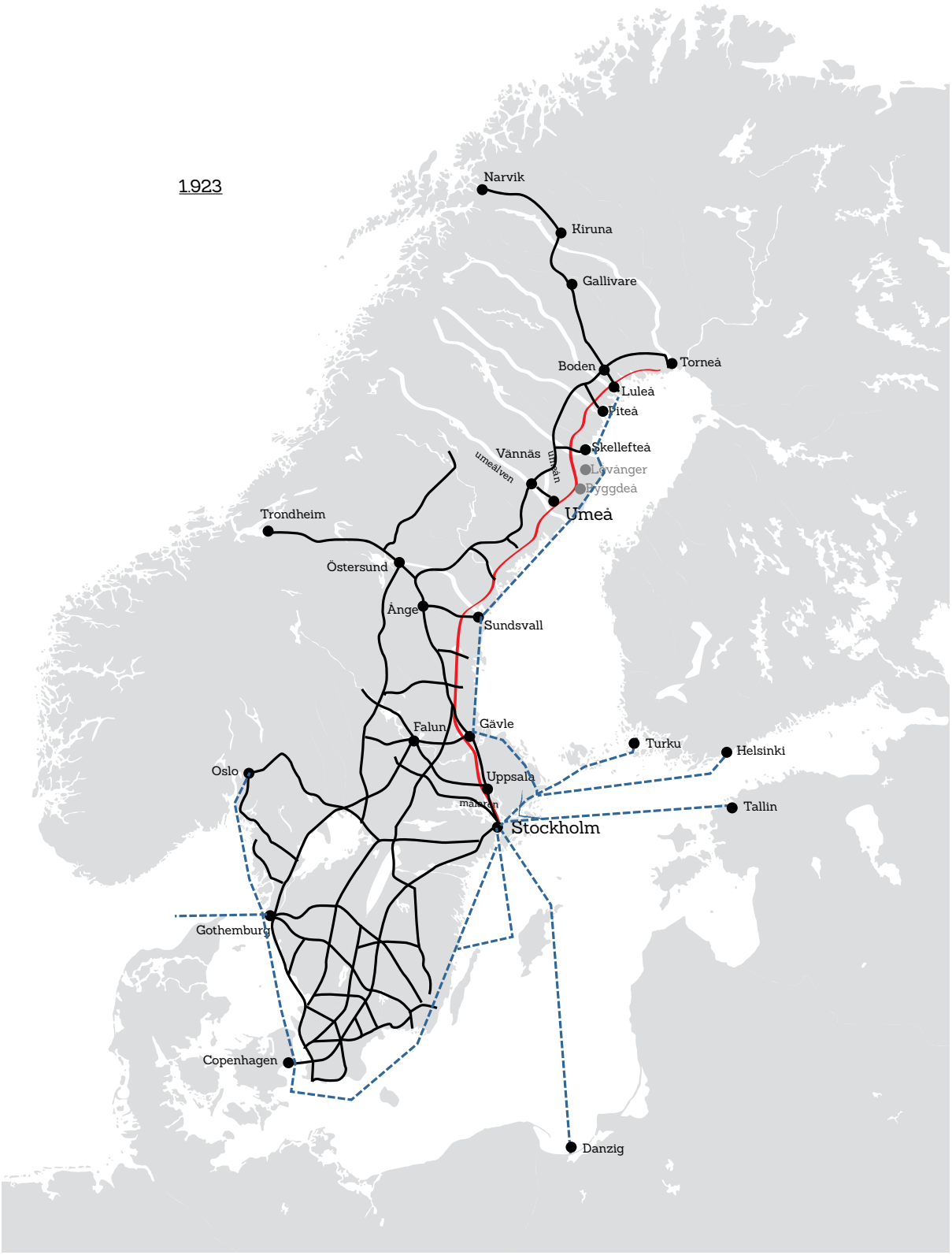


Figure 1.12

Map of Umeå from 1899 by city engineer Wilhelm Stolpe

Lantmäteriet, Umeå kommun. Online at Opendata, Umeå Historiska kartor över Umeå 1899.

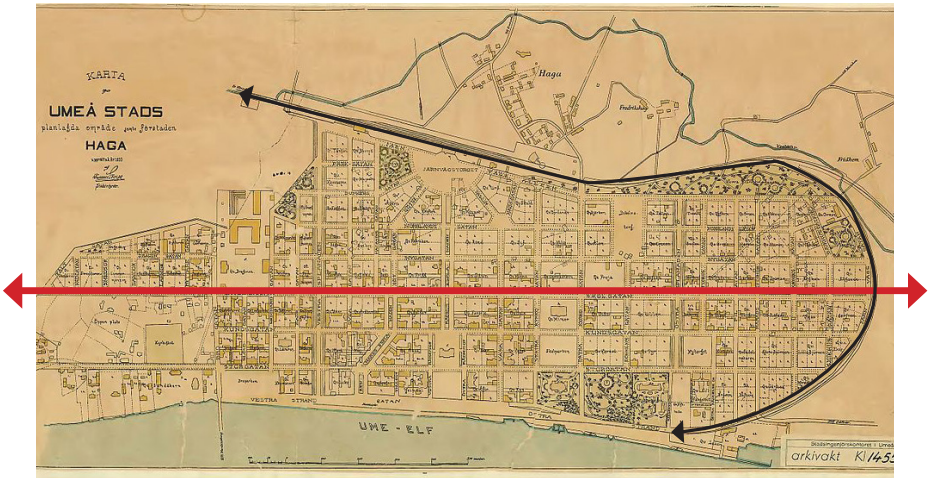


Figure 1.13

Map of Stockholm from 1885 by A. R. Lundgren

Stockholm City Archive. Online at Stockholmkällan, Karta öfver Stockholm upprättad och utgifven af A. R. Lundgren år 1885.

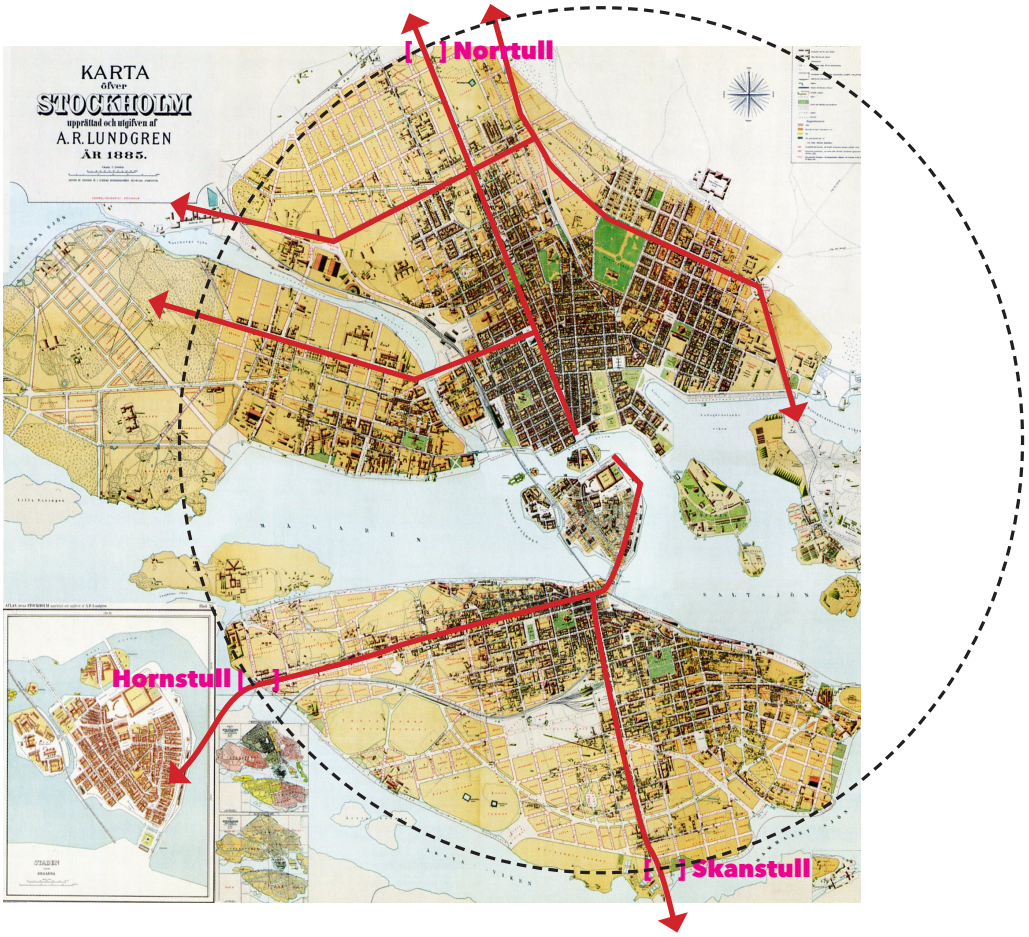
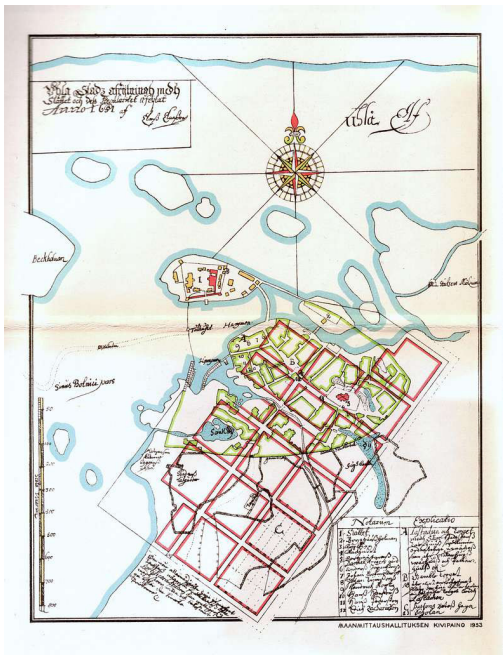
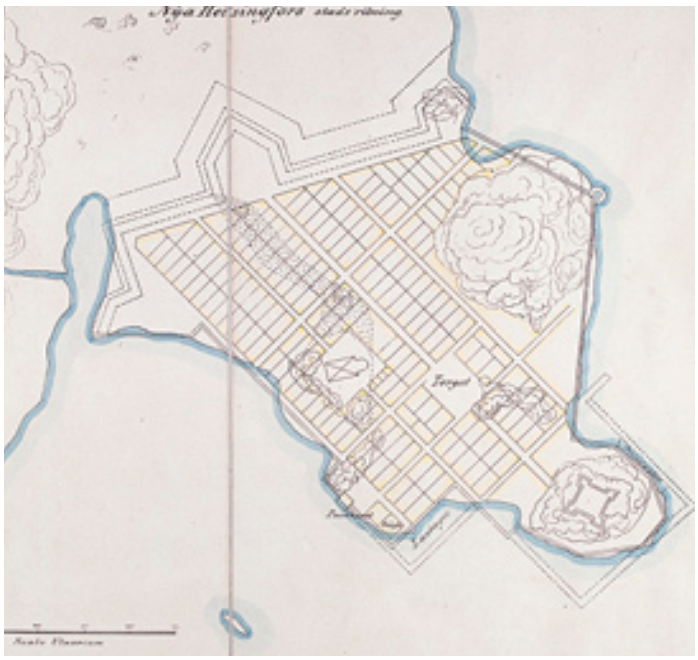


Figure 1.14
Left: Map of Oulu in the 17th century
Source: Ahlberg 2012, p. 299
Map of Helsinki in the 17th century
Source: Ahlberg 2012, p. 312





Role in the Web

Stockholm, although smaller than Paris, London, Barcelona, or Berlin, which set the trend in European urbanism, shared many of the same problems associated with growth, such as overpopulation and increased need for sanitation. Umeå, however, due to its size, density, and growth at a later period, experienced few of the same problems and conditions. However, town planning ideas of the time were applied to both cities, a clear example of knowledge and best practices being disseminated through the geography of the web.

To better understand how nodes relate to the web, we can look for parallels in the maps of two Finnish cities built during the period of Swedish rule: Oulu (Uleåborg in Swedish) and Helsinki (Helsingfors in Swedish) (fig. 1.14). Oulu, like Umeå, was a northern trading settlement located at the mouth a river (the Oulu) connecting inland Finland with the Baltic Sea. The city, planned during the 17th century as-well a regional node, and it was designed and built atop an older settlement as part of the centralised Swedish state's web of towns. When Oulu was eventually integrated into the Finnish state, its role in the Finnish web of towns remained analogous to that of Umeå within the Swedish system. Both cities

hosted state institutions such as offices of regional administration, a hospital, and a university. And in both, the industrial harbour and the administrative centre developed with different characters, although the functional separation is more evident in the case of Umeå, which, being far from the mouth of the river, had to locate its port away from the city.

Helsinki, also founded by Swedish rulers, would not become Finland's capital city until the 19th century. The first plans for the city are similar to other nodes in the southern Baltic, such as Gothenburgh, built during the 17th century with trading role and, what differentiates it from Umeå or Oulu, need of military defence. Once Helsinki was established as the capital city, it developed similarities with Stockholm, forming the central node in a web of towns that articulate a centralised state. Each capital is the physical and bureaucratic centre of its nation's rail and road networks. Each has an urban core that contains representative functions of the state. And each was consolidated around 1900 before expanding beyond those limits in a pattern of suburban housing developments.

Moment 4. Expansion Outside the Limits: Construction of Suburbia Around 1970

During the 20th century Umeå and Stockholm grew outside the limits of the inner-city, being exponential the growth in the second half of the century, the growth when they largely exceeded the limits of the compact inner city. Growth occurred not in continuity with or as a replacement for existing urban patterns but as a sequence of independent enclaves. City maps of this period no longer show a compact structure, as extensions and complexity forced an abstract representation of networks and zones that were combined with a fragmented sequence of plans revealing, at closer scale, the morphology of each area.

The focus here is not on the transformations of the two cities' centres but on their growth into suburban enclaves, representative of changes in the urban structure, its organisation, and meaning. Single-function enclaves were built in relation to automobile and rail infrastructures, designated by the word *område* (area) and the function they incorporated.

Both cities built university areas around 1965. Rather than integrate them into the urban pattern, they were conceived as independent university areas with open green extensions, influenced by university campuses in the United States.

Figure 1.15

Ezpansion of Umeå and Stockholm in the four moments of growth in relation to transport infrastructures

1300s: Settlement
Process of aggregation

1630: From settlement to node in the web
New nodes in the web

Workers were accommodated in multifamily housing areas that, such as Rinkeby-Tensta and Husby in Stockholm or Mariehem and Ålidhem in Umeå, that concentrated services in a local centre: metro, bus, supermarket, often a library or a swimming pool. The rest of the area was dedicated to housing. The street pattern was defined by separation of the means of transportation. The classic urban block with four street façades was abandoned in favour of free-standing volumes, each questing for fresh air, optimal orientation towards the sun, and a good relation to greenery.

Villa areas were still designed to provide with greenery and fresh air. However, they differed in key ways from the communities of the first industrial period: they were less community-oriented, had fewer common facilities, and were located farther from working areas and collective transport. Buildings lost their relation to the street following the adoption of new regulations requiring greater separation of buildings from plot borders. The focus in

1900: Consolidation of the node
Response to population growth

1975: Expansion outside the limits
Construction of the suburb

these villa areas shifted to the car, the individual, and privacy.

In the first half of the 20th century urban planning commingled Swedish and British influences (Hall, 2008). In Sweden, it resulted in a romantic image of traditional towns, small-scale and organic patterns, with sprinkles of influence from Germany and Austria (e.g. the ideas of Camillo Sitte). After the Second World War, and especially from the 1950s, urban morphology was influenced by London New Towns, but also by Le Corbusier and rationalism, by the car-friendly principles applied in the development of Radburn, New Jersey, in the United States (Färjare, 2001).

The monotony and lack of variation found in some suburbs from the 1960s and 1970s are often attributed to the application of functionalism as an architectural doctrine characterised by monochrome, repetitive, prismatic, and volumes. However, a predominant doctrine can be applied in many different ways and alone does not explain the resultant city.

Some housing areas developed along functionalist principles during the 1930s and 1940s, for example, Hammarbyhöjden in Stockholm and Haga in Umeå incorporated clear articulation of the architecture and the in-between spaces and the use of detail around doors, windows, and on cornices. Following, chapter 2 expands on the period after functionalism, and chapter 3 delves deeper on the different approaches to functionalism.

Mass production and urban structure

The post-war period brought not only shifts in political and cultural relations but also the need for mass housing. From 1965 to 1975 as part of the *Miljonprogram* (Million Programme), around one million Swedish homes were built in new housing areas The car that made possible to build next to greenery in cheaper land became a core problem of the sustainable city. In an example of what Ian Morris calls “the paradox of development”, where “social development creates the very forces that undermine it” (Morris, 2011, p. 560), the development that made possible the provision of good-quality, affordable housing to families moving into cities also would bring in the future undesired consequences in the form of low-energy efficient housing, undefined public spaces dominated by the car, or segregation. The same transport infrastructures that connected these suburbs with the services of the centre became physical barriers separating one community from another. New means of production allowed housing elements to be prefabricated and repeated as many times as needed. Thanks to new fabrication technologies and means of communication, developers could build on cheaper land farther from the urban core, closer to greenery and open air. Following the logic of the web, best practices spread, so once a set of optimal housing layouts was defined and an optimal orientation towards the sun ascertained, advances in fabrication made it more convenient simply to repeat a standardised unit in the factory, resulting in prismatic volumes with little articulation or definition of the architecture and of in-between spaces.

The Stockholm and Umeå of this period, as much as reflecting the ideas of the time, were the result of the mass production of housing and traffic engiennering. The development of prefabricated construction systems and methods, increases in population, the rise of financial capitalism, the concentration of means of production, and rapid scientific

and technological development played a major role in post-war European reconstruction. Together, these formed the so-called Great Acceleration (Steffen et alt., 2011), a global trend in which population, production, and fabrication – as well as their environmental impacts – grew exponentially beginning in the 1950s, generating new relations between the humans and the environment (McNeill. J. R., 2021).

1.4. The city in continuity

Urban systems

Traditionally, cities were understood to have developed after agriculture, as a result of food surpluses and the division of labour. Edward Soja (2000), following Jane Jacobs in the Economy of Cities, challenged this notion by "Putting Cities First", arguing that social organisation and exchanges within the city led to the production of knowledge needed to develop and master agriculture. For Soja, the inherent dynamics and synergies within the social system of the city are important forces of innovation and development.

A moment of rupture in the 17th century has been introduced in this text when, on top of an existing pattern of trading settlements, the Swedish state imposed in the territory a web of towns with taxation and administrative functions. This new system also creates new relationships and dependencies. It has been estimated that by the 18th century Swedish towns were no longer reliant on their own hinterland to produce their own food, relying in the distribution of the web (Björklund, 2010; see also Berglund, Nilsson, & Sidén, 2023) (fig. 1.16).

Even if we recognise both resultant structures as cities and that there is a physical and temporal continuity between them, the settlements that result from internal generative processes, such as those described by Soja, form different urban systems and organisational structures than cities built by external forces such as the web of towns produced by a bureaucratic and centralised state. These urban systems require different narratives about the internal and external dynamics that shape cities, how they are organised, behave, and function, and how citizens relate to them.

Figure 1.16
Umeå 1693
The city still has its own agricultural land.

From this, we can conclude that no single universal narrative can explain what cities are and what forces shape them and that a city cannot be studied in isolation but in relation to the system of cities to which it belongs. Furthermore, a single city is not necessarily part of a single system, since many dynamics operate in the same city. Stockholm, for example, grew as an aggregation of towns rather than as a homogeneous entity. During the 18th and 19th centuries the city expanded north and south, in grid form but with different characters, the administrative core of the state based in Norrmalm expanded north into Vasastan and Kungsholem, allocating aristocratic and bourgeois classes, while the organic trading settlement based in Gamla Stan expanded south into Södermalm, first occupied by Dutch traders and harbour activities (Noldus, 2004) and, later on, by industries and working classes.

These two dynamics are represented in an European context by two organisational structures: more or less politically independent clusters of cities (e.g. city-states, urban federations, commercial confederations) and webs of towns of the bureaucratic, centralized state in its various forms (e.g. empire, absolutist monarchy, nation-state).

Clusters tend to emerge around landforms such as bodies of water, which serve as

communication channels, allowing both competition and collaboration. Such cities control their immediate territory and establish commercial, political, and cultural bonds with other territories, exercising influence but not direct coercive control over them. Exchange and interaction foster innovation and the transmission of knowledge. These cities grow organically from internal generative forces close to those described by Soja.

These clusters are not isolated polities they are defined by processes of aggregation of individuals and interests but also of different entities, characterised by a relationship between polities of the same hierarchy. Peer-polities interaction (Renfrew, 2009) defines the full range of interchanges taking place between autonomous socio-political units which are situated beside or close to each other within a single geographical region. These relationships are articulated around collaboration, competition, imitation, emulation, exchange, transmission of knowledge, and conflict is constantly maintaining the balances of power that reorganise alliances and forms of government.

In contrast, the webs of towns formed by bureaucratic and centralised states tend to be hierarchically organised, with a central node exercising direct coercive domination over a large territory. The state, in the long run, is consolidated within clear geographical borders and enforcing territorial integrity. Cities incorporate administration and taxation functions. The state develops technical and organisational capacity to build new cities, roads that facilitate postal communication, and the deployment of troops (bureaucracy and warfare). Early examples include the Royal Road of the Achaemenid Empire in the fifth century bce and the Roman Empire's extensive system of roads that, as the medieval adage notes, all led to Rome.

Although the comparison is oversimplified, scholars have long pointed to Greek city-states as innovators in fields such as philosophy and the arts and to the Roman Empire, which assimilated Greek culture, as an innovator in engineering and law. The centralised state disseminates political structures, language, culture, and innovations throughout its territory while simultaneously homogenising and systematising them. We find a similar process of creation around generative clusters of cities in modern Europe and their later assimilation in the nation-state that will further homogenise and disseminate those innovations.

The two urban systems recognise different forms of citizenship. In ancient Athens and premodern Europe, citizenship was associated with the city. In ancient Rome and the modern nation-state, it is associated with the nation. In his study of pre-modern European cities, *Citizens Without Nations,* Maarten Prak (2018) argues that in the independent cities of premodern central Europe citizenship was not exercised exclusively through legal recognition but also through civic action that included a considerable number of the inhabitants. Civic engagement promoted innovation and creativity and was supported by proximity to civic, administrative, and political institutions. This kind of civic engagement is reminiscent of the generative forces proposed by Soja. How then, and to what extent, can civic action be incorporated into urban systems where citizenship is defined towards the state, and individuals can become physically and mentally distant from the civic, administrative, and political institutions?

Dissemination of Trends

The evolution of political maps from medieval to modern Europe reveals that centralised states first formed in the western and eastern ends of the continent. In the middle, a zone of friction roughly following the Po and Rhine River valleys, were myriad principalities and city-states, an area dense with commercial routes, exchange, universities, competition, innovation, and economic, cultural, and scientific development, even religious reformation. The trends that shaped Swedish cities can be traced in this zone of friction dominated by different clusters of independent cities: from the Renaissance as it unfolded in northern Italian city-states in the 1400s and 1500s, via the baroque art and neoclassical architecture and town planning of the urban federation that the cities of the Dutch Republic formed in the 1600s. The same vector describes a broad history of innovations in technology, trade, and economy: from the early agrarian revolution in Lombardy and the first banks in Genoa and Venice, to the foundation in the Dutch Republic of the first stock exchange (1602), first modern central bank (1609), and the Dutch East India Company (1602).

The spatial and temporal vector of economic and cultural innovation is extended in the 1700s to the Scottish cities that became important commercial nodes on the fringe of

Figure 1.17

Transmission of trends in the web before 1900.

A map drawn by the author showing the transmission of urban trends in the web, focusing on European processes and trends that influenced Swedish planning during the modern period. The political map of Europe around 1600 shows the formation of centralized states in both ends (in grey) and a zone of friction with multiple independent cities and principalities (in white). European processes and trends that influenced Swedish planning during the modern period. The political map of Europe around 1600 shows the formation of centralized states in both ends (in grey) and a zone of friction with multiple independent cities and principalities (in white).
Map by the author.

Figure 1.18
Expansion of Calvinism (in dark brown).

the English state. Around Glasgow and Edinburgh evolved the Scottish Enlightenment and took form both James Watt's steam engine, a key technology of the Industrial Revolution, and Adam Smith's theorisation of capitalism, two processes that will define social and urban development in the 1800s (fig. 1.17).

Significantly Max Webber (1905) connected the origin and evolution of capitalism to Calvinist ethics. If we look to a map of the origin of Calvinism (fig. 1.18) and the development of its areas of influence, it follows the same spatial and temporal vector, from Geneva in central Europe, to the Dutch Republic and Scotland. However, I am following Ellen Meiksins Wood (2017) in placing the origin of capitalism in the 17th century English countryside, but I have also argued that the formalisation of tools and mechanism employed by capitalism follow that vector. Without expanding in the debate of the origins of capitalism, what is relevant here is that changes and innovations occur in places and structures where competition and collaboration are fostered by the aggregatuin of multiple actors, both capitalism and calvinism could have been developed in parallel in these areas not subject to the homogenisation of the centralised state.

The maps of the first industrialised areas of Europe around 1850 picture the Rhine and Po River valleys and southern Scotland, as well as areas of Bohemia and western England.

Most of the new urban models that emerge in this first Industrial period and prefigure the trends of urbanism in the 19th century (which are discussed above following Choay), are towns and villages scattered along these areas, concentrated next to industrial production.

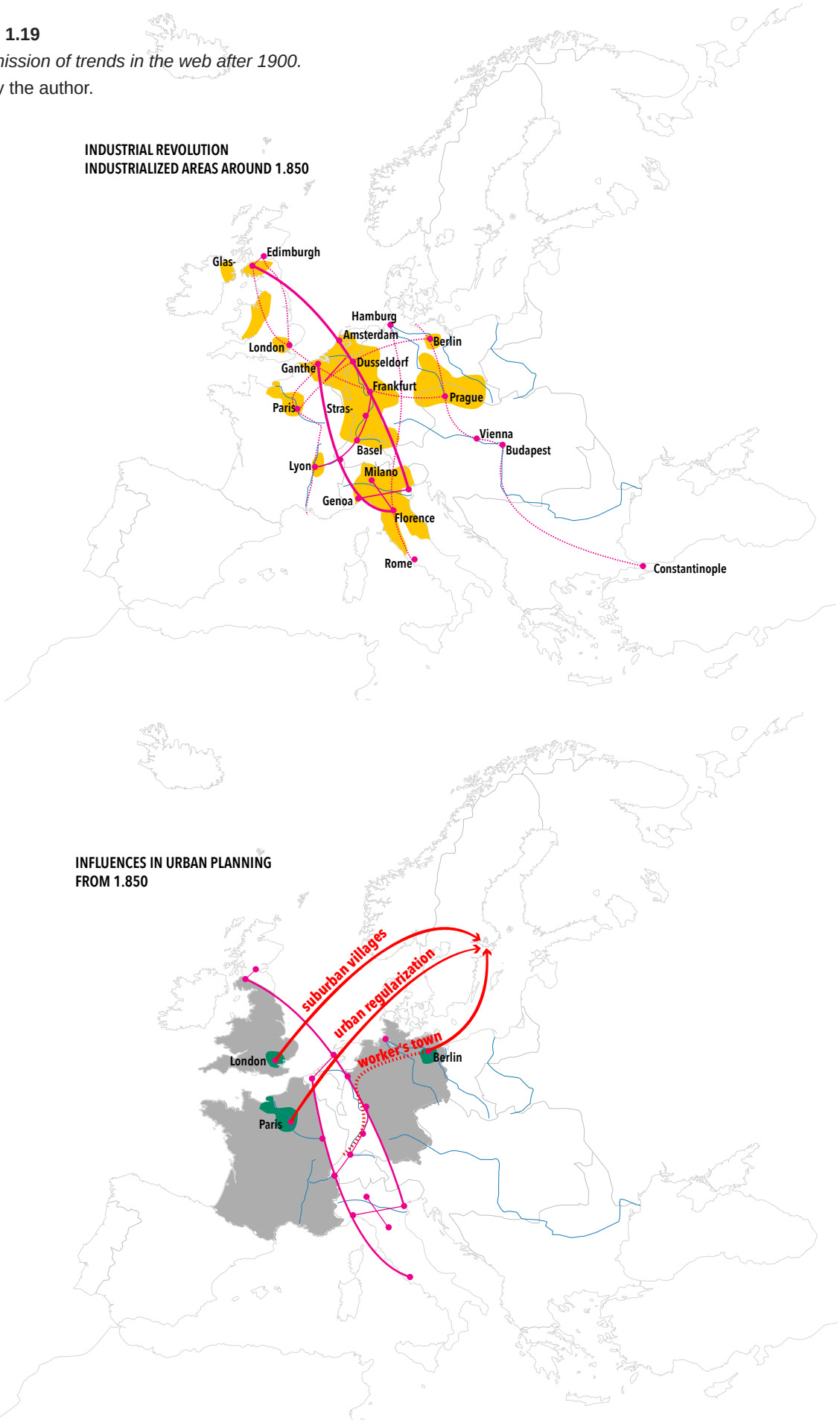
In time the pattern of the centres of production of urban models and ideas reveals the emergence of concentrated nodes around the capital cities of England, France, and Germany. Regularization models are produced in industrial cities such as Paris (plan Haussmann), Barcelona (plan Cerdá) or Lyon (Tony Garnier's Cité Industriéelle). During the 20th century, following an evolution that goes by hand with the consolidation of nation-states, the European centres of influence for urban planning shifted to capital cities. London produced the garden cities of Letchworth (1903) and Hampstead (1907), in Paris Le Corbusier proposed the Radiant City (1922), and in Berlin the Siedlung, Modernism Housing Estates (1925). (fig. 1.19).

The Structure we Inhabit

The web of towns of the bureaucratic and centralised state created a new geography, one that we still inhabit today. The new system had, nevertheless, continuity with the past, for it was superimposed on existing patterns of trade settlements around the Baltic. The first maps of Oulu (fig. 1.14) Vaasa, planned in this period as part of the Swedish centralised state, were drawn with simple red lines to indicate a regular block structure superimposed on older organic settlements, an apt metaphor for a new system taking over an old one. Although the Industrial Revolution is often cited as a pivotal moment in the development of European cities, the process of growth and transformation started much earlier, in the 17th century.

According to Ellen Meiksins Wood (2017), the Industrial Revolution and its subsequent evolution were consequences of capitalism and the forces of compulsive accumulation, profit maximisation, and increased labour productivity it put in motion. The formation of centralised and bureaucratic states, and capitalism were two ways out of feudalism that cohabited and became intertwined. In today's parliamentary nation-states, power structures remain centralised, and political rule is separated from economic action, a core characteristic of capitalism. The paradox of capitalism is that it demands freedom of

Figure 1.19
Transmission of trends in the web after 1900.
Map by the author.



action but requires the regulation of the state to correct its excesses (pp. 176-81). This duality between state and capital will define urban planning in the second half of the 20th century.

For Meiksins Wood, capitalism is not a mere evolution of commerce; it is a new phenomenon whose origin can be dated to the English countryside of the late 16th or early 17th century. Capitalism is rooted in a "specific transformation of social property relations", including the enclosure of communal lands, and "the alteration of the laws and customs that maintained the community". During the early stage of capitalism was theorised the notion of improvement understood as the productivity of the land for economical profit. Improvement played a central role in the introduction of a new way to relate to the land from the perspective of the economical benefit that can be obtained from it, rather than from the perspective of the people who is working and inhabiting it.

> Improvement meant something more than new or better methods and techniques of farming. Improvement meant...new forms and conceptions of property...the elimination of old customs and practices that interfered with the most productive use of land. (pp. 107-11)

This process leads to a reconfiguration of the countryside into larger properties, where even whole villages disappeared,

> poor peasants of the type that have shaped the countryside..were replaced by... prosperous capitalist tenants...and landless labourers. The landscape was transformed from a sequence of modest peasant villages into an idyllic vision of cottages, parks and well-designed landscape gardens. (pp. 125-7)

The *jordreform* was a sequence of three land reforms in the Swedish countryside starting from around 1750 and stretching for more than a century. As with the English case, it concentrated land and means of production for the sake of efficiency, resulting in changes to the configuration of landscapes and social structures. Noldus describes how also the Swedish countryside was transformed from small properties of peasants grouped in villages into a sequence of large, independent estates embellished with the palaces and gardens of landowners (Noldus 2004, p. 55). Even if formally many of the estates built in the Swedish

countryside follow a rational orthogonal logic inspired in French and Dutch neoclassicism rather than following the romantic style of the English garden and countryside, the spirit, the processes and the driving forces behind mirror the English experience. In following chapters will be deepened the discussion around the distinction and relation between styles, trends, driving forces that shape urban environments.

Citizens

If the agrarian phase of capitalism meant the disappearance of many villages that articulated the life of the community, and the transformation of peasants into landless labourers, a similar pattern can be seen in urban centres during the industrial and financial phases of capitalism: in the sake of rationalisation and efficiency, specialised mono-functional enclaves separated work from social life, they were inhabited by workers rather than by citizens, lacking public spaces and services, and closeness to civic and political institutions.

The urban expansion of the 1600s was not a response to internal dynamics, it was driven by the state. First, new towns were built and then occupied by new populations. For example, Gothemburg was populated by attracting Dutch merchants to settle there (Noldus, 2004, p. 48-9), or in Oulu, artisans and merchants were forced to move there to populate the area and boost its commercial activity. The exponential growth of those same towns in the 20th century was a reaction to an increase in urban population. This time, growth occurred not by building new compact towns but by adding suburbs dependent on the existing cores. This pattern of growth may seem natural but should not be taken for granted, as it physically separates people from services, civic institutions, and associations in areas that lack “the role of wards, districts, neighbourhoods...the small entities that provided another layer of texture to urban communities” (Prak, 2018, pp. 10-11). If, following Prak, citizenship is a set of practices of collective action, canalised through civic organisations and institutional representation, then housing areas, enclaves, and developments that lack closeness to services, administrative and civic institutions are not designed as cities in the full sense of the word, because they hinder the exercise of citizenship.

Curiously, in the Swedish everyday language is not used a clear equivalent to the

English word *neighbourhood*, the word *grannskapsenhet* is not used in the everyday and it has become associated to the notion of the *neighbourhood unit*, which is discussed in later chapters as a different structure from the overlapping neighbourhoods of the consolidated inner city. Instead are of common use administrative terms like *område* (referring to an area or a delimitation) and *stadsdel* (literally, a part of the city). Europe at the beginning of the 20th century aimed at the design and construction of complete pieces of town in the form of *workers towns*, *suburban villages*, and *garden cities*., as is reflected in the denominations that include an urban reference. Rationalism, no longer interested in the city and focused in efficiency and specialisation, introduced *zonification* and *housing areas* that focused on a single aspect of life. Later on, *urban developments* incorporated a capitalist language related to the improvement and profitability of the land.

Following the harmonisation between the social centralised state and the capitalist logic, the Million Programme was an infrastructural intervention by the state where the industry was on charge for the construction. The programme was rooted in socialist ideals but responded to the forces of capitalism, fostering an economy of industries that concentrated the means of production in fewer hands.

The industries that emerged from the Million Programme became a force in promoting urban development. Following capitalistic logic, they pushed for more production to increase their profit accumulation. At some point in the 1980s or 1990s, new housing areas started to be built to attract population, this time the population was not attracted through the direct exercise of the state's coercive power but through the logic of the capitalist market. Urban growth became an investment, a marketed product, as could be read in a slogan on the webpage of Umeå Municipality: "Flytta till Umeå: du är välkommen, och viktig"[2] (Move to Umeå: you are welcomed and important). Taxation remained a central role of the city, only now cities competed with one another in the market economy to attract taxpayers.

Land, under the lenses of capitalism, is viewed in relation to the profit that can be obtained from it, whether measured in terms of agrarian or mining production or in terms of building exploitation. As a result of the separation of the political and economic spheres,

2 Seen at www.umea.se (31 October 2022).

municipalities lay out guidelines, plans, and infrastructures, and developers build and sell. That separation is materialised in the municipal organisation of both Umeå and Stockholm by the distinction drawn between the Planning Department, in charge of the spatial and social aspects of urban planning, and the Exploitation Department, charged with making urban development economically viable and profitable.

Typological Approach to Design

Both Umeå and Stockholm offer a perfect mosaic of 20th-century urban ideas, where approximately once per decade each built a new piece of town next to an older piece, based on a specific model defined by its own street pattern and building typology.[3] Each new model tried to correct the mistakes of the previous and was assumed to be a solution that would remain in time. However, both the romantic garden city of individual houses laid out on curving streets and the rational, large-scale, free-standing housing volumes of functionalism were rooted in social concerns, hygienist principles, and a desire to provide workers with decent housing, abundant light and fresh air, and proximity to natural elements. But both are also self-contained enclaves dependant on the urban core.

Mechanistic thinking and rationalism introduced the idea that nature and social relations could be understood as predictable mechanisms. If planners could predict how cities work, they could define a perfect, permanent urban model that structures and organises the life of the people instead of letting the life of the people structure and organise the city. A deterministic belief in linear evolution and the search for truth provided continuity to urbanist approaches from the 17th century until the much-vaunted ‘End of History’ was announced at the close of the 20th century. Since the turn of the millennium, however, environmental, financial, and migratory crises have reminded us of our vulnerabilities and the need to embrace uncertainty, change, and adaptation as we move from a linear extractive system to a more circular system that takes care of human and natural life.

The sustainable city should not fall into the same pattern of reacting to the city of the

3 For a description of the development of Umeå, see Forsberg (2001). For a description of the growth of Stockholm, see Magnus Andersson (1997).

past from the perspective of the present. Just as *history is not one damn thing after the other*, the city should not be one damn typology after the other. Instead, it should be recognised as an entity that changes and adapts over time. If "Most Buildings Are Already There" (Svane, 2009), then, no matter how sustainable a piece of town we create, we will always still have pre-existing urban structures to take care of. The city should be built in continuity, overlapping with the existing, with full consideration given to how every new intervention, in addition to being sustainable by itself, should have a positive impact on the existing city. This will require an acknowledgement that "Planning is Choosing" (Einarsson, 2012) among a set of possibilities and that no street pattern or building typology is ideal. Rather, the goal of planning should be to promote a good mix of patterns that complement the existing ones.

We Answer the Questions We Make

Whether they form part of constellations of independent cities or bureaucratic and centralised webs, we will understand cities better if we study the systems they form rather than studying them as isolated entities. François Ascher (2004) defines a city as a population cluster that is not able to produce its own means of subsistence. His definition works with both systems of cities because it addresses the significant impact cities have on the environment beyond their physical boundaries and their dependency on the web. This approach helps to overcome the dichotomy between urban and rural and, recalling Geddes's regional city, to understand urbanisation as an integral system of territorial occupation that requires a greater understanding of how villages, towns, and cities are interconnected with their surrounding territory, where the spatial re-articulation of the community goes hand in hand, and is equally necessary, in cities, towns, and villages. Under this perspective, for example, sustainable local food production would be addressed through a holistic approach to villages, towns, cities, and their surrounding territory rather than limiting the focus on urban agriculture versus industrial production in the countryside.

The adoption of any uniform, dominant discourse of best practices wipes out other systems of occupation of territory, reduces diversity, and increases vulnerability. Recognising the existence of other systems – beyond the two introduced in this chapter – is an important

step towards reducing vulnerability.

Meiksins Wood questions capitalism's "compatibility with democracy, social justice and ecological sustainability" (2027, p. 8) because its ultimate goal is the generation of capital through an extractive logic of profit maximisation. That is, to build housing as a means of economic profit is not compatible with the construction of the city as a space for the community. And to view land through its potential monetary value is not compatible with building a city that benefits all and values the environment.

Changing the Perspective

Cities are often explained with reference to infrastructures and typologies, but other forces should be considered, such as their relation with the web, the organisation of the state, mechanistic thinking, or capitalism. Amid the complexity of issues and interests that converge in city planning, one can easily forget that transport is not an end by itself but a means to arrive at a place and that the goal of the built environment is not just to provide mobility, food, or energy but to provide a good quality of life, a good relationship with the earthTo incorporate people as active agents of change more narratives are needed that explain urban space through people, their role in its processes of transformation, their needs, their daily routines, and their relations with one another. The same applies to the natural and rural ecosystems that, at best, are explained in terms of land use or what can be extracted from them, thus missing their functions and performance of their human and non-human inhabitants.

The following chapters aim to provide with another perspective of the sustainable city by tracing a different account of the historical process of the construction of the suburbs of Stockholm and its contextualisation in the process of urbanisation that started in the 1600s. The second and third parts of the thesis provide with different narratives that address the design and proposal of future urban interventions rather than being mere historical sequence of models that end in deterministic ways to interpret history. At last will be proposed ways to look to the city, and the redefinition of sustainable design not through models to be replicated but through how design is approached.

Figure 1.20

Diagram summarizing the moments of growth and the main forces introduced in chapter 1

Chapter 2

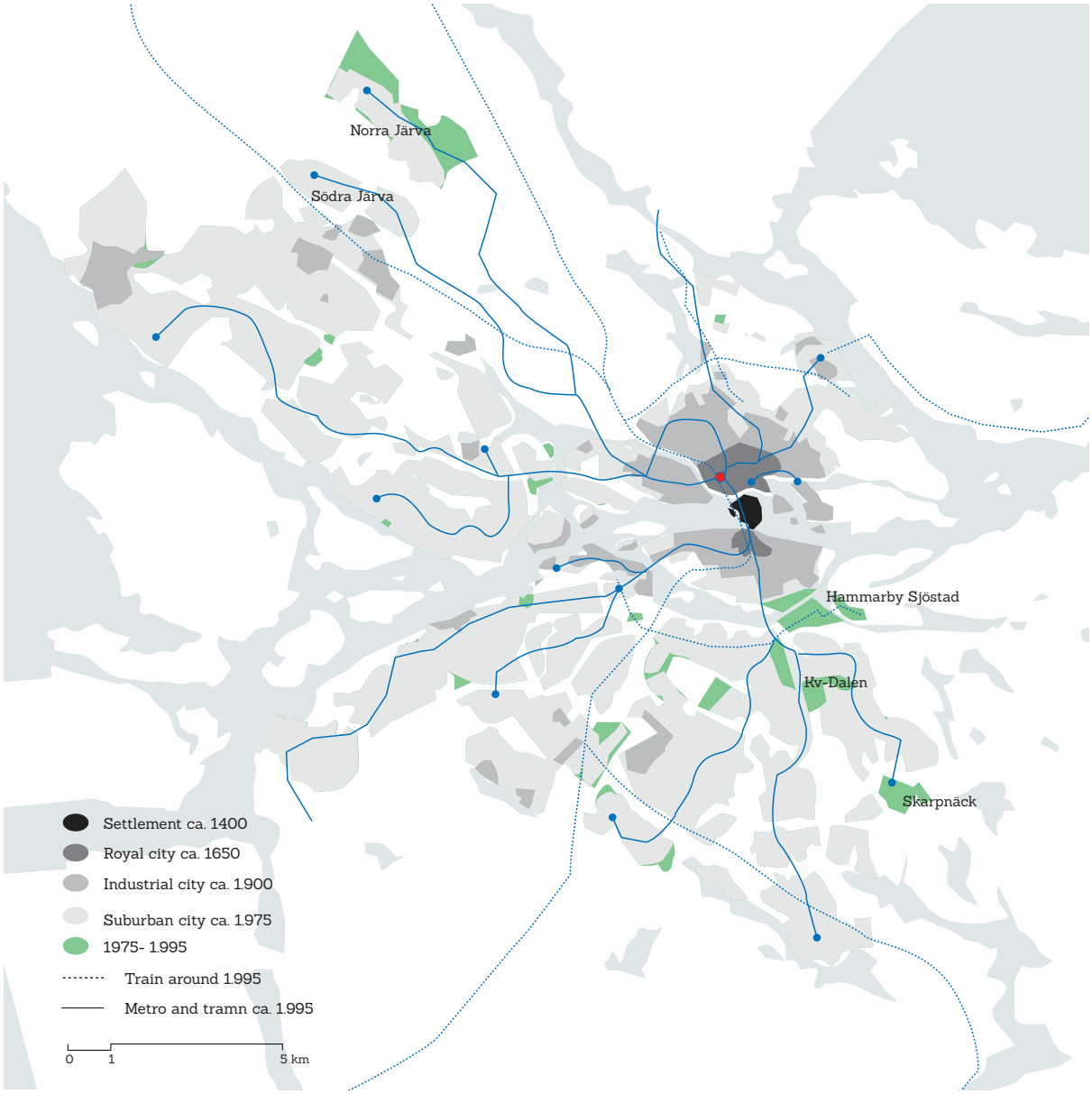
Park i Kvarter The Park in the Block

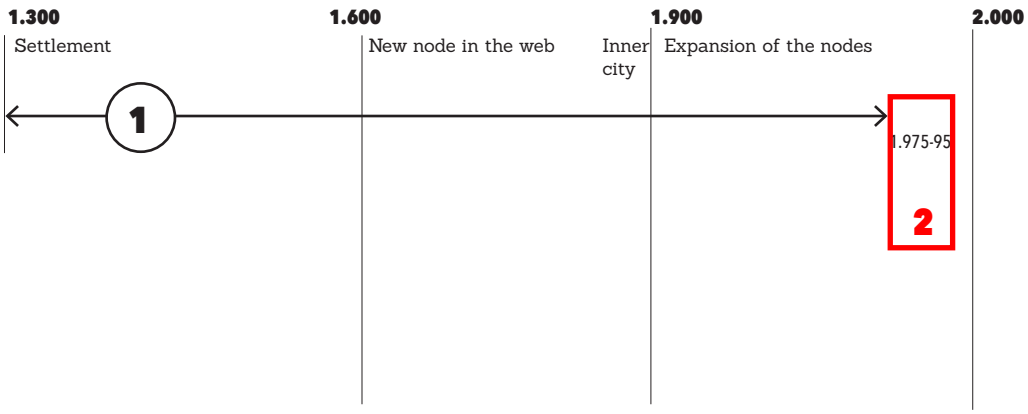
The Suburban Block in Stockholm 1995-1975: Hammarby Sjöstad, Skarpnäck, Kv. Dalen

This chapter deals with the transition between 1975 and 1995, starting with Hammarby SJöstad and tracing its evolution backwards what will lead to the discussion in the next chapter of a more nuanced approach to the functionalist period. I propose to explore the urban scheme and the block typology found in Hammarby Sjöstad not as the result of a new way to approach urban planning and design based on sustainability. Instead, I argue that it shall be studied as the result of ongoing discussions, part of a larger evolution of trends and ideas within the process of the construction of the Stockholm suburbs, a process that, will be argued in chapters 4.3 and 5.1, can be circumscribed to the 20th century. To understand the genealogy of Hammarby Sjöstad are traced precedents that incorporate the block before it, namely the neighbourhoods of Kv. Dalen and Skarpnäck, and that invite to look to late functionalist developments around Järva seeking for elements of continuity. The block produced in the suburbs is referred to as the *suburban block* which, I argue, should be considered as an entity different from the *urban block* typologies implemented in the inner-city, with its own particular characteristics that will be listed in chapter 4.

Figure 2.1

Growth of Stockholm between 1975-1995





2.1. The Suburban Block - *Förortskvarter*

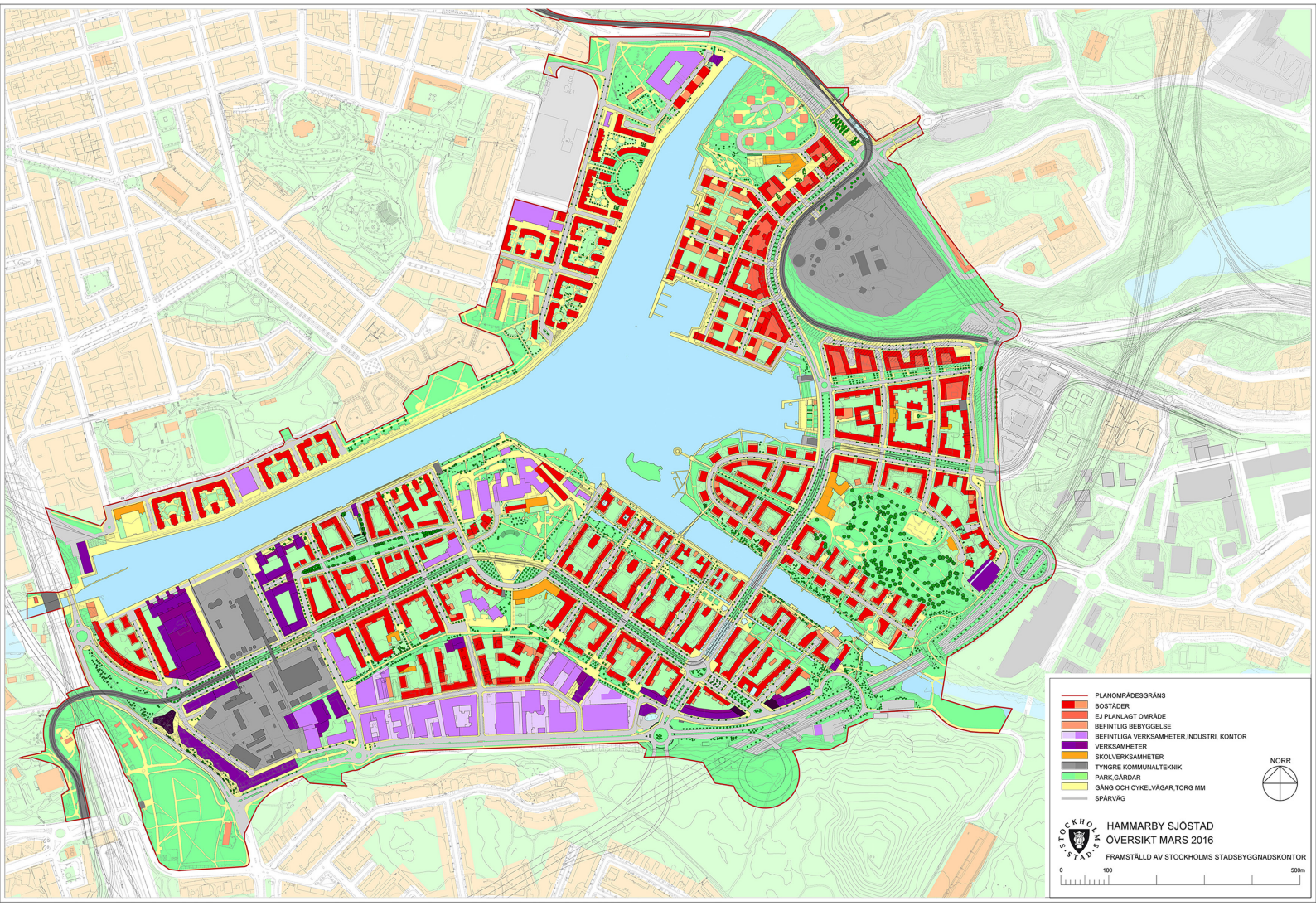
The urban development of Hammarby Sjöstad in Stockholm became a reference in the beginning of 2000s as one of the first ecological neighbourhoods in Europe. Its urban scheme and block typology (fig. 2.2) correspond to the footprint of certain approach to sustainable urbanism that fits well with "[v]isions of the sustainable planning paradigm to, for instance, build communities of around 10,000 inhabitants and provide them with convenient and efficient mobility solutions and pleasant, vibrant public spaces to ensure the formation of social communities" (Koch, 2021, 187).

The urban scheme of such sustainable city is often organised as a grid that incorporates block typologies with inner gardens filled with greenery. In Hammarby Sjöstad the network is characterised by a clear hierarchy of streets, with a main street in the core that contains public transport and commerce, and transversal secondary streets that provide with a quiet access to the domestic space in secondary streets. It makes reference to certain qualities of traditional gridiron plans of the 19th century, at the same time it incorporates qualities of the suburb, aiming at a seemingly contradictory balance between quietness and protection of the domestic space characteristic of the suburbs, and lively vibrant streets characteristic of the inner-city.

The first sustainable city was to some extent a response to the problematic of zoning, sprawl and car dependency of the city associated to late functionalism, the same way that the first functionalist city of white volumes surrounded by greenery was a response to the problematic derived from the polluted and overcrowded industrial city. A simplified reading of this process would be that during the 1990s is re-introduced the perimeter block to recover a more integrated grid network and the street as the social space of encounter and exchange, that had been lost during functionalism, inspired in the city of the 19th century although in a less dense and compact version.

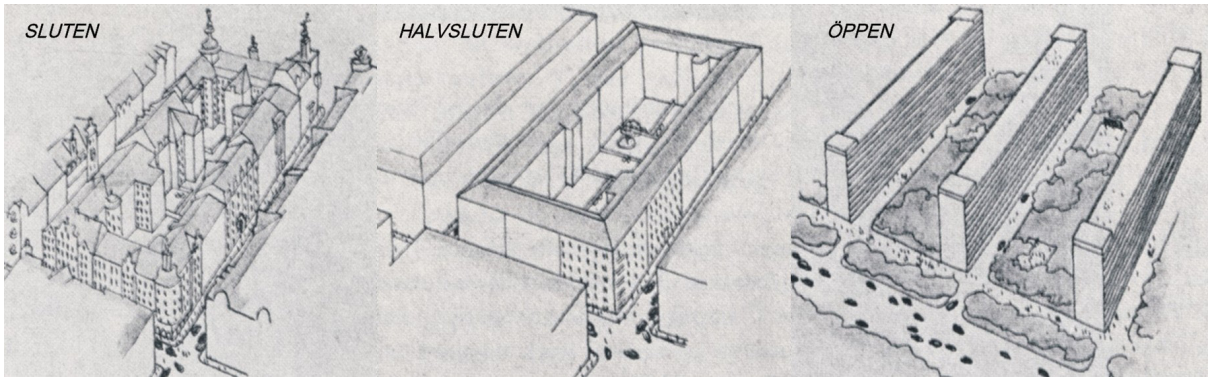
The manifesto Acceptera (Asplund et alt., 2008 [1931]) was published in connection to the Stockholm Exhibition of 1930. Both introduced functionalism to the general public in Sweden, embracing the new modern architecture of clean, neat, prismatic white volumes.

Figure 2.2
The urban scheme of Hammarby Sjöstad



The title of the manifesto is a call to accept a new reality, the modern world of scientific knowledge and industrial production and efficiency, that proclaims the recognition the individual within the mass, what demands a new architecture for a new society. The kind of functionalism introduced in Acceptera is rationalistic, based in geometric organisation, and the repetition of typologies. The primary typology employed will be the linear rectangular slab-building (*lamellhus* in Swedish), which is placed following parameters of light, air and greenery. So to speak, it reacts to the cramped conditions of the inner-city of the 1900s it seeks good relation to the sun, fresh air, and views of the greenery from the windows. In this scheme the buildings will not be framing the street and the urban space. Modernism will focus in the object, and in the repetition of types.

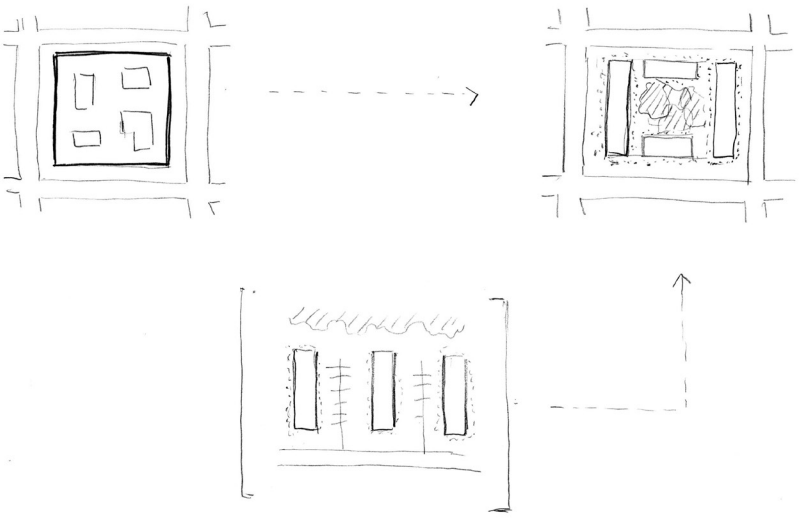
Figure 2.3
The slab-typology. Image from Acceptera.
Closed. Semi-closed. Open.



In one of the illustrations of Acceptera, the slab-typology of parallel linear buildings is depicted as a response to the cramped perimeter block of the inner-city typical of 17th and 19th gridiron plans (fig. 2.3). The linear buildings are seeking light, sun, and greenery, but also a democratic ideal to provide everyone with (similar) good living conditions, with apartments with windows in both sides of the slab, and all with good views to greenery. Functionalism was introduced in parallel to the socialist welfare state, and was applied as part of an effort to provide the whole population with good living conditions, following an effort to address scarcity of housing by developing housing areas outside the urban core. In Sweden public authorities will aim at building dwellings for the whole population, instead of promoting social housing to the more disfavoured.

In the long run, functionalism will embrace mass production in large scale housing enclaves built far from the urban core they depend on. Around 1975-1980 was in place a diagnosis of the problems of the functionalist city. Due to the use of block typologies in the so called sustainable neighbourhoods such as Hammarby Sjötad, it is tempting to see the subsequent response to the perceived problems of the later functionalism as a return to the traditional grid (fig. 2.4). However, the previous sequence obviates not only what happens between the industrial city and the first functionalism (between 1900 and 1930), also what happens between functionalism and Hammarby Sjöstad (between 1975 and 1995). Furthermore, it is not considering that the almost four decades of the functionalist period are not homogeneous.

Figure 2.4
This chapter questions the reading of the suburban block as a re-introduction of the block typology of the traditional gridiron plan, with the functionalist slab-typologies as a parenthesis.



Functionalist enclaves have been stigmatised, but I will not go into a discussion that deserves a much more nuanced and in-depth analysis that is beyond of the scope of this thesis. However, I refer to the perceived problems of the functionalist city because it is relevant for this thesis, in the sense that there was around 1980 a perception of some of these urban environments being problematic, not appropriate for people, nor enhancing social life (see Asplund, H., 1980 for one of the most severe attacks to functionalism from the architectural profession) what originated a response to it and to look for new paths for urban design. This stigmatisation, I would argue, in terms of spacial configuration should be rather studied from a structural perspective of a spatially segregated city that builds independent enclaves built far from the city centre and that concentrate social groups in homogeneous housing areas, and connected to the effects of a planning driven by production, efficiency and by traffic. Factors that have more impact than functionalism as a doctrine that, as we will see in the following chapter, has produced enclaves of different characteristics and qualities.

Hygienist Suburbs[1]

If the first sustainable city is an infrastructural response to the problematic of zoning, sprawl and car dependency of the functionalist city, the same way that the functionalist city is a response to the polluted and overcrowded industrial city (fig. 2.5), both have in common that the point of departure for the construction of the suburb during the 20th century is a hygienist response to overcrowded unhealthy cities that still influences urban developments built today, dominated by housing areas that aim at greenery, air, light and pleasant environments for family life, (fig. 2.6) that escape from packed, noisy, city centres, even when, as in the case of Stockholm, the polluted overcrowded centre does not exist any more.

Stockholm had 75.800 inhabitants in 1.800; 167.900 inhabitants in 1.881; and 300.624 inhabitants in 1.890. At this point, two thirds of the population lived in small apartments for one family and often a guest. Three of four apartments consisted of one kitchen and one room, in bad sanitation conditions, with lack of bathroom and central heating and a housing sector characterised by high rents, dominated by private developers and where construction was not professionalised. (Sax, 1989).

Both sides of the reaction to the industrial city, the regularisation and sanitation of the inner-city and the escape to the suburbs, had in common the search for more healthy environments, fresh air, light, greenery and good housing conditions. The urban regularization that responds to the city growth at the end of the 19th century applies urban grids and perimeter blocks to complete and stitch together existing parts of the city. The plan Haussmann for Paris, the first reference of urban regularisation, introduces for the first time public parks in the urban core as a means to introduce a void of greenery in the packed continuous urban tissue.

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1 For this chapter see a description of the industrial city and the transition into the first functionalist housing developments in the introduction in Sax (1998), a monograph dedicated to Hammarbyhöjden. For a short overview of the evolution of the garden city into the 1950s Andersson, Monica (2006). For the transition from Acceptera to the 1950s in relation to the welfare state Creagh (2011). For a history of the historical planning processes of Stockholm Hall (2009). Berglund, Nilsson and Sidén (2023) for a concise review of Swedish urban history, the definition of the different moments and the description of the urban life in different periods. Choay, 1969 offers a clear picture of the planning of the 19th century that precedes the modern city.

Figure 2.5
Minne från 1898. Bostadbristen (Memory from 1898. Housing shortage)
Picutre showing cramped and unhealthy housing conditions in the inner-city
Artist Oskar Andersson. Stadsmuseet i Stockholm (City Museum) Inventarienummer SSM 500339.

Figure 2.6
Advertisement of Lidingö Villastad publihsed in "Lutfisken" in 1912
It shows the ideal of the house surrounded by greenery with the tram in the background.
Source: Wikimedia Commons. Public domain.

> With Haussmann, the notion of open space, still current today, came into being open spaces which are not laid out for visual or ceremonial effect as in the Baroque, but simply for the negative reason that they are not to be filled in...and related to this idea of open spaces was that of verdured space which is very different from the old public garden in that it has lost its semiotic richness. (Choay, 1969, p. 18)

This idea of "verdured" spaces translated into housing developments outside the city will follow the ideal of the house in the park (hus i park), building independent enclaves of, at first formed by single family houses surrounded by a greenery that conquers the plots, the streets and parks. In the suburbs of Stockholm, from 1930, are introduced multifamily slab-buildings typologies, that still aim to be surrounded by greenery, or the existing forest when possible.

The house in the park (*hus i park*). With the arrival of the train, light rail or tram to the cities, comes the possibility to expand beyond the contained limits of that thriving although packed city. The first developments outside the inner-city in the beginning of the 20th century were villa areas (*villastad*) connected by a light train to the city. The first villa areas, of private initiative, are built outside the limits of Stockholm municipality, examples of this are Djurholm villastad or Lidingö villastad. Short after, public authorities start to take responsibility in the provision of housing and Stockholm starts to buy new land to build housing, starting an expansion from the inner-city into those areas where land was available. This process resulted in a municipality of irregular shape, with different arms that expand from the city centre in all directions. This linear expansions will be done along road and rail infrastructures, leaving a structure of green wedges in between these arms. In 1907 the city builds the first garden city (*trädgårdstaden*) in Gamla Enskede. The villa areas and the garden cities have differences that will be discussed in chapter 4.3, but both share the ideal of the house surrounded by greenery, that is known as the 'house in the park'.

The city in the park (*stad i park*). A more determined step in the assumption of the responsibility of building affordable decent housing for the whole population is taken in the 1930s and it comes with the adoption of multifamily housing apartments. Still

keeping the aim of having access to light sun and greenery and a quiet space for families. Hammarbyhöjden is the first clear exponent of this ideal of building next to the nature and even inviting the nature into the development. New developments from the 1930s built in close relation to greenery and characterised by the adoption of apartment buildings, particularly linear slab-buildings (*skivhus*), will be referred to as the' city in the park'.

The park in the block (*park i kvarter*). Around 1975 the excesses of the later period of functionalism are being questioned, among other aspects are criticised the predominance of the car and the lack of a well defined urban space. The block built in the four sides aims to recover the street as a space of socialisation, while the contact with the green is recovered by introducing a big garden inside the block. However, in this chapter I will argue that the formation of these blocks is less a reaction to the previous period by reintroducing the traditional perimeter block and more a reconfiguration of the slab-typlogies, re-grouped in the four sides of a block in order to define a street scape in the outer side and contain the green park in the inside. Instead of building slab-typologies inside the forest or the park, the park will be enclosed by those same typologies, in what I am calling 'the park in the block'.

Typological or Structural Dichotomy

If we jump form the latest functionalist city to the block scheme of Hammarby Sjöstad, we can construct a typological narrative that traces a dichotomy between the slab-building and the grid formed by perimeter blocks. Which overshadows another dichotomy between urban and suburban structures. The first narrative provides with a typological response to the questions of urban design, where each period produces its own urban model by defining a building typology and a street network, often as a reaction to previous models. It tells a story of contraposition, where each model is presented as an innovation, and where all the elements of the model form and indivisible unit. The second narrative is evolutive and tells a story in continuity about how has evolved the suburb during the whole 20th century. It differentiates the elements and driving forces that shape the design, and allows to trace the evolution of each one through the different periods. The characterisation of the suburb as an entity or structure with a different logic from that of the inner-city, allows to question to what

extent both can be approached, analysed and designed as the same kind of urban entities. It questions if suburbs, due to their relation to the wider urban structure and their role, can be at the same time vibrant urban environments and quiet domestic areas, or if they should be defined by its own qualities and characteristics. And it questions if only by adapting typologies of the inner city in the suburb we can translate selected qualities of urban life.

The Urban Block and the Suburban Block / Stadskvarter och Förortskvarter

The urban development of Hammarby Sjöstad, considered one of the first ecological neighbourhoods in Europe, is used as point of departure to question the grid-slab and urban-suburban dichotomies, in order to understand better the transition of the urban ideas between 1975 and 1995, and to place them in the larger context of the construction of the suburb during the 20th century. The analysis of the block typology of Hammarby Sjöstad is put in relation both to the 19th century grid and to other nearby housing areas that had introduced the block during the late 1970s and the 1980s. It is questioned: to what extent the urban scheme formed by blocks can be considered as inherently sustainable; to what extent is urban; and to what extent the functionalist city is a rupture with what came before and what came after it.

I argue that the block typology is better understood as part of a process of construction of the suburb that runs during the 20th century, than as a reaction to the functionalist city that looks back to the traditional urban structures of the 19th century. Under this perspective, I make a distinction between the urban and the suburban block. The latest is not a solid carved by patios with four clear and continuous façades to the street. Instead, in the suburban block, the multifamily slab-building characteristic of the suburb folds on itself to embrace a piece of garden inside, while generating street-like environments in the outside.

In Swedish urbanism is commonly used the term *kvarterstad* (city of blocks) to refer to those urban developments built from the 1990s that incorporate the block as the main typology. They are often housing developments built outside the inner-city with a block formed by a garden with apartment buildings that surround it. The block is often open to let light come inside. This is differentiated to the *slutna kvarter* (closed block) typical of the

inner city, denser, built in the whole perimeter and with darker small yards.[2] I choose to not follow this terminology because the *kvarterstad* implies that the incorporation of the typology brings automatically certain qualities. By highlighting the differentiation between urban and suburban blocks (*stadskvarter* and *förortskvarter*), beside the reduction of the density, the introduction of openings in the perimeter, and translating the focus to a verdured garden in the middle, I want to put the focus in two other important aspects. First in the urban structure, how they are not part of a continuous urban tissue but built in new urban enclaves. Second, in the relationship of the building with the public and common spheres, and how the suburban typologies introduce more elements of transition and protection between spheres.

2.2. The Sustainable Profile of Hammarby Sjöstad

The fördjupad översiktsplan - from now on FÖP - from 1991 for Hammarby Sjöstad (Stadsbyggnadskontor, 1991b) is the first comprehensive document that describes all the aspects of the new development, from the urban structure to land use, economic, transport and infrastructural issues. The FÖP in the Swedish planning system is an in-depth development of an area of the general plan. The ÖP or översiktsplan (literally overview plan) is the general plan that introduces the strategic approach for the whole municipality. The FÖP for Hammarby Sjöstad was connected to the general plan released in 1990, known as Stockholm Översiktsplan 90 - from now won ÖP90 - (Stadsbyggnadskontor, 1991a).

The FÖP and the ÖP90 include ecological concerns connected to the oil crisis of the 80s, to the scarcity of resources and loss of biodiversity. Measures addressing ecological challenges include a public transport that articulates the area and a holistic understanding of infrastructures, although there are no references to the environmental program that was implemented in Hammarby Sjöstad later on, neither deal with the concept of sustainability.

The urban scheme in the FÖP (fig. 2.7) is very diagrammatic and quite different from the design that was actually implemented. The final scheme was developed after 1991 but was already in place by 1994 when the sustainable profile was introduced in

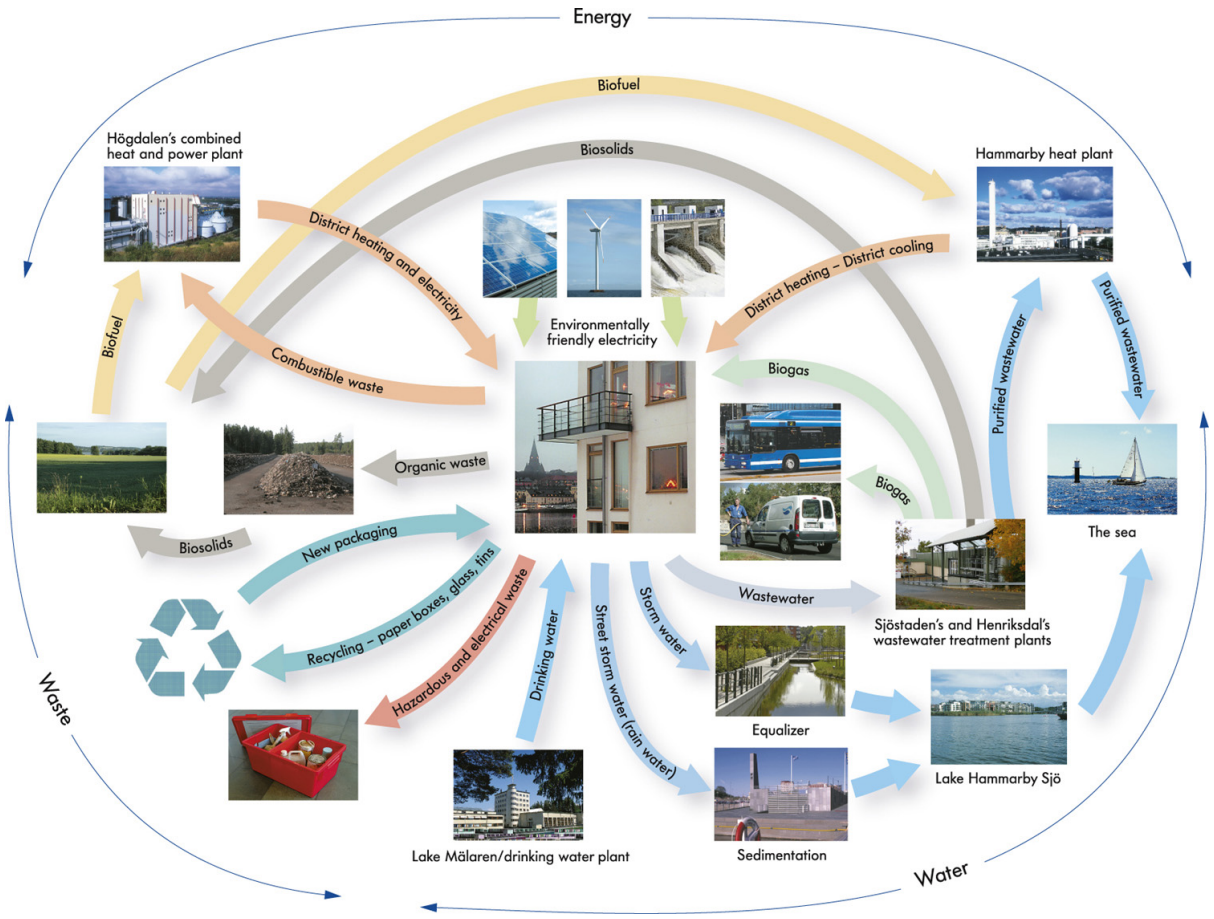
2 See as an example, the debate article by Caldenby et alt, 2024 in the magazine of the Swedish Association for Urban Planning

Figure 2.7
Hammarby Sjöstad. Urban scheme from the Fördjupad Översiktsplan (FÖP) from 1991.

connection to the candidature of the city of Stockholm for the Olympic Games of 2004. In that candidacy, Hammarby Sjöstad was expected to be the Olympic villa, and a legacy from the Olympics that would remain as one of the most sustainable urban developments in the world. Stockholm did not organise the Olympics but the environmental ambitions and the sustainable profile were maintained, an approach that represented new challenges for the municipality. An office was opened on site so all the parts working with the executive project and its implementation could sit next to each other, including people from the different technical departments of the municipality and external consultants[3]. The environmental

3 See https://electricityinnovation.se/bakgrund-2/ that includes interviews with some of the people that collaborated in the implementaion of Hammarby Sjöstad. Last visited 2025-02-19

Figure 2.8
Hammarby model including energy, water and waste. Developed after 1994.



program was summarised in the Hammarby model that combines the cycles of water, energy and waste (fig. 2.8). Sustainability in Hammarby Sjöstad is mostly evaluated and discussed in relation to environmental and technical aspects, but not in relation to its urban scheme, morphology or typologies (Wangel, 2013; Hult, 2013; Pandis & Brandt, 2011;The Swedish Government, 2011).

Based in the environmental profile, Hammarby Sjöstad has been used to market and export Swedish expertise and know-how in sustainable planning and design (Mejía-Dugand, 2016; Ranhagen, 2013), and its urban scheme has remained as the footprint of how a sustainable city looks like. Taking into account that the urban scheme was previous to the

implementation of the ecological profile, this conceptualisation of what should be the scheme for the sustainable city is done in retrospective. In other words, once Hammarby Sjöstad is labelled as sustainable, its scheme is assumed to be the model for sustainable development.

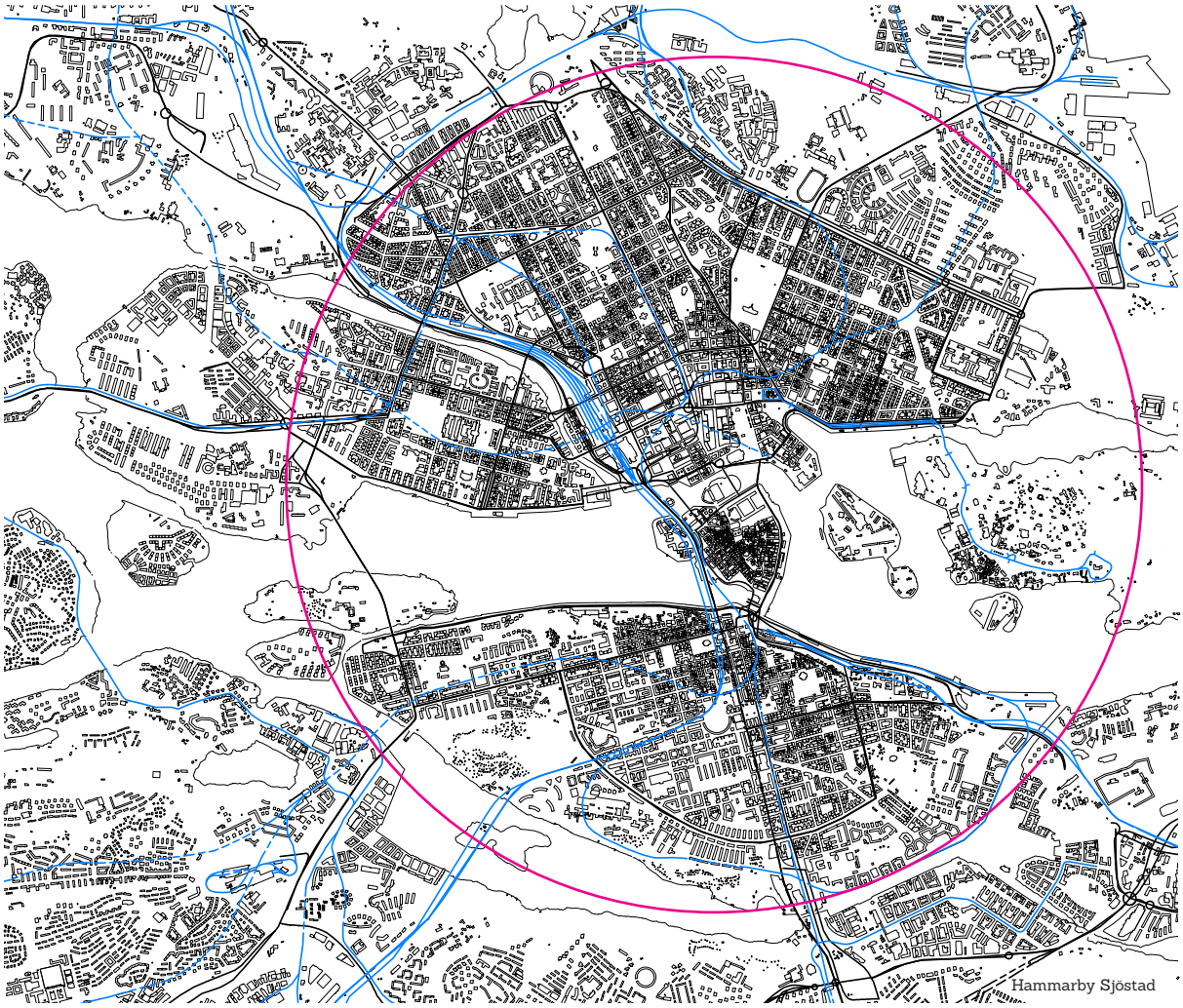
One question is to what extent an area can be considered sustainable in absolute terms or if should try to learn from those aspects that contribute to sustainability. Beside the mentioned infrastructural aspects, if we look to the urban scheme and urban form of Hammarby Sjöstad, it prioritises public transport, walking and cycling and limits actively the car, it also integrates the water management in the landscape and aims at the continuity of green structures. On the other hand, it also promotes a lot of demolition and the construction of new buildings when it comes to the definition of the architecture it prioritises the relation to the water than to the sun, which means big windows facing north, and could have incorporated typologies that minimise the use of land (Vestbrö, 2005; Svane 2008)

2.3. Suburban Block: Grid and Block Typologies in a Controlled Domestic Environment

Stockholm Inner-City

Stockholm inner-city is well defined by the compact urban structures of the medieval town and of the extensions of the city in form of gridiron plans from the 17th and 19th centuries, which are completed by later additions, mainly in the fringes of the urban core. The consolidated urban core is contained circular form trimmed by water bodies, with clear geographical borders that limit with water bodies in three sides, and with road infrastructures to the north. In the centre, the small island of Gamla Stad (the old city) contains the trading medieval settlement in a strategic location between the Baltic sea to the East and the lake Mälaren that gave access to the interior of the country to the West. North of Gamla Stan, we find in mainland the gridiron plan from the 17th century that expands in three directions. To the east, Östermalm limits with the Baltic sea. To the north, Vasastan is separated by a ring road from the municipality of Solna. And to the west, half of the island of Kungsholmen, is occupied by the compact structure of the consolidated urban core, delimited by road infrastructures with a later expansion in the rest of the island in the form of a series of urban

Figure 2.9
Footprint of Stockholm inner-city, including the geographical and infrastructural borders that delimit the urban core, and *centralised transport infrastructures that connect with the suburbs*



developments built in different periods, recognisable by the use of different typologies. South of Gamla Stan, the compact city expands in the form of a grid into the island of Södermalm, characterised by the regularization of the 19th century that covers most of the island. This plan did not reach the water in most sides, which left some gaps in the fringes of the island that were completed by later additions. This later additions do not prolong the grid, instead they apply the urban typologies dominant in the period each of them was built. Beyond these limits the city expanded during the 20th century in a suburban form, building a sequence of enclaves along transport infrastructures (roads and rails) which, at the same time that connect the enclaves with the inner city, become barriers in the territory (fig. 2.9).

Hammarby Sjöstad

The island of Södermalm limits to the south east with Danvikscanal, a canal that separates it from the mainland that expands to the south. Hammarby Sjöstad is located in a former industrial site that operated in both sides of Danvikscanal (fig. 2.10), which is an entry of the Baltic sea that varies in width between 80 and 110 meters. The canal ends to the west in Hammarbysluss (Hammarby lock), one of the locks that make possible the boat traffic between the lake Mälaren and the Baltic sea, and it is the point where the island and the mainland get closer. Hammarbysluss is characterised by a dramatic rise of topography and a traffic apparatus where three bridges (two for cars, one for the metro) cross 20 to 30 meters above the sea level connecting the inner-city with the southern suburbs of Stockholm. More than a connection point with Södermalm it t is a bottleneck that sets the western limit to Hammarby Sjöstad (fig. 2.10).

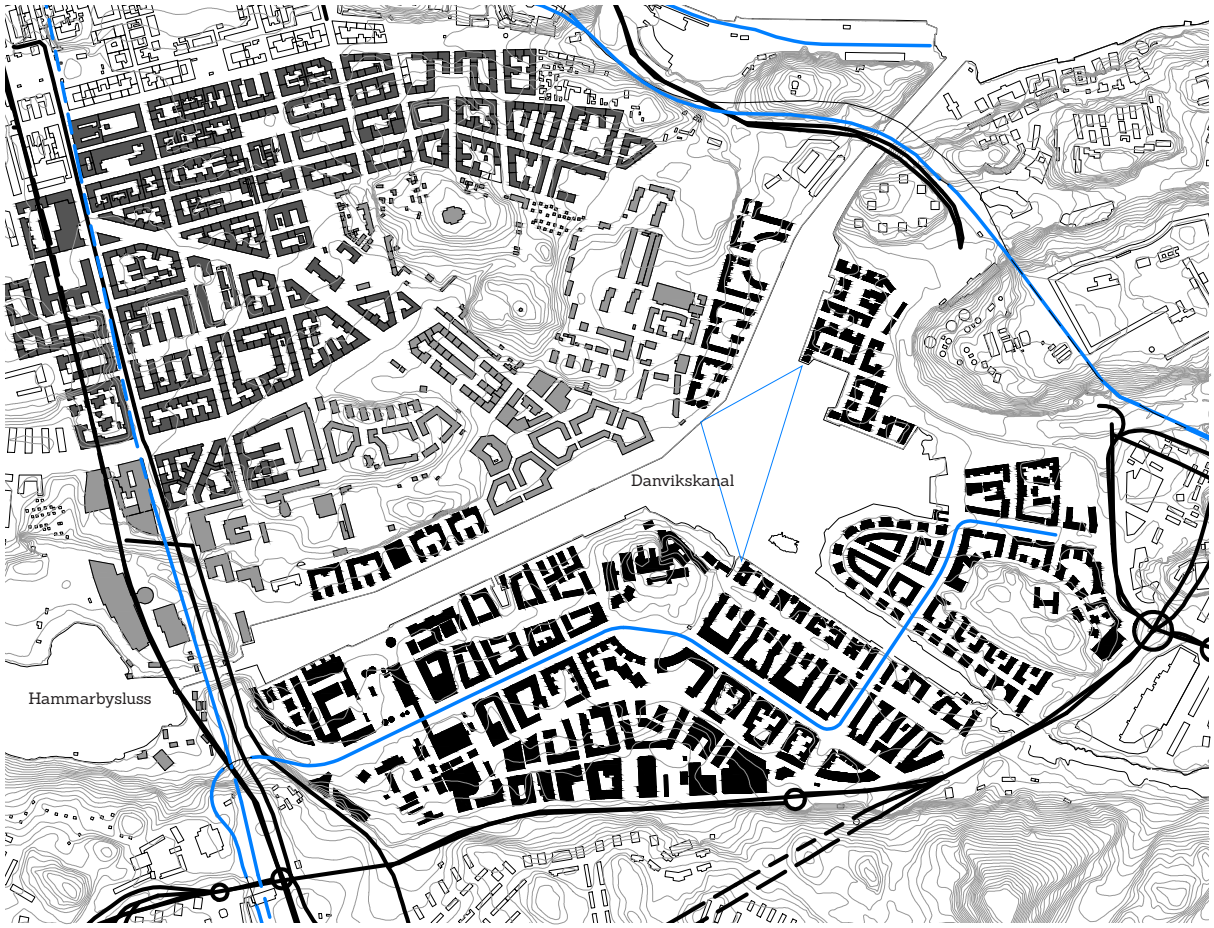
The actual plan for Hammarby Sjöstad covers both sides of the canal. It was considered the option to build a bridge to connect them, but it was never materialised, and the connection is made by a boat with high frequency of departures. Södra Hammarby Sjöstad, in the mainland to the south, occupies a flat area of land artificially filled into the water. It is clearly delimited to the north by the canal, and to the south and west by a cliff edge that runs along the shore creating dramatic height differences next to the water. These limits are reinforced by road apparatus to the west and south. Norra Hammarby Sjöstad, the northern part of the development placed in Södermalm, is much smaller and was executed in a first phase, that can be recognised by the architectural style.

The scheme applied in Södra Hammarby incorporates a structure of blocks with buildings in the four sides, which can be understood as inspired by the traditional urban grid from 19th century. This, in connection to the proximity to the inner-city, can suggest the idea of Hammarby Sjöstad being an extension of the gridiron plan. But, taking a closer look we see that, even if those blocks in Norra Hammarby are near to the pre-existing grid in Södernalmn, they are not a direct extension of it, they rather consolidate the water front, with the buildings facing the water rather than the pre-existing city.

Figure 2.10

Comparing grids from Hammarby Sjöstad and Södermalm

In black the suburban blocks of Hammary Sjöstad. In darker grey the urban blocks of the inner city. In blue the rail transport. In lighter grey, additions built between 1900 and 1995



The fact that the southern part covers most of the area of the development, and the clear limits that forms the canal, reinforce the actual distinction between Norra and Södra Hammarbysjöstad as distinct urban areas. This differentiation reinforces the idea of Södra Hammarby being part of a suburban development outside the compact urban core (although a very close one) rather than an expansion of it. When talking about Hammarby Sjöstad most people refer to southern side, which is the part I will refer from now on.

Street Network

Even if both Södermalm and Hammarby Sjöstad have the block as the main typology and the grid as basic pattern, there are differences in the way they are laid out. The traditional urban grid is quite homogeneous of Södermalm with some arteries that articulate the

movement. Streets tend to meet at the same level and there is continuity for all means of transport. The grid runs in both perpendicular directions and it aims to connect different areas of the city.

In the case of Hammarby Sjöstad, the grid introduces a clear hierarchy that defines the character of different order of streets, aiming to control where things can happen. A main longitudinal direction with a central artery in the middle contains cars and public transport, and agglutinates urban life. Two parallel linear edges, one to the south delimited by remaining industries, a road and a service street; and another to the north facing the canal with pedestrian paths for leisure. The transversal direction emphasises the residential aspect often finishing in cul-de-sac. It aims to protect the domestic domain, streets without active bottom-floors, limited car traffic, primarily serving the residents. If we draw only the streets accessible for cars we obtain a spine rather than a grid. Beside the longitudinal and transversal order, there is a third one for pedestrians and bikes that completes the grid (fig. 2.11). The overlapped systems for tram, cars, bikes and pedestrians, generate a hierarchy of privacy, with higher public use the central axis, then in the borders, being the intermediate streets for local access. All of what comes with a control of where services and shops can be located, and where the domestic space is protected from activity.

Characteristics of the Suburban Block

Hammarby Sjöstad is composed mostly of rectangular blocks built in the four sides, with linear slab buildings often forming a U. The buildings define rectilinear streets of parallel façades, including public active floors in specific streets. The question is if this typology is the same as the one applied in the inner-city.

The perimeter block of the inner-city, also known as stenstaden (the city of stone for the use of that material, unlike the traditional wood houses) can be conceptualised as a solid rock that is carved to introduce patios. This solid block has a clear front, consolidated by a perimeter that has a continuous and direct interface with the streets in the four sides, where the transition between public and private tend to be direct with few elements that mediate between the public street and the domestic apartments, such as stairs, balconies or backyards,.

Figure 2.11

Hammarby Sjöstad street system.

Above: the car network is a spine rather than an integrated grid: public transport and car in the central artery (orange). Transversal residential streets (black). Perimeter high-speed roads (grey).

Bellow: the pedestrian/bicycle system is completed to create a continuous grid (pink).

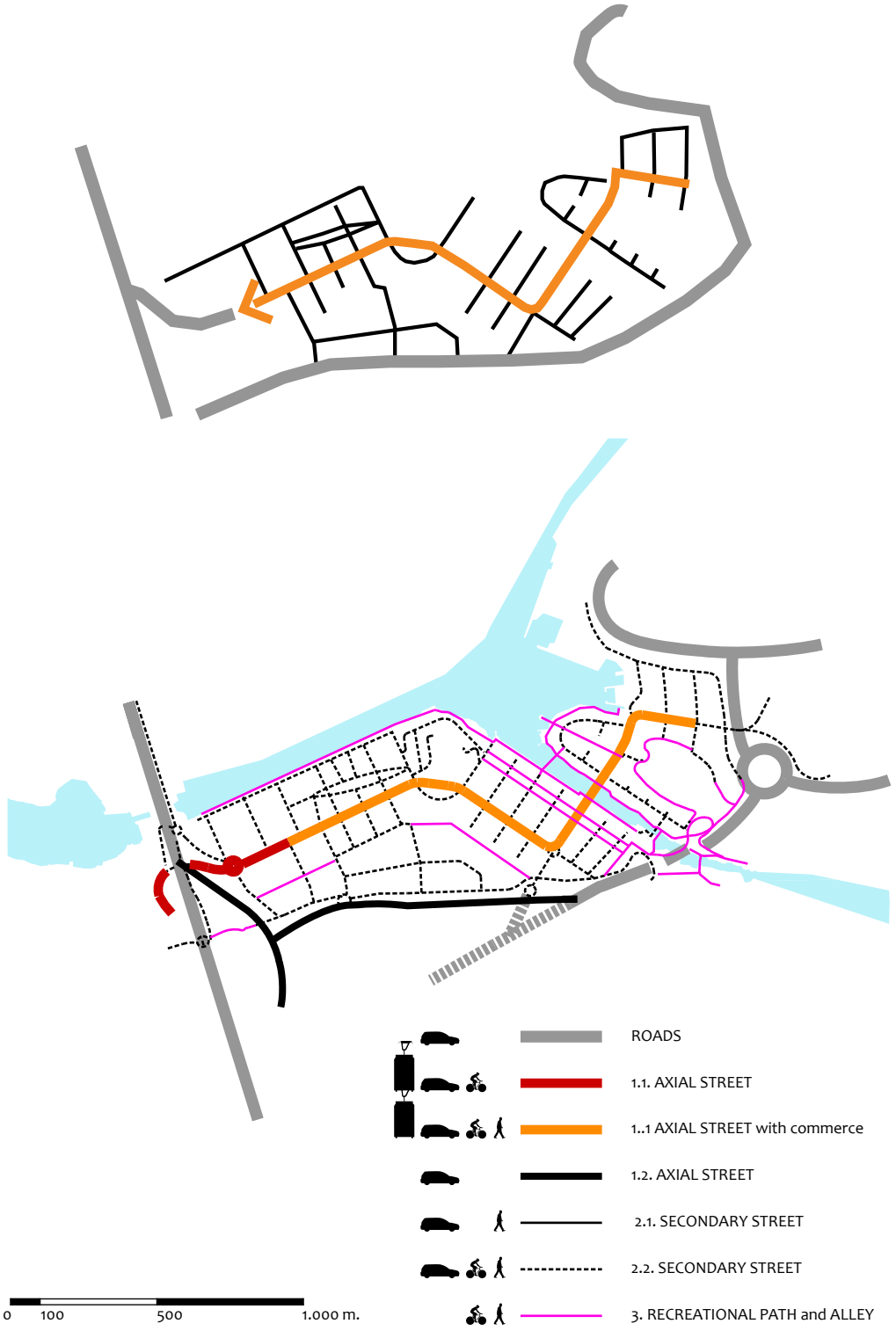
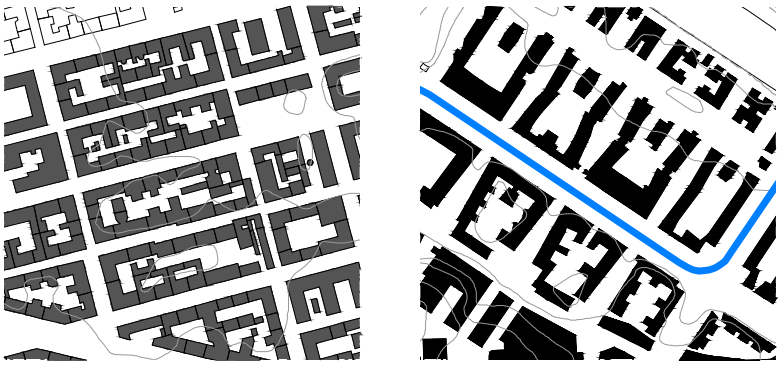


Figure 2.12
Urban versus Suburban blocks
Left:l urban blocks from Södermalm. Right: suburban blocks from Hammarby Sjöstad



The block of Hammarby Sjöstad is not a carved solid, it is rather composed by linear slab-buildings placed along the borders that enclose a shared inner garden. Each of these slab-buildings has two well differentiated sides, one more public towards the street and one more protected towards the inner garden, which differs from the urban block that has one main front and an interior carved by small inner-yards. Another difference with the urban block that tends to have a direct transition with the street, the front facing the street tends to incorporate elements that soften the transition between public and private, introducing some distance and a sequence between the domestic interior, the shared garden and the public exterior with elements such as low vegetation, a rough pavement next to the façade, or an elevated bottom floor. The suburban blocks have a direct contact with the public space only in specific streets designated for commerce and public transport, the rest of the streets include thinner or thicker buffer zones that serve as interface.

Given these differences, it is convenient to make the distinction between the urban block and the suburban block. The urban block of the inner-city is a solid carved with patios and backyards with a clear perimeter that has a direct interaction with the street. The suburban block is formed by linear slab-buildings that embrace a shared garden. This typology does not build the perimeter in its totality, it leaves openings to introduce light into the garden, each slab-building has two differentiated sides, and introduces elements of protection from the shared and public areas as well as a sequence of spaces that stablish a transition of privacy (figs. 2.12 and 2.13).

Figure 2.13
Urban versus Suburban secondary streets.
Above:Olandsgatan in Södermalm
Bellow: Korphoppsgatan in Hammarby Sjöstad

The suburban block aims to keep the quiet domestic character of the suburb at the same time it aims to introduce some qualities of urban life in a controlled way. Hammarby Sjöstad has been built over a period of over twenty years and we observe an evolution of the blocks where more recent ones increase the density with higher buildings and smaller gardens, the buildings tend to occupy the whole perimeter, leaving less openings, which in turn makes less attractive inner gardens. Still, as a reminiscence of the hygienist seek for greenery, even when the garden becomes small and dark, they all keep the garden as a characteristic feature that marks a difference with the more busy and stressing inner-city.

Urbanity as Friction

Both typologies generate different urban spaces and different social life; one that enhances contact and leaves room for spontaneous activities, or unpredicted uses; the other that exercises more control over where contact occurs, where bottom floors can be commercial or not, and protects the domestic sphere from the noise of the public life. Not only the block typologies, also how the grids are structured create different environments.

In the street network of the traditional grid, uses are distributed across blocks and streets, and there is continuity between different areas of the city, with less control about what happens where. While, in the suburban space, transitions are softened, in the urban space exists a physical friction between the block and the street, with sharp transitions and direct contact. Friction of the block with the street, of the public with the private, and also between contiguous neighbourhoods that overlap. This spacial friction invites to friction between individuals, furthermore between different kinds of people.

The suburban space is conceived as an enclave, with clear limits. Without direct continuity with other areas of the city. The intensity of social contact is mitigated by adding transitions and layers of privacy in the form of shared gardens in the interior. The streets are often designed to generate distance and protection, aiming to avoid noise and disturbances, so to speak, to avoid friction. There is a much more clear hierarchy of streets with a careful design of the pavements and transitions that do not invite the casual passer by to go through the more domestic streets. Instead it is clearly defined a central axis where interaction

Figure 2.14

Balance between urban and suburban qualities in Hammarby Sjöstad.

The central axis (crossing the photo in the foreground) with tram and commerce in the bottom floor aims at an urban character. The transversal street ending in cul-de-sac, with distance and transition elements with the buildings has a suburban character.

happens (fig. 2.14). In the suburb are encouraged the social encounters, the familiar everyday contacts with the neighbours, enhancing the sense of community and local networks of support. On the other hand, they enhance homogeneity in the people living in the area.

Given this, we can consider friction as a defining aspect of urbanity. If the urban block is associated to friction and a sense of citizenship, the suburban block is associated to domesticity and to a sense of community. Regardless personal preferences, my aim by tracing this distinction is not to establish which one is better, but to understand the characteristics of each one, and how we can confront the design and evolution of the already existing built environments. If it goes wrong, friction can be a source of conflict, if it goes right a source of exchange and enrichment. In the same way, the construction of the community can be understood as segregation and lack of diversity, but also can be understood as an expansion of the home, the familiar space into the common space, expanding from the family to the community, to create bonds and networks of support.

Around 1900 the city was characterised by perimeter blocks, small apartments and

small backyards, that push people into the public space. Still aroud 1900 (see fig. 1.13) the whole city was quite compact, and in walking distance people from all social classes and conditions met in the street or local pubs. It is a time of industrial development and invention, discussions and revolts, where the industrial worker with ideas to build a new machine could meet the investor to finance the invention. With the arrival of the train, light rail or tram to the cities, comes the possibility to expand beyond the contained limits of that thriving city (Berglund, Nilsson and Sidén 2023). In time will be built outside the city urban enclaves for specific functions and for homogeneous social groups, at first in the form of villa areas surrounded by greenery.

It has been introduced in chapter 1how friction between independent cities, polities of similar hierarchy, fosters innovation. The same way friction between connected neighbourhoods that compete and collaborate fosters contact and creativity.

This new urban structure where the city expands in the territory and where the continuity in the urban tissue disappears is possible thanks to the train, and will be enhanced by massive access to the car from the 1950s. It also means that the city is no longer compact and that there is less contact between the different parts. Each enclave built in the suburbs relates to the centre, but often not connected directly to other nearby enclaves.

I will argue that the block typologies introduced after functionalism are as much connected to the ideal of the garden city of small communities and well defined urban spaces in line with the work of Raymond Unwin and Camilo Sitte, that depart from an aesthetic perspective, in order to produce harmonic, rich and pleasant environments.

2.4. Contextualisation of Hammarby Sjöstad in the Suburb

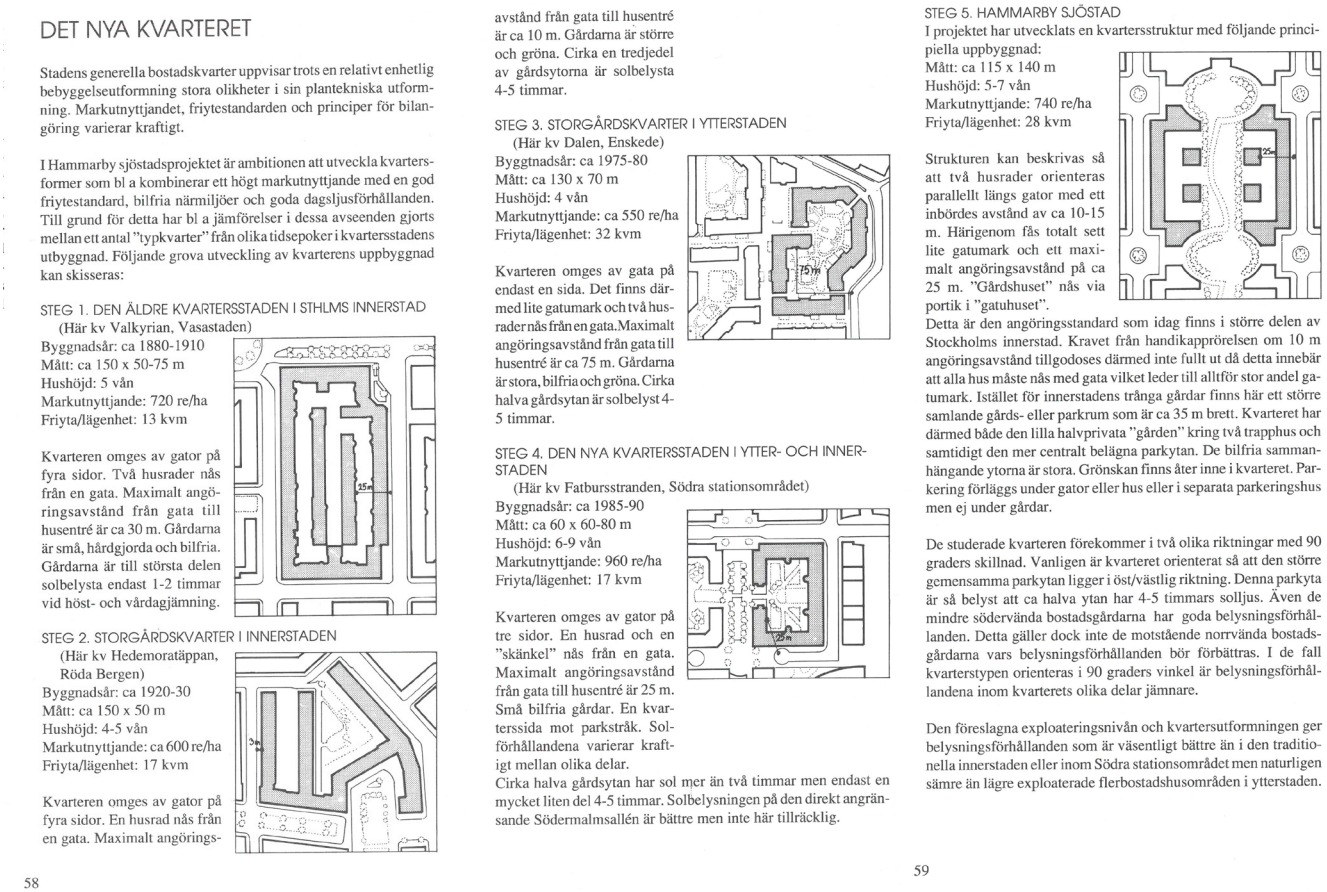
Once established the difference between the urban and the suburban block, the typology found in Hammarby Sjöstad is analysed as part of an evolution of the suburban developments of the south of Stockholm. Using the cases of Kv. Dalen and Skarpnäck to explain that transition, which introduce schemes based in suburban blocks earlier on, in the late 70s and the 80s, and which are close physically and temporally to Hammarby Sjöstad, part of the same dynamics and planning efforts within the municipality of Stockholm.

Figure 2.15
Plan of Hammarby Sjöstad from the fördjupad översikt plan (FÖP) from 1991.

The Harmonisation of the Qualities of the City and the Suburb

The urban scheme of Hammarby Sjöstad presented in the FÖP 1991 (fig. 2.15) consists of long linear buildings along main streets and water bodies, and some linear U-shaped buildings open to greenery, with a democratic idea of giving all the inhabitants good conditions in terms of views, light and access to public transport and greenery In this document, is described the attempt to balance the qualities of the city and of the suburb, considering the suburb the space for the families (pp. 30-31). In this diagrammatic scheme the space in between buildings is not a privatised common space, it is open continuous. In the page 58 (fig. 2.16) is introduced an historical sequence of blocks, from the 19th century

Figure 2.16
Evolution of block typologies from the fördjupad översikt plan (FÖP) from 1991, pages 58-59.
Step 1: Kvarterstaden (the old urban block) of the inner-city. Step 2: Storgårdskvarter (block with big garden) of the inner-city. Step 3: Storgårdskvarter (block with big garden) of the suburb. Step 4: Nya Kvarterstaden (the new urban block) of the inner-city and the suburb. Step 5: Hammarby Sjöstad.



DET NYA KVARTERET

Stadens generella bostadskvarter uppvisar trots en relativt enhetlig bebyggelseutformning stora olikheter i sin plantekniska utformning. Markutnyttjandet, friytestandarden och principer för bilangöring varierar kraftigt.

I Hammarby sjöstadsprojektet är ambitionen att utveckla kvartersformer som bl a kombinerar ett högt markutnyttjande med en god friytestandard, bilfria närmiljöer och goda dagsljusförhållanden. Till grund för detta har bl a jämförelser i dessa avseenden gjorts mellan ett antal "typkvarter" från olika tidsepoker i kvartersstadens utbyggnad. Följande grova utveckling av kvarterens uppbyggnad kan skisseras:

STEG 1. DEN ÄLDRE KVARTERSSTADEN I STHLMS INNERSTAD
(Här kv Valkyrian, Vasastaden)
Byggnadsår: ca 1880-1910
Mått: ca 150 x 50-75 m
Hushöjd: 5 vån
Markutnyttjande: 720 re/ha
Friyta/lägenhet: 13 kvm

Kvarteren omges av gator på fyra sidor. Två husrader nås från en gata. Maximalt angöringsavstånd från gata till husentré är ca 30 m. Gårdarna är små, hårdgjorda och bilfria. Gårdarna är till största delen solbelysta endast 1-2 timmar vid höst- och vårdagjämning.

STEG 2. STORGÅRDSKVARTER I INNERSTADEN
(Här kv Hedemoratäppan, Röda Bergen)
Byggnadsår: ca 1920-30
Mått: ca 150 x 50 m
Hushöjd: 4-5 vån
Markutnyttjande: ca 600 re/ha
Friyta/lägenhet: 17 kvm

Kvarteren omges av gator på fyra sidor. En husrad nås från en gata. Maximalt angöringsavstånd från gata till husentré är ca 10 m. Gårdarna är större och gröna. Cirka en tredjedel av gårdsytorna är solbelysta 4-5 timmar.

STEG 3. STORGÅRDSKVARTER I YTTERSTADEN
(Här kv Dalen, Enskede)
Byggtnadsår: ca 1975-80
Mått: ca 130 x 70 m
Hushöjd: 4 vån
Markutnyttjande: ca 550 re/ha
Friyta/lägenhet: 32 kvm

Kvarteren omges av gata på endast en sida. Det finns därmed lite gatumark och två husrader nås från en gata. Maximalt angöringsavstånd från gata till husentré är ca 75 m. Gårdarna är stora, bilfria och gröna. Cirka halva gårdsytan är solbelyst 4-5 timmar.

STEG 4. DEN NYA KVARTERSSTADEN I YTTER- OCH INNERSTADEN
(Här kv Fatbursstranden, Södra stationsområdet)
Byggnadsår: ca 1985-90
Mått: ca 60 x 60-80 m
Hushöjd: 6-9 vån
Markutnyttjande: 960 re/ha
Friyta/lägenhet: 17 kvm

Kvarteren omges av gator på tre sidor. En husrad och en "skänkel" nås från en gata. Maximalt angöringsavstånd från gata till husentré är 25 m. Små bilfria gårdar. En kvarterssida mot parkstråk. Solförhållandena varierar kraftigt mellan olika delar.
Cirka halva gårdsytan har sol mer än två timmar men endast en mycket liten del 4-5 timmar. Solbelysningen på den direkt angränsande Södermalmsallén är bättre men inte här tillräcklig.

STEG 5. HAMMARBY SJÖSTAD
I projektet har utvecklats en kvartersstruktur med följande principiella uppbyggnad:
Mått: ca 115 x 140 m
Hushöjd: 5-7 vån
Markutnyttjande: 740 re/ha
Friyta/lägenhet: 28 kvm

Strukturen kan beskrivas så att två husrader orienteras parallellt längs gator med ett inbördes avstånd av ca 10-15 m. Härigenom fås totalt sett lite gatumark och ett maximalt angöringsavstånd på ca 25 m. "Gårdshuset" nås via portik i "gatuhuset".
Detta är den angöringsstandard som idag finns i större delen av Stockholms innerstad. Kravet från handikapprörelsen om 10 m angöringsavstånd tillgodoses därmed inte fullt ut då detta innebär att alla hus måste nås med gata vilket leder till alltför stor andel gatumark. Istället för innerstadens trånga gårdar finns här ett större samlande gårds- eller parkrum som är ca 35 m brett. Kvarteret har därmed både den lilla halvprivata "gården" kring två trapphus och samtidigt den mer centralt belägna parkytan. De bilfria sammanhängande ytorna är stora. Grönskan finns åter inne i kvarteret. Parkering förläggs under gator eller hus eller i separata parkeringshus men ej under gårdar.

De studerade kvarteren förekommer i två olika riktningar med 90 graders skillnad. Vanligen är kvarteret orienterat så att den större gemensamma parkytan ligger i öst/västlig riktning. Denna parkyta är så belyst att ca halva ytan har 4-5 timmars solljus. Även de mindre södervända bostadsgårdarna har goda belysningsförhållanden. Detta gäller dock inte de motstående norrvända bostadsgårdarna vars belysningsförhållanden bör förbättras. I de fall kvarterstypen orienteras i 90 graders vinkel är belysningsförhållandena inom kvarterets olika delar jämnare.

Den föreslagna exploateringsnivån och kvartersutformningen ger belysningsförhållanden som är väsentligt bättre än i den traditionella innerstaden eller inom Södra stationsområdet men naturligen sämre än lägre exploaterade flerbostadshusområden i ytterstaden.

58

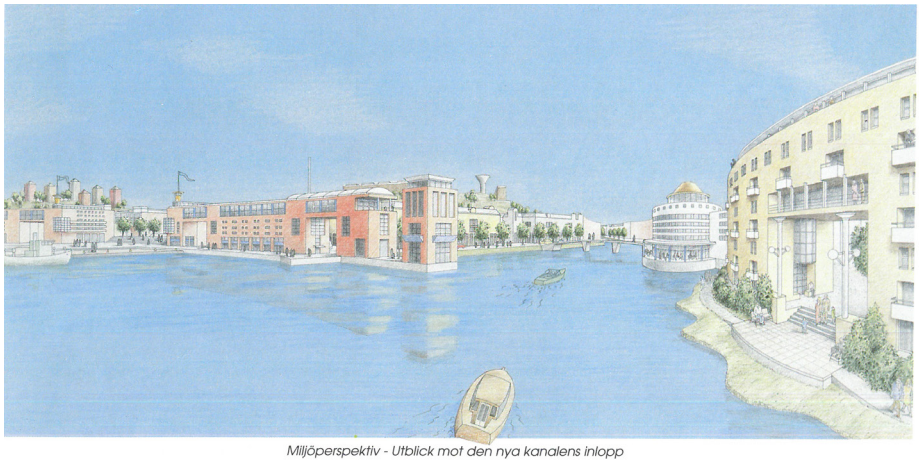
59

city centre, to the big blocks that contain a garden, Kv. Dalen in the 1970s that remind to those of the 1920s, and the more regular block of Södra station in the 1980s. The blocks of Hammabrby Sjöstad in this document present a distinct character as the inner garden is not as clearly defined as a private space, but as a continuous public space (fig. 2.16). The fluid open space around the buildings reminds to that of the functionalism (fig.2.3) only now the space is more enclosed by the buildings. The block typology presented in the FÖP was more different from other precedents of vlock typologies than the actually built.

The images produced to illustrate the FÖP depict a pedestrian friendly, lively urban environment in close contact with the water. These images have a postmodern flavour, where

Figure 2.17
Perspective of Hammarby Sjöstad from the fördjupad översikt plan (FÖP) from 1991.

Miljöperspektiv - Längs den nya kanalen



Miljöperspektiv - Utblick mot den nya kanalens inlopp

the buildings incorporate arcades, and are finished by triangular pediments (fig. 2.17). In Norra Hammarby (the area north of the canal), built in a first phase, the buildings keep the style of the images contained in the FÖP, while the south side was executed later and in longer span of time and the architecture has a less decorated character (figure 2.18).

The scheme of the FÖP contains the basic street structure, but the buildings and blocks differ from those that were actually implemented. Jan Inge-Hagström, the city architect responsible for the project, described in a later interview this scheme as a diagram, not intended to be built as such, but to present the core ideas and raise the discussion around it (Caldenby, Hultin & Söderlind, 1992). In the evolution of the project, the footprint of the

Figure 2.18
Photo of one of buildings in Norra Hammarby in the first phases (left).
Photo of one of buildings in Södra Hammarby (right).

buildings that form the current block structure, was drawn by Jan Inghe and his team at the municipality. If we look only to the scheme in the FÖP and the one actually implemented, we could suggest an innovation, a conscious effort to produce a new model of sustainable planning, which would fit with the idea of the scheme as an rupture that aimed to incorporate qualities of the traditional grid, opposed to certain image of the functionalist city of large scale monotonous and repetitive parallel slab-buildings, with an urban space dominated by the car. However, by doing so, we would oversee that the work within the municipality is part of larger discussions and development that can be traced through preliminary studies for Hammarby Sjöstad that precede the FÖP, and through previous projects, such as the mentioned Kv. Dalen and Skarpnäck.

Precedents

It exists an earlier scheme from 1987 by another city architect, Leif Blomquist, that precedes the FÖP which is much closer to the final project and that allows to trace a narrative of the formalisation of the urban scheme of Hammarby Sjöstad connected to discussions about urban space from the late 1970s and 1980s rather than to the sustainable discourse of the late 1990s (fig. 2.19). Blomquist worked in the preliminary studies for Hammarby Sjöstad, until he left the project when he took a two years leave from the work

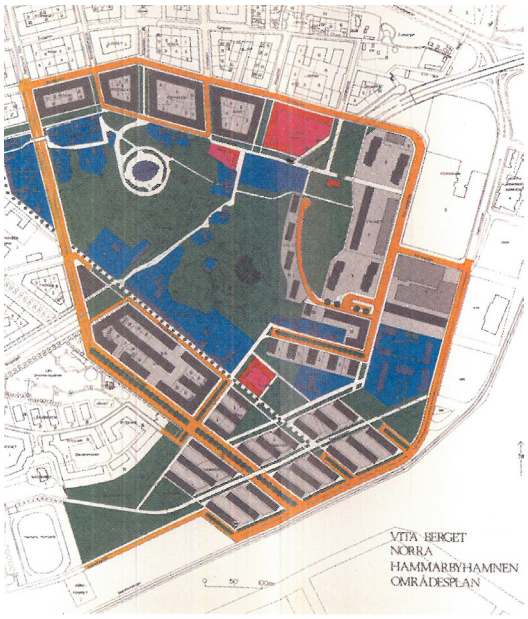
Figure 2.19
Preliminary study for Hammarby Sjöstad from 1987 by city architect Leif Blomquist.
Note the north is rotated 45 degrees to the left.
Source: personal archive of Leif Blomquist.

in the municipality (personal interviews April 22 and June 13, 2024). This plan is not well known, and I received it from Leif Blomqusit who kept it in his personal archive. For example, it is not present in a little book done on the occasion of the Housing Fair of 2002: *BoStad02*, that was a housing fair organised during the construction of Hammarby Sjöstad where the typologies built should show state of the art of innovations in housing. This book (Bodén, 2002) includes an historical review of the plans for Hammarby Sjöstad with the final scheme and that of the FÖP, but also two precedents. In 1967 was presented a plan to continue Södermalm until the water Söder 67 (p.16) in what is Nörra Hammarby Sjöstad that proposed a series of parallel buildings perpendicular to the waterfront aligned with the direction of the grid plan and integrates the built and green structures of Södermalm in a more determined way that Nörra Hammarby will do. And there is a proposal from 1989 by Ralph Erskine (p.17) in for a part of Södra Hammarby, that he did for the private owners of that piece of land, which is closer to the plan by Blomquist (which precedes it in a couple of years) and to the one actually implemented than to the FÖP of 1991 (fig. 2.20).

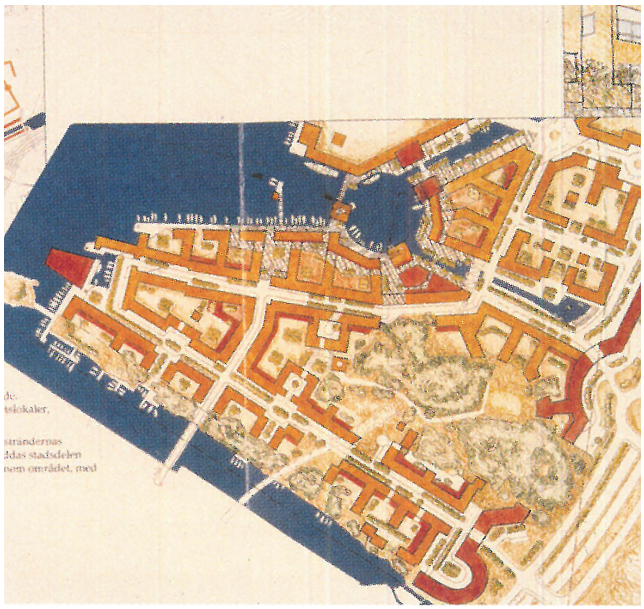
Before the ÖP90, planning in Stockholm was following the guidelines of the previous General plan for Stockholm from 1952 (Stadsplanekontoret, 1952). During this time, the architects within the municipality did not deal with questions of urban structure. Explained in a simplified way, they would receive the commission to develop housing projects in predefined areas within the General Plan from 1952. Each project was assigned to an architect within the municipality who would make a design proposal to start the development process. Three architects are most present in the projects of the 1980s, Aleksandrer Wodolarski, Jan Inghe-Hägstrom, and Leif Blomquist.. However, before getting engaged in the first phases of Hammarby Sjöstad, Blomquist had been responsible for Kv. Dalen (1979) and Skarpnäck (1983), that already incorporate the perimeter block as basic typology, situated both to the south of Hammarby Sjöstad. However, each architect was not responsible for a specific area of the city.

The existence of preliminary studies and the precedents that introduce the block earlier on suggest that the resultant scheme is part of a larger discussion within the

Figure 2.20
Plan Söder 67 (left) and plan by Ralph Erskine for Sickla from 1989 (right).
Source: as portrayed in BoStad02 (Bodén, 2002, p.16-16)



Söder 67



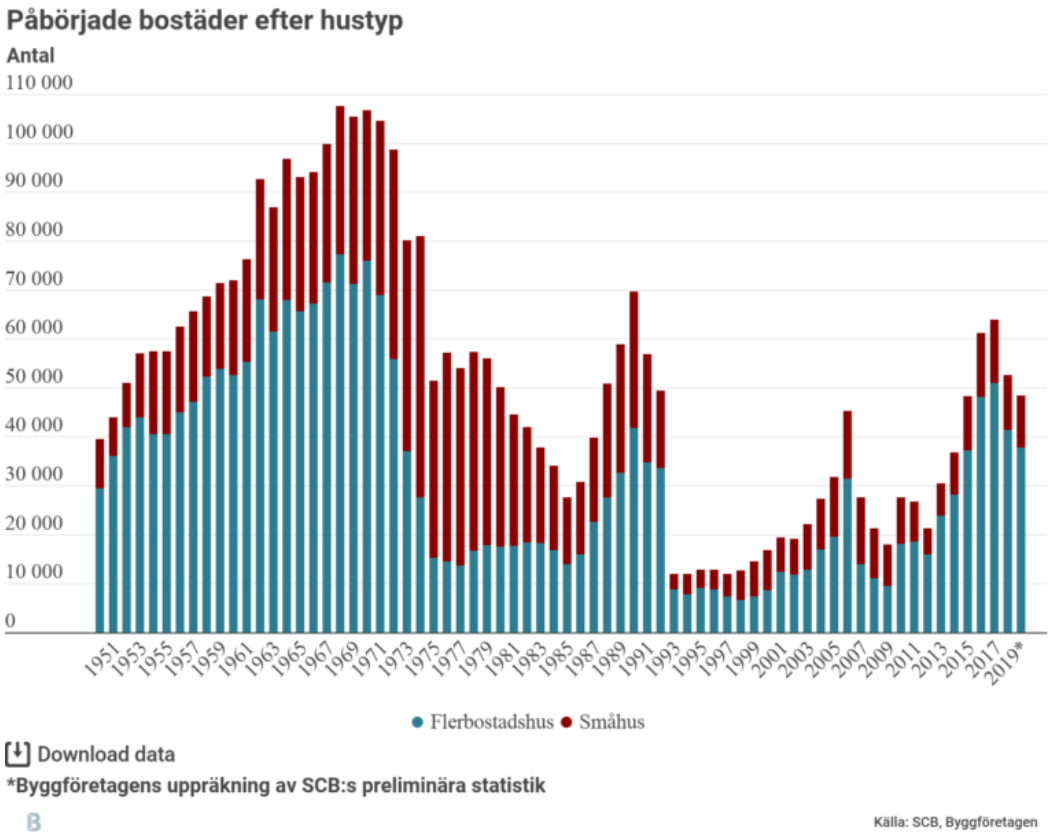
Förslag till utbyggnad av Lugnet-området kring 1989, arkitekt Ralf Erskine

municipality, and of the evolution of the typologies of the suburb during the 1970s and 1980s. Moreover, we will see, that elements of urbanism taken account in the design can be traced back to the functionalistic suburbs in Järva, to the north of the city, and even further to some of the first suburbs of Stockholm such as the garden city if Gamla Enskede (1907) or to Hammarbyhöjden (1930), also located in the south-east expansion of Stockholm.

Stockholm Inward Growth

By the end of the 1970s the urban expansion of Stockholm geared from Järva, north of Stockholm, to the south-east. The projects of Järva built between 1965 and 1971 are clear examples of mass housing functionalism, they occur in two phases, Rinkeby-Tensta in Södra Järva (southern Järva) and Kista-Husby-Akalla in Nörra Järva (northern Järva) . After 1975 there is a reaction to some excesses of the mass-production of the rationalism that resulted in a strong critique certain aspects of functionalism. Nevertheless, the dynamics within the

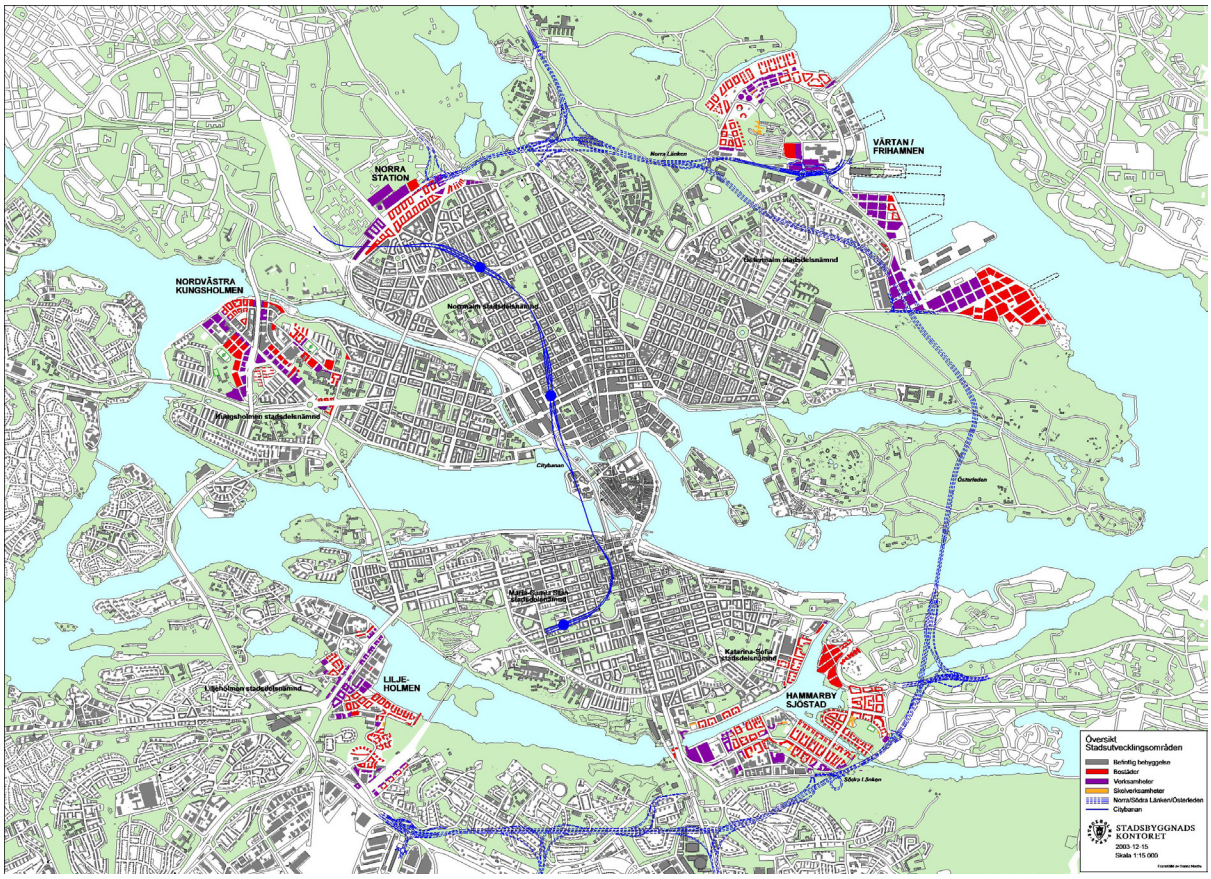
Figure 2.21
Dwellings built specifying housing type in Sweden.
Blue: multifamily housing. Red: single housing.
Source: Byggforetagen (https://byggforetagen.se/statistik/bostadsbyggande-2/) SCB, Byggföretagen-



municipality that define the way the city is built did not suffer such an abrupt disruption. The schemes and typologies change, but more as an evolution or a learning process than as a rupture with the past. We should not forget that the plan and design of the developments is done within the same departments of the municipality with the same people working in them under the same framework and directives. For example, Blomquist had been also engaged in Järva, concretely in Hjulsta.

There are two moments of mass-production, the 1930s and the period from 1965 to 1975, known as the Miljonprogram. Between 1975 and 1990 the rhythm of construction decreases and also is built a higher percentage of single family typologies (fig. 2.21). In this later period the city does not grow in extension by acquiring more land, instead, are sought within the municipal boundaries areas to be developed or re-developed, what described

Figure 2.22
General plan of Stockholm from 2003.
Showing the housing developments in former industrial areas of Hammarby Sjöstad, Frihamen (Norra Djugårdstaden), Norrastation and Liljekajen in Liljeholmen.



in the general plan from 1999 - *översiktsplan* ÖP 99- (Stadsbyggnadskontor, 1999) that substitutes the one from 1991 as “bygga staden inåt” (build the city inwards) that will become the following decade the motto to refer to projects that look for land within the municipal borders, where higher density and block structures become assotiated to more urban character. In relation to the first experiences from the late 1970s and the 1980s, in time, the blocks will increase the number of floors and reduce the size of the gardens, and will be characterised by big balconies and façades rendered in light colours. In what follows I try to trace this transition.

In line with the spirit of growing inside, Kv. Dalen was an old quarry of sand and gravel and was partially occupied by allotment gardens.,Skarpnäck was built in the flat terrains of a previous airfield, and Hammarby Sjöstad is built in a former industrial site, and

is part of a process of displacing industrial activity from the city centre, making land available for new housing, a process that is later continued in projects such as Norra Djurgårdstaden, Liljekajen or Slakthusområden, visible in the general plan that follows ÖP 99 (fig. 2.22).

2.5. From Functionalist to Sustainable (?)

Until now Hammarby Sjöstad has been introduced to analyse block typologies form the 1990s. It has been questioned whether its urban scheme is inherently sustainable and whether the block-typologies introduced a direct re-interpretation of the traditional perimeter block. The previous approach assumes a degree or innovation or rupture in relation to previous periods.

Understanding urban ideas as part of an evolutionary process, the aim now is to look to the block typologies of Hammarby Sjöstad as a transition from well defined typologies of parallel slab-buildings of the functionalist period into what I am calling the suburban block (*förortskvarter*) to distinguish from the 19th century urban block (*stadskvarter)* of the inner city. The urban block would be formed as a solid mass that consolidates the perimeter and is carved by patios. The suburban block would be formed by slab-buildings with well defined transition spaces, that embrace a garden to contain the garden in the block.

In the south-eastern suburbs of Stockholm where Hammarby Sjöstad, Skarpnäck and Kv. Dalen are located, can be found examples of the different decades of the 20th century that show the evolution of urbanism in the periphery of Stockholm, the developments located in this area are used through the thesis to exemplify different trends and periods of urbanism. But in this area there is a gap during the mass housing period between 1960 and 1975, for in this period the big scale mass-housing the big developments are built further away from the city. The developments in Järva are used to fill that gap, introduced to explore that continuity because, even being far away, there is continuity in the processes and in the evolution urbanism with the examples built in the south east in the periods before and after. The following chapter will delve in the evolution of functionalism until 1975, now the centre of attention is in the transition into the suburban block.

The transition between Järva and Hammarby Sjöstad is not evident. We can speculate that this could be due several reasons. The transition period falls in between two periods, the functionalism and the first sustainable development, with well defined characteristics that have a big presence in the academic and the public debate. Furthermore, the 1980s saw a strong fall in the construction of housing, and within the total number, the proportion of single family housing increased, meaning that the multifamily housing areas built in this period were fewer and smaller in comparison those before and after, leaving a gap in the collective imaginary. Besides, they are not as boldly codified stylistically as the slab concrete buildings of late functionalism or the rendered and coloured suburban blocks built from 1995. The dominance of brick and postmodern elements during late 1970s and 1980s make them seem disconnected stylistically from the periods that precede and follow. However, the aim here is to look beyond stylistic classification of historical periods, and look into the configuration of the space and its conception.

Järva

As introduced before, from 1965 to 975 were built in Sweden one million dwellings in an effort directed from governmental housing policy known as the Miljonprogram, that went in hand with the development of an industry to address efficiently mass-production of housing. Some of these large scale developments became the image of problematic urbanism, and a lot of the urbanism discourse produced after this period is formulated as an attempt to correct the perceived excesses of that period. Even if the effort of the Miljonprogram responded to a social concern to provide housing of quality for large sections of population, with good connections to the inner city by car, metro and bus, the resultant urbanism produced a collective imaginary of the functionalist city characterised by large scale concrete linear slab blocks, a monotonous repetition of grey, large buildings, with separation of modes of transportation, lacking services and a negation of the street and a public space dominated by big undefined areas occupied by the car (Hall & Vidén, 2005).

The urban developments built around Järva (figure 2.23), north of Stockholm are amongst the more prototypical images of the Miljonprogram. It is composed by five urban

Figure 2.23
Developments around Järva.
North of Stockholm.

developments divided in two parts, separated by the green wedge of Järvafältet and by road infrastructures. There are two developments in the southern part (SödraJärva), and three in the northern (NörraJärva). Each of them is served by a metro station and connected to the neighbouring one(s) by a central axis. In Södra Järva were built in 1.965 Rinkeby and Tensta where today live around 35.800 inhabitants. In Nörra Järva were built around 1.971 Kista, Husby and Akalla and today live around 35.700 inhabitants.[4] Particularly Tensta

4 Source: Stockholm Stad Områdes Fakta- statistik om stadens delområden [City of Stockholm: Data of the urban areas]. https://start.stockholm/om-stockholms-stad/utredningar-statistik-och-fakta/statistik/omradesfakta/. Consulted online 2025-02.21. Population on 31st December 2023: Rinkeby 17.161; Tensta + Hjulsta 18.599; Kista 14.273; Husby 11.957; and Akalla 9.434.

became focus of criticisms even during the first moment of occupation, representing some of the problems assigned to functionalism: excessive land use, land occupied by the car, denial of the street as social space, monotonous grey slab-buildings, separation of modes of transportation (Arkitekturmuseet, 1980; Asplund, Hans, 1980; Bengtzon et alt, 1970).

1970s

The journal Arkitektur dedicated the volume 9 from 1979 to a new way to approach the planning of housing areas that had emerged during the 1970s. This new approach is introduced as a reaction to the schematic, big scale areas of parallel prismatic buildings of the 1960s. Introducing small and human scale instead of large and big buildings. Sequence of spaces, changes of viewpoints, twisted passages instead of straight streets. Variation instead of monotony. Examples of housing areas laid out forming small scale and sequential public spaces are shown in the magazine, including Kv. Dalen, that fits well in the new paradigm.

In the introductory article titled “Something has happened” Olof Hultin (1979) defends the change in the approach to urbanism during the 1970s. In his critique to the previous period, he points not only to an industry focused in efficiency and production, but also to to architects’, whose approach to housing was rooted in a functionalist legacy that looked for a model of the perfect and conflict-free system, the housing area as a mathematical equation, where the solution would come out simply by multiplying the right factors. In such a system, all angles are right, all the streets are straight, and all the opportunities for the unforeseen to occur are completely eliminated. (p.3).[5]

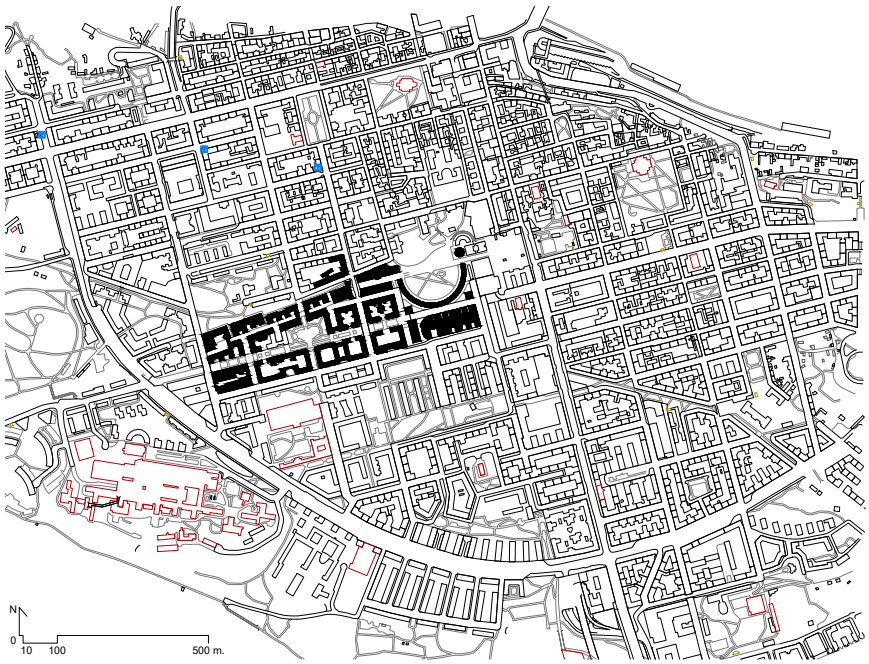
The alternative explored during the 1970s sought after the human scale, the variation of the architectonic landscape and the integration of functions. Hultin points to influences from Christopher Alexander, and specially from Ingrid and Jan Gehl, who addressed the effect the environment has in people. “Integration, interaction and contact” became central. The interest moved from the house as a volume to what happened to the people in between

5 Olof Hultin (1979, p.3). Translated by the author. Original quote: “Det synsätt som dominerade bostadsplanering under 60-talet tror jag var djupt rotat I ett funktionalistiskt arv: man sökte en modell I det perfekta och konfliktfria systemet, bostadsområdet som en matematisk ekvation, där lösningen trillade ut bara man multiplicerade med rät faktor. I ett sådant systemär alla vinklar räta, alla gator raka och alla möjligheter för det oförutsedda att inträffa fullständigt eliminerade”

Figure 2.24

Södrastation. Södermalm.

Block structure from the 1980s with suburban qualities inserted in the inner-city, next to the blocks from the 19th century. It includes an internal pedestrian spine that crosses the with a domestic character that does not continue the urban tissue of urban streets that contain both traffic and pedestrian movement.



the buildings. The new planning model aimed at the small and intimate scale, the winding passages where different things occur, sequences of spaces as opposed to straight streets, different grades of privacy. This was achieved by grouping the buildings around shared gardens that offer opportunities to get to know each other, and by having the houses placed on the ground with rich vegetation next to them.

1980s

Examples of urban developments from Stockholm during the 1980s include Södra Station, with Jan Inghe-Hagström as responsible city architect. It is a large scale housing project in the inner-city, that introduces not only postmodern trends, but also tries to articulate some of the residential qualities of the suburb into an urban environment (Mattson, 2020) with big blocks with gardens that contrast with the more compact tissue of the inner city (fig, 2.24). This is the reverse to the idea of Hammarby Sjöstad incorporating qualities from the traditional grid in the suburb; here qualities from the suburb are introduced in the

inner city, what suggest that there has not been and urbanism of the suburb and an urbanism of the inner-city that recognises its specific characteristics, instead, in each period architects and designers have defined their ideal of what a city should be in terms of density, typologies and traffic. Rather than typologies applied according a context, this tells a story where in each period is developed and conceived a model to address urbanism, which is applied similarly in different contexts. In relation to Hammarby Sjöstad this would mean that rather than bringing some qualities from the inner-city to the suburb as suggested above, what is done is to define a generic model of what is thought to be good urbanism, which is applied and adapted both in urban and suburban environments.

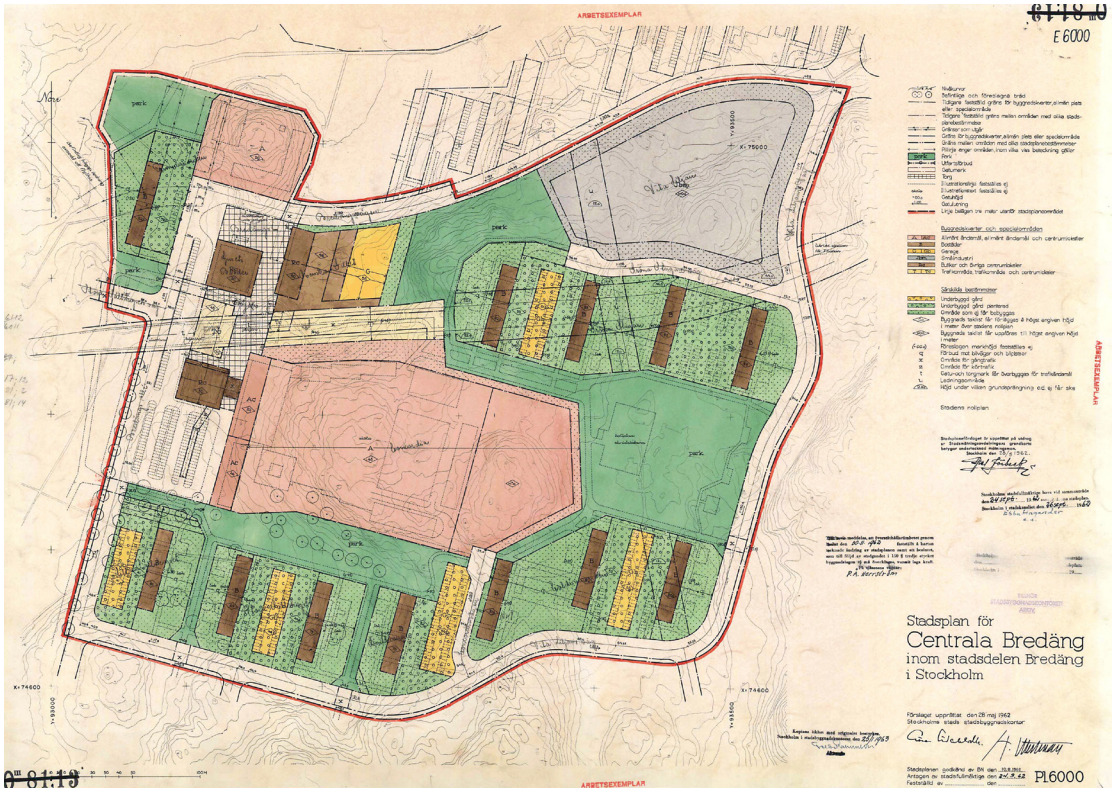
In the suburb, there are some developments that introduce the block and the grid in the late 1970s and 1980s. Minneberg (see fig. 3.14), to the west of the city with a symmetric scheme with postmodern flavour, where Jan Inghe-Hagström was the responsible architect from the municipality. Kv. Dalen and Skarpnäck (fig, 2.25) to the south east with Leif Blomquist as responsible architect from the municipality. Under the historical perspective of a sequence of styles, Kv. Dalen, that precedes the other examples, seems difficult to position, due to its character defined by prefabricated concrete panels that are used in a very different way than in Järva, here they are used seeking variation to form suburban blocks in a small scale environment. Rather than assimilating Kv. Dalen to a predominant model or typology, we shall look to it as a transition that collects previous experiences but also the critique to what had been done before, it connects with previous approaches to planning and with the progressive introduction of elements that will evolve until the codification of the block.

2.6. From Järva to Skarpnäck: From the ‘slab-house in the park’ (*skivhus i park*) to the ‘park in the block’ (*park i kvarter*)

The volume 7 from 1980 of the specialised magazine Arkitektur was dedicated to the project of Skarpnäck, with articles by Torsten Westman, city planning director (stadsbyggnadsdirektör) of the municipality of Stockholm, and Leif Blomquist, city architect (stadsarkitekt) responsible for the project. Westman introduced some design principles applied in Skarpnäck that have evolved across the functionalist period as part of a learning

Figure 2.25
Kv Dalen.
_Late 1970s. Around 6.000 inhabitants.
Skarpnäck.
_1980s. Around 10.000 inhabitants.
Hammarby Sjöstad.
_1990s. Around 20.000 inhabitants.

Figure 2.26
Bredäng.



process that goes “from Bredäng to Skarpnäck”. The desing principles introduced by Westman are: planned variation (*planerad variation*); cityness (*stadsmässighet*); and a well defined urban space (*stadsrum*).

Bredäng (fig. 2.26) is a paradigmatic example from 1962 of a generic idea of the functionalist city characterised by repetitive, tall, linear slab-buildings, all placed in parallel to get air and best orientation to sun, with separation of transport modes, with a protected but undefined internal space that denies the street as the space of socialisation. Westman sees the developments of Järva, otherwise often associated to the same functionalist paradigm as Bredäng, as an important milestone in the incorporation of new planning qualities and ideas, such as the aim to reintroduce the street and of the urban life. In the monographic volume it is suggested that this transition was culminated in Skarpnäck. However, I argue, that the transition was not finished and the typology introduced in Skarpnäck did not become the model codified in subsequent developments, for it would go a step further in Hammarby

Figure 2.27
Above: Rendered building facing the central spine in Hammarby Sjöstad.
Bellow: Brick building facing the central spine in Skarpnäck.

Sjöstad, whose typologies lean towards rationalisation and are more clearly based on linear slab-typologies, taller than Skarpnäck, rendered in colours with a face to the street and another face to the common garden, have become dominant since then (fig. 2.27).

Slab-house in the park' (skivhus i park)

In the article by Westman, the typology in Bredäng is labelled as 'slab-house in the park' (*skivhus i park*). Is to this typology, from the 1940s and 1950s that precede the Miljonprogram, to which the suburban-block typologies will react rather than to the later developments of the late 1960s and 1970s. Bredäng is presented as an example of rationalist planning, with monotonous parallel blocks grouped generating and internal car free area with school and children's playground, with car-traffic in the perimeter. From the rationalist period Westman recognises the high quality of the apartments, but considers that is not enough to repeat a good unit with a good orientation, for it results in a monotonous urban landscape that neglects the importance of well shaped spaces.

Projected Variation (planerad variation), Cityness (stadsmässighet) and a Well Defined Urban Space (stadsrum)

After Bredäng, Westman talks about the large scale projects built around the green wedge of Järva, divided in two phases. The first one from 1965 is north Järva (Nörra Järva) includes Rinkeby-Tensta could be seen as the culmination of a process where the lack of urban space is enhanced by its large scale and prefabricated concrete elements. Furthermore, the separation of means of transportation in different levels reduces the presence of people in the public space. Nevertheless, Westman defends some decisions in Rinkeby-Tensta as the first attempt to re-introduce in the urban scheme a sense of 'city-ness' (*stadsmässighet*) through the disposition of buildings framing the public space.

The critique associated to Tensta of not being a good living environment shall not be connected only to the scheme, style and disposition of the buildings. In fact, that stigmatisation was formed early on, even before it was finished. Already in 1970 appear harsh critiques to a large scale development for an area that had gone from around 200 inhabitants

in 1967 to around 20.000 in 1.970, with a messy construction phase with lack of coordination across too many builders engaged in the area, and a late construction of the metro that would serve the area that did not come until 1975, generated an image of an unfinished building site without services or public spaces (Bengtzon, Delen and Lundgren, 1970).

Westman mentions also the social segregation associated to Järva, which shall be considered as a structural characteristic of how the suburbs of Stockholm have been built since 1900, that had resulted in secluded areas, each of them very uniform in terms of social backgrounds. Spatial segregation in Tensta is is reinforced by high distance to the inner city and by road infrastructures that act as barriers that difficult the connection with nearby areas. In relation to the monotonous landscape of repetitive, flat, rectangular, grey blocks, Westman points to excessive focus in production and efficiency in the application of prefabricated systems.

Norra Järva dates from 1971. Westman explains the introduction of the concept of projected variation (*plannerad variation*) in this phase. In Husby and Kista, not all the buildings have the same direction. They depart from a rectangular scheme where linear slab-buildings of different heights are placed in one of the directions of the orthogonal scheme taking into count their role to define the urban space, and not only their to the sun. The planned variation seeks human scale and more contact between people, aims to avoid repetition and to incorporate a more human scale through lower volumes, and more diversity in the program, in the types of dwellings, and the use of materials and details.

The project of Kv. Dalen from 1979 is located to the south of the city, and at first sight offers a very different scheme and urban environment, but Westman introduces it as a conscious planning effort to give continuity to what had started in Järva. Continuity in the exploration of spacial qualities to provide with variation and social exchange, aiming at a well defined character to the area. After the experience in Tensta, it was considered important to reformulate the collaboration with builders and consultants, in order to engage them in an effort to build urban volumes and spaces in a different way. Being of much smaller scale, the whole development was assigned to one developer (the public cooperative Svenska

Figure 2.28
Kv. Dalen. Sequence of urban spaces framed by the buildings, with intimate scale.

Böstader - SB) to avoid the problems suffered during the construction, working with only one developer and one architectural office, being the challenge to produce a harmonic variation that both gives a common character to the plan and welcomes variation in the sequence of spaces (fig. 2.28) within the repetition of solutions.

The social urban space (sociala stadsrum) and the multifamily garden city (trädgårdstaden)

In another article in the same Arkitketur monography from 1980 dedicated to Skarpnäck, Leif Blomqvist (1980), the city architect responsible for the project, explains the principles behind the design, the aim to integrate working spaces that were being pushed out the city centre, the ideas of variation and of urbanity, and the introduction of parallel competitions to secure those qualities. Particularly interesting here are the principles of the social urban space (*sociala stadsrum*), which refers to the influence the disposition of the buildings in how people relate to each other, and of the garden city applied to multifamily block.

The connection to the garden city is even more clear in Kv. Dalen, where each block can be read as a collective house with its own community garden. The whole area is restricted to the car and there is a very careful design of the landscape, the pavements, and the selection of low and high vegetation, being each of the blocks dedicated to a tree species to generate a sense of belonging. Each block is the garden of one community, each one named after a tree species, and the whole neighbourhood has a well defined identity. The height is limited to three flours, with a fourth floor in specific corners. In each block are mixed apartment types with smaller and bigger apartments, and duplex houses. The urban space, is not a strict grid, it rather is formed as a sequence of spaces that provide with alternative paths and alternative vistas, avoiding long longitudinal lines except in the central avenue that works as the common meeting space for all the blocks. Being located in flat terrain of a former sand and gravel quarry, it does not have a landscape to adapt the scheme as the garden city does, instead it creates its own urban landscape of sequential spaces and interrupted streets to change perspectives and richness of the experience (figs 2.28 and 2.29).

Storgårdskvarter.

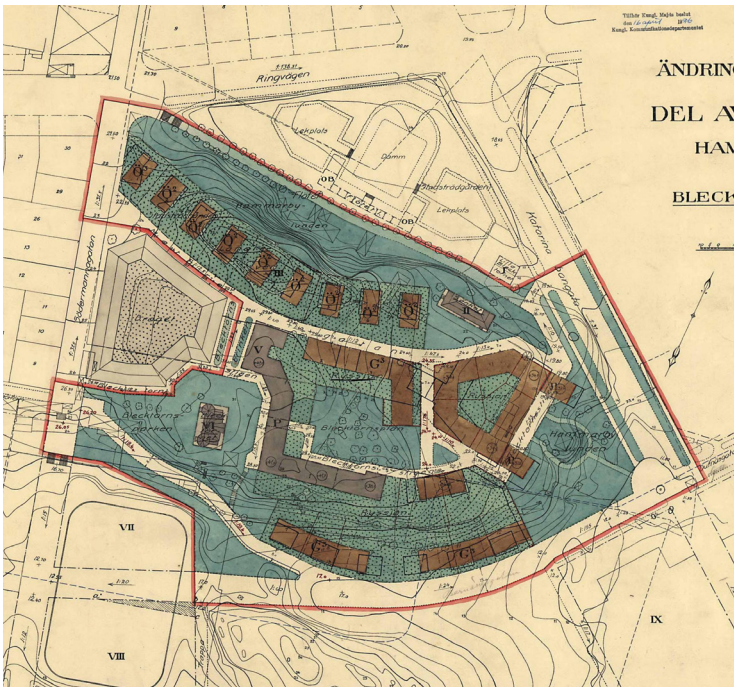
In the first decades of the century it is developed the typology known as *storgårdskvarter*, or the block with a large garden, which incorporates many of the qualities of the garden city, that was being implemented at the time. It establishes a sharp direct limit with the outside streets, but in the inside there is a much more nuanced sequence of private, shared and public spaces. It could be considered a bigger urban block, but in fact it is not usually built as part of the gridiron plan or as a continuation to it. Instead, as the garden city does, it generates an own microcosm of well delimited borders and common spaces, with entrances marked by arches and internal streets to access the apartments. Per Olof Hallman also worked largely with this typology in projects like Lilla Blecktornsområdet from the 1920s, in Södermalm , north of Norra Hammarby Sjöstad, which it is close to the regularisation plan of the 19th century but not inserted in it, built in a little hill, adapting its street structure to the topography (f8g 2.30). It includes an external facade and an entry to the housing, including internal streets to access the appartments

Figure 2.29
The garden city in multifamily housing

Gamla Enskede garden city from 1907

Kv. Dalen, garden blocks from 1979

Figure 2.30
Blecktornsområdet.
Left: situation in Södermalm. Right; plan by P. O. Hallman 1926



Other areas built outside the city incorporate the big garden block, like Midsommarkransen and Aspudden, the last, from 1918, also counted with the participation of Hallman. They dispose a traditional network of small streets with fronts well defined by the buildings designing urban environments outside the inner city, intimate urban spaces with intricate streets and sequences influenced by Camilo Sitte and Joseph Sübben (Anderson, Monica, 2016; see also Rådberg, 1988). They aim to have an urban character, with urban streets defined by the façades of the buildings with direct access, but providing with another face to an internal garden where the shape of the block is not usually rectangular, it is altered and twisted to define a variation of internal spaces where the greenery predominates. Some characteristics that we will find in Kv. Dalen.

Kv. Dalen

Leif Blomqvist was the architect from the municipality responsible of both Kv Dalen and Skarpnäck. I interviewed Blomquist in his apartment two times in 2024, April 22 and June 13. In order to explain some of the decisions behind Kv. Dalen he made a

similar diagnosis as that exposed by Westman in the article of the magazine Arkitekten mentioned above. Influenced by the unsatisfactory implementation of the project in Tensta, emphasis is put in a smoother construction phase, by incorporating only one developer that worked with one architectural office, which was facilitated by the much smaller scale of the development, and favoured by the fact that it was built around the already existing metro station of Sandsborg, which meant that the public transport was already in place before the construction, and ready when the first inhabitants moved in.

The separation between cars and pedestrians is not done in different levels as happened in Tensta, for these levels were seen as problematic and reducing the social exchange rather than enhancing it. In this respect Kv. Dalen it is closer to the principle applied in previous developments such as Bredäng, that maintain the cars in the periphery, with an internal area for pedestrians, safe for children to move freely. To keep the car traffic in the perimeter, and a clear definition of the border by the buildings and their characteristic use of concrete panels and steel roofs, reinforces the idea of the community in Kv. Dalen.

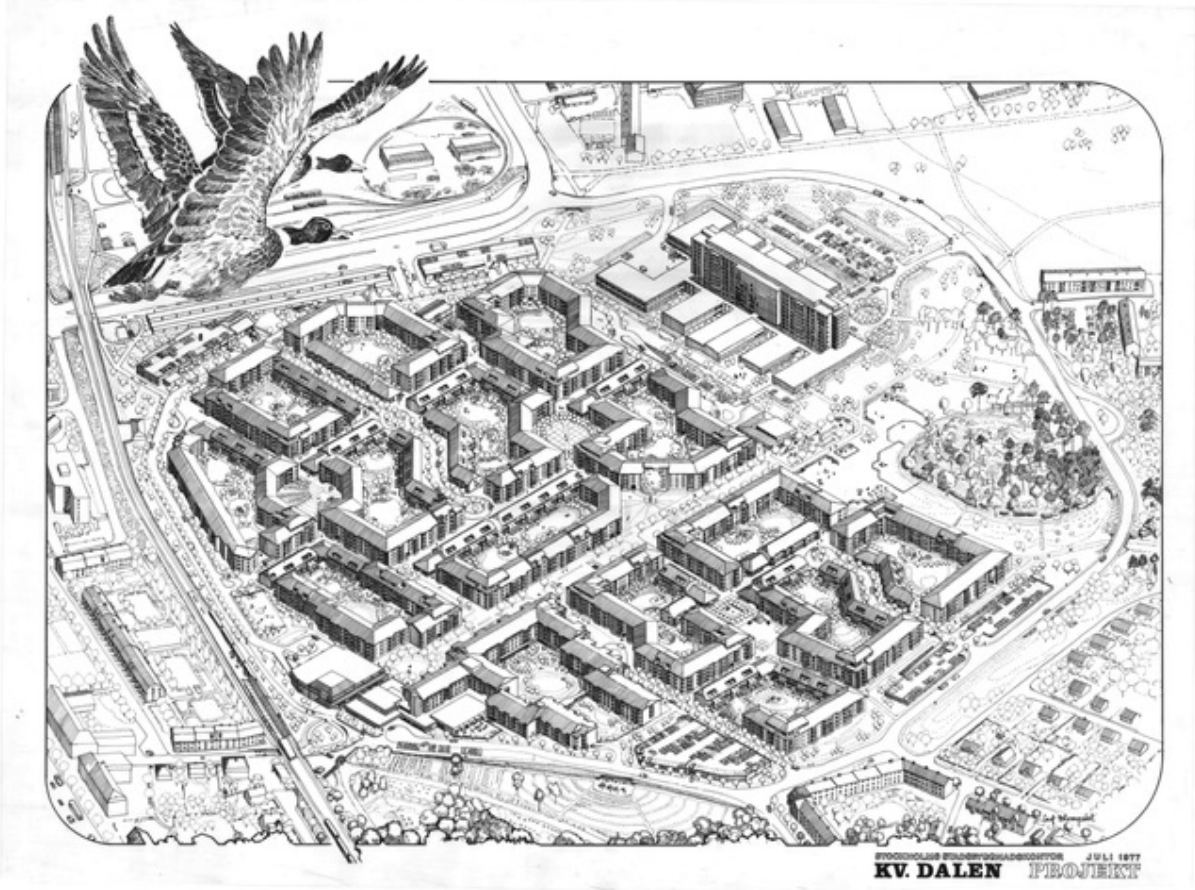
It is incorporated the grid as the basic scheme, however it is not a pure grid of straight lines, it is closer to the picturesque conception of the garden city. Here, the urban spaces comes before the definition of the blocks, it creates a sequential experience of small squares and changes of view, with small scale, narrow streets and low buildings up to three floors, occasionally four to emphasize the corners (fig.2.25). Typologically is closer to the *storgårdskvarter* from the 1920s, than to the block inserted in an orthogonal grid that was applied more clearly in Skarpnäck and Hammarby Sjöstad. However there is more emphasis in the urban space than in the case of the *storgårdskvarter*, that tends to be more self-referenced. In relation to the evolution followed in Skarpnäck and Hammarby Sjöstad, the focus of the social exchange in Kv. Dalen is in the garden, while in the following examples the street will be strengthen. The well defined enclosed spaces aim to enhance contact between neighbours and that their presence increases safety and surveillance. Leif Blomquist talks about a learning process experienced by himself and the municipality since the developments around Järvafältet, where they start to group the buildings aiming for more social contact.

In Kv. Dalen, the original idea was to build brick façades rendered in white, but the builder preferred to use prefabricated concrete elements that were being used in most of the housing developments during the 1970s. To avoid monotony, the concrete elements were applied with variation in height and shape of the volumes and the colour scheme, forming a landscape emphasised by a playful definition of the line of the tilted roofs.

Two are the main references mentioned by Blomqusit. On the one hand the psychologist Ingrid Gehl who wrote about the importance of the environment in the people´s behaviour in her book *Bo-Miljø* (‘Living Environment’) from 1971. On the other hand the book *Funktionalismens Genombrott och Kris* (‘The Breakthrough and Crisis of Functionalism’) (Arkitekturmusset, 1980), which was published as part of an exhibition held at the Museum of Architecture in 1980, which explains Swedish functionalism between 1930 and 1980, its achievements and also the perceived problematic of certain urban environments. Being part of two traditions: the consideration of the urban space as the space for socialisation, and the early functionalism that was not restricted to rationalistic parameters of the modernism but aimed to integrate in the design a wide set of functions, practical, technical, social or cultural, Blomquist would define his approach as social functionalism, because the main goal of the spacial investigation in the design of Kv Dalen is how the user experiences the space, and how it can favour the social contact, through intimacy but also through natural care and protection of a space appropriated by the neighbours..

In the local library of Kv Dalen there is a big picture hanging in the wall that shows an axonometric perspective of the area signed by Leif Blomquist (fig, 2.31). The drawing is very close to what was actually executed, despite it was drawn before the project was assigned to the developer and the architects. In the axonometric the blocks are not generic, the shape is well defined and the architects resolved the buildings following the given footprint. It is not common that an urban plan drawn with a lot of detail at the municipality gets implemented without major changes. The whole development was assigned to the cooperative Svenska Bostader SV, who in turn made a competition with three invited architect offices that made proposals to solve specific blocks, being selected the office FFNS. Thus in Kv. Dalen is first

Figure 2.31
Kv. Dalen overview by city architect Leif Blomquist. 1977.
The picture hanging on the library is a colour version of this drawing.
Source: personal archive of Leif Blomquist.



defined the urban space and its qualities to then adapt the housing solutions to it. According to Olle Jouré (1979), one of the architects form FFNS, the qualities of the urban spaces were firmly kept through the process by all the parts. This can be contrasted with the approach of Tensta that applies the reverse logic by defining a good apartment to be repeated and positioned in relation to the sun, being the urban space the result of those parameters.

Gunnar Andersson and Sverker Feuk, part of Svenska Bostader explained that in the competition between the three architectural firms (FFNS, Engstrand & Speek, and EGÅ) the requirements from Svenska Bostader included variation in the volume of the buildings and in the way the ground is treated, considering variation within uniformity, that would be reached through the use of one material with diversity of shapes. Pitched roofs where not only a contrast with functionalistic flat roofs, they where also a practical solution regarding the climate and the fact that they make possible to allocate pipes and facilities under the

roof. Attention to the detail was an important part of the process, what is mostly visible in the design of the landscape, the variation of ground materials and species planted. According to the developers, the process showed how through a good the collaboration between the building company and the architects, the concrete elements could be adapted to the variation of the project, and the colours agreed upon. The “technique was adapted” to the desired result and not the other way around through and intense collaboration between producers and designers (Andersson, G. & Feuk, 1980).

But Kv. Dalen also received criticism early on from part of the architectural profession who, recognising the aim for variation, small and intimate scale, criticised a lack of order and clarity of the elements. So to speak, demanding more rationalism to find a balance between order and variation (Caldenby, 1980).[6] We will see in the following chapter that exists a recurrent tension between a more expressionist approach to design from the definition of the space and an aim to control the space and the order from a rationalist approach.

Skarpnäck

Skarpnäck (fig.2.25) was built in the flat terrain of a former airfield. Unlike Kv. Dalen, is not build next to a pre-existing metro station or in connection to other neighbourhoods. In this case, the metro line number 18 was prolonged one stop from the neighbourhood of Bagarmossen. Skarpnäck is separated from Bagarmossen in its north-east limit by a 170 to 250 meters wide green wedge, that is an insertion of the nature reserve of Nacka into the built environment. To the north-west, in the direction of the city there is an open sports field followed by some villas. To the south-west limits with Gamla Tyresövägen, the road that connects the suburban developments with the city, that also surrounds Kv Dalen. And to the south-east there is the more clear border of a high-speed motorway.

The enclave has an almost rectangular shape. It is built parallel to the road Gamla Tyresövägen next to the road but not along it. From Gamla Tyresövägen departs a smaller feeding road (Horisontvägen) that divides Skarpnäck in two, with the industrial area in its

6 The referred article is an interview with three recognised architects.

southern side and the residential area to the northern side. A third order of streets stems from Horisontvägen forming Skarpnäck allée, as it happened in Kv Dalen, the central allée is the central spine that articulates the he enclave.

There is an evolution from the separation of modes of transportation that in previous experiences liberated the central space from traffic, done in different heights in Tensta, and then in the same level in Kv. Dalen leaving car traffic in the perimeter. In Skarpnäck, the spine contains car traffic to favour commercial activity. Despite the access for the car, the allée is still a self contained space, so to speak, it does not form an artery extended to connect with other parts of the city. Similar to Kv. Dalen, if the gardens inside the blocks are the gathering space for the neighbours, the allée is the meeting space for all the blocks. In Skarpnäck this central space contains the metro station, the cultural centre, the church and the commerce.

The grid in Skarpnäck is based in straight orthogonal lines. According to Blomquist, in this case the decision is related to it being built in the flat surface of the former airfield with no close relation to immediate urban areas, the straight lines aim to connect visually the interior with the surrounding landscape, which is emphasised in the borders, where the streets create narrower passages. The blocks in the preliminary sketch by the municipality are regular and almost square, in the design process they where twisted to generate different kind of urban environments, closer to the spirit in Kv. Dalen. The approach to the grid in the preliminary sketch from the municipality is closer conceptually to the grid plans of the Renaissance, with square blocks and where the streets frame views and connect with the landscape, rather than to the gridiron plans of the 19th century of rectangular blocks that stitch together existing urban environments. In both Kv. Dalen and Skarpnäck the separation of transport modes is substituted by providing alternative possibilities for movement, inviting pedestrians to walk through the gardened blocks. IF in Kv. Dalen was searched a continues internal space, in Skarpnäck is introduced a controlled integration of traffic and pedestrians systems, while in Hammarby Sjöstad the grid is even more hierarchical in the way the streets are assigned to different means of transport. (fig. 2.32)

Working places were part of the project, but they were not mixed with the residential, being located in specific blocks in the other side of Horisontvägen, which does not become an urban avenue to connect both. There have been taken some measures to mitigate the noise in the residential side of Horisontvägen. The distance between cars and dwellings is increased by adding a lane of trees along the side-walk, and offices and parking houses are located along it. The perimeter is clearly defined, and each entry into the area is emphasised by colonnades (fig. 2.33). As said, the alley, conceived as an internal spine, is not connected to other urban tissues. It has one main entry point to the north-west end, and ends into an internal square in the south-east, which is emphasised by a high building. This square with the landmark of the tower, was planed to allocate the metro station, but it was later moved to the central part, remaining the square and the tower as a landmark at the of the alley. In line with the argumentation by Françoise Choay (1969), the self-contained spine of both Kv. Dalen and Skarpnäck, framed by buildings, vistas and landmarks show a baroque conception of the space, the spines can be understood as a salon or a central space, which is different concept from that introduced in the Haussmann plan for Paris where the boulevards are elements that articulate the city. In Hammarby Sjöstad the spine is less conceived as a salon, and more as a linear street with openings when it meets the water or central areas.

The idea of harmonised variation is further developed. If in Kv. Dalen one developer gave unity through the use of material and variation by including different apartment types of each block, the overall result is repetitive as all the blocks include the same elements of variation. In Skarpnäck, being bigger size, the harmonised variation is addressed by the introduction of several developers, each on charge of six to eight blocks, and each asked to make a competition with three architecture offices for their assigned land. Unity is provided by assigning the use of a common material to all of them. Each group of blocks has its own character that has a close connection to their own landscape, internal gardens and external public space, while the harmonisation is achieved by the use of the brick, the volumes, and the common structure provided by the urban scheme defined at the municipality’s planning office. A step further in the search of variation, in Hammarby Sjöstad each block has one or