

AAHM10

DEGREE PROJECT IN MASTER OF ARCHITECTURE

# NEIGHBORHOOD AS A LIVING ORGANISM

LOOKING AT TERRITORIES-IN-BETWEEN RURAL AND URBAN  
CASE STUDY BRUNNSHÖG LUND

BY PARTO JAHANGIRI  
JUNE 2021

SUPERVISOR: MARIA RASMUSSEN  
EXAMINER: CHRISTER MALMSTRÖM

LUND SCHOOL OF ARCHITECTURE  
AND BUILT ENVIRONMENT

# — ABSTRACT



LUND  
UNIVERSITY

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To encounter the ambiguity of the contemporary understanding of neighborhood, we must fundamentally view the concept from a broad historical and global perspective. A neighborhood should be understood as an organism; this whole organism is alive, constantly changing, and its structure is fluid. The way people live and create community has changed with all the social and technological changes in the last century. This study intends to look for patterns in micro-behavior that evolve, shift, and emerge as macro-behavior. In this regard, it chooses the neighborhood scale as an understandable benchmark. The neighborhood changes like a dynamic organism depending on how people interact with it.

The project explores new strategies as a necessity for shaping future neighborhoods in territories between rural and urban, aiming to increase individual responsibility by providing more opportunities for negotiation. Neighborhood is seen as an incentive process leading to self-organized collaboration and participation of residents. Case study methodology is used to generate an in-depth, multi-faceted understanding of the complexity. However, the approach is not intended to be overly solution-oriented or context-specific but develops principles to relate the topic to other similar contexts. Scandinavian cities are stimulating when considering settlement patterns because large tracts of land predominantly surround them. The study focuses on southern Sweden and looks specifically at the city of Lund. In Skåne, the primary structure that connects it to its history is the act of farming, which has remained active for many years. As Lund grows, how can it adapt to agricultural conditions without destroying the surrounding farmland entirely?

The proposal presents a morphological and pattern design intervention as its technique to enable new forms of experience, dialog, and awareness about the design of future neighborhoods. The design intervention is used as a placeholder concept that allows for the exploration of further alternatives.

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# 1. INTRODUCTION

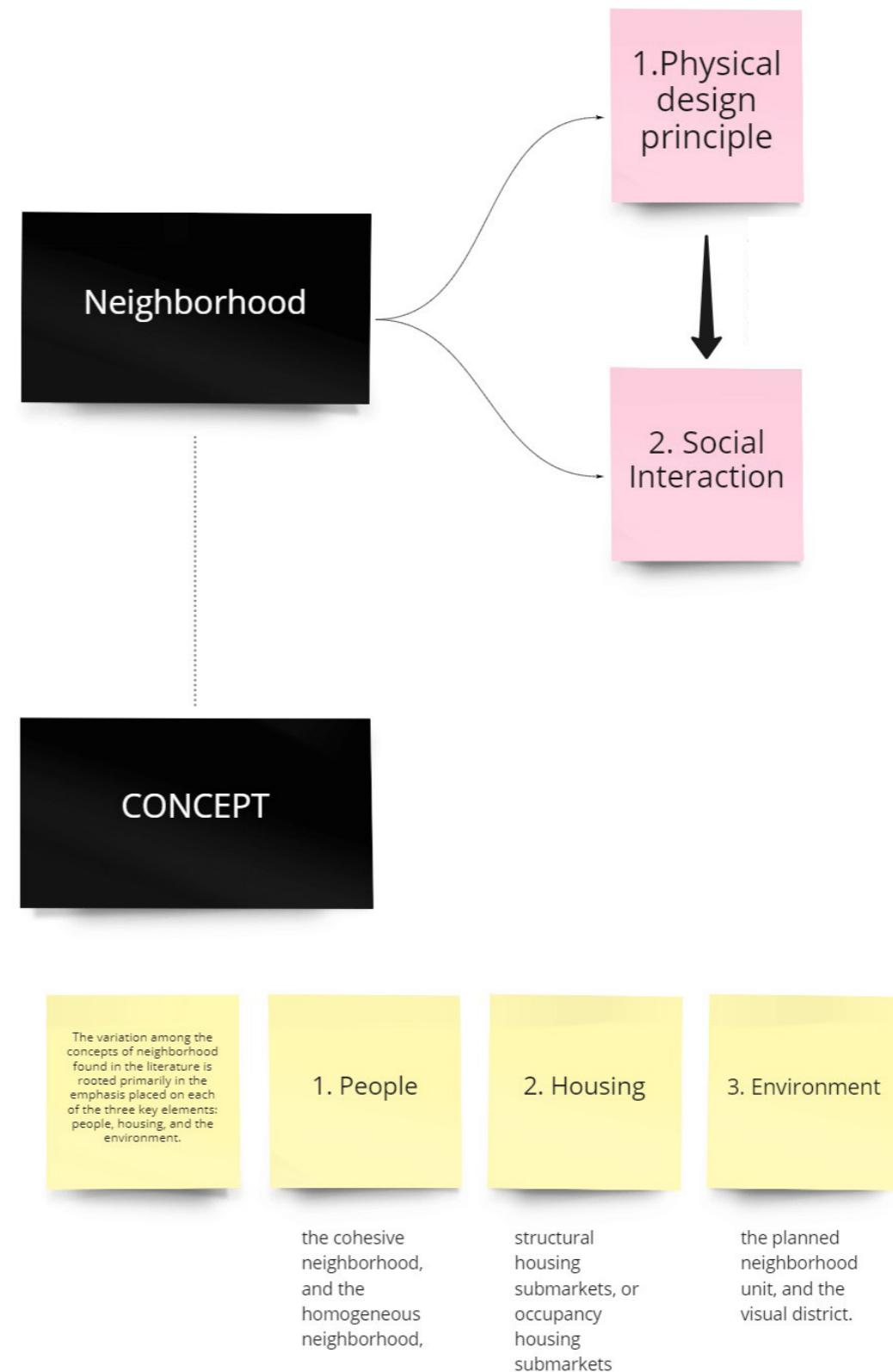
## OVERVIEW

This report consists of seven chapters, where in the first four chapters, Introduction, Historical Studies, Hypothesis and Morphological Studies the aim is to discuss the concept and character of the neighborhood as a living organism. Based on the findings, existing theories and knowledge from various literature reviewed in the first part, hypotheses are put forward. In the next two chapters, the aim is to test the proposed idea through a case study of Lund in Sweden. In these chapters, Site, Design Intervention, the aim is to give some experimental interventions with the hypothesized scenarios and to better visualize the challenges and opportunities for the future neighborhood.

## MAIN BODY

-Consider neighborhood theories to extract meanings, examine patterns, and arrive at implications for people's quality of life.  
-The aim of this study is not to describe and urge a utopian life. However, the main goal is to open a discussion about how future neighborhoods can be shaped relative to challenges and needs.  
-A recurring theme is the search for patterns in micro-behaviors that evolve, shift, and emerge as macro-behaviors.  
-Shifting recognition of impact from functionalism to metabolism. The neighborhood is discussed as a living organism.

## CONCEPT OF NEIGHBORHOOD AND VARIATION IN DEFINITION



## VARIETY IN DEFINITION

In order to understand the notion of neighborhood, various literature has been studied. The attempt to find the true concept of neighborhood and its role in shaping cities resulted in different theories and definitions. This variation is mainly due to the emphasis on three key elements: People, Housing, Environment. When the focus is on people, the interest is in how the behavior of the neighborhood's residents shapes the neighborhood's identity; these definitions are more commonly used when the neighborhood is studied from a sociological or demographic perspective. The second key element, housing, can be used to define a neighborhood with its housing submarket coming from a purely

economic perspective. It is an element of the physical environment that dictates who should live in it. Finally, the definitions within the last group, environment, deal with visual and physical aspects of a residential area(Hodas, 1975).

The English word ‘neighborhood’ was originally used for areas outside the city. Also, according to Talen’s studies, ‘myn neghebores,’ was another term commonly used, but that is a group of people and not an actual place. “The first use of the English word of “neighborhood” synonymous to its current meaning as a community of residents living close by was recorded in 1620” (Talen, 2018).

When the living is emphasized in the title of the project, understanding the nature of human life becomes indispensable. This initial understanding plays a crucial role in the design outcomes. When we talk about history, we often see it as something that is in the past, but the way time transforms concepts like neighborhood gives some traces to better deconstruct the complex patterns of contemporary situations. The

analogies between neighborhood and organism are one way to simplify the complexity and ambiguity of contemporary understandings of neighborhood. Neighborhoods can be seen as part of a larger ecosystem of the city, as they are often considered by urban planners as building blocks of a city. This phenomenon has a dual character, physical and social, so the main objective of this study is to address both simultaneously.

## PATTERNS

The first step in this study is to use the neighborhood as an understandable benchmark for the design of future homes and the growth of cities. As patterns in micro behavior develop, shift, and emerge as macro- behavior, managing neighborhoods on a small scale and making them more sustainable has a greater impact in large-scale patterns when this is multiplied. Following the ideology behind Pattern Language, described by Christopher Alexander and others, the set of patterns we choose to build into any part of the neighborhood gives it its character. “ The character of what you build will be given to it by the language of patterns you use to generate it”(Alexander et al., 1977).

In examining the various neighborhood morphologies, a sharp distinction between rural and urban neighborhoods became apparent. Thus, the territories in between became a secondary focus. What happens to the urban edges where these two territories meet? There, the situation is challenging. On the other hand, since there are not many design rules, it provides an opportunity to look at and rethink the concept of neighborhood from a different perspective and free from the pre-existing rules.

“Neighborhood is a word that has come to sound like a Valentine.”  
— Jane Jacobs,  
The Death and Life of Great American Cities

## 2. HISTORICAL STUDIES

### OVERVIEW

As mentioned earlier, the concept of neighborhood has received various definitions, mainly caused by the emphasis on different key elements: People, Housing and Environment. To examine the form, we can start by exploring the changes it has seen so far. In this regard, various articles, books, and references have been reviewed. A significant resource used was Neighborhood, a book by Talen (2018), in which she notes that instead of being just a "descriptor of the geographical location", the basis for the traditional neighborhood concept is tightly formed by regularities of various urban experiences, such as interconnection, localized

identity, human scale, adjacency, access, and the need for a tangible spatial unit to which one belongs.

As the neighborhood form emerged as a feature of urban experience worldwide, observing the historical examples will shed light on how neighborhoods were laid out and experienced. Examining the transformation of this form on a global scale will likely lead to a deeper understanding of contemporary understandings of neighborhood.

### HUMAN SETTLEMENTS

Neighborhood as a form of human settlement can be found all over the world in different periods with various cultures. Whether in the city or in the country, the trace of the communities living together is clear and "even ancient cities have been described as clusters of neighborhoods, a federation of small locality groups" (Talen, 2018). Excavations of ancient cities provided archeologists with strong

### ANCIENT CITIES

evidence of the existence of neighborhood patterns. Without a street or, in some cases, a front door, tightly clustered groups of buildings formed a neighborhood—there are many examples of such settlements in Asian and Near Eastern towns. Talen concludes that "social interaction is believed to have been intense" (Talen, 2018b).

### NEIGHBORHOOD THROUGH THE AGES

With all the social and technological changes, the new relationship between humans and the land has influenced the living format, leading to a change in housing typologies and, alternatively, the communities. This section aims to illustrate the alteration in the connection between living, land, labor, and leisure to emphasize how social and technological changes have influenced it in the last centuries.

Pre-industrialization, land, labor, and living were closely related, and all took place in one place. People lived in a house and worked near their home; the farm and the house were in the same territory. However, when the industrial revolution took place, the number of industrial cities increased. Consequently, labor

and factory-based employment division resulted in a disconnection between land and labor. Although many changed their work from farming to factory-based employment, small-farming and food production remained as a small-scale activity taking place in the yards. Industrialization influences in Europe led to the exclusion of craft production resulting in weakening localized culture, which was previously a reinforcement for neighborhood definition. (Pearson, 1993)

Improvement in mobility network brought the possibilities to live in the city and work further away as commuting in longer distances had become possible. However, these changes complicated the neighborhood identity.

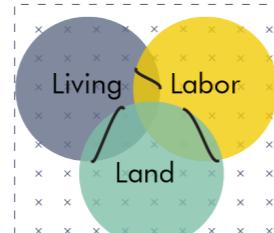
# THE 'L' IS FOR ...

## INDUSTRIALIZATION

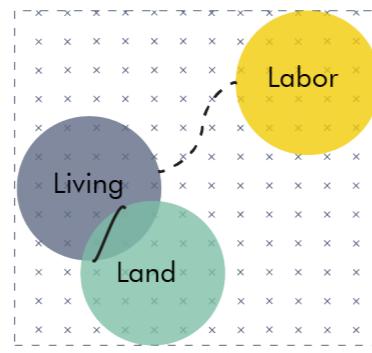
Talen, in the chapter of Historical Neighborhood and Its Decline, indicates (2018) that "form of factory-based employment increased the distance between work and residence even in the pre-automobile city, and factory workers who had once lived close to their jobs were now burdened by long commutes" (Talen, 2018b). The collective moral economy gradually disappeared, and class-based patterns of residential differentiation emerged. (Pearson, 1993)

## TRANSFORMATIONS

### Pre-Industrialization



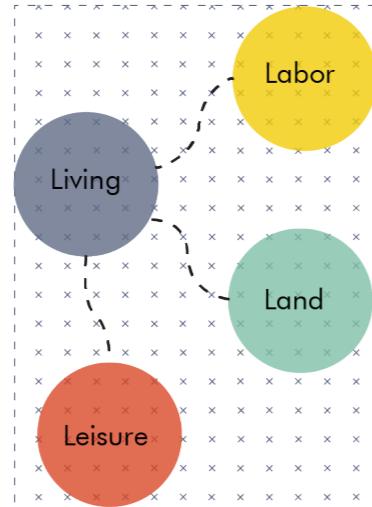
### Industrialization



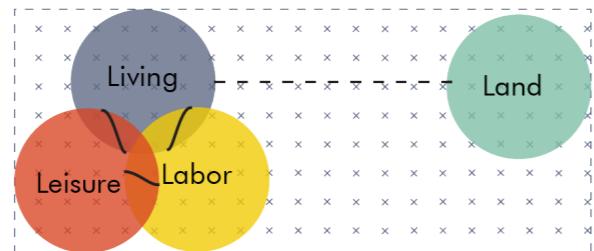
## MODERNISM

As the human scale morphed into the automobile scale, housing and land were no longer closely connected. People began to alienate themselves in neighborhoods and lose their sense of place. A new parameter of leisure began to affect daily life as it was a replacement for the lost social interactions. Residents traveled greater distances to find new communities with which they felt connected. Sometimes it was a short drive to another neighborhood for simple grocery shopping, and other times it was about finding amenities to spend more time there. The more the road network grew, the further apart these four elements became.

### Modernism



### Digital Era



## MODERNISM

The form of the modernist neighborhood unit lacked human scale and lacked integration, connectivity both internal and external. At the same time, enabled by the presence of highways and certain networks such as infrastructure, a new urban lifestyle was taking shape in the countryside. In other words, the binary definition of the countryside began to disappear gradually. New neighborhoods with a direct link to the city emerged, and grid structures

with the same plot size became a feature of the neighborhood unit, resulting in socially segregated areas.

According to Talen, in the later 19th century neighborhoods remained significant only in old urban quarters or in cases of deliberate planning such as small company towns, garden cities, and designed suburbs. The extent outside planned suburbs was described only in terms of a street and not as a neighborhood. (Talen, 2018b)

## DIGITAL CONNECTIVITY

With technological developments, in this age of digital hyperconnectivity, it is more important than ever to recognize and understand the connections between people as a gloriously social species. Digitization has challenged the importance of the physical form of the living, reducing it to isolated cells, leading to a higher degree of individualism. Nowadays, in 2021, we can all easily imagine presenting the visualization of a project to an audience located in another continent. In addition to the accessibility of the internet and the recent technological improvements, people globally have experienced social distancing emerging as a necessity to face the global

pandemic of coronavirus. The pandemic has changed every single relationship in contemporary life since the beginning of 2020. In this regard, living, working, and leisure occur in one place, the home. Often this home is very far from the countryside, open spaces, or green infrastructure in most urban areas and larger cities.

Communities of interest are created in contrast to traditional communities of place. The most social interaction of many has become possible through digital platforms. Nevertheless, it seems unlikely that they can be detached entirely from the physical environment.

# HISTORY

## ANCIENT CITIES

In this section, more detailed information is provided to give a clear idea of the changes within neighborhood design on a global level.

In ancient cities, the urban structure was neighborhood-based. According to historical records, the cellular dynamics of urban change were neighborhoods. As the city consisted of various types of cells, the growth also took place in this format.

According to excavations, the earliest neighborhoods had a small size; Talen notes that rooting back to 4th-century b.c a Mencius proposed that neighborhoods of eight families can support

## HOMOGENEOUS

In the Middle East during the Early Bronze Age, settlements consisted of compounds of different characters. The link between these compounds was created by kinship, economic relationships, social and ritual duties. “There is evidence that the ancient city of Ur was socially and economically mixed, with the wealthy living next to “commoners and craft specialists” (Talen, 2018) . There are more examples that excavations shed light on how ancient people were forming their houses in clusters. For example, in ancient

## FACE-TO-FACE INTERARCTIONS

“principles of humanity.” Talen further explains this proposal that nine plots of land, consisted of eight plots for families and one plot for communal cultivations, form a neighborhood. They would work together, pay the taxes with the processed crops from the collective field, and maintain social interaction (Talen, 2018). The limit of size for a neighborhood was based on face-to-face interactions. By referring to six different studies, Talen points out that “150 to 250 people can maintain close, personal interaction, while 400 to 600 can maintain a more casual form of interaction” (Talen, 2018).

## DEVELOP AROUND A CENTER

Iranian cities, neighborhoods (mahalleh) have always had a key role in the spatial organization and social life mostly culturally homogeneous and mixed in class, and poor and rich lived together as the differentiation was not based on class wealth. In these structures, self-sufficiency was essential, and they tend to achieve internal cohesion. According to the historian Lewis Mumford, medieval cities were “composed on the neighborhood principle.” Talen explains that these cities had developed around a central place, such as

# HISTORY

## PRE-INDUSTRIAL

a manor, the church, a street, the market. In conclusion, economic, religious, occupation, ethnicity, was not a factor to segregate people in preindustrial neighborhoods. Documents are proving this for many medieval cities, like 15th-century Florence, 17th-century London, and 18th-century Paris (Talen, 2018).

Then everything changed the cellular dynamic by the beginning of the industrialization era.

## URBAN GROWTH ALONG THE ROADS

“In Europe, the elimination of craft production—weavers, for example—undermined a localized culture that had reinforced neighborhood definition” (Talen, 2018). Land parcellation and new practices for development significantly influenced neighborhood form. This time is the beginning of urban growth stretching along the roads. At the same time, neighborhoods become differentiated. According to Talen, after 1880, affordable mass transit provided the basis for creating neighborhoods segregated with income levels.

The beginning of the 20th-century marks when urban planners and sociologists started to discuss and plan to get the village life and

## INDUSTRIAL TOWNS

With industrialization, everything became mega. That put a strain on neighborhoods. Early sociologists mention how People were alienated in this industrial city where they did have no sense of themselves and lost their identity. And social connections were lost. In the 19th century, the production method changed, leading to loosening the “cultural bonds holding neighborhoods together for centuries” The neighborhood identity became complicated due to the division of labor and decline of guilds.

## 20TH-CENTURY MOVEMENTS

neighborhood back in the industrial cities. Before historical development, neighborhoods were just happening with not so much predetermined urban planning work going on. The 20th-century version of the neighborhood became “relatively self-contained neighborhoods that had access to services, social life, and nature” (Talen, 2018).

City of Chicago’s club of neighborhood design contest in 1912 received 80 entries; the idea of planning a neighborhood as unite took off, and many of the concepts took shape.

“expansion enabled by the streetcar in the latter part of the 19th century was not usually in the form of neighborhoods. It was in the form of streets” Emily Talen

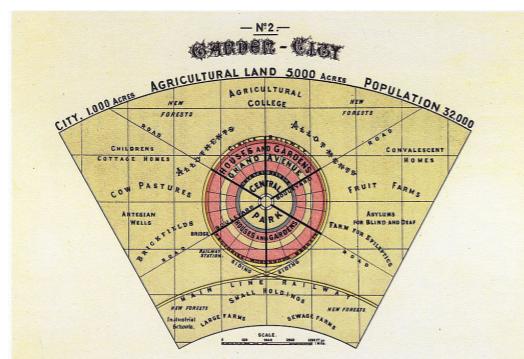
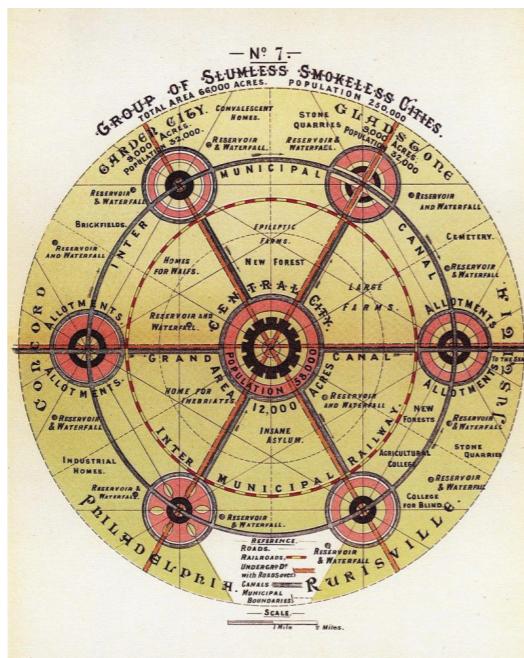
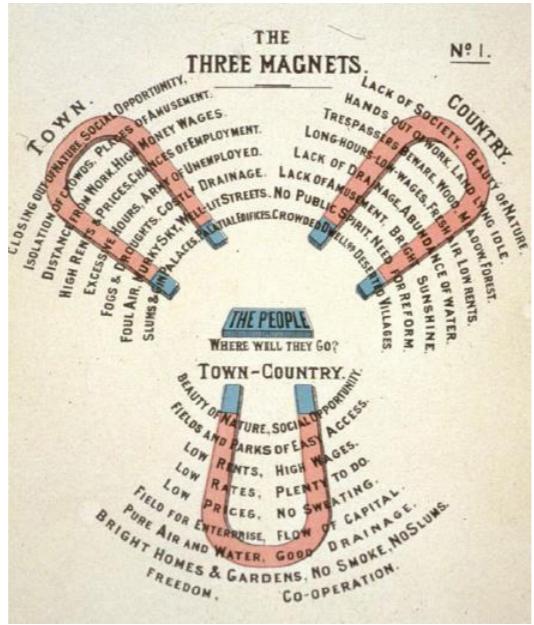
# HISTORICAL STUDIES: 20<sup>TH</sup>

GARDEN CITIES

**1902 EBENZER HOWARD**

The concept of garden cities aimed to address the issues and challenges of industrial cities. With ideals to solve the chaotic urban growth, the idea was based on creating small cities with a combination of advantages from both town and country. Each illustrated magnet represents a specific environment: the town, the country, and the town-country. This concept became a source of inspiration for many and still frequently nowadays is still reconsidered.

“It is worth noting that Ebenezer Howard’s Garden Cities were composed of neighborhoods, called “wards,” and the six wards of Howard’s garden city diagram were each intended for a population of 5,000” (Talen, 2018).



20<sup>TH</sup>

1902 CHARLES COOLEY

1929 CLARENCE PERRY

The theoretical linkage between neighborhood physical design and social interaction can be traced back to Charles Cooley (1909). He stated that human face-to-face interactions are bound on geographical basis. Many sociologists were discussing about these interactions including Robert Park who defined it as the basis of definition of neighborhood. In 1913, he stated: "Proximity and neighborly contact are the basis for the simplest and most elementary form of association with which we have to do in the organization of the city. In the social and political organization of the city it is the smallest unit" (Park 1913).

Perry who was also a sociologist, articulated his Neighborhood Theory by publishing it to a report by the Committee on the Regional Plan of New York. The concept was primarily based on set of functions including elementary school. Small parks and playgrounds, and local shops.

This neighborhood unit was supported with six principles. (all were of a physical nature) later it received many critics. 1980 one of the critics from the new urbanist was the arterials and highways bounding the neighborhood.

## PRINCIPLES

Center the school in the neighborhood.

Place arterial streets along the perimeter to define and distinguish the “place” of the neighborhood.

Design internal streets using a hierarchy that easily distinguishes local streets from arterial streets.

. Restrict local shopping areas to the perimeter.

Dedicate at least 10 percent of the neighborhood land area to parks and open space.



## Model Neighborhood Unit

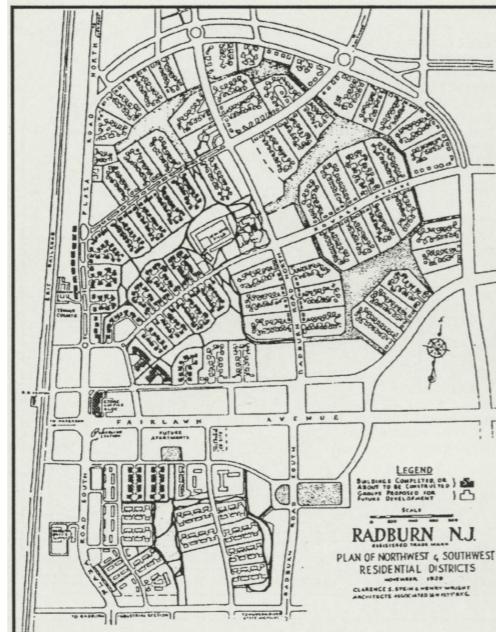
# HISTORICAL STUDIES: 20<sup>TH</sup>

1929 CLARENCE STEIN AND HENRY

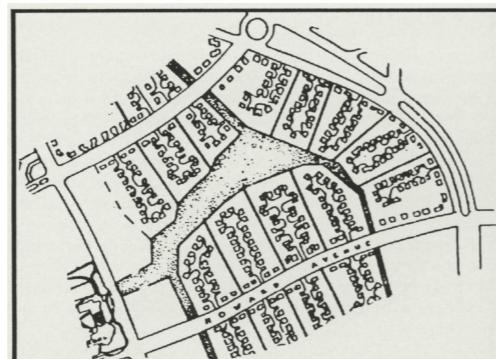
Stein and Wright did not look at the neighborhood to define specific spatial arrangements of supporting facilities, streets, and housings. However, they were emphasizing on fixation of population size without giving a definite number. With a solid center, each neighborhood had defined boundaries.

To provide services like schools and hospitals, the neighborhoods overlapped the other districts. They started the Radburn neighborhood; however, the project was stopped shortly after starting due to the collapse of the United States housing market between 1929 and 1933. Therefore less than an entire neighborhood was completed.

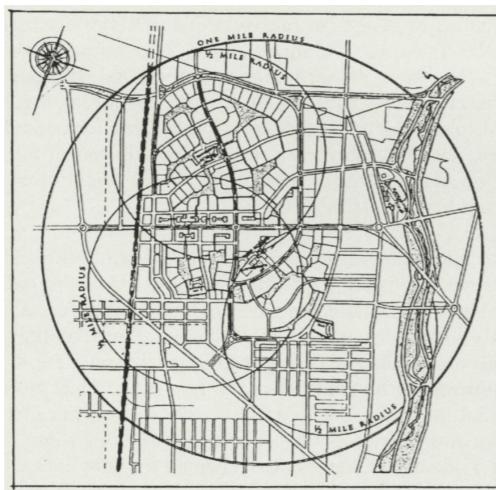
A hierarchy beginning with a group of houses is the basis of their model concept. These houses were arranged around a cul-de-sac court for motor vehicles. The gardens of all houses were connected with a pedestrian path so that the furthest house was a minute walk of the parkway. Some parkways had supported small school rooms within them. The cluster of cul-de-sac and housings along with the parkway shaped the backbone known as superblock.



Typical Radburn neighborhood of six superblocks



Typical Radburn superblock



Overlapping neighborhoods of one-half mile radius each in Radburn

## 21<sup>ST</sup>

MODERNISM

The modernist versions of the neighborhood unit were very enamored with the neighborhood unit. Richard Neutra's neighborhood concept, 1942., and Le Corbusier Chandigarh in India are some examples. But the neighborhood unit was used to socially segregate, although historically, neighborhood role was about to integrate people organized their lives around the central common spaces, instead here neighborhood units were defined for a separate different class.

“European cities outside of the U.K. had their own postwar neighbor-hood unit experiments. Most of them, as elsewhere, were based on modernist Neighborhood spatial planning principles, especially superblocks. In Sweden the neighbor-hood unit (grannskapsenheter) was popularized by the publication in Swedish of Mumford’s exaltation of the neighborhood unit in *The Culture of Cities*, as well as the adoption of the neighborhood unit in the 1944 Greater London Plan.” (Talen, 2018)

“Le Corbusier’s dream city was like a wonderful mechanical toy, but as to how the city works, it tells ... nothing but lies ... There is a quality even meaner than outright ugliness or disorder and this is the dishonest mask of the pretended order, achieved by ignoring or suppressing the real order that is struggling to exist and to be served.” Jane Jacobs, *The Death and Life of Great American Cities*

### NEW URBANISM MOVEMENT

The new urbanists, gave 13 physical attributes of neighbourhoods which are extracted from the most useful parts of perry’s model.

1. The neighborhood is the increment of planning. A single freestanding neighborhood is a village.
2. The neighborhood is limited in size to a 5-minute walk (.25 miles, 400 meters) from edge to center, where the needs of daily life are available.
3. Neighborhood streets are in an interconnected network, allowing multiple routes to destinations.
4. Neighborhood streets are spatially defined by buildings.
5. Neighborhood buildings are diverse in function but compatible in terms of size and configuration on the lot.
6. The civic buildings of a neighborhood are located in

important areas, for example, attached to squares.

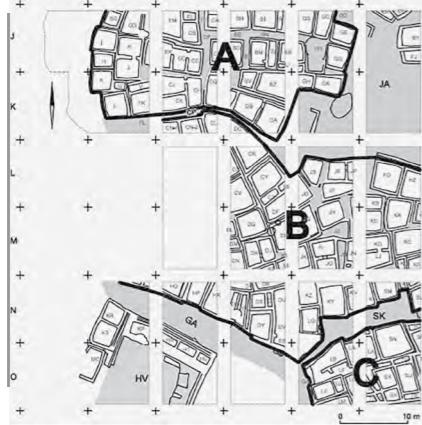
7. Neighborhood open space is defined rather than amorphous.
8. Everyone living in a neighborhood has independence of movement, since activities of daily life are within walking distance.
9. Reduced auto trips means less traffic and lower costs.
10. Human-scale streets and squares provide opportunity for social interaction.
11. Transit is made feasible by providing sufficient density near transit stops.
12. There is a full range of housing types and workplaces, allowing age and economic integration.
13. Civic buildings and spaces encourage democratic initiatives.

(Source: Thadani, *The Language of Towns and Cities*, 429)

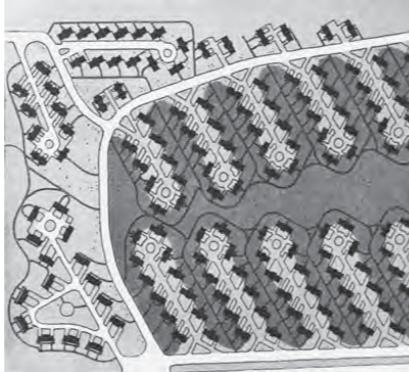
# EARLY DESIGNS

DESIGN DEBATES

FROM TALEN'S BOOK



BRONZE AGE NEIGHBORHOODS  
CENTRAL ANATOLIA



1942 RICHARD NEUTRA'S  
NEIGHBORHOOD CONCEPT

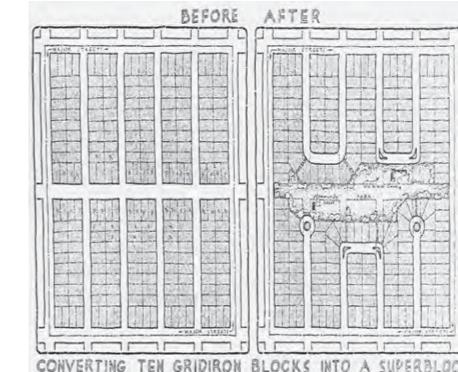
excavated in Central Anatolia (Turkey). Source: Image redrawn from Düring, *Constructing Communities*.

Richard Neutra's Radburn-like neighborhood plan, with housing units fronting finger-like parks around a large communal green that was emphatically free of cars.

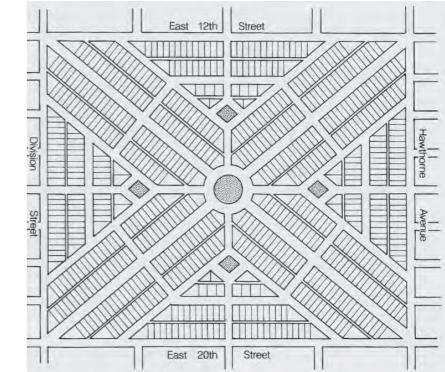
# EARLY DESIGNS

DESIGN DEBATES

FROM TALEN'S BOOK



CONVERTING GRIDIRON  
BLOCKS INTO SUPERBLOCKS



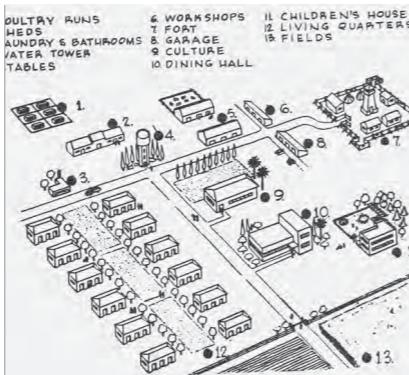
LADD'S ADDITION,  
PORTLAND, OREGON

This 1920s-era neighborhood redesign argued that the gridiron plan is not suitable for residential neighborhoods because it is “wasteful, expensive, dangerous and unpleasant.”

Source: Arendt and American Planning Association, *Crossroads, Hamlet, Village, Town*



HEGEMANN AND PEETS'S  
"MILWAUKEE GRAND CIRCLE"



THE KIBBUTZ,  
PERCIVAL AND PAUL GOODMAN

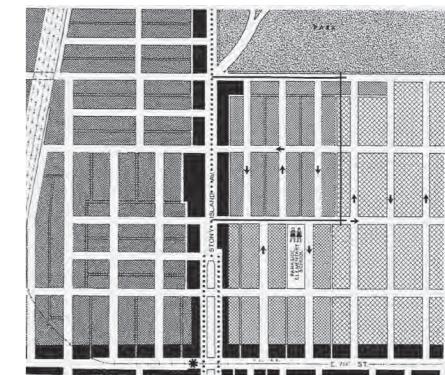
create neighborhood identity in an otherwise endless grid system by inserting elaborate, centrally positioned civic spaces. an effort to “insert a pleasant variation into an existing gridiron.” Source: Hegemann and Peets, *The American Vitruvius*.

as drew it in their book *Communitas*, was a face-to-face neighborhood with all the elements of living and working in self-contained harmony. Source: Goodman and Goodman, *Communitas*.



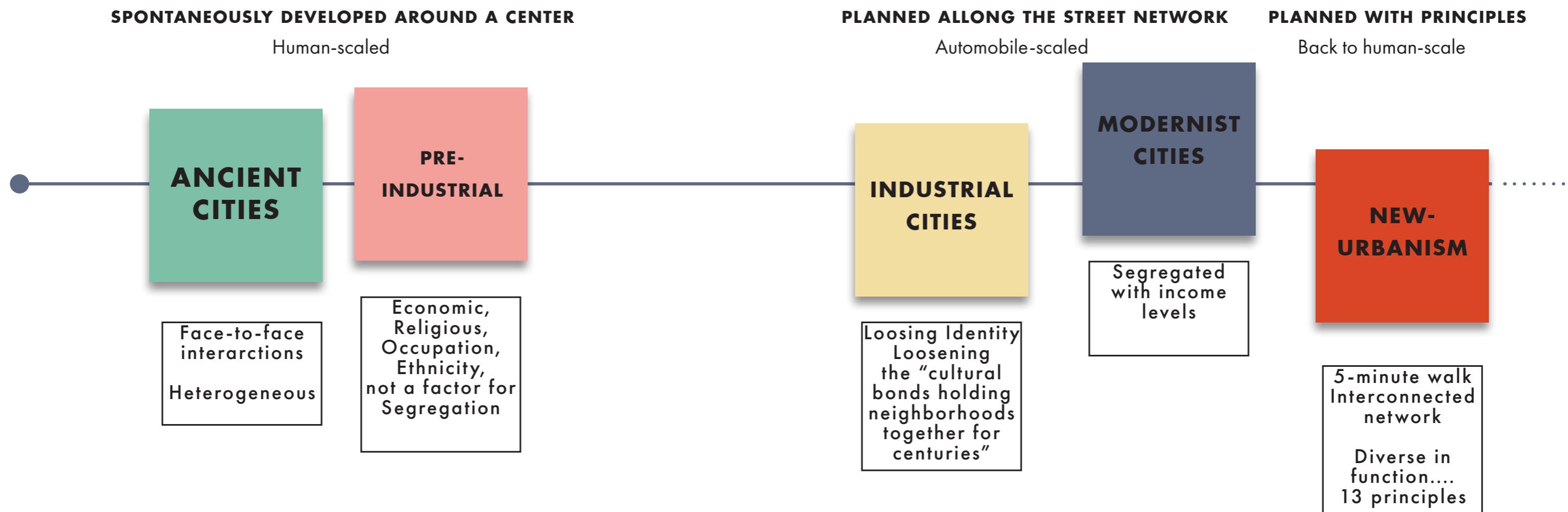
A STRATEGY FOR LINKING  
NEIGHBORHOODS

pathways and greenways. Source: Sketch by Hiroaki Hata, used with permission, in Hess et al., “Pathways and Artifacts.”

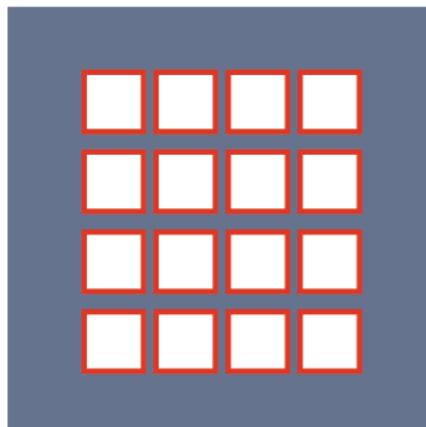
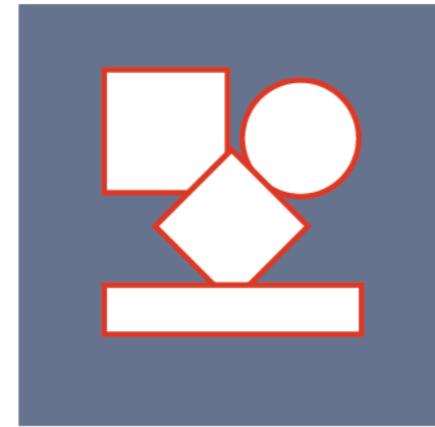
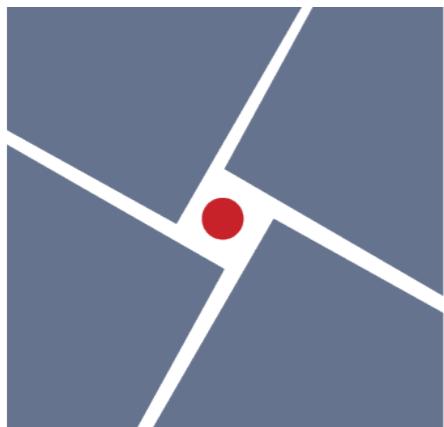
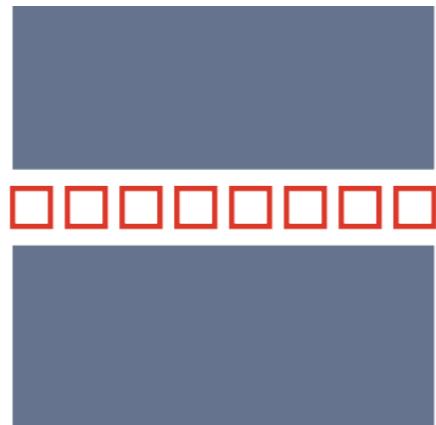
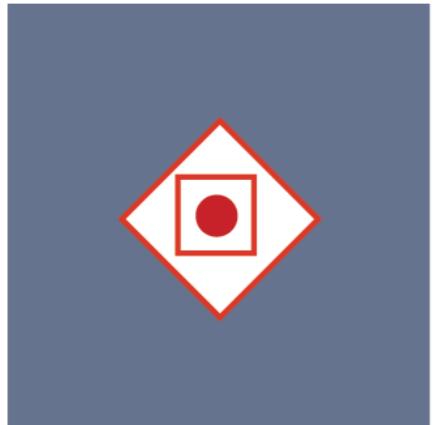


CHICAGO'S 1960 PLAN FOR  
CONNECTING NEIGHBORHOODS

surrounding Stony Island Avenue. Source: Image redrawn from Allaire, “Neighborhood Boundaries.”



## 3. HYPOTHESIS



### THE RIGHT SCALE

The first step taken in this study is to use the neighborhood as an understandable benchmark for the design of future homes and the growth of cities. As patterns in micro-behavior develop, shift, and emerge as macro-behavior, managing the neighborhood as a small-scale and making it more sustainable has a greater effect in the large-scale patterns when this is multiplied. As Alexander and his colleagues describe in ‘A Pattern Language’, when each “act of building, large or small, takes on the responsibility for gradually shaping its small corner of the world to make these larger patterns appear” (Alexander et al., 1977), the large-scale patterns gradually emerge of their own accord and need not be created

just by master plans, centralized authority, or legislation. With the right scale, it becomes more likely to understand the future challenges and find new solutions at an understandable level. In this regard, urban planners need to shift their thinking from cities to neighborhoods, and architects need to do the same from individual buildings to neighborhoods. In short, if architects and designers think about the intermediate scale, they might find more relevant solutions for growing cities in a way they can strive for a higher quality of life for contemporary living, resiliency, and sustainability.

# HYPOTHESIS

## SOCIAL INTERACTION

As described in previous chapters, social interaction played an important role in defining early neighborhoods. However, when analyzing the neighborhood design and planning processes of the last century on a general level, it becomes clear that the social character was not considered in the planning process in the way it was present as an indispensable aspect in historic neighborhoods. Over time, top-down planning has given less and less space to residents to negotiate for their needs while paying more attention to functionality. How successful was this approach in meeting community needs and providing people with a higher quality of life? Compared to the organic

formation of neighborhoods, where individual dwellings created a cluster with communal services, what new features do today's neighborhoods offer.

Several studies have been conducted to determine what features in a neighborhood may enhance social contact between residents or how physical design principles affect social interactions. While tremendous studies have approached this topic in different ways, more than finding relationships, it is important to first question what defines contemporary neighborhood and how residents interact with it. To understand this, the first step taken was to study the transformation of neighborhood concept and its patterns.

## TERRITORIES-IN-BETWEEN

In examining the various neighborhood morphologies, a sharp distinction between rural and urban neighborhoods became apparent. What happens to the urban fringes where these two territories meet? There the situation is challenging. On the other hand, since there are not many design rules set, it provides an opportunity to look at and rethink the concept of neighborhood from a different perspective and free from the already existing rules. Rural patterns have not changed as fast as urban areas. In Europe, hybrid geographies of the middle landscape make up a large part of the continent thus classic urban-rural typologies do not fit many of these physical territories, but 'territories in-between' (TiB) describe

them thoroughly. Typologies of territory or spatial development, however, continue to use only degrees of either urban or rural (McRit et al., 2010; Wandl, 2020). Often territories-in-between are neglected in planning policy and there is a lack of understanding of these areas. Wandl (2020) goes on to explain: "Spatial planning and territorial development policies rarely make use of the notion of in-between areas, but tend instead to divide the territory into urban and rural zones" (Wandl, 2020). Traditional land zoning becomes a barrier for sustainable development in these territories. Because of the situation, there is a need to identify TiB as a unique part of city not just a mixture of rural and urban.

"Apparently we cannot live entirely within cities—at least the kinds of cities we have built so far—our need for contact with the countryside runs too deep, it is a biological necessity" (Alexander et al., 1977)

## LIVING ORGANISM

From the early 20th century on, the neighborhood was seen as something complete, as Talen (2018) describes it: "a cell or unit- capable of turning discord into harmony" (Talen, 2018). This unit was being used to create order out of the chaos of the industrial city at the beginning of the century or the sprawl of the urban periphery at mid-century. Nevertheless, unit thinking is more in line with the interests of the developers than those of the residents since it

## TERRITORIES-IN-BETWEEN

degrades the importance of the neighborhood to a mere object of design. Similarly as Jacobs approached cities as living beings, neighborhood has the characteristic of dynamic organism changing in response to how people interact with them. Each element functions synergistically. This understanding help to discern how neighborhood could be structured better.

## PROPOSING A SYSTEM

The hypothesis is that if we identify a systematic way of looking at the design of neighborhoods in territories in between urban and rural areas while aiming at raising the quality of life measures, this opens a space for negotiation. Additionally, viewing new neighborhoods as an incentive process leads to self-organized

collaboration and participation deriving from the residents. Moreover, the so-called micro-neighborhood breaks new ground in influencing macro-behavior with small micro-scale changes, resulting in a more resilient lifestyle.

# HYPOTHESIS

## RESEARCH METHOD

If we consider the neighborhood as an organism, it is important to find the main structure and components to understand the relationships. The research approach used is to take advantage of a case study to apply all findings to one specific geography. In other words, to generate an in-depth, multi-faceted understanding of the complexity of the neighborhood concept in territories-in-between. However, the procedure is not intended to be overly solution-oriented or context-specific but develops principles to relate the subject to other geographic contexts. Indeed, the case study is only an example of following the process, and one is demanded to

## MAIN STRUCTURE

In ‘The Architecture of the City’, Aldo Rossi reflects that cities have a primary structure that links them to their history. He notes that the past is partially experienced in the present. In Skåne, a region in southern Sweden, this structure is the act of farming, which has remained present for many years. In different geographies, this main structure varies, but each place brings with it a history. Identifying this backbone is critical to shaping and developing what the city will look like in the

future. How can Lund adapt to agricultural conditions as it grows without destroying all the arable land? There are several ways to approach this question; as mentioned in the previous chapter, different studies position themselves to an angle. This study explores the morphologies and patterns that allow for more sustainable development by having a permeability between agricultural land and the city that keeps in mind the consequences in relation to society.

## PATTERN LANGUAGE

Patterns generate archetypal language to universal problems. In 253 patterns concerning built environment collected by Alexander et al., the complexities are broken down into understandable parts. Context, problem, forces

“No pattern is an isolated entity. Each pattern can exist in the world, only to the extent that is supported by other patterns: the larger patterns in which it is embedded, the patterns of same size that surround it, and the smaller patterns which are

embedded in it” (Alexander et al., 1977). In areas in between, there is a high need to develop a vision based on the social values and main structures of each particular territory. There is no simple answer to this question, but by using the pattern language and understanding the forces, the problem and the context, it becomes likely to test some prototypes that exploit the potential of agricultural landscape.

## ENVIRONMENTAL PSYCHOLOGY

In recent years, projects involving eco-villages or smart districts are emerging to tackle urban development in the countryside. However, it is too limited to take only the ecological perspective on sustainability. A human perspective should be considered as much or even more critical in environmental psychology.

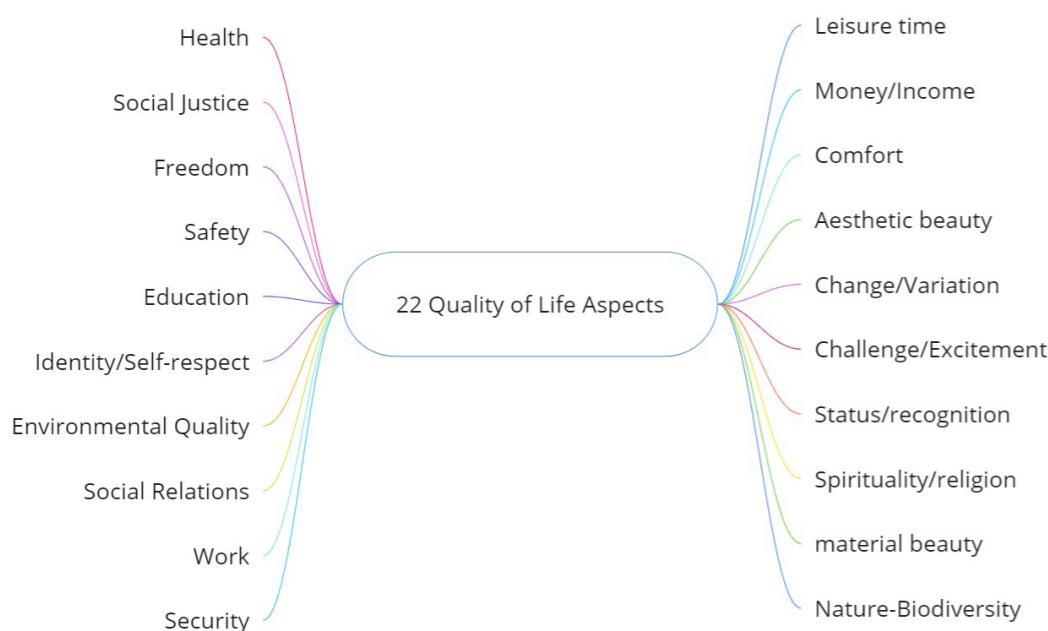
Criteria for each of the three aspects of sustainability (environmental, social, economic) are essential to control the balance between all three dimensions. As Steg and Groot (2018) stated, although well-developed criteria supported the environmental and economic qualities, the social

sustainability measures can be examined further. They describe this situation as, “Social sustainability can be measured at the societal or individual level” (Steg & Groot, 2018). Although the individual level focuses on the well-being of the individual, the societal level examines the well-being of society as an entity. Steg and Groot mentioned that measures of social sustainability used to date have typically been at the societal level, for example, average life span. To assess social sustainability at the individual level, they suggested implementing the quality of life (QoL) measure. They defined this as the extent to which the essential needs and values of individuals are met.

## QUALITY OF LIFE MEASURE

There is clear demonstration that the physical environment influences their contentment. QoL at the individual level can be measured in different ways, subjectively/objectively or uni/multi-dimensional. Based on the understanding of the four functions of measuring individual QoL\*, hypothetical users and their daily lives are studied to shed light on how to evaluate QoL measure in future neighborhoods. These four functions are as follows:

- Identification of key values and needs
- Assessing environmental QoL
- Examining variations in QoL in different environments
- Assessing the impact of environmental changes on QoL



# 4. MORPHOLOGICAL STUDIES

## OVERVIEW

Having gained an overview of how the neighborhood concept and its form have changed historically, the study focuses on the morphologies of neighborhood form. In the first section of this chapter, the aim is to explain the essence and roots of morphological studies in urban research and draw a conclusion with the main feature of this method. It also discusses the advantages of using this methodology in explaining neighborhoods. The focus is not only on the physical elements but also on the activities. In the second section, after breaking down the form into its main elements, the background of using typo-morphology in the design of Swedish cities is presented. In the end, presumably, the questions of what explains neighborhood in the Swedish context and how different neighborhood typo-morphologies have been applied during the planning process in cities will be acknowledged.

## DEFINITION

## URBAN MORPHOLOGY

The term morphology consists of two parts, morphé, meaning ‘form,’ ‘shape,’ and the suffix ‘logy,’ meaning ‘the study of.’ According to Oliveira, the first use of the word dates to the end of the 18th century. It was a branch of biology that referred morphology to the “science that deals with the essence of forms” (Oliveira, 2018). However, due to the abstract nature of the term, it was applied in various fields, including urban studies. In Central Europe, urban morphology became a field of study in the late 19th century (Oliveira, 2018).

Urban morphology is the science of studying physical forms, main

agents and processes of cities shaping over time in another words it is the study of urban form concerning the size, shape and physical structure of urban settlements (D’Acci & Batty, 2019; Oliveira, 2018). Batty hold the position that urban structure patterns are based on the order of activities in a location, emphasizing how these physical patterns are linked with activities.

## TYPO-MORPHOLOGICAL APPROACH

Alexander’s pattern language is an example of the morphological approach. He argues that like patterns in town, recognizable morphological characters that order the elements are exhibited in neighborhoods and buildings. Buildings, spaces and functions form a pattern that conforms to a set of principles. The patterns of events dovetail with certain geometric patterns in space (Alexander et al., 1977). The ideology behind pattern language explains that patterns are not and cannot be isolated in themselves, but as Alexander

et al. describe, “Each pattern can exist in the world only to the extent that it is supported by other patterns” larger one embedding, equal size surrounding and smaller ones embedded within it (Alexander et al., 1977). If we take the pattern language as a basis, the patterns are ordered from the largest to the smallest, from cities to construction details. However, in recent years, architects in architecture and the built environment tend to focus on the relationships within buildings. Also, urban planners and designers make

# MORPHOLOGICAL STUDIES

## PURPOSE

decisions about regions and cities. In breaking down cities to the cluster of buildings, the neighborhood is often forgotten. The language that today's designers have for neighborhoods is fragmented. Morphological studies at the neighborhood level can be an impactful method to move forward.

In the 'Importance of Urban Form as an Object of Study', Barke points to the interest in the "everyday" that constitutes the totality of the city as one of the most important positive features of urban morphology. He goes on that suburbs, though often

## THE MAIN ELEMENTS

As mentioned earlier, the purpose of urban morphology is to facilitate the understanding of the city's character. Buildings and their architectural features are a part of the whole; however, these are not enough. Street patterns form the skeleton of a block; therefore, streets are the following elements to be studied. In addition to buildings and streets, the individual plots on which buildings are constructed within the street plan play a unique role in shaping the morphologies and how people

denigrated as a built form, are a fascinating resource for urban morphologists and can be the subject of analysis in the same way as a medieval district (Oliveira, 2018).

Many contemporary morphologists argue that when thinking of the city as an organism, a holistic approach is necessary to create distinctive cities that remain true to their roots and embody a sense of place. Geddes notes the importance of engaging with the spirit of a city, historical essence, and continuous life. Its civic character and collective soul (Oliveira, 2018).

## SWEDISH CITIES

Like many other European cities, Swedish cities have experimented with the neighborhood unit and are mostly grounded on modernist planning principles, specifically superblock, in the postwar period. The Culture of Cities published a document in Swedish of Mumford's adoration of the neighborhood unit. Moreover, in 1944, when the neighborhood unit was adopted in the Greater London Plan, it (neighborhood unit grannskapsenheten in Swedish) was popularized in Sweden (Talen, 2018).

## SWEDISH TRADITION OF TYPO-MORPHOLOGY

In the early 20th century, geographers in Sweden began the tradition of typomorphology with the aim of categorizing districts and cities, inspired by French, German, British, and American schools of geography and sociology. The result of these influences was the identification of clusters of neighborhoods that were clearly distinguished by their character/type (bebyggelseagglomeration med tydlig inre differentiering in Swedish) (Stojanovski, 2019). Since 1950, various researchers, historians, and architects have observed Swedish cities under the umbrella of morphology. To name but a few: Ahlmann studied Stockholm's morphology

In urban morphology, the historical emergence of urban forms is observed in typomorphological tradition and typoprocessual approaches. Typo-morphology focuses on types and typological processes (Stojanovski, 2019). Types are used mainly to identify the similarities disregard of differences. Stojanovski noted that with a long tradition of typo-morphology, many municipalities in Sweden employ neighborhood typologies as a foundation for building regulations and design codes.

geographically. Paulsson described ideal types for cities in his book *Svensk Stad* (Swedish Cities in English). Cornell later focused on ideal types of building technologies. Neighborhood type was first explained by Linn, who as an architect used morphological analysis to understand the emergence of the specific neighborhood type 'storgårdskvarter' (translated into English "enclosed urban block with a large courtyard") in Sweden and other European countries. The term 'bebyggelsemönster' (settlement pattern in English) was used to describe the spatial structures typical of cities (Linn, 1989; Stojanovski, 2019).

# SWEDISH TYPO-MORPHOLOGY

## THE USAGE OF TYPOLOGIES

With the advent of new typomorphological research and conceptualizations in the 1980s, which were not limited to urban history but also aimed to support urban planning by understanding processes, terms such as place types, city types, and city characters (typområde, stadstyper, stadskaraktär in Swedish) were used to describe urban neighborhoods. Since then, as noted by Stojanovski, neighborhood typologies have been developed in three different ways: 1. architectural style, 2. design codes in the planning paradigm, 3. socio-economic epochs (Stojanovski, 2018).

## EXAMPLES

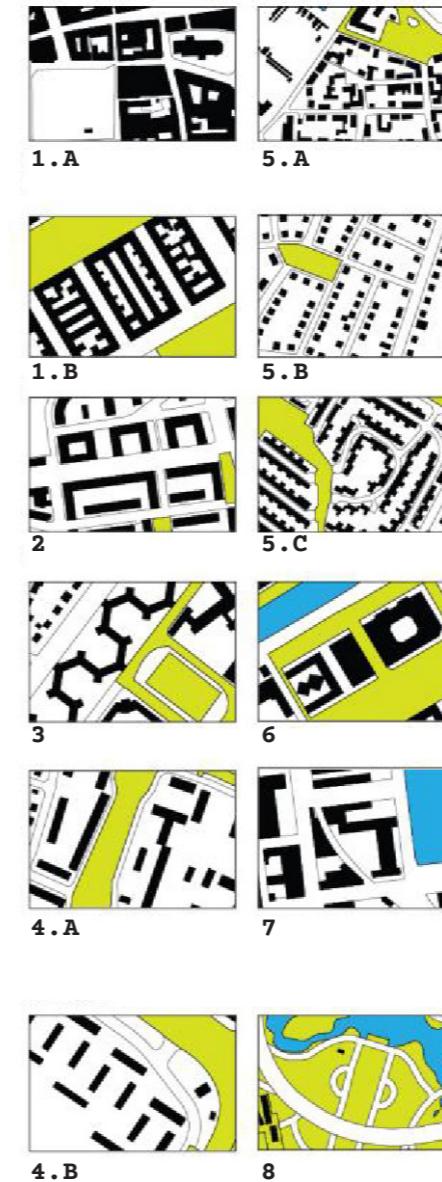
### MALMÖ

In the case of the city of Stockholm, twelve different urban characters (byggnadsordning in Swedish) were identified in the building regulations (stadskaraktärer in Swedish), which became the basis and inspiration for developments in 2000. Another example of the use of urban typologies is the city of Malmö that ten urban characters have been identified like Stockholm. The following figures illustrate these urban forms for both Malmö and Stockholm. In short, traditional, industrial, modernist and postmodernist neighborhoods have emerged consecutively in Swedish cities, each expressing different characters.

The typologies in Malmö are as following:

- 1.Dense neighborhood town
  - A.The city inside the canal
  - B.Stone city
- 2.Scattered neighborhood town
- 3.Neighborhood units
- 4.Large-scale residential areas
  - A.New districts on a large scale
  - B.Series-produced buildings
- 5.Small-scale buildings
  - A.Traditional buildings
  - B.Villa development
  - C.Low-rise buildings and group house areas
- 6.Institutions
- 7.Business areas, Ports, Office, Industries and supermarkets
- 8.Green rooms, City parks, Nature and recreation areas, Cemeteries, Special leisure areas

## URBAN TYPES IN MÄLMO



## URBAN TYPES IN STOCKHOLM

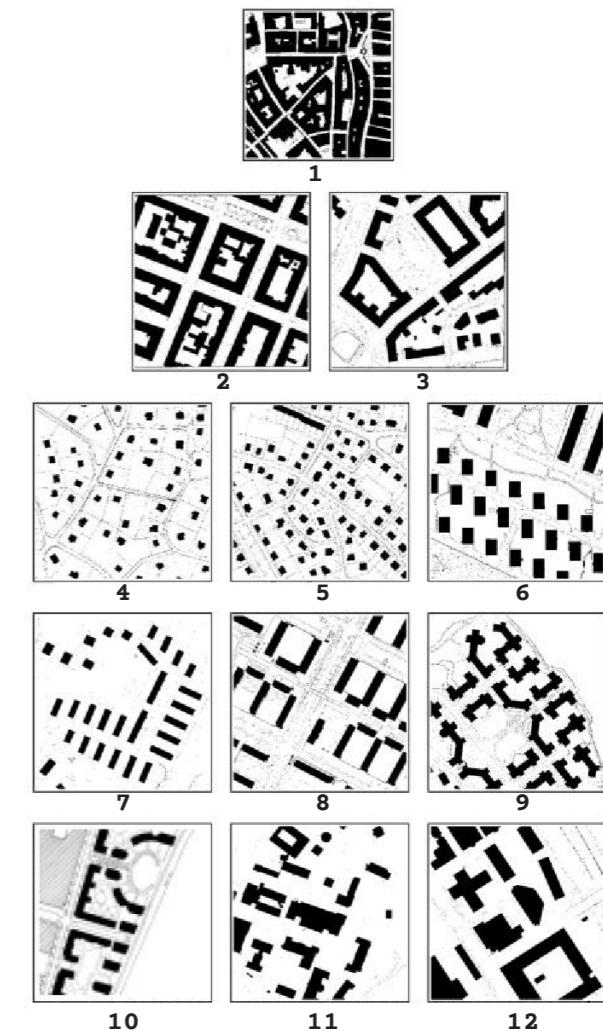


Figure source :  
Swedish Typo-Morphology—Morphological Conceptualizations and Implication for Urban Design (Stojanovski, 2019)

## STOCKHOLM

Stockholm municipality also used the typo-morphological approach to sustain the character of neighborhoods while new infill development was taking place. The twelve typologies are listed below:

- 1.0ld Town (Gamla Stan)
- 2.Stone city(Stenstad)
- 3.Older suburb(Äldre förstad)
- 4.Villa town(Villastad )
- 5.tree town(Trädgrådsstad)
- 6.Stone city wreath (Stenstadens krans)
- 7.Small house town (Smalhusstad)
- 8.Subway town (Tunnelbanestad)
- 9.Newer city clef (Nyare stadsenklav)
- 10.Newer city circle(Nyare kransstad)
- 11.Institution park(Institutionspark)
- 12.business area (verksamhetsområde)

The titles are translated into English.

# SWEDISH TYPO-MORPHOLOGY

NEIGHBORHOODS IN SWEDEN

PHOTOS FROM ARKDES COLLECTION



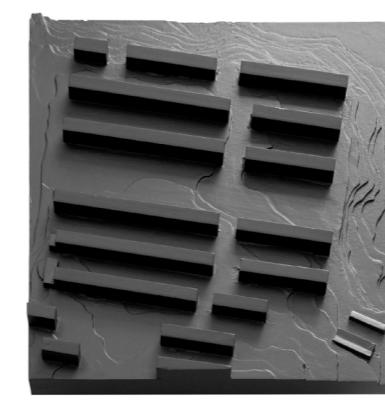
**GAMLA STAN, STOCKHOLM**  
14TH-17TH CENTURY

Firstly didn't have an overall city plan. Small plots for houses with narrow streets. developed on the basis of geographical and practical conditions, without regard to the whole. New plans organized the street network with larger dimensions.



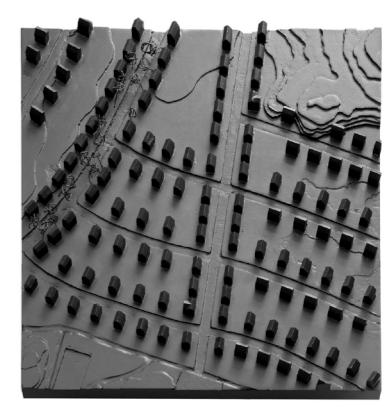
**NÄSSJÖ, SMÅLAND**  
1860

The rural village with agriculture as the dominant occupation turned to railway town due to construction of the southern main line railway.



**HJORTHAGEN, STOCKHOLM**  
1934-1935

The first industrial suburb within the city limits of Stockholm in 1903. The new narrow slatted houses were an idea from Germany that was considered more surface efficient. east-west direction to get the best solar conditions. Functional town.



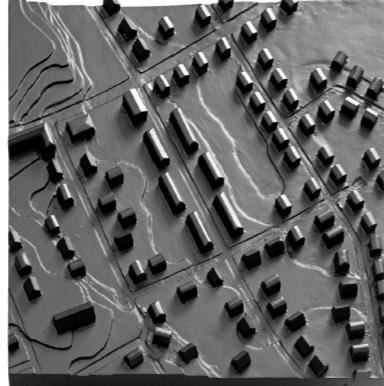
**NORRA ÄNGBY, STOCKHOLM**  
1930-1940

The "settlers" formed a garden city association. Self-construction detached houses, under the auspices of a real estate office. Homeowners would carry out their own construction work on their house corresponding to 10 percent of the construction cost.



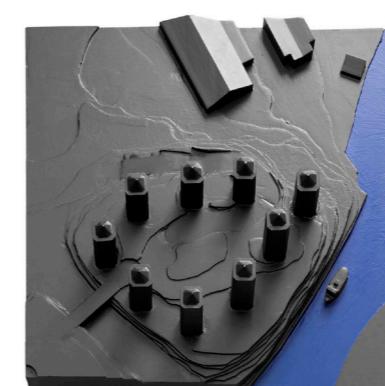
**KARLAPLAN, STOCKHOLM**  
1866-1896

Proposing street regulation in Stockholm Construction started in 1896. Designed in the image of Place de l'Étoile in Paris. Deep houses with small courtyards three or five stories.



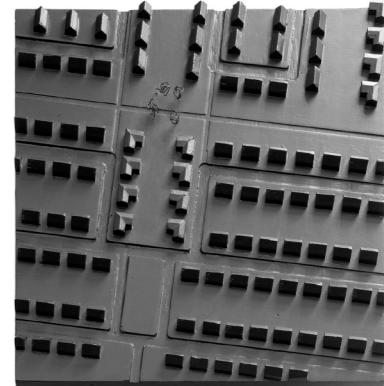
**GAMLA ENSKEDE**  
1907-1914

With tram line the area was in some distance away from the center. Streets had irregular patterns. Buildings were mixed in terms of typology and ownership.



**DANVIKSKLIPPAN, STOCKHOLM**  
1940-1945

The eight and nine story tower blocks formed a central courtyard. Tower block in park was economically ideal for postwar-years.



**STAFFANSTROP, SKÅNE**  
1970

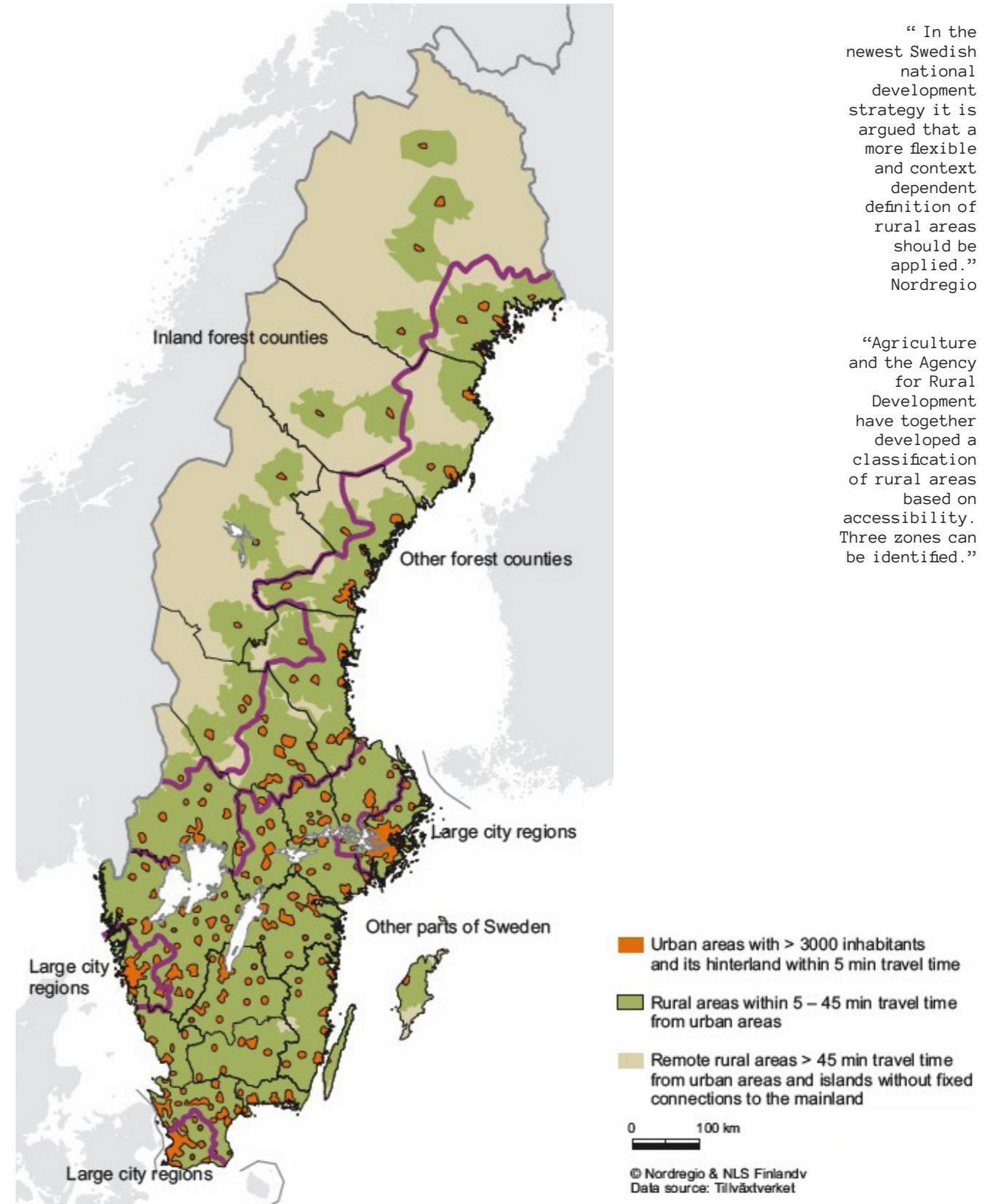
Repetition and uniformity. site for Housing Trade Shows, firstly in 1970 with 43 furnished homes and 100.000 paying visitors, and later in 1997, with 25 exhibited homes.

# SUMMARY

SWEDISH CITIES CHANGES	BUILDING BOOM	URBAN FORM ROLE	FRAMEWORK
In summary, different characteristics of Swedish urban morphology appeared in different areas and periods. Organic rectangular street grids combined with stone or wooden houses are the main character of the pre-industrial Swedish town; names like trästad or stenstad (wooden town or stone town) are used for this group. Organically scattered detached houses formed the villages around the medieval town, which became urbanized with the rapid growth of the highway network. Industrialization led to the densification of the urban	core, the expansion of the stone city, and consequently, the formation of the urban fringe. These changes in urban fringe led to the formation of trädgårdstad and villastad (garden city and villa town) along the suburban railways by the end of the 19th century. In the middle of the 20th century, the most significant building boom in Sweden took place, significantly inspired by the modernist movements. Thus, modernist apartment blocks were built on the edges of the old cores.	land uses, resulting in the future presented as an ideal situation. Oliveira states that the city is conceived as a stringing together of plots and an accumulation of buildings to extend a 'static urban pattern' across the city (Oliveira, 2018). In this quantitative understanding, urban space is not thought of concerning context. Urban form dictates how neighborhoods should be structured, and such patterns play a significant role in neighborhood quality, functionality, and character. With different street patterns, block types, land zone, a unique type of neighborhood is formulated. Some advocate mixed-use development and	combining multiple block types in a neighborhood, but the implications of this decision should be considered as well.
<b>THE FUNCTIONALIST CITY</b>	<b>ABC</b>	<b>NEIGHBORHOOD UNIT</b>	<b>RELATIONSHIPS</b>
The functionalist city became popular in the 1950s, the ABC -city, stood for Arbete, Bostad, Centrum (work, dwelling, center), resulting from the application of the grannskapsenhet concept based on Perry's Neighborhood Unit. Providing semi-autonomous neighborhoods with essential services for daily life was the idea behind this model, which was expected to create community and provide a sense of belonging. With urban sprawl beginning in the 1970s, a new form of residential suburbs emerged with individual single-family homes. Self-built homes were developed with future inhabitants who were no longer just consumers. This movement aimed to diversify the housing	supply and find a solution to the urgent housing need. In Vällingby, for example, a model of ideal communities was tested where residents could pay in the workforce with assisted tools and particular loans. This example led to low-cost solutions with high-quality standards in architecture and a strong connection with the natural environment(Cities, 2019; Stojanovski, 2018).	the 20s until the 70s, the neighborhood unit with public housing projects was equated with social segregation. This situation was the case almost everywhere in the world, including Sweden. Developers called it neighborhood unit to organize different housing with different price points. Planning in a neighborhood is still the way to go, the liabilities and problems with design issues and social concerns need to be understood.	As Oliveira explains, "the delineation process might involve combining different layers and thinking about the relationships and their implications." In times of stagnation and slow physical expansion of cities, fringe belts tend to form. Given ecological conditions, special attention should be paid to the links between urban morphology and ecology. Urban morphologists could play a vital role in raising awareness of the environmental conditions of peri-urban areas. These areas between urban and rural areas need much greater recognition in planning policy.
40	ABC	41	

# 5. SITE

## SWEDEN CLASSIFICATION OF RURAL AREAS BASED ON ACCESSIBILITY



### REASONS BEHIND THE SITE SELECTION

Based on the insights gained in the previous steps, the case study methodology is used to generate a more profound, multi-faceted understanding of the complexities of shaping neighborhoods in territories in between.

When considering settlement patterns, Scandinavian cities are stimulating because they are predominantly surrounded by large tracts of land where the ratio of urban to rural land is significant. In addition to the patterns, the high reliance on public planning and decision-making set them apart from other parts of Europe. The study narrowed its focus to Sweden and its large city-regions to investigate deeper. Between the metropolitan regions of Stockholm, Gothenburg, and Malmö, the latter

attracts particular attention due to its enormous development in recent years and its role in southern Sweden. Within Skåne, with the highest quality of arable land, the currently growing cities are transforming the surrounding countryside into hardscapes to address the demand for more housing. Among the various cities in the greater Malmö area, Lund has a unique situation with the current development in the northern territory, Brunnshög. One of the major forces in this development is the establishment of two large research facilities ESS and MAX IV. It is expected that this new district of Brunnshög will provide space for up to 50 000 people to live, work and study within 40 years from the beginning of the project.

# 5. SITE

## OVERVIEW

This chapter is about identifying forces and challenges in the case of Lund. The method used in this part mainly consists of six steps: researching the history of Lund, comparing the geographical photos with the current situation, understanding the relationship between the city core and the urban fringe over time, focusing on morphologies in the urban edges where fringes are emerging, analyzing different neighborhood morphologies, and finally explaining the current development plan and municipal visions for northeastern Lund, specifically, Brunnshög. All these steps are taken to find an answer to how Lund can adapt to agricultural conditions as it grows. Based on the findings, the next chapter explores the morphologies, patterns, and design approaches that will enable more successful sustainable development.



# LUND

## RURAL THEME

Rural areas cover 98 percent of Sweden with varying conditions, appearances, and characters. In Skåne, which is characterized by highly urbanized zones, agriculture is the primary structure of the region in the rural parts, which has been preserved for many years. As a result of new research facilities, the municipality of Lund decided to develop the new district of Brunnshög. Building on Sweden's best farmland has received

## NORTHEASTERN EXTENSION

many different criticisms and arguments, as the productivity class of soil quality in Brunnshög is among the best in Europe. Kopljär noted in her study that the decision undermines previous intentions of the municipality to preserve agricultural land around the city of Lund (Kopljär, 2016; Carlie & Lagergren 2012). Nevertheless, Brunnshög is not the first urban expansion, considering the city's growth in the last century.

## LUND OVER THE YEARS

## 2011;2021;2021/1940

The first photo on the top right is the satellite image from 2010, just one year after the decision to build ESS in Brunnshög. The first trace of new development in the area is from 2014. The second photo, the current situation, frames the progress at ESS and shows the start of other ongoing projects in the area. The final image shows an overlay of aerial photos from 2021 and 1940, clearly showing the different radius of the city limits. Recently, the GIS Center and the Geography Department of Lund University released 1940 aerial photographs of Skåne taken during World War II. As a historical dataset, the comparison with more recent aerial and satellite images reveals how the landscape has changed in all directions around the historical city.



ESS:  
“The European Spallation Source is under construction on the outskirts of Lund, a city in southern Sweden. The facility’s unique capabilities will both greatly exceed and complement those of today’s leading neutron sources”

# LUND

LUND 1585, SCHEMATIC SKETCH

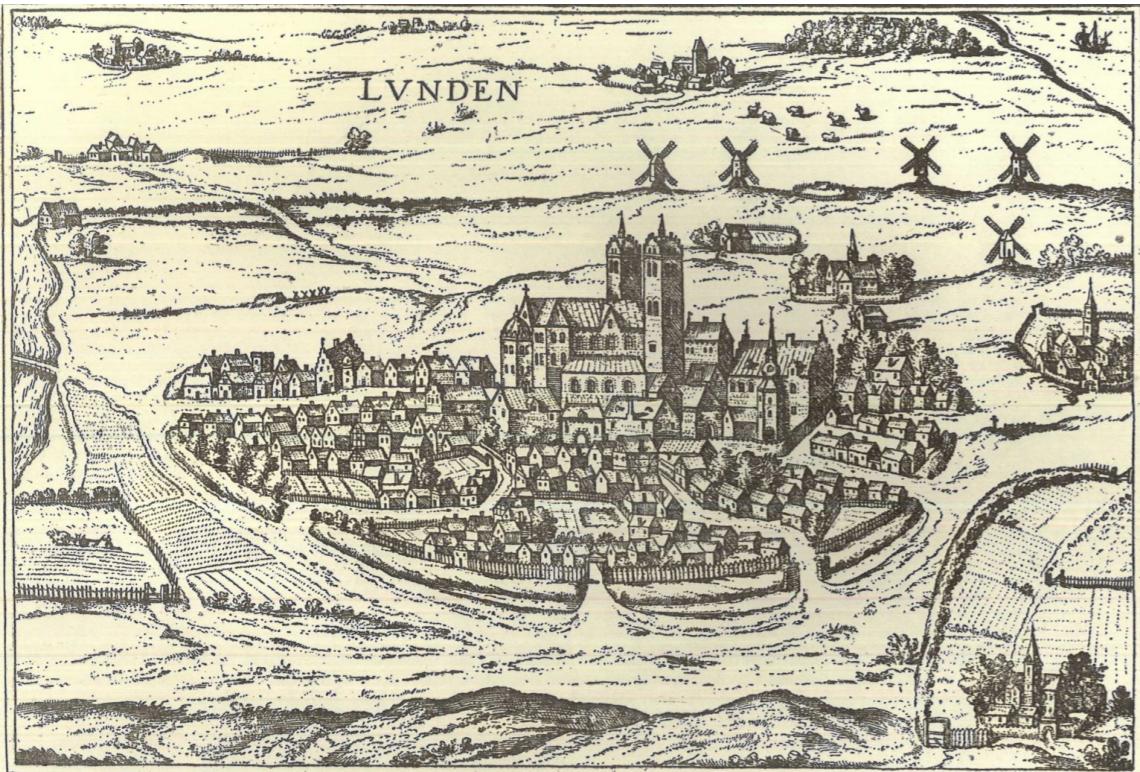


Image source: Sydsvenska Medicinhistoriska museets bildarkiv

LUND 2021, DWG PLAN



Base Map Source: Lund Municipality

# LUND

THE MEDIEVAL CITY OF LUND

OLDEST IMAGE AND TRANSFORMATIONS

Lund, a medium-sized Swedish city, is known as an innovation city with several successful innovation companies and Lund University, a university of international standing. According to excavations, Lund was founded as early as around 990 AD as one of the most important cities in Denmark. In the course of the Middle Ages, Lund became an established city and an archbishopric for Scandinavia. Lund's economic role remained until the Reformation at the end of the Middle Ages, making Malmö the economic center of Skåne. The abolition of the archbishopric and annihilation of most of the churches and monasteries in Lund took place.

According to Knarrström and Ryberg, the oldest pictures of Lund were made in the 1580s. The picture at the top of the previous page is one of the schematic sketches of the city from 1585(Knarrström & Ryberg, 2020).

In 1658, after several wars between Sweden and Denmark, the region became part of Sweden, and only a few years later, the university was founded. When the town was burned down by the Danish army in 1678, half of the farms – mainly in the center and the northern part of the town –, city archives, city hall and partly the cathedral were burned down. However, it was not the last city fire.

INDUSTRIALIZED LUND

Danes made one last futile attempt to recapture Scania. The City was rebuilt without significant changes to the town plan(Knarrström & Ryberg, 2020). The establishment of the railway between Lund and Malmö in 1856 was a turning point for Lund, leading to rapid industrialization and strong economic growth. Lund, which retained its form for many years, ran beyond the old city walls in the second half of the 19th century and began to expand (Knarrström & Ryberg, 2020; Viking Archaeology, 2021).

CONTEMPORARY LUND

One of the success factors for today's Lund is the knowledge-based activities in an attractive environment. As part of the Öresund region, the city has a robust research atmosphere. Good living conditions in the form of a safe urban environment, an attractive city and accessible nature, all within a short distance, make it easy for innovative companies to locate here. Many well-educated and creative international workers in the region contribute to the city's success. Brunnshög will develop in this unique environment and tradition.

The cathedral, the monastery church of St. Peter, and the winding street system of the city have been preserved to this day, which neither the Reformation nor the city planners of later generations have been able to change(Viking Archaeology, 2021)

# BOUNDRIES

## CITY CENTER OVER TIME

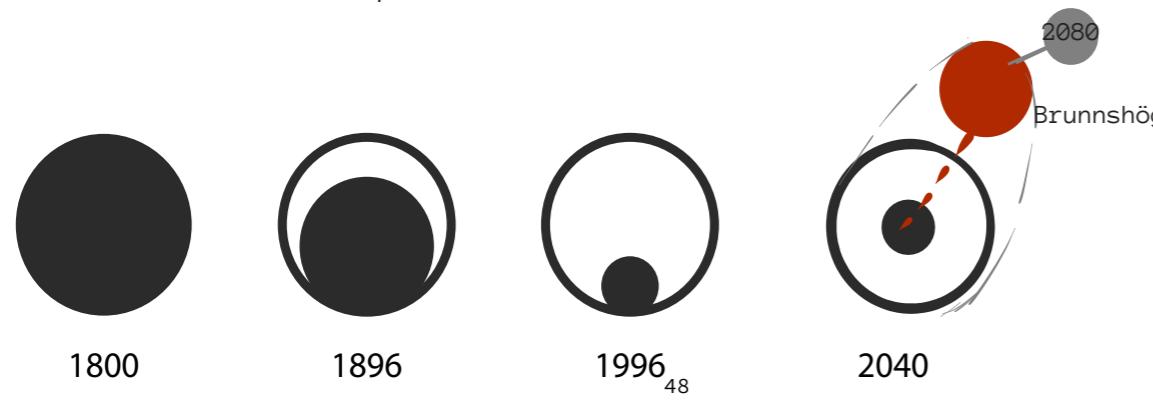
In a previous study the buildings of the city center were divided into age intervals with six time periods. In order to make those mappings transparent and comparable, this study creates an additional map consisting of six layers of mapping of the different buildings according to their construction dates; the darker the color, the younger the building. The following diagram clearly explains that most of the buildings have been built since 1930.

The downtown area is the only part of the city where there are contiguous 19th century buildings. According to an in-depth study of Lund masterplan, there are only about 30 buildings of recognizable character from before 1810. The 'pre-1800' age interval accounts for only 2% of the town center buildings

## THE CITY CENTER'S RELATIONSHIP TO THE ENTIRE CITY

Based on the previously mentioned study, the diagram below is created to illustrated how the relationship of the

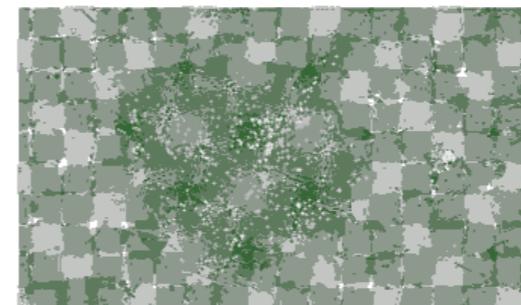
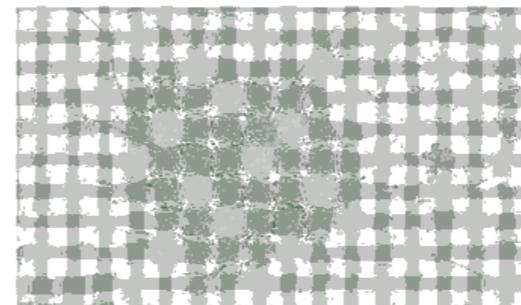
city center to the whole city body has changed and how the new area of Brunnshög will relate to it.



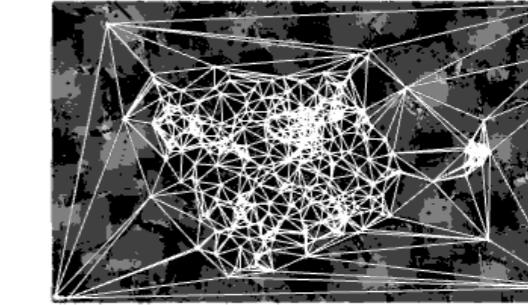
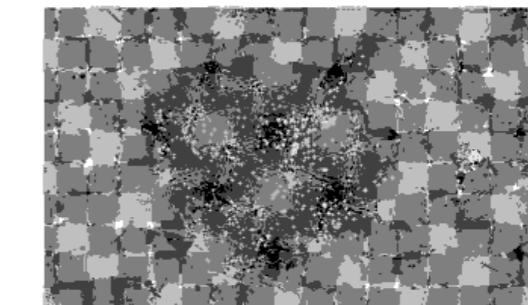
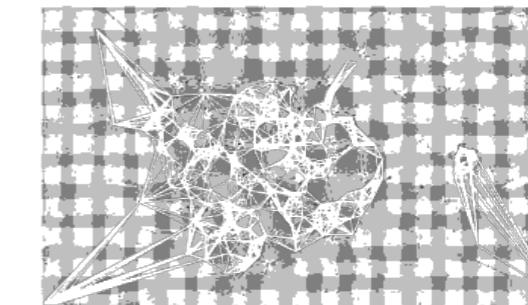
The diverse buildings from different time periods and the winding street network of medieval origin have qualities of inalienable value for the city and its inhabitants.

# URBAN FABRIC

## ACTIVITY NODES



## NETWORK BETWEEN ACTIVITIES

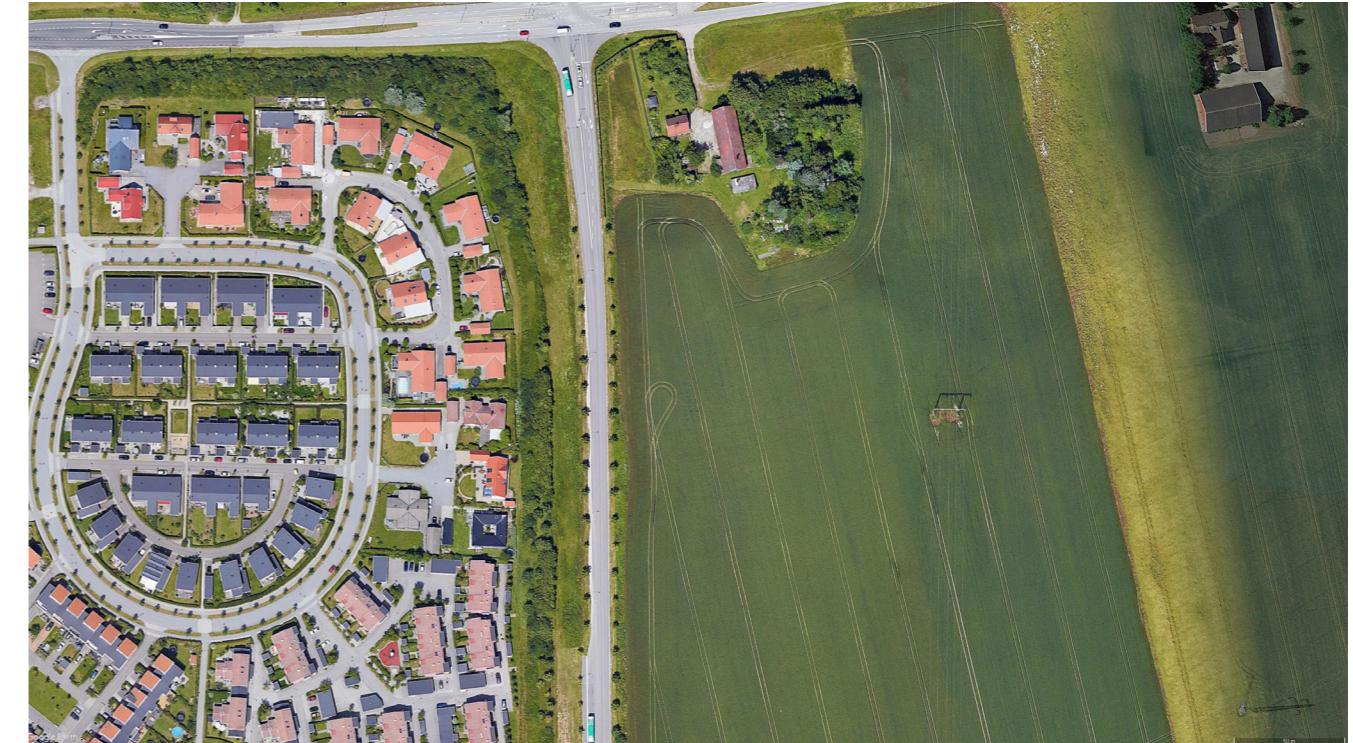
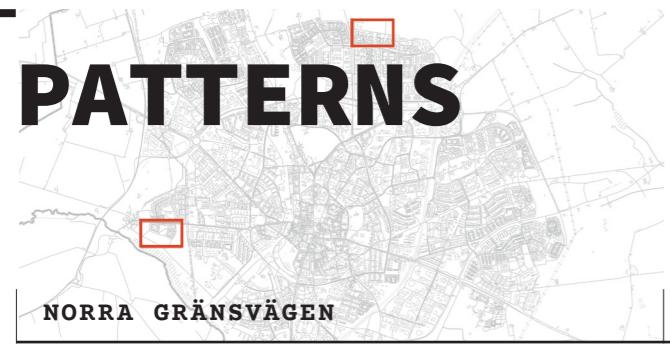


## IMPORTANCE OF DOWNTOWN

For the first eight hundred years of the city's history, the downtown area corresponded to the entire body of the city. In the last decades of the 19th century, some expansion began outside the old city body. However, most of it consisted of green space – cemeteries, the Botanical Garden, and parkland around institutional buildings. Today, the city center is superficially a marginal part of the urban body and most of the city's commercial and

cultural activities are still concentrated in the city center. In Lund, as in other European cities of the Middle Ages, the city center plays a decisive role in the character and life of the city, bringing with it a unique environment with a very high attractiveness. It can be measured in the prices of land and condominiums, queuing time for public housing, in the room rents, but not least in the congestion that prevails in the city every Saturday morning.

To understand the fabric around Lund and the role of different activities in it, this image processing is done from recent aerial imagery using a simple code with Grasshopper's Image Sampler. The first column shows the activity nodes, the second column shows how these nodes are connected, with a high density in the center, connection to other cities like Malmö; in the southwest is also noticeable. In northeast, Brunnshög is the new node in this network, which will play a significant role.



# NEIGHBORHOOD TYPOLOGIES

NEIGHBORHOODS EXAMPLES IN LUND

AERIAL PHOTOS FROM GOOGLE EARTH



CENTRALA STADEN  
DENSE NEIGHBORHOOD

Central City is the district with the most inhabitants, The central city has the most homes in the city, close to 10,000.



NÖBBELÖV  
SMALL HOUSES

The district is the district that has the oldest population, the average age is close to 42 years.

# NEIGHBORHOOD TYPOLOGIES

NEIGHBORHOODS EXAMPLES IN LUND

AERIAL PHOTOS FROM GOOGLE EARTH



JÄRNÅKRA  
VILLA DEVELOPMENT

Student housings in adjacency According to the Swedish Tax Agency, the assessed value of a normal plot for detached houses is among the highest values in the municipality.



ÖSTRA TORN  
LARGE-SCALE RESIDENTIAL AREAS

The most even distribution between both house types and lease forms. offers a varied range, given that the expanding Brunnshög is today part of the district.



ANNEHEM, NORRA FÄLADEN  
LOW-RISE BUILDINGS

Group house areas Of the new homes, just over a third were detached houses.



NÖBBELÖV  
SCATTERED NEIGHBORHOOD TOWN

Nöbbelöv has just over a third of the apartments in detached houses.



KLOSTERS FÄLAD, VILDANDEN  
SERIES-PRODUCED BUILDINGS

Over 90 percent are apartment buildings. The lower proportion of children is a sign that families with children have opted out the district due to scarcity of detached houses.

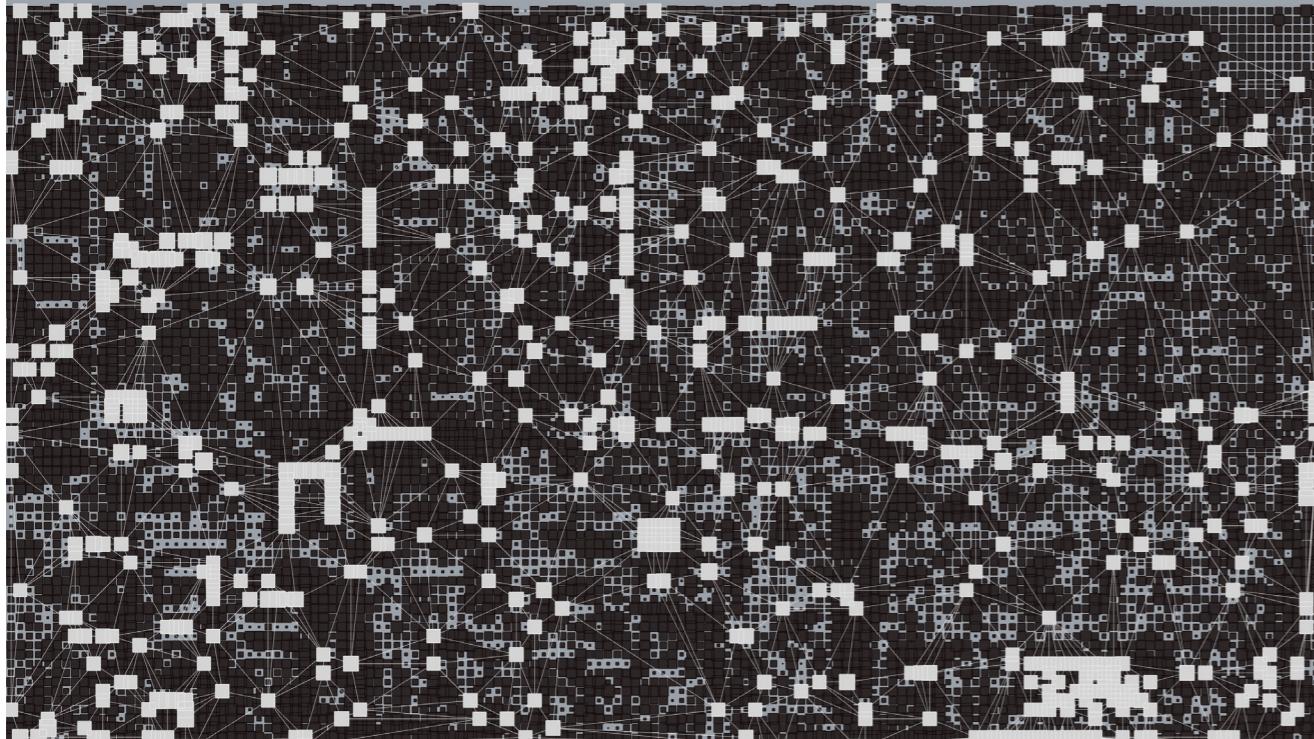


NORRA FÄLADEN  
SERIES-PRODUCED BUILDINGS

The second largest district with the youngest population in the city. The housing stock holds the largest number of student housing.

# RESIDENTIAL AGRICULTURAL

URBAN NETWORK

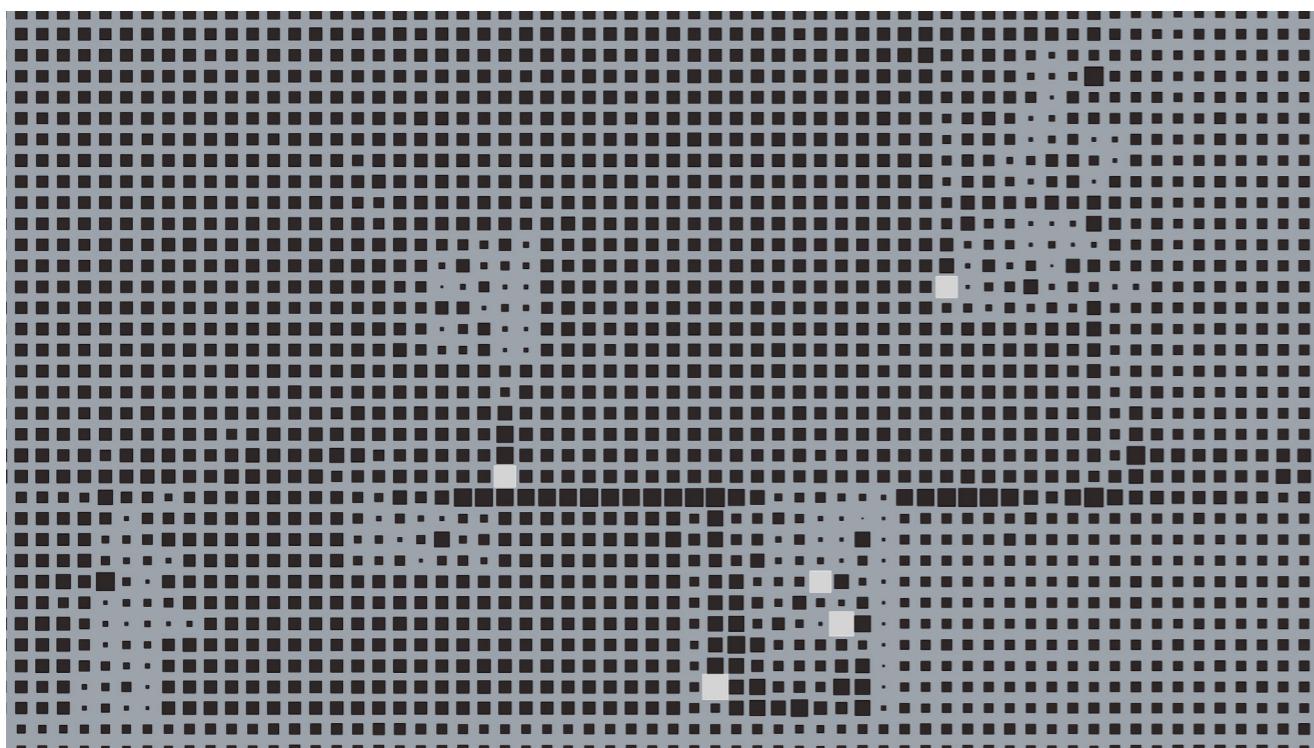


RURAL NETWORK

RESIDENTIAL URBAN PATTERN



AGRICULTURAL LAND PATTERN



# BRUNNSHÖG

ACTIVITY NODES

DENSE HARDSURFACES



# BRUNNSHÖG

GOOD QUALITY LAND AND CURRENT DEVELOPMENT PLAN

Up to this section, the chapter has covered the historical aspect of Lund, the geographical condition, the role of the old town, the morphologies of the city districts. The following section explains Lund Municipality's current development plan for Brunnshög, which forms the foundation for chapter six with a more thorough understanding under the hat.

On the northeastern edge of Lund in-between land and city, the new district of Brunnshög is emerging. The district has fertile fields and is under significant planned development,

## MUNICIPAL STRATEGIES

According to Lund Municipality, the strategy for Brunnshög consists of three components: Research facilities, an exceptionally sustainable district, an attractive destination in the region and internationally. The primary vision for sustainable development for the whole municipality is based on cohesive growth and densification with resource-efficient building structure while preserving agricultural land as much as possible. On the other hand, the planning of the new district with high building density, which certainly brings high economic value, conflicts to the aim of minimizing the ecological impact and using

estimated to finish in 2050. Creating a world-leading community in the area is one of the main goals presented in the comprehensive plan. The core concept can be seen as a combination of functionalist city and neighborhood unit concepts. While the former focuses on zoning and distinguishing between recreation, residential, and business areas, the latter focuses on providing a layout with most services and facilities within the region. There is still the question of how this new urban area will meet the rural area.

Images on the previous page illustrate the effect of extension in the network of activity nodes. The different size of squares explains different density, meaning that the more this new area is built, the more new connections will appear in the network, which polarizes urban-rural dichotomy. thus porosity is influential

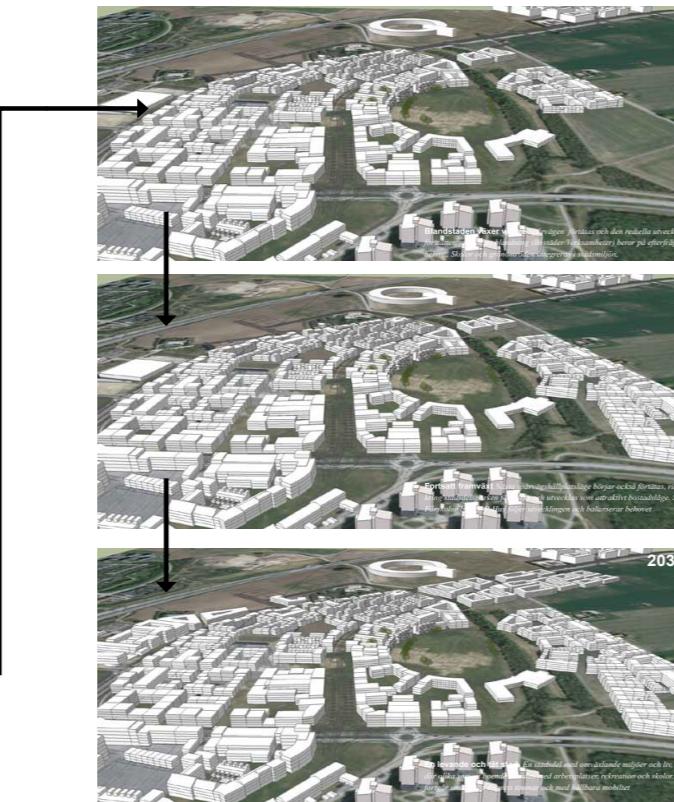
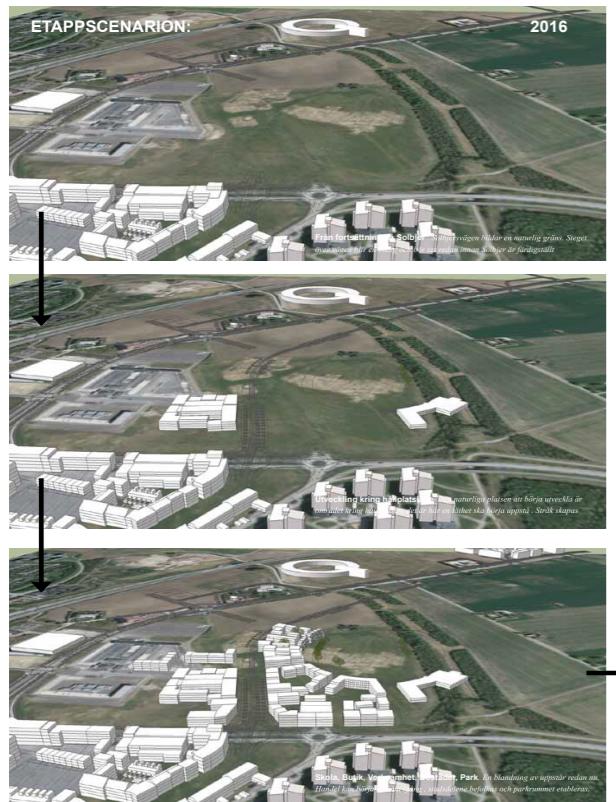
the high-quality farmland. The municipality describes the future Lund as taking on the role "as a regional engine with innovation and a knowledge-driven economy at the forefront, meeting the needs of a multifaceted business community"(Brunnshögsprojektet & Municipality, 2020). There are many arguments on this topic due to the scope of the surrounding landscape. In addition to ecological aspects, the vision for Lund also encapsulates a socially sustainable urban environment for a heterogeneous population. Nevertheless, the significant focus on research-driven activities could lead to a unified population.

Images on the last pages are created with ImageSampler component in Grasshopper

# AREA

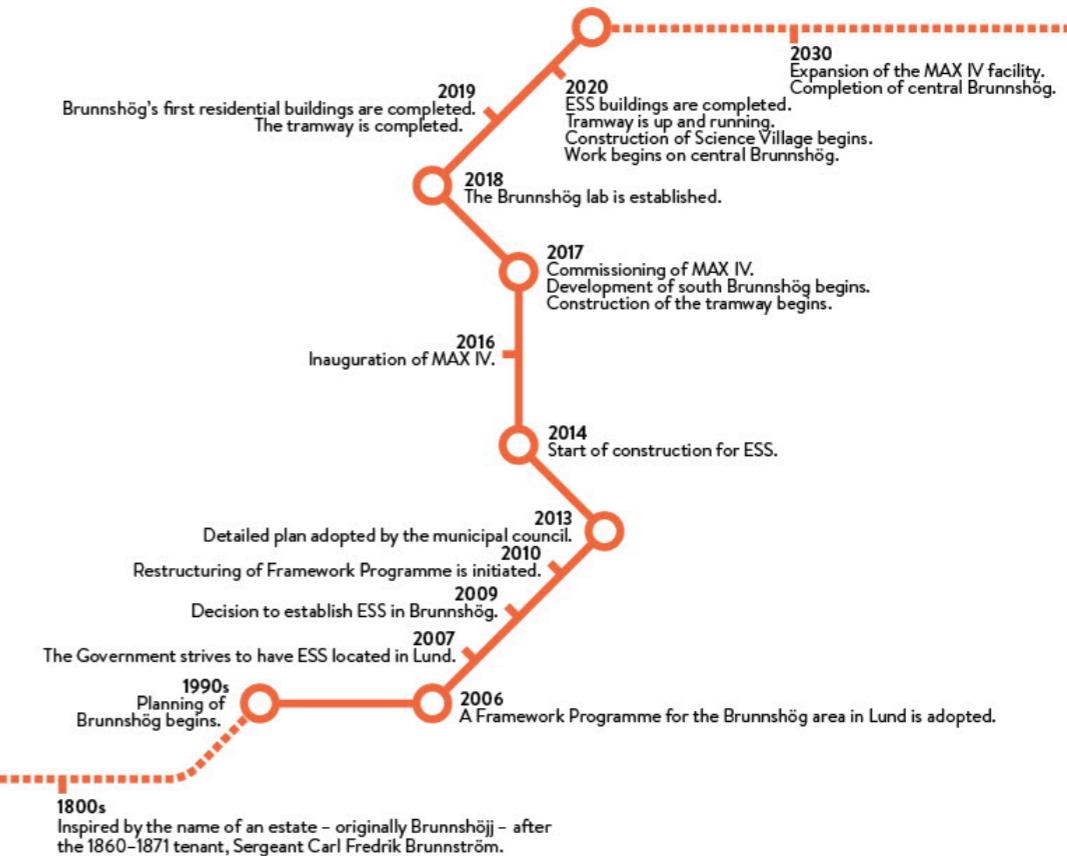
LATEST IMAGERY FROM 2017

PLANNED PHASES DURING 2016-2030



# DEVELOPMENT PLAN

PHASING PLAN



As of today, some residential buildings in the southern part are completed and have their residents. Some of these buildings have community greenhouses, roof terraces, or courtyards with edible plants; others are so-called plus-energy houses.

## STAGES

The above image explains the timeline for the development project. It indicates the development of the framework in 2006 and the start of construction for ESS 2014. Also, the tramway began its operation in late 2020. According to city documents, the plan is intended to provide some flexibility for new ideals. With various subdistricts, the process is envisioned in stages. The dashed line shows the time until 2030 when the MAX IV facility is expanded, and the central Brunnshög is completed.

Kopljar notes in her dissertation (2016) that when Lund was chosen as the perfect location for the establishment of ESS and MAX IV, the area became known in the public media as an important part of Northern Europe in terms of research and connection with a highly developed social system. Kopljar further points out that this situation resembles Swedish utopian narratives, and these narratives become fragmentary in practice(Kopljar, 2016).

# MASTER PLAN



# MUNICIPALITY VISION

## AGRICULTURAL LAND ON THE HORIZON

With the aim of becoming the most high-grade example of European and Swedish world-class sustainable planning, it will be inspiring to see how these goals are put into practice and how they will enrich the daily lives of future residents.

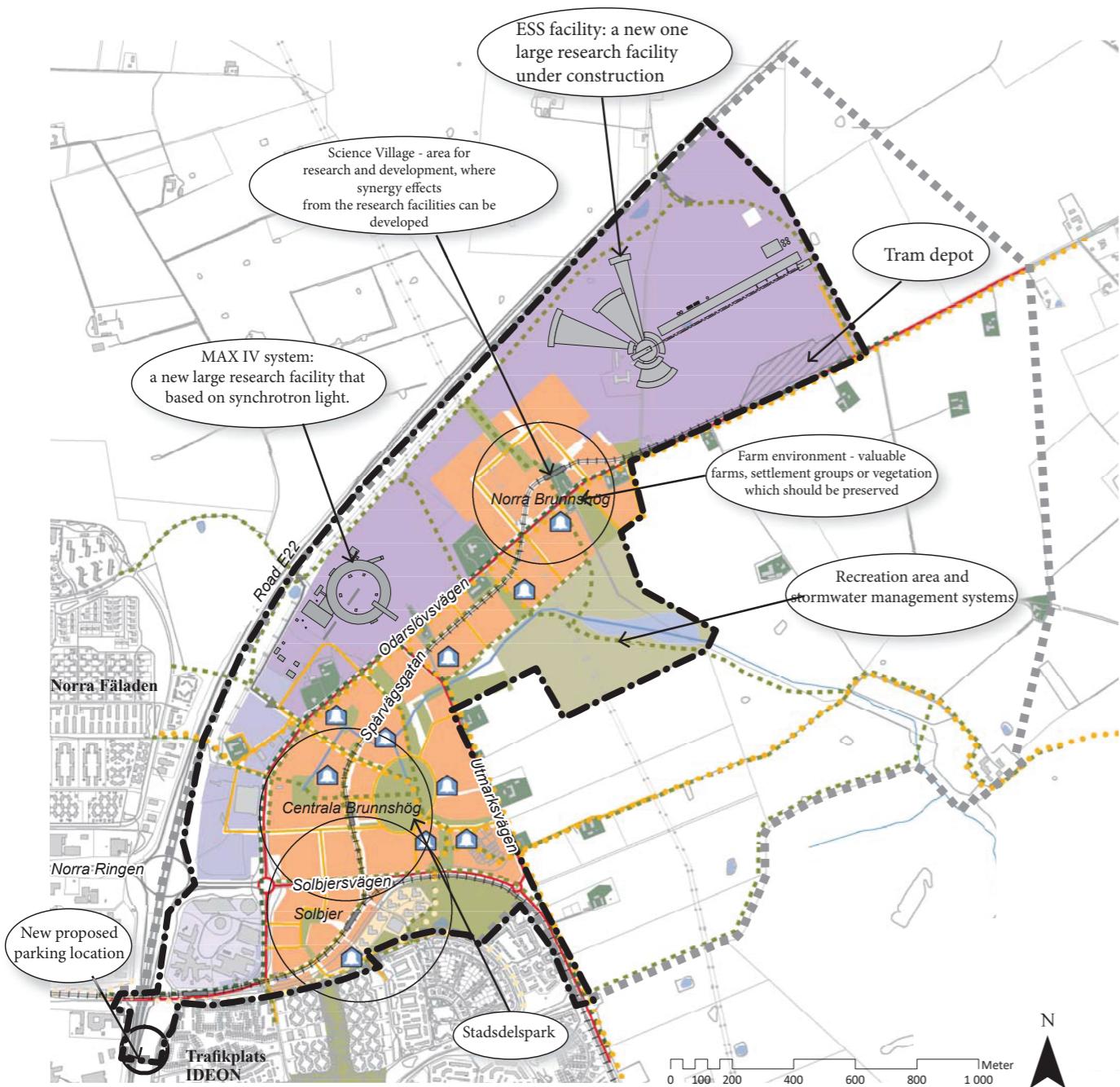
The new urban environment can positively influence the synergies between facilities, research, and society at the international level, but at the local level and in practice, there is a risk of undermining the existing society. In chapter two, discussing the neighborhood concept, the ideas about the role of physical space in enhancing social interaction clearly showed that physical space is a facilitator but not the generator of these interactions; rather, society itself generates interactions.

The goal of creating a diverse urban environment in this new district is supported by dense development and green spaces in between. The municipal documents mention that the role of Brunnshög is to "lead the way to a smarter and more sustainable society" (Brunnshögsprojektet & Municipality, 2020). Three profiles have been created to explain this vision in this context - minimize, balance, and maximize. Minimizing climate impact, balancing and offsetting rich farmland, and maximizing impressions by

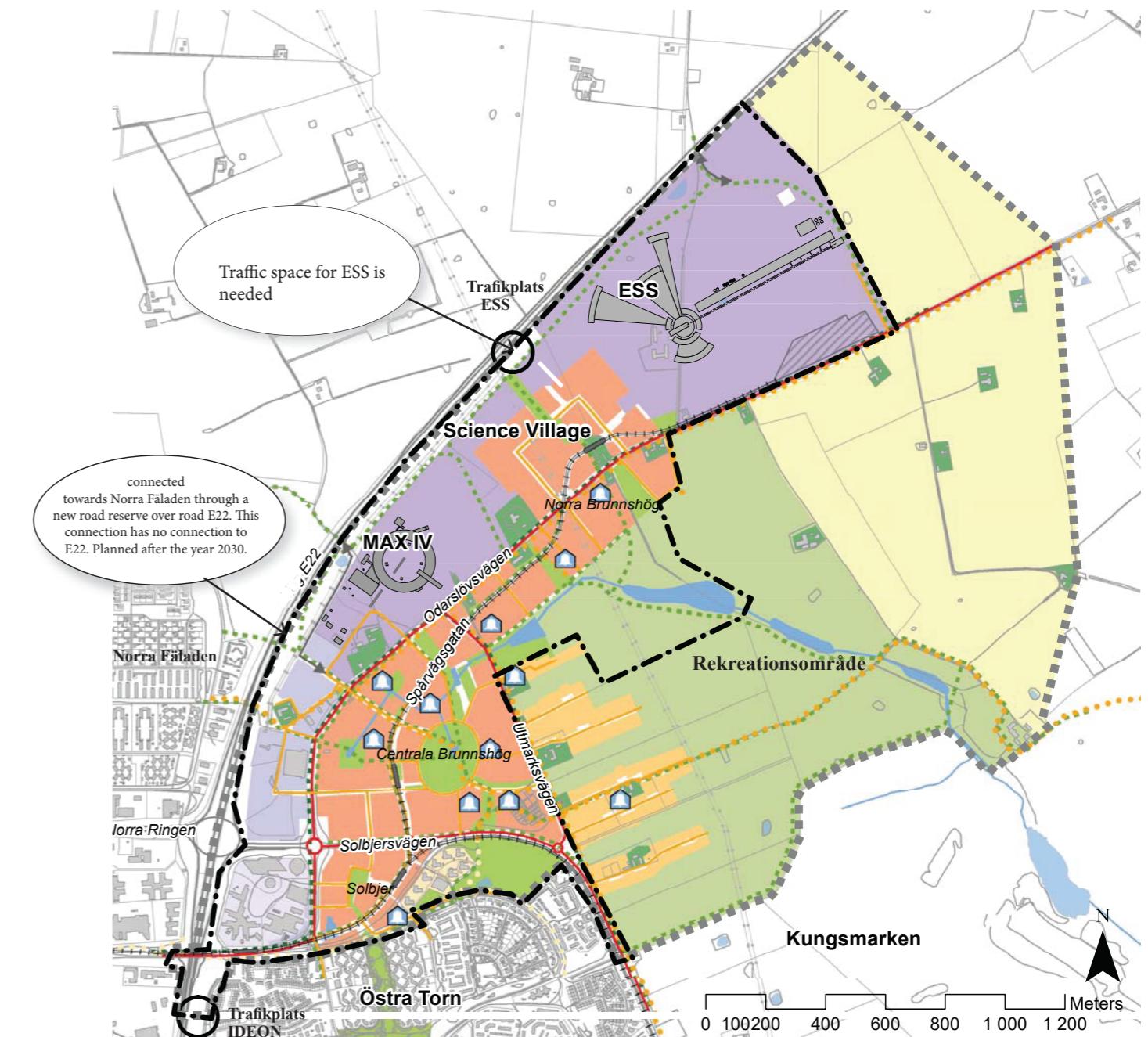
focusing on people's senses. Kopljär argues that the solutions are often underpinned by arguments "adapted to an international science community," which contrasts with the municipality general desire to tackle challenges in small scale that affect everyday life (Kopljär, 2016).

Yet, the conundrum of connectivity to the agricultural landscape remains. Parks with edible plants, urban farming in yards, on rooftops, and in grocery stores are some of the features that support the development plan. In contrast, the agricultural landscape continues to be displaced, and only in the eastern part, there some hope for integration with Kunskapsparken. Also, the vision mentioned that there will always be fertile soil around the corner in the new district, but will that be the only way to integrate agricultural land right in the corner? Again, there will be fringe areas that have a sharp contrast between agricultural land and residential areas. This situation will arise if the master plans do not define the intervening areas with a clear solution. By looking at the detailed plans, more information can be gained to explore the extent to which these proposed green spaces, will correspond with the agricultural land.

# PLANNED AREA 2030



# **VISION AREA 2050**

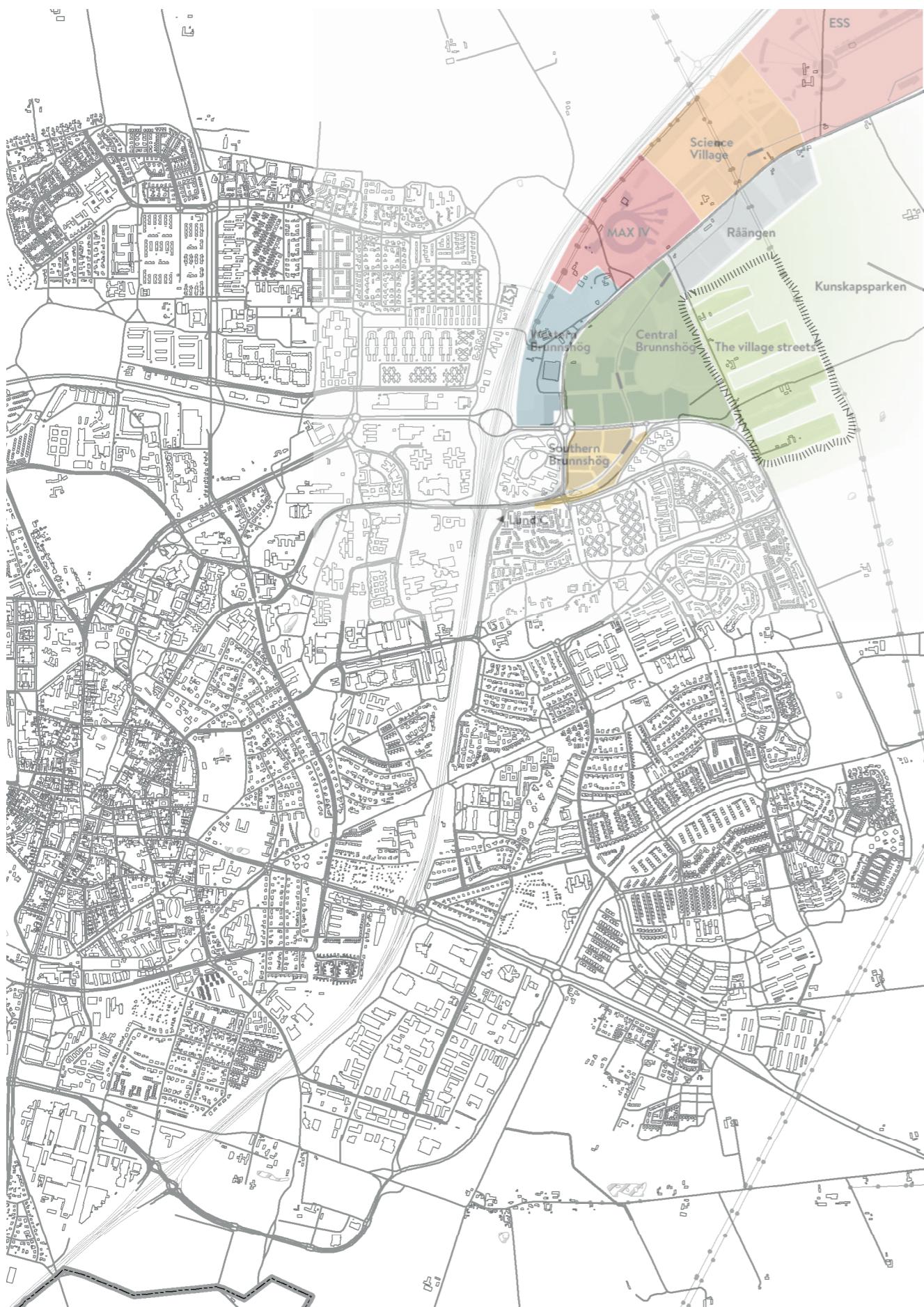


## Teckenförklaring

- |   |                                   |
|---|-----------------------------------|
|  | Plan Boundary 20-year Perspective |
|  | Vision area Brunnshög             |
|  | Secondary Development Area        |
|  | Mainly Housing                    |
|  | Mixed Housing                     |
|  | Business                          |
|  | Research and Development          |
|  | Green Structure - park            |
|  | Blue Structure - Water Surface    |
|  | Green structure - recreation area |
|  | Farm                              |
|  | Tramway                           |
|  | Tramway - stop / terminal         |
|  | Tramway - depot area              |

- ● ● Riding trails - planned
  - ● ● Riding trails - existing
  - — Pedestrian and bicycle lanes
  - — Cykelstråk - prioriterat
  - Lokalgata
  - Main street
  - Passage and access road  
  - ↔ Private road
  - Preschool or school
  - Housing - existing land
  - Businesses - existing land
  - Areal nutrition - existing land

# PHASES



# OPPORTUNITY

## VISION FOR EASTERN EDGE

When visioning for the future, we can change how we perceive the agricultural landscape and not limit it only to rural areas. Indeed, other formats of food production are rapidly improving, and this will affect traditional agricultural activities. However, in the case of Lund, this landscape is part of the place identity. By drawing inspiration from them, new ways of living can emerge. As the masterplan is based on long-term development, 30–40 years into the future, it deals with the vision area. The 20-year time perspective of the detailed plan ends around 2030 with an estimate of completing half of the total build-out. When looking at the vision, what is important to note is

## VILLAGE STREETS

that, especially on the eastern edge, the so-called “village streets” (Bygatorna in Swedish) are six narrow cul-de-sacs that connect to Kunskapsparken. According to municipal documents, the idea behind these cul-de-sacs, inspired by the classic village streets in Skåne, is to provide “a more rural housing alternative” with access to farming plots and proximity to urban Brunnshög.



The only visionary illustration for Bygatorna (Village Streets) available on the municipality website.

## LIMITATION AND OPPROTUNITY

Furthermore, as there are some existing buildings, there is a plan to preserve the rural heritage and, to some extent, as Kopljär explains, “communicate a history in this building process” (Kopljär, 2016). These spaces are intended to function as visitor centers. The goal of providing residential and commercial opportunities close to the urban area, combined with all the qualities of country life, sounds like a utopia everyone

might like. Nevertheless, this attitude sounds conservative and aims to mix some features with elements, such as low-rise terraces or semi-detached houses, without looking deeply into the relationships. Developing a vision based on the social values of a particular territory should be a step in the strategic planning process.

# CONCLUSION

## THE SOCIAL ASPECT OF SUSTAINABILITY

To draw a conclusion about the development plan, it promises a better and exceptional future, since all master plans have the same goal of making everything better but exclude the individual. If the area seeks to become a model example of the most sustainable planning, it should balance all three aspects of sustainability, especially the social aspect, which is often neglected. The Scanian landscape is an

interwoven pattern between nature, people, and wildlife that can serve as a source of inspiration. In historic neighborhoods, the role of negotiation was significant. Therefore, development plans must consider that although the environmental and economic aspect of the new district is strongly promoted, there are some gaps when it comes to the individual level to be socially sustainable.

## TERRITORIES IN BETWEEN

Keeping in mind the polarization between urban and rural, the areas in between need their specific vision and place in the planning process, as mentioned in chapter two, and it should not just be a mix of urban and rural. These visions are rarely developed, and as Wandl mentioned, "the specific characteristics, needs, and potentials for sustainable development of TiB are not very prominently represented in regional strategic plans" (Wandl, 2020). These in-between areas represent a challenging situation that at the same time offers opportunities to explore new forms of strategic neighborhood design to bring these areas out of their shadows.

Focusing on the large, global scale often raises the problem of placelessness on a small scale. Rural, agricultural

fields communicate as a symbol of the Scanian landscape. Thus, this situation highlights how rural activities on the periphery can become the focus of attention. From another point of view, access to green spaces is essential in many ways, and it has been fully considered in almost all Swedish development processes. However, these tend to be small and medium-sized green spaces in an interconnected network. Accessibility to large agricultural areas is still more defined in a rural context. How would it be possible to bridge this gap by strengthening ecological permeability?

It is often repeated in visions that Brunnshög will be a meeting place and that one can find friends in every corner of the district. But isn't that a utopian picture of a community?

# CONCLUSION

## SOCIAL INTERACTION

A homogeneous community of the creative class will lead to more social segregation. If we look at meeting places on the level of scientific research, it is feasible, but in daily life people don't meet their neighbors often these days and in areas like Sweden they tend to avoid any interaction with their neighbors. It is important to mention here that when we talk about social interaction, it is not at all about being friends. People needed their neighbors when they were completely dependent on face-to-face encounters before technological advancements. They no longer need the people who live in the neighborhood to be in their social circle. Addressing only the creative class in the future plan is similar to the idea that comes from the modernist approach, which makes the neighborhood unit a terrible idea and a place for social segregation.

Infrastructurally, the tram is seen as the backbone of the development, connecting the city center with the future Brunnshög. It is known as Science Road as it connects various research and science-based institutions. It passes through the campus of the Faculty of Engineering at Lund University, Ideon Science Park, and Medicom Village and ends at the facilities of ESS. Another aim of this network is to make

## INFRASTRUCTURAL DEVELOPMENTS

the innovation environment more vibrant and attractive. But how different this is from the industrialization era, when roads and networks came to an area before anything else. Why not experiment with prototypes in the periphery, where there are already traces of local activity, instead of pushing into the new periphery? With a limited budget, this so-called village street can play its role and shape a neighborhood around it, where negotiation is once again a key element.

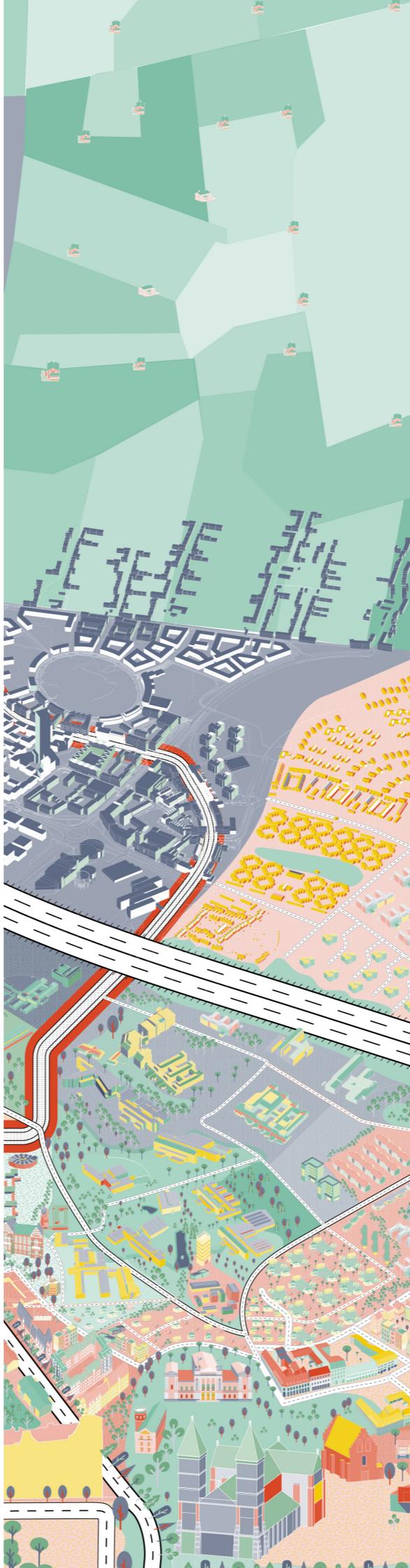
From another perspective, today all the infrastructures for a plus-energy house are in place, but it makes life more complex without taking into account the human interaction with them. It is true that from the environmental aspect we could see a huge positive impact, but that will not last long without society as a structure.

A neighborhood should be seen as a living organism where the sense of place is present; we don't have to congregate with people similar to us in our neighborhood; the public realm is where the exchange happens, not a public space that is open to everyone. To find this level of neighborhood, the next chapter will come with some intervention design ideas.

# 6. DESIGN INTERVENTION

## FRAMEWORK

In this chapter, design intervention will be discussed primarily for two reasons. First, it is used as a method to enable new forms of experience, dialog, and awareness about the design of the neighborhood. Second, the design intervention is used as a placeholder concept that allows for the exploration of further alternatives. Halse and Boffi describe design interventions as “playful, experimental, and open-ended in setting up a frame for exploring a given topic in a new light. We should not underestimate the importance of object, just because it is de-centered.”(Halse & Boffi, 2020)



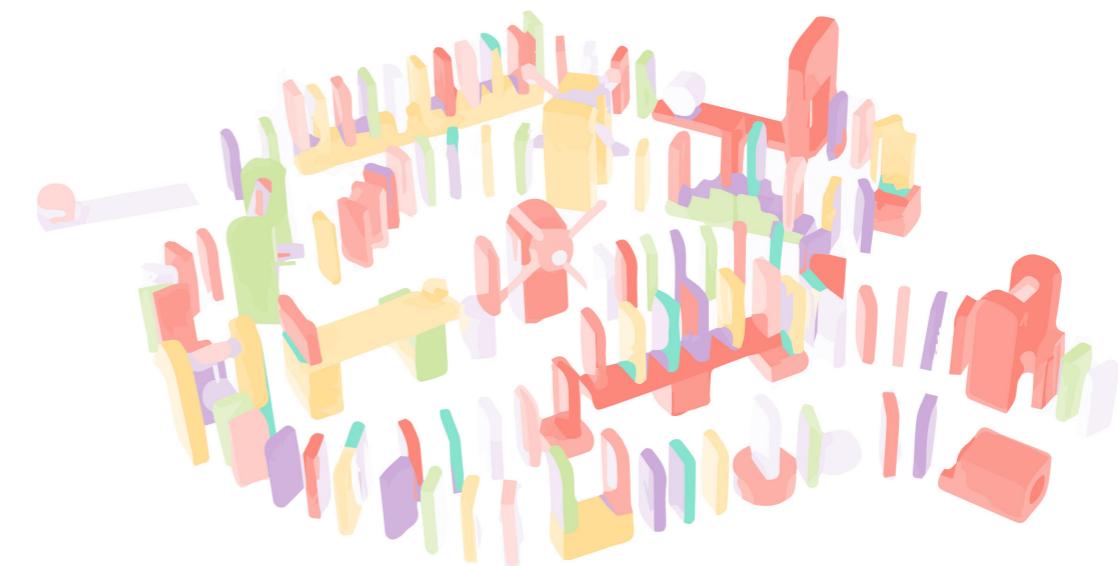
## AIM

Design intervention is about both the idea and the intervention that aims to modify behaviors and routines. Here the main question is “Why and how should we change the way we design?”. Rather than proposing a master plan for the area or just designing buildings, the proposal focuses on a system and the relationships within that system. With a different set of rules, the outcome of the system differs. The proposal seeks to encourage new ways of thinking about neighborhoods and territories- in- between. The created materials tell a story that offers a reflection

on how neighborhood can become something different when it comes to territories between rural and urban.

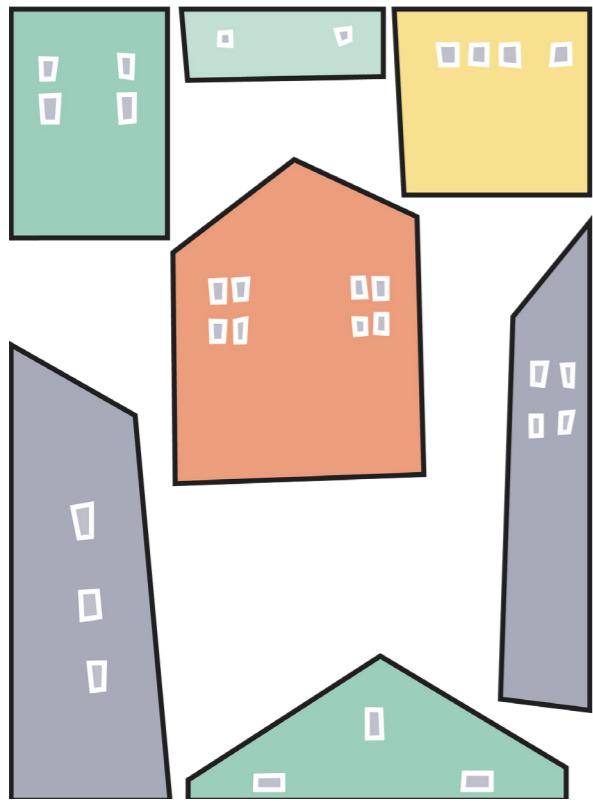
Building on the literature reviewed in the previous chapters, the routine of decision making for cities has not changed for years and decades. These development decisions are like rows of dominoes. Upon pushing the first domino, the next domino in line will be knocked over until the last one falls. In this regard, the proposal seeks to intervene in the falling row of urban development dominoes in periphery.

## DOMINO EFFECT

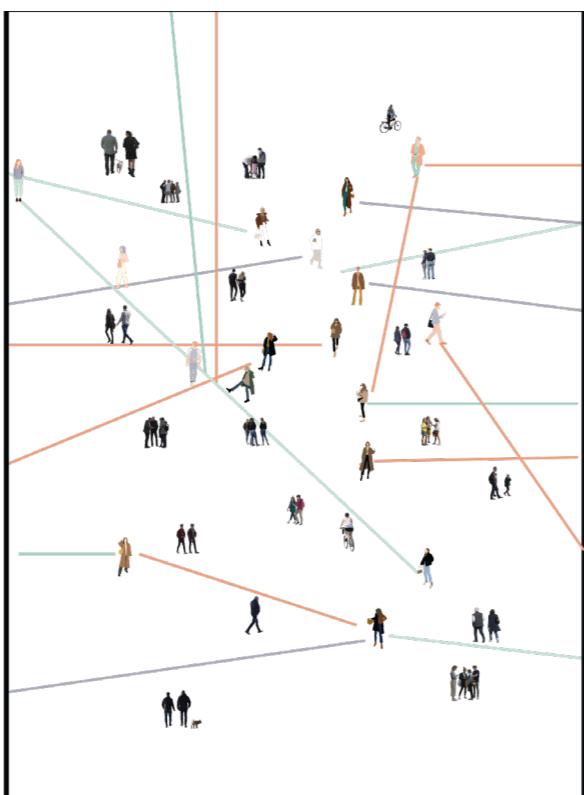


# MANIFESTO

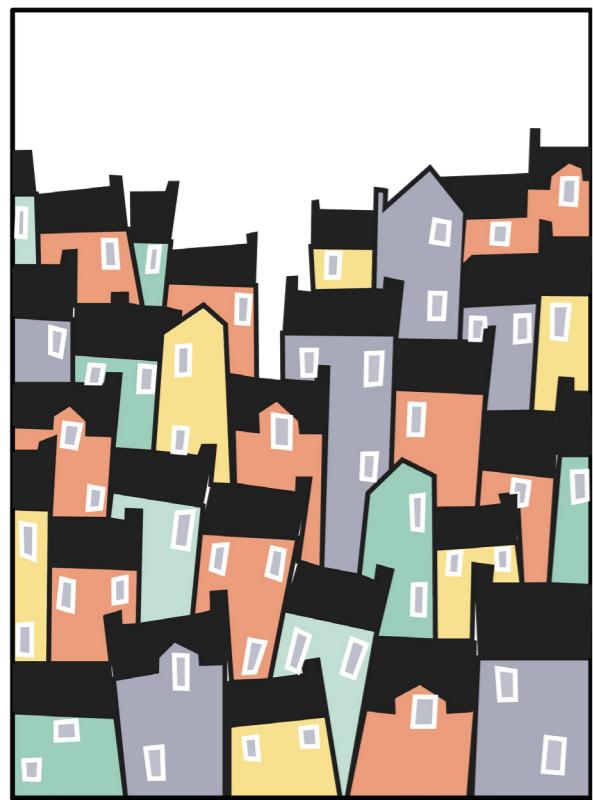
## MAJOR INTERWOVEN PATTERNS OF HUMAN ACTIVITY



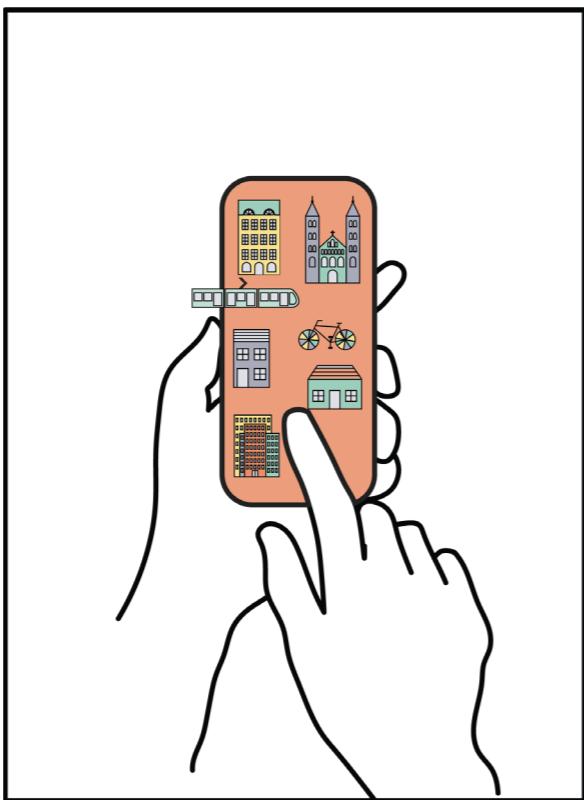
Redrawn from *The Forgotten* by Roger Ycaza



Face-to-face interactions



Redrawn from *The Town* by Paul Brunsall



Digital City

## NEW STRATEGIES

## MICRO-MACRO

The study explores new strategies as a necessity for shaping future neighborhoods in areas between rural and urban to increase individual responsibility by providing more opportunities for negotiation.

Jane Jacobs looked at cities as living beings and ecosystems. She explained how each element of a city functions together synergistically, much like the natural ecosystem. This resemblance is all with the goal of understanding and recognizing how the city functions. Having that in mind, the city is a complex system, and breaking it down into its components requires many different expertise and observations. This study intends to look for patterns in

micro-behaviors that evolve, shift, and emerge as macro-behaviors. In this regard, it chooses the neighborhood scale as an understandable benchmark. The neighborhood changes like a dynamic organism depending on how people interact with it. Moreover, the initial concept of this project sees the structure of the neighborhood as a living organism; this whole organism is alive and constantly changing –as it consists of people who interact within the neighborhood-, and its structure is fluid while at a certain point it becomes a center of attention with many activities, over time this area is abandoned. A new area of development emerges next to the previous one.

## INCENTIVE PROCESS

Another aspect of the organism with which we can relate the neighborhood is that the organism grows and matures and may die if it does not take proper care of itself. Nowadays, the neighborhood is not only defined by a social zone anchored in a particular geography, and it goes beyond the physical boundary if we look at it from the perspective of psychology. Despite the contemporary look and format of life leading to less dependence

on neighborhood geography and its services, the need for face-to-face interactions has not diminished and plays an essential role in shaping neighborhoods to improve people's quality of life.

In the manifestation, the neighborhood is seen as an incentive process that leads to self-organized cooperation and participation of residents.

# MANIFESTO

**“IT IS ALSO  
ESSENTIAL THAT WE  
REMEMBER THAT IT  
IS THE EVERYDAY  
SITUATIONS THAT  
ARE IMPORTANT  
AND THAT SHAPE  
THE MAJOR PART OF  
OUR LIVES AND OUR  
CITIES.”**

— RALPH ERSKINE, 1986

## MAIN INTERWOVEN PATTERNS

## NEED FOR PRINCIPLES

Since most people still use social and humanistic vocabulary to describe their neighborhood rather than physical boundaries, special attention has been paid to how people live today. The main interwoven patterns of human activity today are the city, the internet, and the environment. With all the constant changes in society, we need to keep in mind that adaptation is becoming more critical than before, thus aiming for restorative systems that do not compromise future opportunities. Giving dynamism and emergence to the neighborhood is strongly thought to face unexpected changes in the future.

With the dual nature of the neighborhood, physical and

## COMMON SPACE

Historically, neighborhoods were about the integration of people who organized their lives around central common spaces. When one examines the changing nature of neighborhoods throughout history to modern times, it becomes clear that the central core in our communities is always changing; For example, the role of religion as the absolute center of a city in earlier times led to placing the place of worship at the center of a neighborhood accessible to all, or the role

social, finding principles that satisfy both aspects is the next step in design interventions. As people's daily lives have become more multidimensional and complex, our cities are still built according to the principles of a few decades ago. The functions may change in these plans, but the approach is still the same. The land is divided by a street network, and then the services are put in place; with zoning, the residential plots are divided between different professionals, and everyone tries to make the best of the given plot. The point is not to undermine the role of regional and municipal planning but to take a critical look at the top-down planning that comes out of these processes.

## CENTER OF NEIGHBORHOOD

of the bazaar (marketplace) in ancient cities and Middle-Eastern countries such as Turkey, Iran, Uzbekistan as a central feature of daily life, in the Middle Ages walls became important, and later in Perry's neighborhood unit, the function at the center became the school. A modern metropolis has various new functions, with multifaceted lives of people, different things could take the center. In the case of Brunnshög, with the current development plan, the research facilities become the central



French photographer **Antoine Geiger** created a series named **SUR-FAKE** where people's attention is being sucked in by their mobile devices.



**DINNER BY PAWEŁ KUCZYNSKI**

#### CONTEMPORARY FACE OF LIFE

#### TWO ARTWORK

hub of the new community. Also, with the contemporary trend of use of more green spaces that can become a green wash, the open greenery could take the center. On the other hand, with all plus-energy buildings, energy could be the center of attention. Nevertheless, note a sole function is not satisfactory for the ever-changing life. In today's world, the central core of a neighborhood should be an overlay of several layers.

Often in this day and age, people seem more taken with digital objects than the tangible world around them. The project **SUR\_FAKE** by Antoine Geiger strongly illustrates

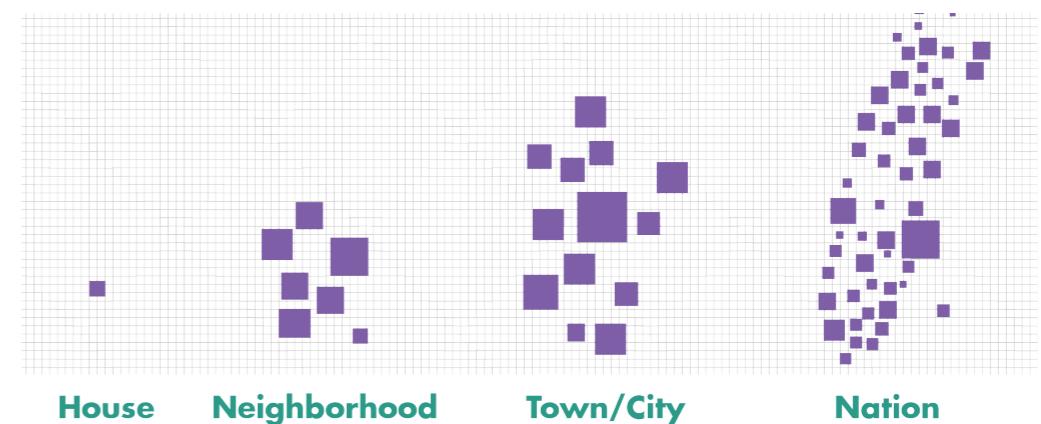
this situation: It places the screen as an object of "mass subculture", alienating our relationship with our own bodies and more generally with the physical world (Antoine Geiger website, 2015). Another illustration that points to today's reality is **Dinner**, a painting by Paweł Kuczynski from 2016, which shows a family at the dinner table. Everyone is sitting in complete silence in front of their mobile device. One could relate it to social media addiction, if we open our eyes we are confronted with this situation every day. However, another interpretation that comes to mind with this situation is that the hub has replaced the pub.

#### CELLULAR DYNAMIC

#### INTERVENTION

The micro-behaviors in a house evolve, shift, and emerge as macro-behaviors in a broader network or city. Home extends to the whole block in the neighborhood. The city changes with the cellular dynamic of neighborhoods. A small-

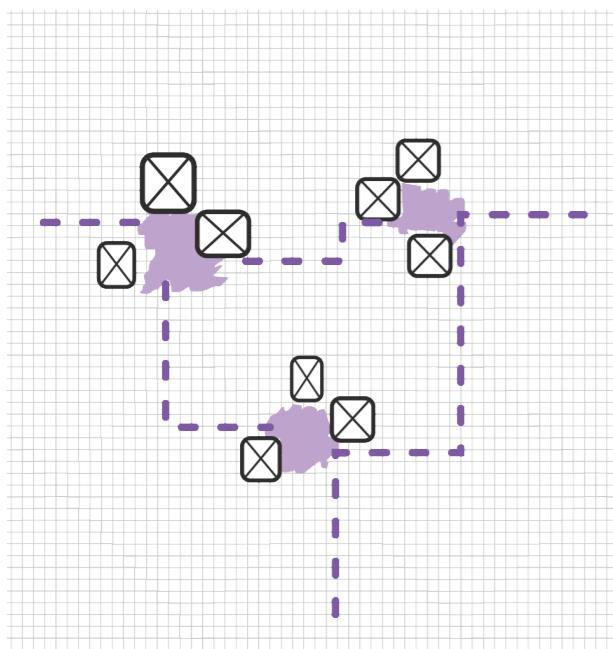
scale intervention leads to a large-scale impact on a national scale. The small-scale neighborhood should find its way to integrate the cooperation between neighbors. Is this another utopia?



# URBAN RURAL

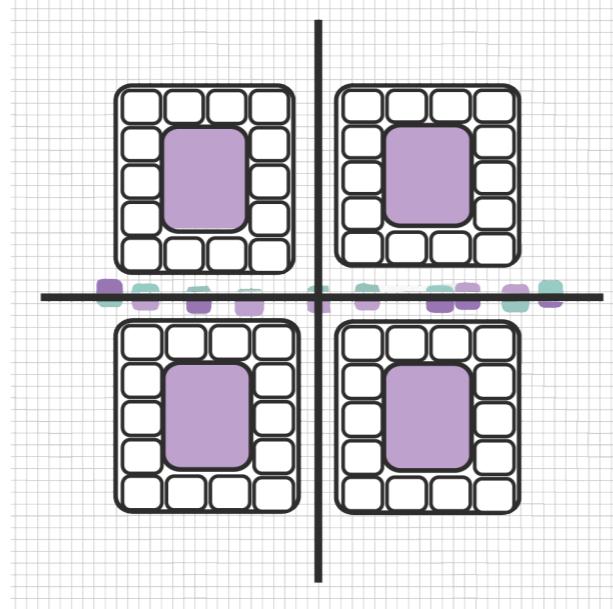
## COMMUNITIES

In the urban block, neighbors meet at the entrance, elevator, or courtyard in the case of gated communities or courtyards. In the rural context, residents meet at work in the countryside and form a larger community with stronger relationships.



## POROSITY

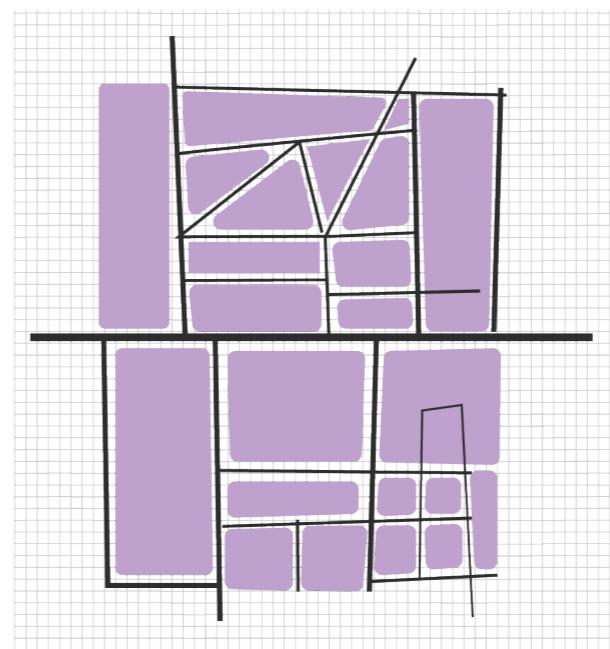
Density in terms of units per acre is obviously greater than in rural areas. Consequently, porosity is defined at a very different level, making the rural pattern porous. The urban void in a city block is the courtyard and the rural void is all the surrounding fields.



# URBAN RURAL

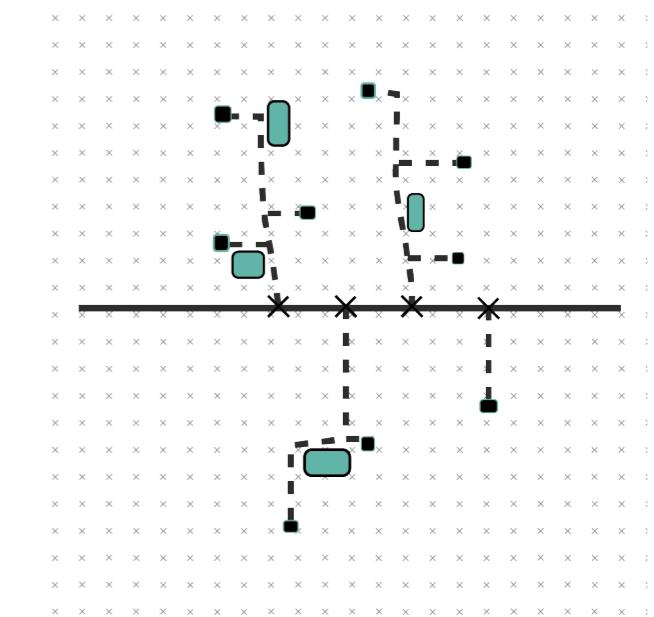
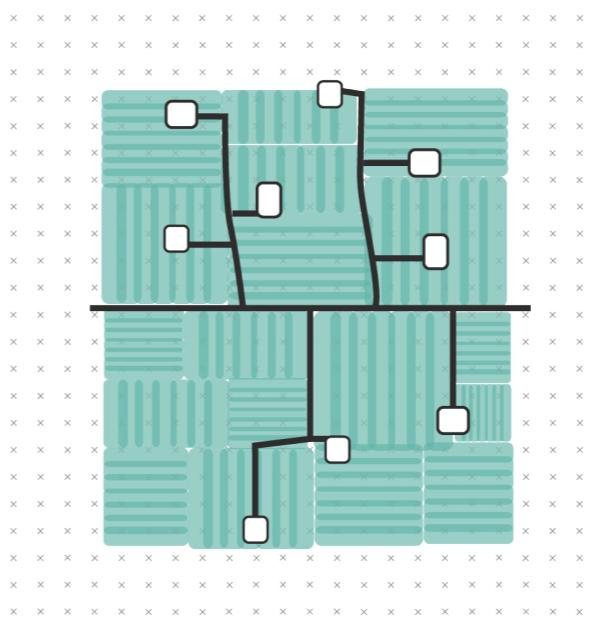
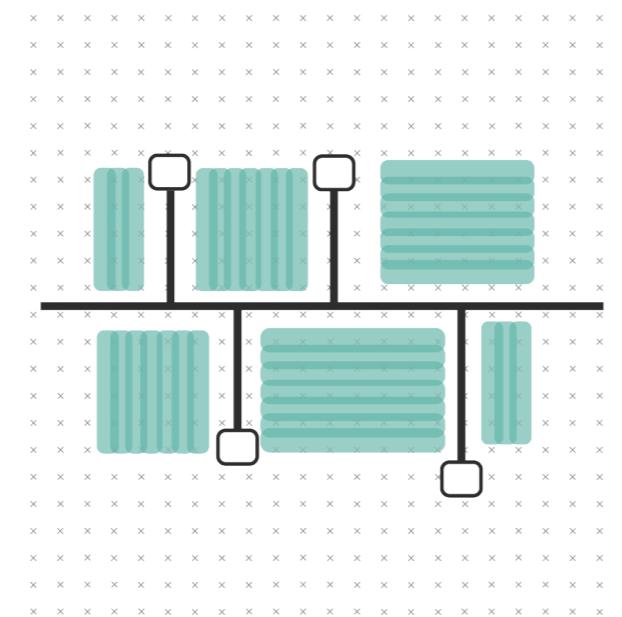
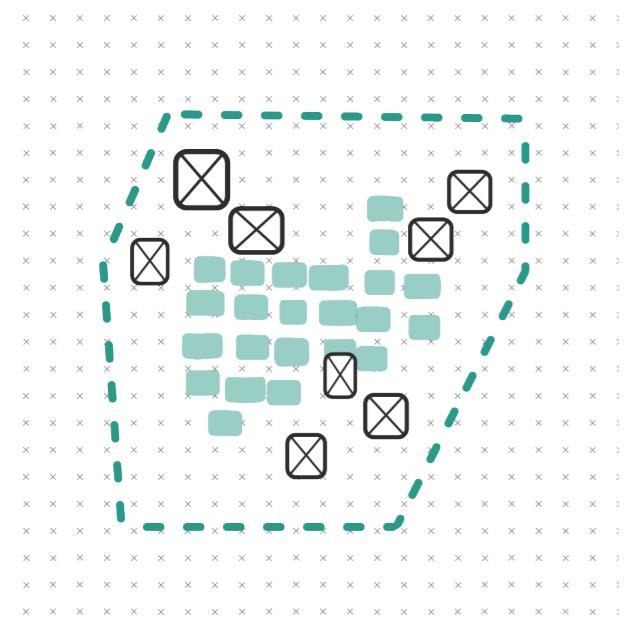
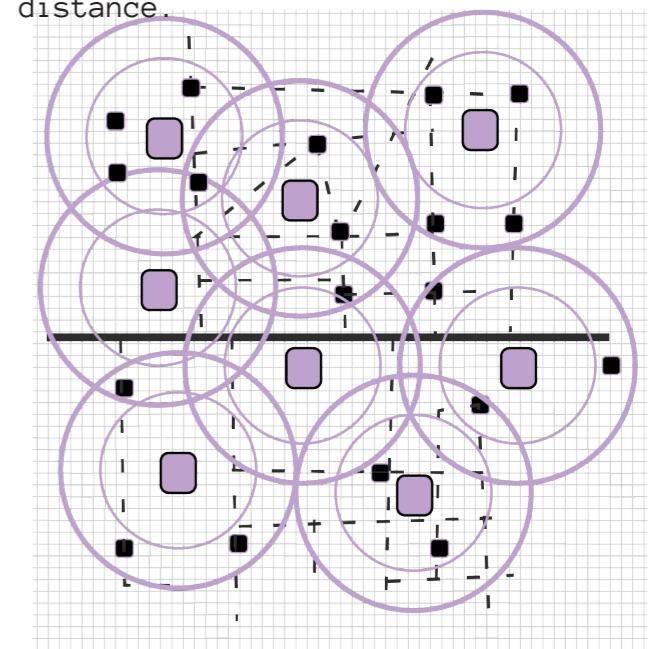
## CONNECTIVITY

While the street network in an urban setting follows a grid or well-connected network between blocks, rural patterns tend to follow tree form, loop or cul-de-sac morphology.

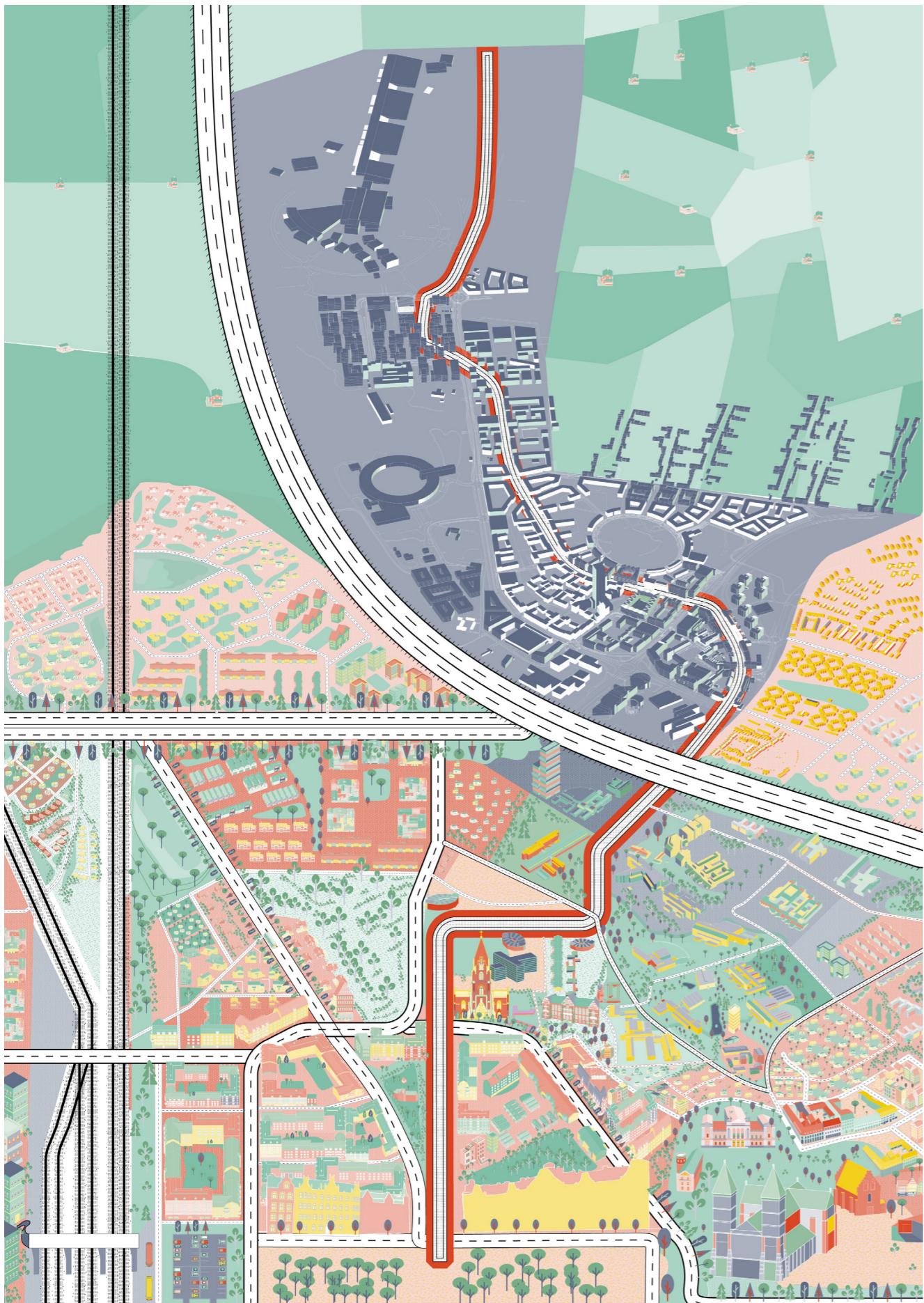


## INFRASTRUCTURE

Infrastructures in each city district is served by different services and facilities, with walking and driving distances setting the boundaries. In rural patterns, however, services and infrastructure and service is shared between residents at a greater distance.



# CITY/NEIGHBORHOOD



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LANDING ON SITE

UTMARKSVÄGEN

What morphological structures offer the potential for community integration in the neighborhood? On the previous page, urban and rural patterns were presented in four categories and in parallel to illuminate what relationships within a form might be considered in the areas between rural and urban. The development and comparison of urban and rural qualities were each considered in this dual perspective.

In the search for a reconciliation between urbanity and agriculture, this section attempts to find a suitable hypothetical pattern for the eastern edge of Brunnshög, Utmarksvägen road where agricultural landscape can be integrated in voids of residential fabric.

How the two sides of the city, urban and rural, meet has strongly been defined by street networks. On one side of the Utmarksvägen road there will be urban life and on the other side are the unlimited open fields. In a new perspective, the illustration shows how the new tram line, called Science Road, connects the new Brunnshög with the existing urban fabric. The patterns of different activities in the city are at the root of this new neighborhood and embody the cultural and social aspects of the city. It is only fifteen minutes by tram from Clemenstorget, the square in front of Lund Central Station, to ESS station, but it contains patterns from three hundred years of development.

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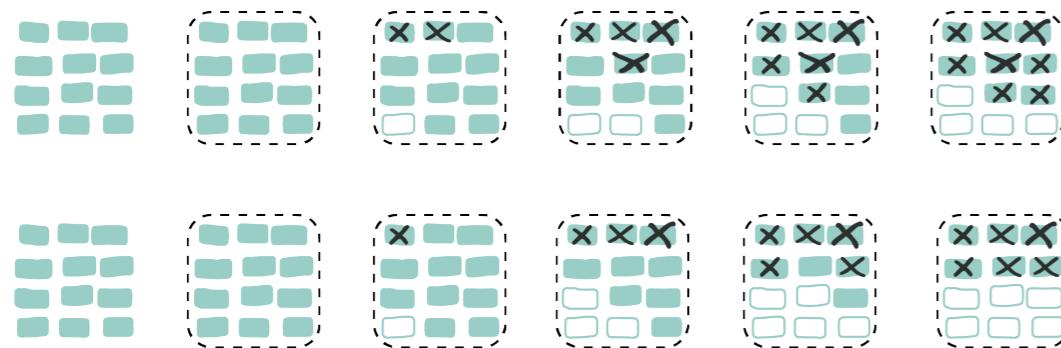
# PATTERNS

## WHERE TO BUILD WHERE NOT TO BUILD

In the last chapter we saw how Lund city growth has spread over agricultural land in recent decades, this is the case with all cities in the world, agricultural or not. Eating up limited resources and placing residential land destroys the possibility of agriculture. According to Nicholas de Monchaux, the amount of urban fabric that will be built in the next four decades will equal what has been built in the entire last ten thousand years of human history. Cities have an interconnected metabolism, some of it physical, but most of it social and economic. "It is impossible to truly imagine physical resilience without social, cultural and economic resilience" (Monchaux, 2016). In this background, this section considers the physical nature of urban growth on agricultural land.

### As AND Rs Game

In this section, the growth process is illustrated in a simple way with a game like tic-tac-toe ( Xs and



Os). Imagine a hypothetical frontier consisting of nine agricultural plots. The goal of the game is to show

In the precedent projects such as ReGen Villages and TwinPhenomena, each project was based on one of these ratios. In the design of the new neighborhood in eastern Brunnshög, the 1:1 ratio can be imagined.

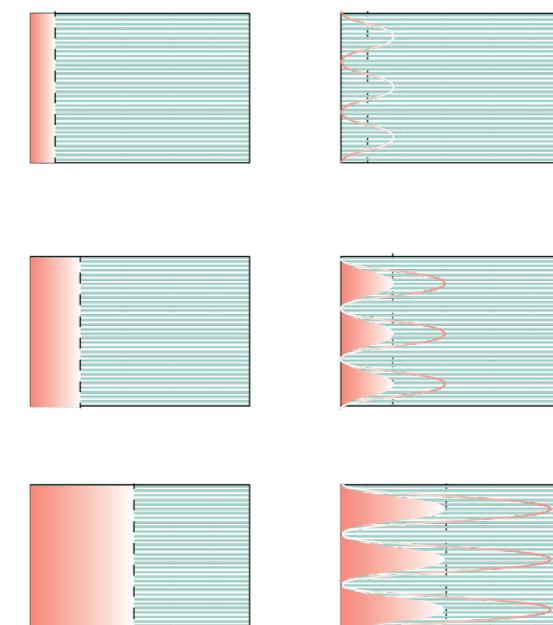
## VARYING RULES

how different rules make the process and outcome different, and in this way combine growth and preservation. The game is played by two players, Residential and Agricultural, who take turns marking the plots in a 3x3 grid. In the first rule, if the residential took one plot, agricultural get two plots. In this ratio, the agricultural land will dominate over the residential (which was never the case in the peri-urban areas). In the second set of play, the rule changes to a more equal condition. This was an explanation of how zoning policy can change the outcome of the urban development game.

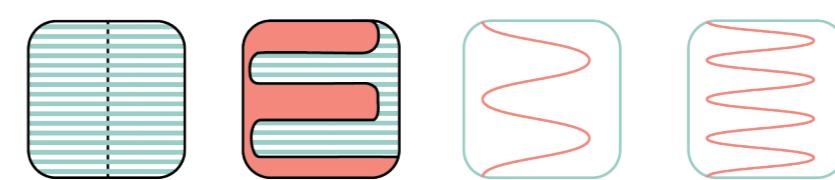
### THE BOUNDARY

In addition to finding the right balance between housing and agriculture, we need to rethink the character of the city's boundaries, which are currently primarily rigid and static. The boundary of the urban body should be seen with a more dynamic and fluid-structure. If we see it from a mathematical perspective, the current boundaries resemble a square waveform with sharp edges, mostly these boundaries are just political, and on master plans, what is on the

## ALTERNATIVE URBANIZATION



master plan cannot be seen on the aerial photos. What we see on the map is a road facing both the country and the city. If we look at the forces on this boundary more like a spring in tension, the waveform that follows the movement is a sine wave. The physical pattern of the sine wave shape is presented here as a metaphor for a more flexible boundary. The frequency and length of this growth follow the rate of urbanization.



# IMMEDIATE CONTEXT

THE OTHER SIDE

CUL-DE-SACS OR GRID



RE-VISION

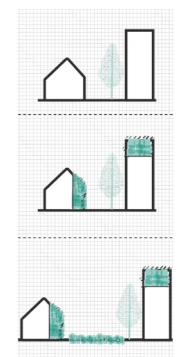
STRATEGY

To provide a clearer context, the focus in the following section is on the principles for a hypothetical neighborhood on the east side of Utmarksvögen Street. As explained in chapter five, the masterplan for Brunnshög is divided into two main phases that relate to the time period. Focusing on Utmarksvögen, different patterns can be imagined. This area has been visioned as Village Street by the municipality. The next few pages rethink the vision and develop an alternative morphology.

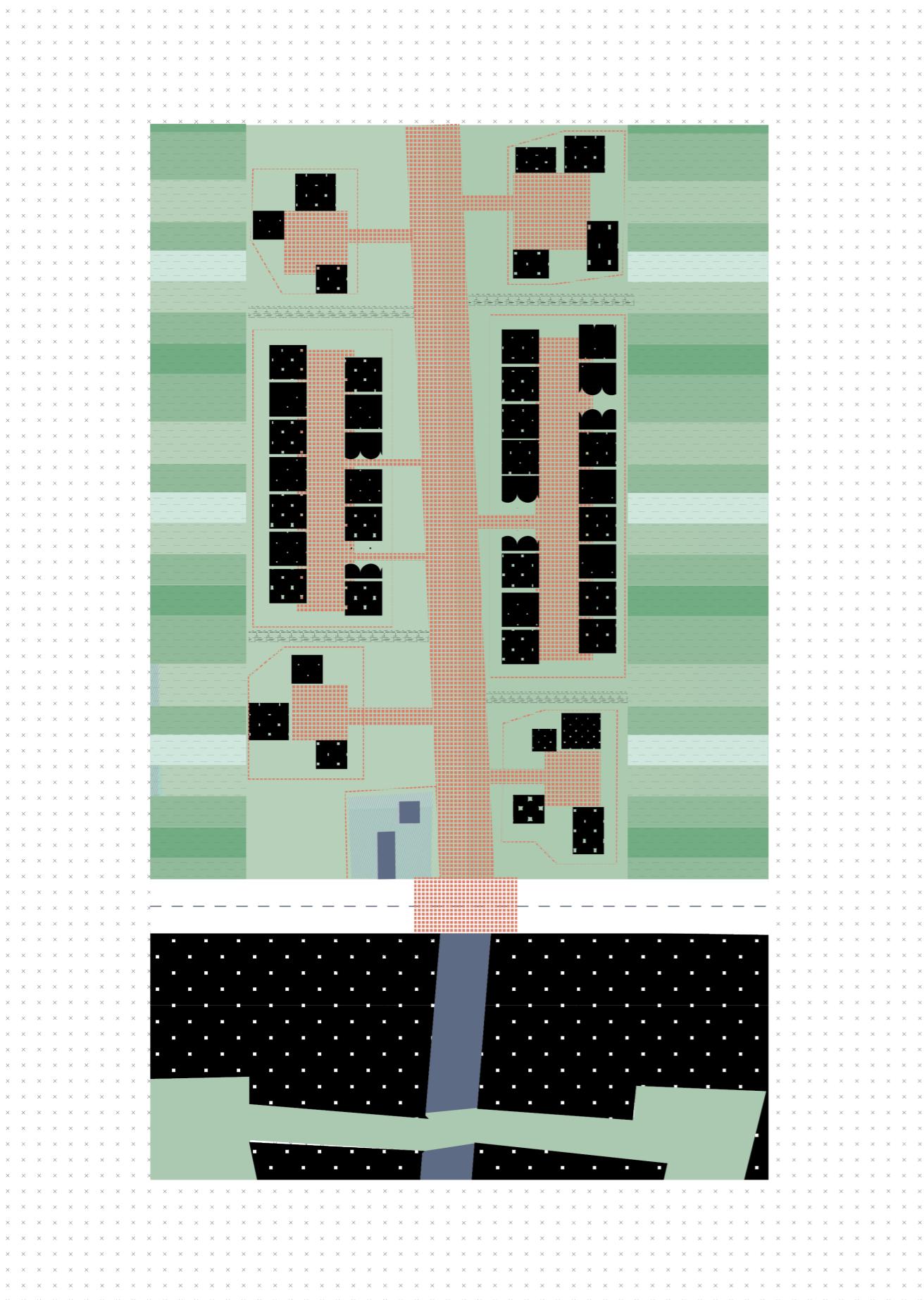
Many different operators are working on individual buildings for the plan area by 2030. Many well-known Scandinavian architectural firms have a project in the border including, Henning Larsen Architects, Liljewall Architects, White Arkitekter, FOJAB, COBE and etc. If you look at the statistics that can be seen on the map at the top of the previous page, you will find that 96 percent of the buildings in the entire Brunnshög will have opportunities for cultivation, but the question of design strategies is interesting. At the diagram below, there are three strategies to incorporate and integrate cultivation. The first strategy, which is familiar to many, is that there is no space for cultivation between residential buildings

and little vegetation is provided. The reason for this is often explained by the importance of building at a high density and closer spacing to reduce infrastructure costs. The second level is seen in urban agriculture projects in the last decade when rooftops and terraces become small greenhouses. The plot size and road network are maintained. The final strategy is to leave some farmland between buildings and in gaps. This strategy was not economically feasible due to the high cost of building at a lower density resulting in more meters of infrastructure. But this study argues that this is no longer the case with current energy microgrid technologies and instead is more efficient in the long run. Looking at all the completed, ongoing, and planned project proposals available on Municipality website, these cultivation opportunities mostly fall into the second category in the form of terraces, small courtyards, patios and roof gardens. Assuming that all of these projects will be built sooner or later, the east side of Utmarksvögen has the potential to offer a different form of cultivation that is to some extent consistent with the nature of traditional agriculture.

Three strategies for integrating cultivation in residential buildings.



# THE FIRST MYCELIUM



## TESTING BED

For Brunnshög, an urban development plan with a long-term vision was sought, sustainable and dense, but would not interfere with the small-scale nature of the existing patterns, nor with the surrounding agricultural land.

With a densification strategy over time, the territory will slowly transform. Starting with the first prototype, the basis of the system can be grounded and tested as a full-scale prototype. If the prototype goes well, the following roads and branches will grow. If not, the excess land is still untouched and ready for the improved version of the prototype.

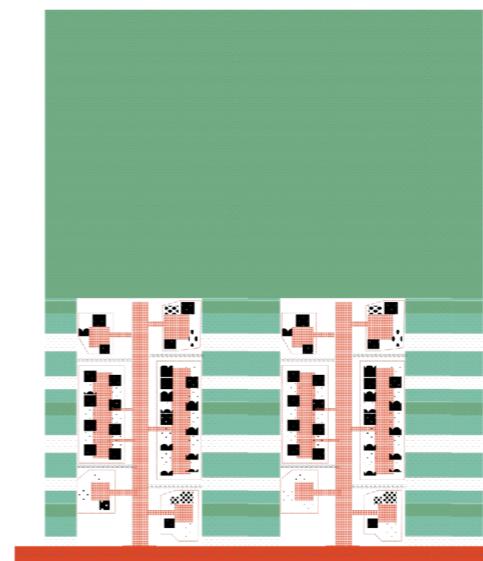
In short, the district acts as a testbed for the new prototype with a limited time for

## PROTOTYPE

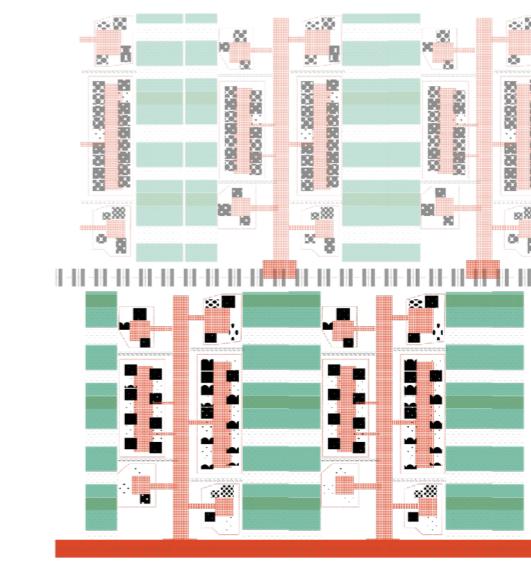
research and development. This prototype is called Mycelium.

As mentioned earlier, the ratio of residential to agricultural land is essential in shaping the morphology. Previous studies suggested a ratio of 1:1 or 1:2. Here, due to the boundaries and land size, the 1:1 ratio is used, which means that for one square meter of residential land, one square meter of agricultural land is preserved. This ratio can become smaller as it grows outward and moves further away from the existing city limits. We have seen in Perry's model that using a perfect neighborhood unit does not solve the future problems. This unit must be flexible to change over time and adapt to new conditions.

## SECOND PROTOTYPE



## THE GROWTH



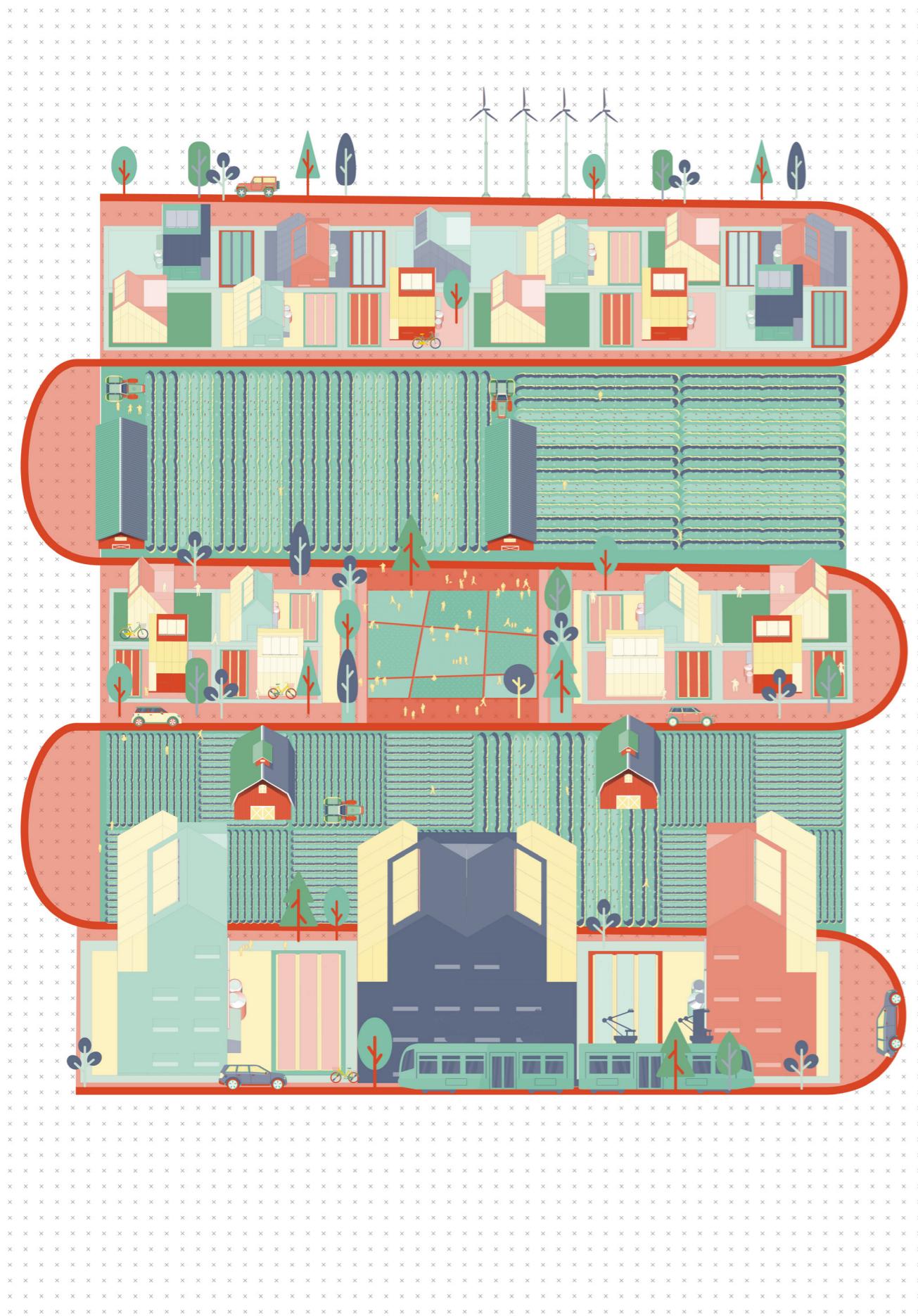
Mycelium in reality

"the vegetative body of fungi: a mass of branching filaments (hyphae) that spread throughout the nutrient substratum" Collins Dictionary

Through the mycelium, a fungus absorbs nutrients from its environment." Wikipedia

Communities, porosity, connections, and infrastructures follow an urban characteristic at the smaller scale and more closely resemble rural areas at the larger scale. Residential voids are accessible with varying degrees of privacy.

# PRINCIPLES



## CHARACTER

Most people still use social and humanistic vocabulary to describe their neighborhoods rather than physical boundaries. We have seen that throughout history most design principles for neighborhoods have been based on physical features. There is a need to explore and manifest principles based on both interwoven characters of the physical and social interactions.

Mainly, a common question is whether neighborhood is still a social zone anchored in a particular geography or has it changed to a borderless phenomenon; can we define a neighborhood as a cooperative structure? Despite the

## THE TALE

contemporary look and format of life leading to less dependence on the geography of the neighborhood and its services, the need for interactions has not diminished and plays an important role in people's quality of life.

The tale of establishing an alternative system for neighborhood based on negotiation stands as a microcosm for sustainable living. Neighborhood as the smallest unit considered in terms of urban development reflects in this narrative a web of relationships between residents.

"In all of these ways, the everyday neighborhood is intended as a tool for change. It is not applicable everywhere nor for everyone. But in the vast expanse of amorphous, neighborhood-free urbanism that constitutes much of our cities, there is a need to proactively work toward neighborhood definition and reconstitution. Unless we do that, neighborhood cannot be used as a credible resource in the quest to help cities become better places" (Talen, 2018).

## PRINCIPLES

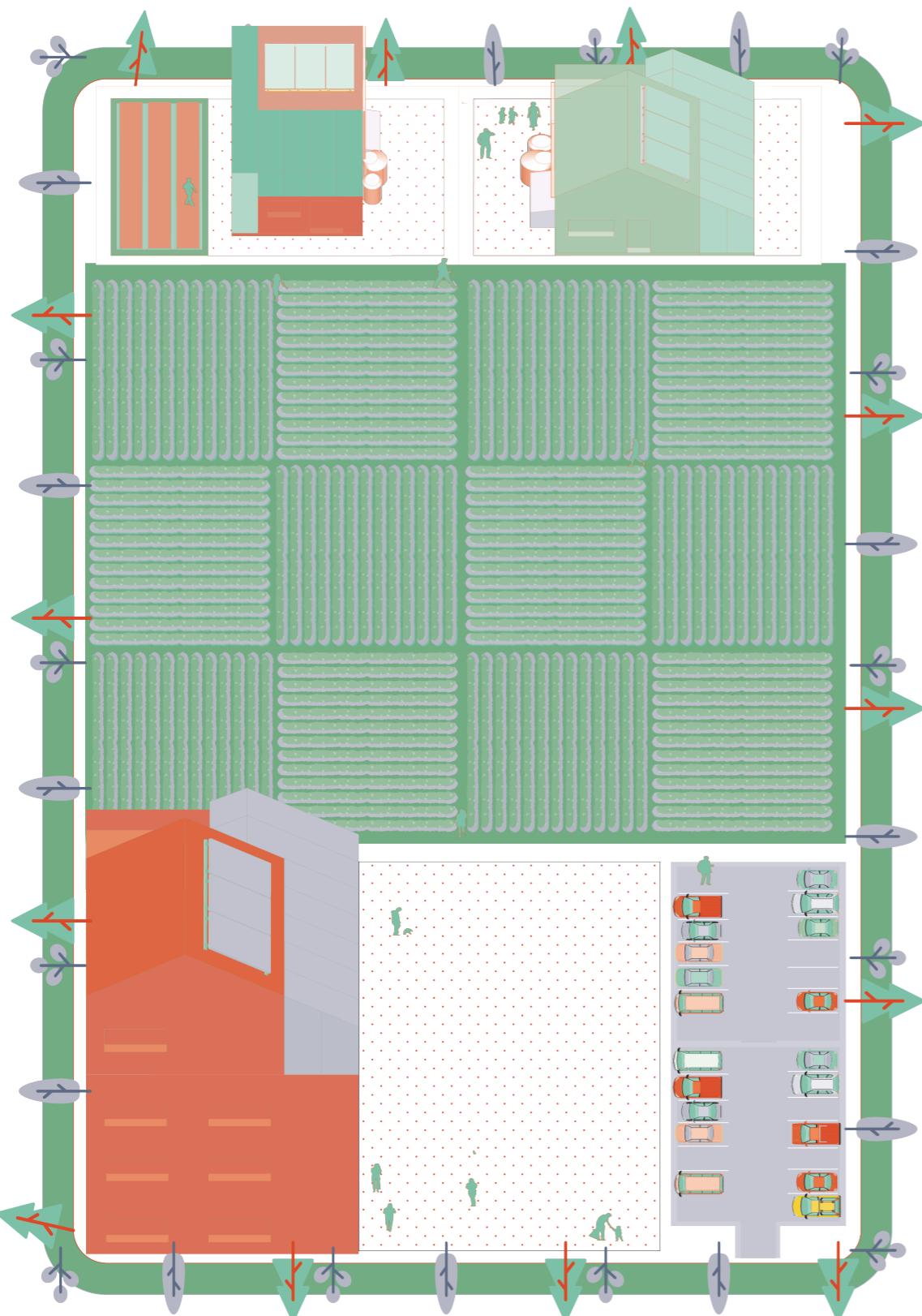
The concept of this design intervention is based on four core principles:

1. Collaboration and Negotiation: Ecological food production
2. Circular economy: Mixed renewable energy and storage
3. Automation for quality of life: Improve the interaction between human and systems
4. Local Self-Sufficiency: Empowering local communities

In this context, four different scenarios are discussed based on the principles to show how different roles impact the community.

The goal is not only to redefine countryside as economically, environmentally, and educationally attractive places to live, work, and raise families, but also to make them more resilient and regenerative. A number of regenerative design frameworks have been developed in recent years, most of which are conceptual and intended to create a dialog rather than provide a prescriptive checklist. The principles mentioned above are used as the framework for the scenarios.

# SCENARIOS



## PURPOSE

The scenarios presented here attempt to illustrate how citizens interact with neighbors and connect to their immediate neighborhood. The categories for these scenarios are based on four hypothetical types of residents. This grouping deals with the matrix of influence - interest.

It is important to note that these scenarios represent only one possible outcome; many different scenarios can be discussed. Instead of outcomes, the focus is on methodology, and instead of exact characters, the focus is on interaction and negotiation.

In scenario number one, a researcher/student is the actor who comes to Lund and Brunnshög for a limited

## FOUR DIFFERENT ACTORS TYPE

time to study and practice, possibly for a temporary stay. This actor belongs to the group with a high interest in collaboration and low influence on the neighborhood.

In scenario two, those who have the most influence and interest are the farmers; in scenario two, this is articulated in more detail. In addition to farmers as permanent residents, a family is described in the third group. The family may consist of a couple and one child, or it may be a more prominent family with several children and perhaps grandparents. These actors may be at different stages of life and are considered one group due to having a significant influence over the neighborhood and less

"An urban neighborhood is determined not only by geographical and economic factors, but also by the images that its inhabitants and those of other neighborhoods have of it."  
—Chombart de Lauwe, Paris, essais de sociologie

## COLLABORATION

interest in collaborating with every neighbor. The final group is the digital nomads who have the slightest interest in the physical location of the neighborhood and accordingly have a minor influence on the social structure of the neighborhood.

The next aspect worth discussing is the format of cooperation between neighbors. When it comes to a self-

## VOIDS

sustaining neighborhood, the individual building or, more specifically, the individual housing unit does not solve a problem if it does not contribute to the system. Collaboration increases social responsibility resulting in a more sustainable neighborhood

We have seen how people get to know fewer neighbors even though they do not have a common area that forces them to greet each other. As a result of digitization, people are less reliant on neighbors for social connections. Many of their neighbors are now defined as those who are followers on social media or whom we follow back. Therefore, it makes sense to bring collaboration into the system. The main reason is that the less we know, the less we care.

In 2018, Sweden became one of the first countries to adopt a comprehensive policy for what is known as Designed Living Environment. In this definition, Designed Living Environment covers everything from residential buildings to public spaces and squares. "There is a clear movement

where architecture creates benefits and content and is not confined to the surface"

The residential voids are not filled with limitless parking spaces, but these are intriguing to grow small vegetables or have a larger open space to play and have a picnic. Agricultural areas are integrated into the larger voids where residents can observe the agricultural process up close. In this respect, different scales of green empty spaces characterize the space between buildings. Social green, cultural green, ecological green, and agricultural spaces are classified from small to large scale.

“

*“First life, then spaces, then buildings.—the other way around never works.”*

— Jan Gehl

# SCENARIO 1

RESEARCHER/STUDENT

TEMPORAL RESIDENT



**ELLEN**  
RESEARCHER AT LUND UNIVERSITY

1. Ellen is a newly moved resident in the first Mycelium. She wanted close access to university facilities and needed a small apartment.



DAILY ROUTINE

2. Most of the day, Ellen works on campus or from home. She uses green transportation, her bike, or the tram. When she wants to enjoy the sunny day, she walks to her department in LTH.



TIME OUT AND HOLIDAYS

3. When she is away from home for extended periods of time to explore other cities or take a working vacation, she needs to monitor the energy consumption and safety of her apartment.



ORDER TOMATO FROM THE YARD

4. In her spare time, Ellen invites her friends over. Often she orders vegetables produced in the neighborhood, instead of paying from her bank account she pays with the stored extra energy from the solar panels.

THE ROLE

For Ellen, as a newcomer, integration with her neighbors supports her feeling part of the community. She represents residents with a high interest in community activities or food production and a low influence on the system. The tram stop within walking distance and the new Brunnshög development provide her with the essential needs of daily life. As a young resident, the density of the area brings many activities and makes the district lively. On the other hand, the first Mycelium has close access to the agricultural landscape, which brings a peaceful charming environment. Having a small apartment meets Ellen's needs. However, it is no ordinary flat as it is a module in a larger microgrid. With access to mixed renewable energy, the user can also monitor energy production and use. The neighborhood has a digital application that makes this information available to residents and neighbors so they can communicate with each other, such as when someone

wants to sell something secondhand or sell the vegetables produced in their garden. Ellen strives to keep her costs low; she uses energy efficiently and stores the excess to buy vegetables. A user like Ellen has no idea about food production and no time for it, but she is a good supporter. So she opens the app again and buys tomatoes from Ana, who is her neighbor. To pay for the tomatoes, Ellen sends some of the excess stored energy to Ana. Ellen knows Ana, but she is not her friend.

\*This scenario is based on my experiences as an international student living in Lund for almost two years. The background for the scenario arose from a collective perspective that resulted from a survey I designed in which I asked students what they wanted besides a room during their stay. They gave their opinions on the individual student accommodation offered by AF Bostäder and LU Accommodation, the most biggest student accommodation agencies. This collective map of advantages and limitations of each housing area became available for new students to get an idea of which accommodation they should choose.

# SCENARIO 2

FARMER

PERMANENT RESIDENT



**ANA**  
**FARMER/FOOD TECHNOLOGIST**

1. Ana is an active farmer and was the initiator of urban gardening in Brunnshög, which started around 2010. She is interested in making creative use of what is produced.



**GROWING VEGETABLES AND FRUITS**

2. Ana grows vegetables on the given fields and takes care of them. Integration with nature is what she wants in the urban environment, only outside her house she has her job.



**MONITORING THE QUALITY OF THE CROPS AND TEACHING**

3. Ana has been working on a project where local children can learn how to grow, which she enjoys because she can do something meaningful with the children.



**SELLING THE PRODUCTION IN THE LOCAL SQUARE**

4. Ana is also an active member in the neighborhood, trying to bring awareness to maximize the cycles. She sells some of the vegetables on the local market. People of different ages visit her to learn more about the activities.

**THE ROLE**

Ana is the representative of the many initiators who began cultivation in and around Lund. Ana came into contact with the conversion movement

by running an eco-shop in Lund. She was once a person who was inspired to join the initiative. She spends most of her time on growing projects and believes in collaboration.

Ana knows many of the neighbors through these neighborhood activities. Cultivation opportunities with the kids become a natural and practical way to talk to them about cycles. She also uses the Mycelium application to create events for all ages, so she connects with more people this way, sometimes forming a study circle and short courses.

Often some residents aren't interested in the activities. She sells vegetables on the digital platform and gets the cost with extra energy. This way, the conversation is not limited to a few people with the same mindset, reaching others. She thinks she needs to start

by starting herself. This group of residents, who have a high interest and impact on the neighborhood, should always partner in planning processes.

With sustainability, you could also talk about economic sustainability, or sustainability of materials, taking the focus away from sustainability for the planet. Resilience is more difficult because it is about acting locally and living adaptively to deal with crises. Unlike Preparedness, Resilience is more optimistic about building a robust and fun society – even if there is no (major) crisis, in the meantime, you've gotten to know your neighbors a little better and had fun!

\*Ana's role is similar to the efforts of many, to name a few, Sara Nelson and Julia Linder. They have actively created co-cultivation fields as meeting places in Brunnshög and Linero. After reading their interviews available on the internet, their efforts became a source of inspiration for this scenario.

# SCENARIO 3

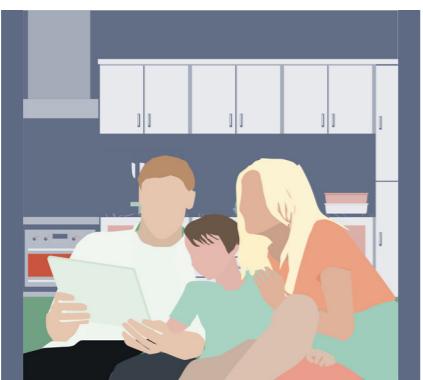
FAMILY

PERMANENT RESIDENTS



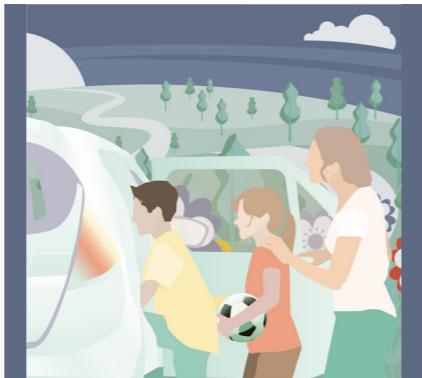
## NILSSONS FAMILY/WITH KIDS/ELDERLY

1. The Nilson family consists of Anders and Birgitta with their children August and Greta; Anders parents Johan and Jenny, live with them in the same house. They have left city life in Malmö behind and live together with their two dogs in a large house in the first Mycelium.



## MONITORING MONTHLY CONSUMPTION

3. They have started growing vegetables in their field and use the neighborhood application to find volunteers to help them with gardening, playing with the kids, and walking the dogs.



## DAILY ROUTINE

2. The Nilson family's weekday routine is usually the same; taking the kids to school and sports and going to work makes up Anders and Birgitta's day. At the same time, Johan and Jenny stay at home.



## STAYING ACTIVE

4. Birgitta has found a community that does activities in the common areas; Greta joins her in the afternoons or holidays. There is always something to do together.

THE ROLE

The Nilsson family needed a large space suitable for their needs... buying a house in the city, or the country was similarly expensive, but the difference was the size of the home.

The Nilson family is an example of any family with children who would like a larger space at a reasonable price; they could also represent an older group who live alone and need a quiet environment.

This group has the greatest influence on the neighborhood, and its interest in contributing to the community may vary with age and occupation, but is on the average less than that of other groups, being confined to leisure time mostly.

They also have an outbuilding near the house to make room for volunteers, which they usually accept in the spring and summer. Volunteers come to help them at home and from time to time babysitting, dog walking. Sometimes Ellen, who lives in the neighborhood, comes to help them as well. In return, she learns more about the Swedish culture, and the children can get acquainted with another culture. Anders and Birgitta lived in Malmö in a small apartment, and when their family grew by having children, they sold their house and asked Anders parents to join them in the new Mycelium in Brunnshög. At first, the grandparents were not happy about moving to an urban area. Still, when they realized it was in between rural and urban, with close access to nature, they supported the idea as they have lived in rural areas all their lives and are used to it, but at the same time, they wanted to see their grandchildren more often. This living together strengthened the family bonds, so they all found

their common interest to move in. Having many generations in the same neighborhood is why people stay close to their families. They are not farmers themselves, but we certainly benefit from the farming community lifestyle that surrounds them. Sometimes they have to contact Ana to ask her to help them choose the best crops.

Anders grew up in small communities, which allowed him to get to know his neighbors better, and so with Birgitta, they want their children to experience something similar to what they did. They get to know other families in the neighborhood to meet and organize activities in the community.

Living in a peaceful setting surrounded by fields and nature is beneficial to them, but they still need services and amenities nearby. To name a few: Job opportunities, studies, availability of daycare centers and schools, and most importantly, a clinic for emergencies or routine checkups, as young children usually have many checkups. Life in between offers the best of the country and the city. A larger space leads to needing more energy to keep it warm and get a higher bill. In the Nilsson family, Birgitta or Anders sometimes work from home, and the neighbors' children, who are the same age as their own, come to their house. As a thank you, the neighbor sends them some extra energy.

\*The inspiration for this scenario comes from Workaway, a platform that allows members to arrange host families and cultural exchanges while doing volunteer work. The platform has become increasingly popular around the world and in Sweden in recent years.

"Make especially sure there are provisions for old people in every neighborhood" (Alexander et al., 1977).

# SCENARIO 3+1

DIGITAL NOMAD

TEMPORAL-PERMANENT



00010101

1. 00010101(Decimal=21) is a digital nomad temporarily living in the first Mycelium, because s-he is looking for a small-scale home connected to other grids around the world.



MONITORING MONTHLY CONSUMPTION

3. Relying completely on automation, the user is relieved of the responsibility of the daily routine. Everything is planned and coded with gadgets and the use of technology. Every Saturday he gets the grocery package delivered to the door



DAILY ROUTINE

2. Most of the time s-he has his headphones on and stares at the monitor or phone screen. A good Internet network is the most important thing he needs.



VIRTUAL GATHERINGS

4. Meetings with other digital nomads take place flexibly in terms of time and space and are organized via online communities.

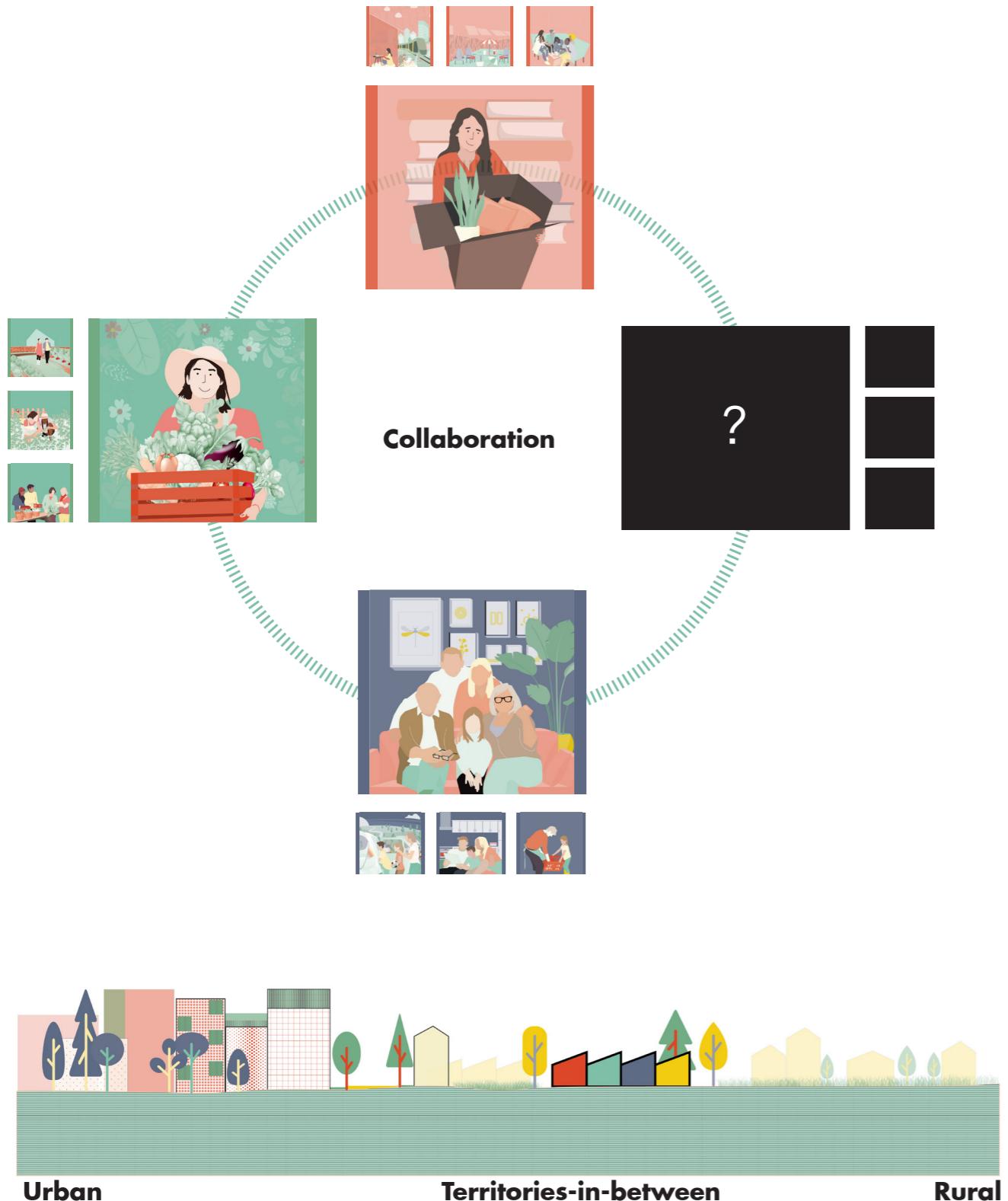
THE ROLE

00010101 (Decimal=21) is representative of digital nomads who do not limit themselves to a specific location but are flexible and use remote working to enjoy the freedom of travel and escape routine. 00010101's activities require different ways of staying and moving around. S-he moves around quite frequently and does not have a permanent residence. A place to live, work and cook meets the needs. 00010101 presents projects for overseas clients with VR set. Becoming a placeless neighbor, is the state of being a digital nomad. The first Mycelium offers short-term rent to the digital nomad to meet accommodation needs. As a placeless person, 00010101 is also interested in observing the local sights and cultural places to share her-his opinion about the area with the other digital nomads. Since wireless activities are not limited to the existing category of space. However, by using the neighborhood app, the nomad can meet the need for grocery shopping or other services that s-he needs. 00010101 knows Ellen, Ana, and Nilson family because he looks at the photos on the neighborhood app. 00010101 has never met the neighbors in person.

In the pandemic of COVID -19, many people around the world experienced extreme levels of digital nomadism in the form of placelessness. Access to the Internet became a key aspect of maintaining social and professional life. With this experience, it becomes important to create in-between spaces that connect the digital nomad with local people, rather than turning every meaningful place into a laptop screen.

\*Over a year of digital living due to COVID -19 limitations, the theory of affordance inspired this scenario. This binary user could be any of us reading this article. The visualization shows a black square representing all aspects that could be interpreted as our laptop, phone, or tablet screens. Nomadlist website was a source of inspiration. In addition, the 1915 painting Black Square by Kasimir Malevich was the source of inspiration. Because it was painted and exhibited for the first time in the Futurist exhibition "0.10" at the Dobytchina Gallery in Petrograd, now St. Petersburg. He described, "What I exhibited was not an empty square, but rather the feeling of non-objectivity" The placelessness of digital nomads creates "communities of interest" as opposed to traditional communities of place (Arefi, 1999)

# 7. CONCLUSION



THINK IN INTERMEDIATE SCALE

FIND THE BALANCE

In conclusion, both social and physical patterns should be overlaid to define the system for the neighborhood. Intermediate scale design has many potentials; first and foremost, it provides an understandable context. This study aimed to investigate the nature of living and the quality-of-life in the form of a neighborhood by re-introducing the idea of neighborhood. When it began with the big question of how we live in a neighborhood and what a future neighborhood might look like, the result was not clear at the beginning. It was an investigation that used different sources and media, books, articles, lectures, journals, etc.; bringing all the findings together was a challenge. It was an important goal to not just visualize the final outcomes of a design process from the beginning.

Finding the language to communicate all these ideas was another challenging part. The message of this report is to draw attention to the qualities that are not visible at first glance. Designers and planners naturally strive to create a better environment, but the importance of looking at the concepts behind projects is often not taken seriously. There have been many hands over time in creating the cities, all promising a better quality of life, but in today's world, the economic and environmental aspects of sustainability often get more attention than the social aspects.

As the mindset shifts to metabolism, it becomes more apparent that there is a high need to balance these three aspects. A resilient community is necessary to adapt to future challenges.

# FUTURE PERSPECTIVES

## TERRITORIES

In this regard, attention to interactions and negotiation is needed more than ever. These aspects are all linked to how we will live together. Therefore, it is crucial to find and redefine the backbone for social interactions in a better quality of life in the neighborhood.

Another aspect was the question of where we will live. Territories in between are not simply a mixture of urban and rural; these should be defined in policies with their principle and character. Instead of stacking different urban layers into a core, with all the new opportunities, is there a way

## CURRENT INITIATIVES

so. Just a few months after starting the work, many events around these topics took shape and place.

For example, the competition theme of Europan 16 is “Living Cities as a new paradigm in which novel synergies between the ecological, biological, social, economic, cultural and political dimensions can be considered. This paradigm leads us to think in terms of co-evolution and interactions and to work with regenerative project dynamics that combine metabolic and integrative vitalities” (Europan website).

## CURRENT INITIATIVES

to create more distributed and self-sustaining areas? Can we make the boundaries more fluid? In this thesis, using a case study, the idea was to find the main structure and relate it to bring the collaboration back in a new format. This structure in Lund was agricultural activities, so the proposal put this at the center and redefine a new scale of farming on the micro-level. Scenarios helped to articulate the process of negotiation between new neighbors.

These kinds of questions about how and where we will live always have interested designers and continue to do

## PROSPECT PATH

# FUTURE PERSPECTIVES

## PROSPECT PATH

Furthermore, the recent exhibition at Form and Design Center in Malmö, entitled Another Countryside (En annan landsbygd), highlights projects, voices, and themes that refine and develop rural areas today.

Many other activities are taking place around how and where we will live; these have been named and described as the latest and most relevant.

To conclude, this topic never ends, as each generation wants to make the best and unique proposal to meet the new challenges. With all being said, it is strongly recommended to bring back the idea of the neighborhood to find solutions for future challenges. Answering questions about neighborhood design requires profound observations and further strong collaboration at local and global levels.

Thank you for your time

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