

ADAPTABILITIES

SPACE, TIME & ARCHITECTURE

Jenny Ackemar & Saara Franzelius



CHALMERS

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© Jenny Ackemar & Saara Franzelius
jennyackemar@hotmail.com
saara.franzelius@gmail.com

Examiner:
Ola Nylander

Supervisors:
Sten Gromark
Jonas Lundberg

Team representative European 12:
Björn Gross

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ABSTRACT

THEME

In today's world tomorrow is hard to predict. The city, the community and the buildings need to adapt in the ever changing situation. How do we plan for the unpredictable? How can we introduce time into urban projects? These are the points of departure in this master thesis *Adaptabilities in Space, Time and Architecture*.

The thesis consists of a theoretical research part and a practical part exploring the concepts of time, space and adaptability in architecture and urban planning. These two parts complement and discuss with each other and should therefore be read together.

The overall method has been to develop the two parts parallelly to each other. Literature and the concepts picked up from it have been used in discussing practical strategies in the projects, and the other way around, the case studies have given new perspectives on the literature.

THEORY

In the theory part we introduce different thoughts on time, space, rhythms, flexibility, adaptability that we believe support planning for a resilient future. Authors like David Harvey, Bernard Leupen, Henri Lefebvre, Bernard Tschumi and Doina Petrescu are represented in the text where we explore the relation between space and time, compare the general and the specific, understand the concept of frame, cross-programming and rhythms. These chapters lead our theoretical process towards our main conclusion: we need a multitude of different approaches, a diversity of adaptabilities.

PRACTICE

In the practice part we present two case studies that we use for testing and developing strategies along with the theoretical part. We choose to work with competitions as we see them as an opportunity for our work to leave the studio and become public. The first case study is a idea driven competition with a political agenda while the second one is an entry for the world's largest recurring architecture competition with a high level of complexity.

Keywords: adaptability, space, time, architecture, rhythms, flexibility, urban planning, architectural competitions

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THEORY

INTRO

How do we plan for an unpredictable future? How can we introduce time into urban projects? In this essay we explore these questions through literature and continuous discussion with different authors and theories.

The essay is divided into three parts. In *Conflict* we start the exploration by looking at the problem: why doesn't our physical environment change according to the demand? Why is this an issue? We look for an answer in our perception of architecture and the relation between space and time. David Harvey guides us into the different understandings of space and time.

The second part, *Approaches*, focuses on how others have handled the question. What is adaptability and flexibility? Different strategies for managing and theorizing change are introduced. The main discussion here is with Bernard Leupen and his frame theory, Bernard Tschumi and his thoughts on functions and Henri Lefebvre's rhythmanalysis.

In the final part, *Findings*, we present our own ideas and the argumentation to support them: how we think the subject should be approached and why. In the discussion with the theory we find a number of important factors that contribute to an adaptable city. Eventually we are faced with the question: Should we settle with adapting to the changing circumstances or can we affect the development?

CONFLICT

THE ILLUSION OF PERMANENCE

The word architecture is immediately associated with images of the pyramids, the ancient temples in Greece and Gothic churches. Architecture seems stable and unchanging and according to Steward Brand we tend to think of architecture as something permanent. Our personal perception of the physical environment is often static and the whole idea of architecture is based on permanence. This is an illusion. In reality, we shape our buildings, then they shape us, then we shape them again. It is a continuous flow of transformation.¹

The static image of architecture is further strengthened by the way we choose to represent it. Our perception of the world is exceedingly dependent on sets of images². The entire concept of architectural representations is based on pictures, frozen moments that exclude time and the temporal experience of a space. Also people are often excluded from the frame which further objectifies the physical structures and places them somewhere outside the realm of the interaction of time and space. The extremely concrete practise of architecture with a strong focus on materials and form, is illustrated and defined through media representations³.

When this static notion of our built environment meets the ever-changing world we can see an essential

conflict. Our physical environment is not capable of adapting in the same rate as the society because time is not integrated in the way we plan and think of buildings and cities. But there is a strong need to adapt deriving from the uncertainty of today's world. If a building's lifetime is one hundred years, we only need to look back equally far to see how much the society and our physical environment can change in such a time period. In that perspective it is clear that a building or the use of a building will change repeatedly in an unpredictable way⁴. If we broaden the perspective to the urban scale, the rate of change and the potential spectrum of it is considerably widened. We can determine a life expectancy for a building but there are no such numbers for a city.

All buildings and cities adapt regardless of whether they were designed for it or not. In most cases, according to Steward Brand, this is not a painless process:

"Almost no buildings adapt well. They're designed not to adapt; also budgeted and financed not to, administered not to, maintained not to, regulated and taxed not to, even remodelled not to. But all buildings (except monuments) adapt anyway, however poorly, because the usages in and around them are changing constantly."⁵

1 Brand, S. (1994) 'How Buildings Learn. What Happens After They're Built.' London: Phoenix Illustrated pp. 2-3

2 Tschumi, B. (1996) 'Architecture and Disjunction.' Cambridge: MIT Press p. 234

3 Rattenbury, K. i Rattenbury, K.(red.) (2002) 'This is not architecture.' Media constructions, Routledge, London, s. xxii

4 Leupen, B. (2006) 'Frame and Generic Space. A Study into the Changeable Dwelling Proceeding from the Permanent.' Rotterdam: 010 Publishers, p. 19

5 Brand, S. (1994) p. 2

“Change is the only constant factor.”

Frank Bijdendijk: “Time Based Architecture”

THE RELATION OF SPACE AND TIME

The geographer David Harvey has gathered and developed definitions and concepts – tools - to an understanding of space in relation to time. The concepts are built upon Harvey's own research inspired by the philosophic, geographic, anthropologic, sociologic discussion. According to Harvey space can be understood through two different dimensions.⁶

In the first dimension, there are three time and space -concepts. First, *absolute space* is the space of science, maps and measurements – Newton's space. In this concept a space is fixed, preexisting, accurate and immovable. Things are clearly distinguished within the framework, for instance a grid, and can be objectively described with unique locations. In *absolute space* areas have clear borders. The relation to time is thus simple and absolute: two objects cannot be situated at the same location at the same time.⁷ The second concept, *relative space* is the space of process and motion. Distance here is the distance relative to something else – like a person's location in relation to her work place. The measurement unit of this distance is not necessarily meters, it can be travel time, cost or travel means. The map drawn for each of these units looks different. *Relative space* cannot be understood separately from time and a concept of relative space-time emerges. This rejects the concept of one single absolute and unique location in favour for a multitude of locations that are equidistant from a geographical point in the terms of, for example, time or cost. The aspect of measurement still exists in the *relative space* but it is much more

complicated compared to *absolute space*. The spatial frame for the calculations varies according to what is relativized to what.⁸

In the third concept, *relational space*, time and space become impossible to separate, they are combined into a *spacetime*. This is the space of memories and dreams. Harvey clarifies the concept with an example: a group of people are gathered to discuss a matter, for instance politics. To this meeting they bring with them past experiences, memories and dreams as well as anticipation, hopes and fears that they have developed in the interaction with the world. The relational understanding of space escapes measurements and calculations. Harvey emphasizes that this lack of calculability hardly makes the concept irrelevant or uninteresting. Memories, experiences and dreams, however hard they are to grasp, affect other very real and concrete dimensions. Our experiences and dreams affect how we shape our physical environment, the *absolute space*.⁹ Some questions can only be understood through this understanding of *spacetime* or as Harvey says:

“I cannot box collective memories in some absolute space (clearly situate them on a grid or a map) [...] I cannot even understand the idea of the city without situation it in relational terms.”¹⁰

According to David Harvey these three definitions of space are all relevant in understanding the relation between space and time. Space can be understood through one of the concepts or all of them depending

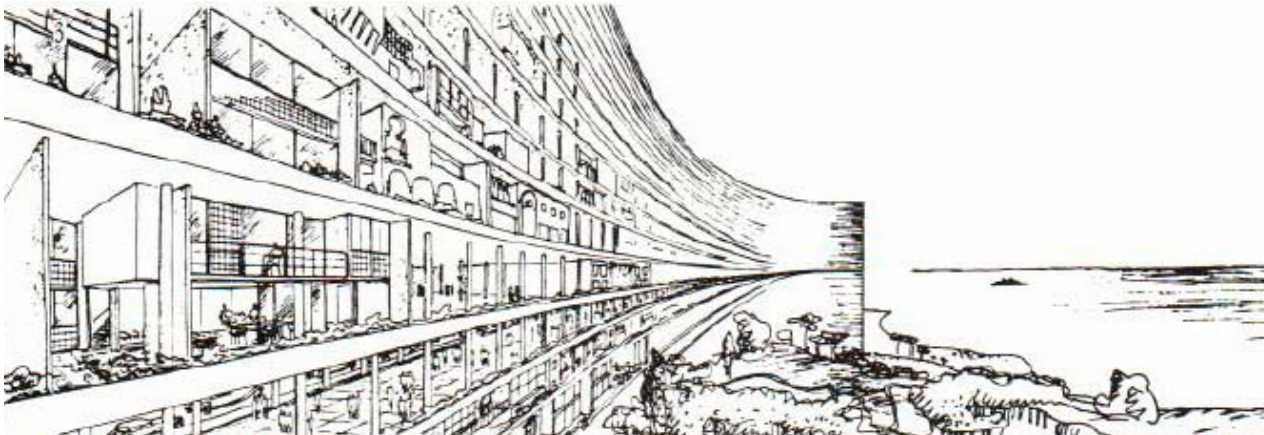
6 Harvey, D. (2011) 'Ojämlikhetens nya geografi.' Stockholm: Atlas p. 22

7 Ibid pp. 22-23

8 Ibid pp. 24-27

9 Ibid pp. 27-32

10 Ibid p. 32



Le Corbusier's Plan Obus project, that was planned for Algiers, is an example of a large scale "skeleton structure" that can house any programme from streets and commercial functions to housing.
Leupen: Frame and Generic Space p. 152

on the circumstances. In order to understand space, the three concepts need to be held in continuous discourse, or dialectic tension as Harvey puts it, with each other.¹¹

The second dimension of understanding space according to David Harvey is Henri Lefebvre's dimension where space is again divided into three concepts: *material space* (space as experiences through our sensory perceptions), *representation of space* (space as conceived) and *spaces of representation* (space as lived). The terms in brackets are Harvey's interpretations of Lefebvre's concepts. *Material space* is the physical world that surrounds us which we can explore with our perceptive senses. We can use abstract symbols, maps, diagrams to describe our experience of the *material space*, this is a *representation of space*.

Lefebvre's third spatial concept concentrates on how we live, both physically and emotionally, in and through the spaces that we encounter.¹² A dense forest might make someone fearful while an old scout maybe experiences a nostalgic feeling. The *space of representation*, not completely unlike relational understanding of space, brings imagination, dreams, memories and fears into focus. The way we act in a space cannot be predicted by the colour of the walls or the material used for the flooring. Henri Lefebvre does not seek to separate these concepts of space: he keeps them in interaction and tension with each other. While the way a space is experienced or lived in cannot be directly predicted from its form or representations, it still affects the perception and encourage different

ways of living in and through the space.¹³ Lefebvre's dimension of space includes time as an essential and inseparable part. While *absolute space* could be seen as some kind of pure space outside the realm of time, as frozen, objective glimpses, Lefebvre's *material space* includes the human perception and thus includes time, a moment of observation. *Representation of space* includes a process of interpretation, and *space of representation* contains a complex time frame: the past, the present and expectations about the future seen through the subjective human experience.

Another lefebvrian term in understanding the relation of time and space is *heterotopia*. The term was first introduced by Michel Foucault in 1966. For Foucault *heterotopias* were related to the concept of *utopia* and their "no place". A *heterotopia* is a space where difference, alterity, heterogeneity can flourish or be constructed – a space where different utopias can exist simultaneously. Lefebvre developed the concept into another direction. Inspired by Foucault his *heterotopia* is a space of difference and of potential transformation that is in dialectic tension with, rather than the opposite to both *isotopia*; the space of rationalized spatial order, and *utopia*; the expressive desire. The concept is dynamic: space and space-time change with periods and activities. They include contrast, oppositions and juxtapositions. Different groups and their activity in a space can create heterotopic spaces, which can be taken over by the dominant praxis. The heterotopic character of a space is not connected to the absolute space but to the activity in the space. While Foucault saw *heterotopia* as something static, an *absolute space*,

¹¹ Harvey, D. (2011) p. 34

¹² Ibid p. 35

¹³ Ibid pp. 36-39

“(social) space is a (social) product”

Henri Lefebvre, 'The Production of Space'

some kind of wasteland outside the dominant spatial structure, lefebvrian *heterotopias* on the other hand are created by social interaction, as all space for Lefebvre.¹⁴ Lefebvre was intensely interested in the way spatial, temporal and social elements shape each other. Central in his theories are social production of space and the concept of the *moment*. According to Lefebvre spaces are created through social activity¹⁵.

This overview of the relation of space and time reveals that they are relative to each other in an essential way. A space cannot be experienced without time and time exists only theoretically outside space. In the world of science and economy the calculable concept of an *absolute space* is the prevailing idea. This separation of time and space leads to a conflict in a spatial practice such as architecture.

¹⁴ Harvey, D. (2011) pp. 42-46

¹⁵ Lefebvre, H. (1991) 'The Production of Space.' Oxford: Blackwell p. 28

APPROACHES

STRATEGIES FOR CHANGE

How have others approached this conflict? The concepts of adaptability, resilience and flexibility have been used to insert time into the spatial and urban projects and leave the notion of permanence. The term resilience is adapted from the field of mechanics where it stands for the ability of a material to deform, absorb energy, bounce back and release the energy, without being permanently transformed. Within architecture and urban planning resilience is the quality of a space that allows it to cope with stress. Resilience in architecture is defined as the capacity of a space to recover a function or develop after experiencing a trauma¹⁶. A resilient city can go through radical changes without losing its spark, it can be worked without breaking. This does not only include a change of the physical environment but also the community and the social aspect of space. It relates to Harvey's *relational space* and Lefebvre's concept of *lived space* and includes the idea of community, history and expectations.

Adaptability on the other hand focuses on the concrete change. It is the quality of a space that can be easily adapted to harmonise with the changes of use that it undergoes. An adaptable building can adapt new functions, and an adaptable city can regenerate and accelerate to adjust to fast development and thus be revitalised in uses and functions.¹⁷ Adaptability works within the concept of relative space that focuses on

process. Flexibility is the third concept of how to deal with change. A flexible structure has a built-in capacity to adapt in a predefined way. Flexibility can be everything from automated sun screening to a clever layout in dwellings to expand or diminish according to changing needs.

Adaptability and flexibility have been addressed in a number of ways over the years. The first wave of flexibility was initiated by the introduction of mass housing in the 1920's and -30's. Flexible solutions here meant to make most efficient use of space in form of sliding doors and foldaway beds.¹⁸ Villa Schröder in Utrecht by Gerrit Rietveld was one of the early examples. In the 1930's Dutch architect Van den Broek introduced apartments with different uses during day and night. This principle is still applied today to deal with lack of space by time-sharing. Flexibility has also been reached by movable building elements as in Cedric Price's classrooms inspired by railway wagons or by John Haberman, suggesting a skeleton support system solution to replace mass housing.¹⁹

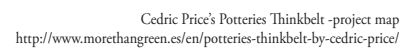
According to the Dutch architect and researcher Bernard Leupen there are principally three ways for a building to deal with uncertainty and time. The first one is to make buildings polyvalent. With polyvalence Leupen refers to the quality of a space that can adapt to different functions without needing to make a change. The term derives from the French *salle polyvalente*

¹⁶ European12 theme p. 4

¹⁷ Ibid p. 4

¹⁸ Leupen, B. (2005) "Towards Time-based Architecture" in Leupen, B., Heijne, R. & van Zwol, J. (eds.) 'Time Based Architecture.' Rotterdam: 010 Publishers p. 9

¹⁹ Ibid pp.12-13



that is a type of community building housing a range of functions from weddings to political meetings. The second way is to make buildings that are part permanent and part changeable. Leupen's own research focuses on combining these two aspects. Leupen's third option is to create semi-permanent demountable buildings like IFD buildings (industrial, flexible and demountable).²⁰ In this option the conflict between the inertia of the built environment and the fast change in society is accepted as a starting point and buildings are not even supposed to change. They are replaced, demounted, when the need changes.

GENERAL VERSUS SPECIFIC

The question of whether to design for specific functions or general space is an interesting one within the sustainability debate. The "generalists" reckon that we should build in a general way so that buildings can host many possible functions and can thus change according to the need. Should form follow function if the function is increasingly unstable? Planning for specific functions is considered one of the main reason for our current building stock not coping with change. The question is not uncomplicated. Specific space has proven to be adaptable or even innovative in many cases. As Maccreanor writes in "The sustainable city is the adaptable city", the truly adaptable buildings throughout history have been the ones that originally were not conceived as flexible, whereas designed flexibility has often failed to deliver²¹. Architect and theorist Stan Allen touches the same subject in an

interview. He sees the specific as a possibility for architecture to introduce newness into society and our way of life: by fitting other functions into existing forms the user is provoked into inventing something new.²²

According to John Habraken, to reach a time-based architecture we must assume that functions are unpredictable except in the most general terms²³. If design can no longer be based on functions, what should it be based on? Bijndijk proposes that we base our planning on certainties, and as change is the only constant factor, we should build on changeability. Uncertainty as a point of departure excludes predicting the possible change. This means that we are building for something specific that might not even happen.²⁴

General space, i.e. space that can house many functions, is often seen as a solution to the unpredictable programmes of today. Frank Bijndijk proposes *solids*, buildings that can house infinitely changing functions because of their accommodation capacity. According to Bijndijk a general space is not enough and the concept of a *solid* also includes preciousness. Preciousness is a quality in a building that constitutes a fixed point, a mean of identification in the changeable world. Accommodation capacity and variable uses are located inside the building while preciousness is related to the exterior and common spaces such as entrances.²⁵

²⁰ Leupen, B. (2005) p. 13

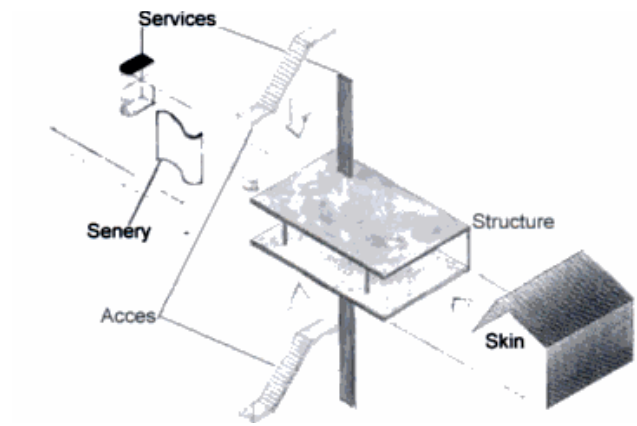
²¹ Maccreanor (2005) "The Sustainable City is the Adaptable City" in Leupen, B., Heijne, R. & van Zwol, J. (eds.) "Time Based Architecture." Rotterdam: 010 Publishers, p. 101

²² Stan Allen in www.anycorp.com/anycorp/article/77, read April 14th

²³ Habraken, J. (2006) "Change and the Distribution of Design" in Leupen, B., Heijne, R. & van Zwol, J. (eds.) "Time Based Architecture." Rotterdam: 010 Publishers p. 27

²⁴ Bijndijk, F. (2006) "Solids" in Leupen, B., Heijne, R. & van Zwol, J. (eds.) "Time Based Architecture." Rotterdam: 010 Publishers p.44

²⁵ Ibid p. 43 - 49



Leupen's layers
 Leupen, B. (2006) Frame and Generic Space. A Study into the Changeable Dwelling
 Proceeding from the Permanent. Rotterdam: 010 Publishers p. 31

Through preciousness Bijdendijk attempts to tackle one of the main questions of generality. A general building that avoids everything specific may not be seen worth keeping because of the very fact that there is nothing special with it and it is not well adapted for anything. The risk of the general is that of a one size clothing; it doesn't fit anyone well because it has to fit everyone a little.

Maccreeanor approaches an adaptable city looking at its building elements; adaptable buildings. Today factory work is becoming less common and technological development enables new work forms that need other types of spaces. In order to accommodate organisations that respond to an unstable and unpredictable business environment, we need to create environments capable of reacting to changes in use and we need a less traditional perception of space. The adaptability of buildings creates a vibrant urban structure coloured by change, various characters and new form of urban contact and sociality.²⁶ For Maccreeanor an adaptable city is dependant on its buildings: the key question of adaptability could be simplified to: why do some buildings get to stay while others get demolished²⁷. Maccreeanor gathers a list of attributes that, in a successful combination, can make an adaptable building and thus, in his opinion, an adaptable city. The qualities he lists are overdimensioning, neutral facades, context, ordinariness, address, timelessness as well as material and detail. Maccreeanor's list can be considered to be the attributes of the general building.

²⁶ Maccreeanor (2006) p. 101

²⁷ Ibid p. 98

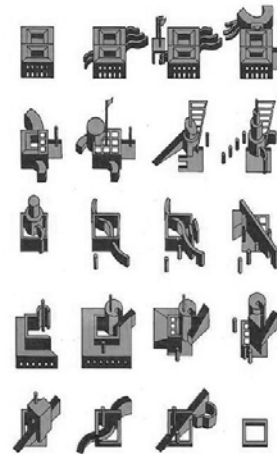
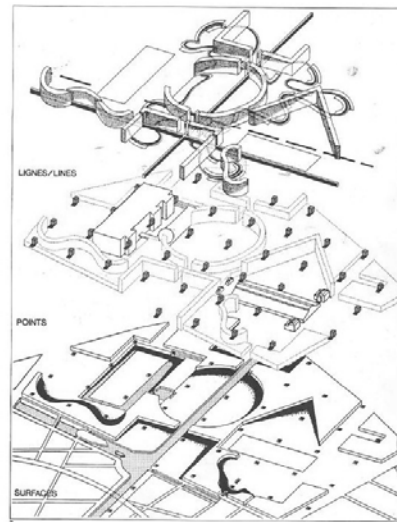
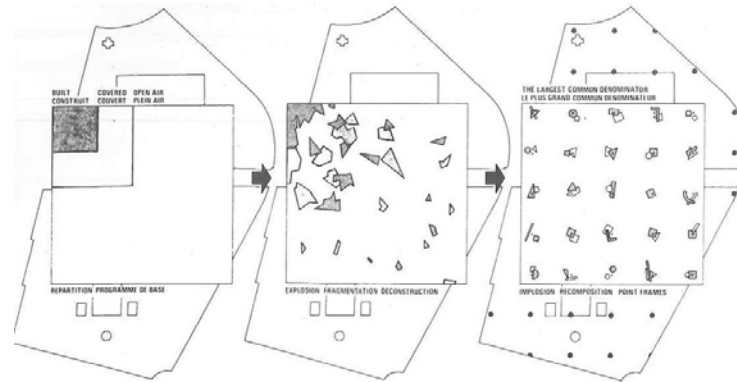
FRAME

Bernard Leupen thinks that we are focusing too much on the unpredictable change. In his dissertation, *Frame and Generic Space*, Leupen shifts focus from what can be changed to what can be permanent in a building. He introduces the concept of frame that creates freedom for change without passing a comment on that change. In Leupen's words this means "designing for the unknown instead of designing for the unpredictable".²⁸ For Leupen, frame is the essence of a building which allows freedom for a generic space.

The frame theory does not mean that all buildings should adapt in the same way, instead their adaptation capacity depends on the logic of the building. Leupen divides a building into five layers; any of these layers can, alone or together, constitute the frame of the building. The layers are *structure*, *skin*, *access*, *services* and *scenery*.²⁹ The layers are constructed in a clever way that allows interpretation on any specific building. *Structure* is, somewhat simplified, the load-bearing structure, *skin* is the facades, *access* refers to the communication system, *services* to shafts and instalments and *scenery* is usually the interior. The simplest example of this is an old industrial building made of brick. Here the load-bearing structure is robust with long spans while the other layers can easily be changed with new needs in factory work. This makes the structure into a permanence that frames the possible changes in the building. Leupen's frame theory goes beyond the physical aspects of the building. Frame also embodies the most important architectural and cultural values

²⁸ Leupen, B. (2006) p. 20

²⁹ Ibid p. 32



Bernard Tschumi's three layers of Parc de la Villette:
points, lines and surfaces
<http://www.tschumi.com/projects/3/>

of a building. This way a building can react to new needs over time without causing damage to its essential character.³⁰

Leupen's theoretical framework results in a variation in flexibility and adaptability. With design we can determine which layers can be easily altered and create space for future needs. This also enables different time frames and rhythms in a building. The changes needed in the near future and the ones fifty years from now can take place as the layer thinking enables slippage between the layers that move in different paces.³¹ Through the concept of frame, Leupen takes a stand in the question of the specific and the general: Instead of choosing one, he combines the two by placing a general space inside a specific frame.

CROSSPROGRAMMING

Bernard Tschumi sees our society as increasingly fragmented due to loss of certainty. As an answer to this, focus should be put on the event that takes place in a space rather than the space itself.³² The terms event and movement derive from situationist discourse. The experience of a space is fundamentally dependant of the event taking place there. The hierarchical relationship between form and function ceases to exist and the combination of events challenges both of them. To Bernard Tschumi architecture is both experience, space, use and structure, without hierarchy. He suggests that we cease to separate these categories and instead merge them into new

combinations of programmes and spaces. Tschumi introduces terms *crossprogramming*, *transprogramming* and *disprogramming*. *Crossprogramming* gives an old building a new function originally not intended for it, *transprogramming* places two programmes that are not usually associated with each other together and *disprogramming* is positioning two functions together so that one can potentially undo the other³³. Tschumi wants to liberate functions from their predestined qualities and create freedom for interpretations. This in Tschumi's opinion has the power to rejuvenate architecture.³⁴ Tschumi has applied these thoughts in his Parc de la Villette project in Paris. Here he created a system of three overlapping layers, a grid of points, lines through the site and surfaces. These three systems were to challenge and question each other. Each point is a 'folie' (folly), a small structure with no predestined function. As Tschumi envisioned some of the folies have been adopted to new functions, like a fast food restaurant while others remain empty.³⁵

This definition of architecture is heterogeneous and it can create conditions for a new city and new relationships between spaces and events. In this *heterotopia* inspired by Lefebvre, the goal is a rich collision of events and spaces which can be intensified with the tools of architecture.³⁶ Tschumi goes beyond the concepts of adaptability when he seeks for an answer by stopping the strict programming all together and focusing on the expressions of a multitude.

30 Leupen (2005) p. 18

31 Leupen (2006) p. 33-34

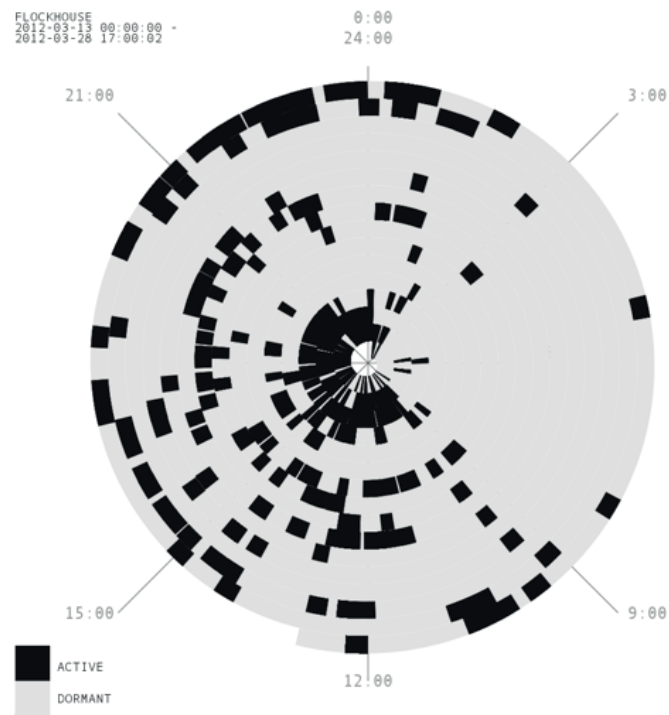
32 Tschumi, B. (1996) p. 234

33 Rendell J. (2006) 'Art and Architecture: A Place Between.' New York: I.B.Tauris p. 116

34 Tschumi, B. (1996) p. 254

35 Rendell J. (2006) p. 116-117

36 Tschumi, B. (1996) p. 265



The *Rhythmanalysis Lab* in New York uses Lefebvre's work as a framework for projects, workshops, and investigations at the intersection of urban research, sound, and data science. The projects are concerned with the observation, representation, and interpretation of rhythms in everyday life.
<http://rhythmanalysislab.org/>

RHYTHMS

Henri Lefebvre's *Rhythmanalysis* approaches the core of adaptability and resilience by essentially linking together space and time with rhythms. In *Rhythmanalysis* Lefebvre sees time as rhythms and all rhythms include both time and space; a localised time or a temporalised space. Rhythm is always linked to a space, it can be the beating of a heart or the movement in a street. Lefebvre also insists on the relativity of rhythms. A rhythm gets its characteristics when compared to other rhythms. This way a key to understanding the rhythms of a city, for instance, is underlining the plurality of rhythms allowing them to relate to each other and interact.³⁷

Lefebvre's *Rhythmsanalysis* builds upon and refers to the concept of a situation originating from the situationist movement from the late 1950's to the early 1970's. The idea of constructed situation is a spatiotemporal concept that combines a space and a time, an ambience and the behaviour. For the situationists, architecture was based on emotional situations instead of physical structures alone. A situation is closely related to the lefebvrian moment. For Lefebvre, however, a moment is not identical to a situation, but it creates them³⁸.

Lefebvre defines four types of interactions between rhythms. The multiple rhythms of a city create *polyrhythmia*, a co-existence of several rhythms, and even *arrhythmia*, conflicts between different rhythms. The natural life, as our bodies in a healthy state, strives

for *eurhythmia*, a constructive interaction between rhythms. Lefebvre's fourth category of rhythms is *isorhythmia*, the equality of rhythms, an exclusive state that is seldom reached.³⁹ Lefebvre rethinks everyday life, both the rural and the urban, through the notion of rhythm. Lefebvre implements *rhythmanalysis* on Paris and 'the Mediterranean city'. The strength of the concept of rhythms is that it allows an actor to take charge of the rhythms and thus become a force, not only following, but also affecting the rhythms. This shapes our relation to time and space. Lefebvre notes:

"how global forces and processes have shaped urban space and the city. Indeed, if they have influenced urban rhythms and spaces, it is by enabling groups to insert themselves, to take charge of them, to appropriate them; and this by inventing, by sculpting space (to use a metaphor), by giving themselves rhythms."⁴⁰

Rhythms are based on repetition which is never exact. There are no rhythms or cycles that do not admit change.⁴¹ The very notion of rhythm also includes a multitude of scales, both when it comes to time frames (seasons, years, minutes) and size (the body, nature).⁴² Rhythms can be implemented to the urban planning strategies of today. The concept of a mixed city, for example, attempts to create a diversity of rhythms by including different functions with their own rhythms at the same place.

37 Lefebvre, H. (1992) p.89

38 Elden, S. (2004) p. 173

39 Lefebvre, H. (1992) pp. 67-68

40 Lefebvre, H. (1996) 'Writings on Cities.' Oxford: Blackwell pp. 104-5

41 Lefebvre, H. (1992) pp. 6-8

42 Lefebvre, H. (1996) pp. 104-105

FINDINGS

MULTITUDE OF ADAPTABILITIES

We believe that we need a multitude of different approaches, a diversity of adaptabilities. The multitude motivates us to experiment and innovate instead of restricting our creativity with prefixed rules. Treating adaptability as a palette of ideas and approaches encourages innovation and experimentation.

We believe that buildings should be adaptable with a variety of flexibilities. There is not one solution or a right answer to follow in order to create flexibility in all buildings. With different approaches the possibility and probability of housing a broader variation of future changes becomes larger. And the chance of completely missing something is diminished. The dangerous thing is to try to find a single answer.

Historically there are many examples of attempts to solve large spatial issues with one solution. The lack of housing after the war years was solved with modernity's analytical and progressive thinking. The apartment design was based on ergonomic analysis. Careful studies were made to once and for all find out what is really needed in a functional dwelling. This planning produced a perfect answer for the time but failed in adaptability because it was specifically designed for the needs of one era.⁴³ This 'form follows function' thinking ends up conventionalizing needs⁴⁴ without space for newness in rituals. In Herman Herzberger's words: "if there was anything to which these

concepts were not resistant, it was time."⁴⁵ The situation is similar in the Swedish Million Programme. The search for a single solution and a single approach for a large scale housing development during the 1960's and 70's resulted eventually in a problem: we have thousands of apartments that today are in a great need of modernization partly due to changes in demography and lifestyles. The risk of the single solution is that if it proves to be unsuccessful, the size of the mistake becomes evident.

We believe that there is a need to diversify our approaches to create adaptable buildings. We cannot predict the changes needed in the future but if we create a spectrum of adaptabilities and flexibilities, many of them will probably be needed. We believe in creating a space for change in different ways instead of seeking for one single answer. This leads to a freedom and a possibility to experiment. Buildings do not need to adapt in all possible ways; they can have their own specific logic. There is space for loose-fit, temporary structures, generic space and flexible room divisions. We don't believe in Maccleanor's and Bijdendijk's universal solutions - we must open our minds for plurality.

Bernard Leupen's frame theory supports our search for a multitude of adaptabilities. Diversity in flexibility and adaptability is one result of Leupen's theoretical framework. Buildings are allowed to adapt through their own logics and conditions which frees the field for innovation. The frame makes space for a multitude of different approaches.⁴⁶

⁴³ Leupen, B. (2006) p. 18

⁴⁴ Bijdendijk, F. (2005) p. 43

⁴⁵ Leupen, B. (2006) p. 19

⁴⁶ Leupen (2006) pp. 33-34



Space Syntax map from London, <http://www.spacesyntax.com>

DIVERSITY, CONNECTIVITY, PUBLIC SPACES, RHYTHM, PROCESS AND IDENTITY

We believe that a resilient city consists of qualities of diversity, connectivity, public spaces, rhythm, process and identity. Diversity is the key word here. Diversity in a broad understanding entails hierarchies, scale, functions, spatial compositions and rhythms.

Many of these adaptability factors of the city are not new ones. Space syntax measures connectivity, the better the connection the more successful the location⁴⁷, a city planning dogma since many years. Diversity combined with connections include the necessity of fine grained urban fabric. A dense weave of streets enable many and close connections and a diversity of functions because of the multitude of smaller spaces in the urban fabric. Steward Brand refers to down town New York as uniquely dense and flexible thanks to its narrow, long blocks⁴⁸. Also San Francisco is considered flexible because of the same reason according to Anne Vernez Moudon. Small lot size is resilient because it allows many actors to directly affect the design of their neighbourhood. This also ensures diversity: different people make different decisions reinforcing variety in the resulting environment.⁴⁹

The importance of public spaces is often lifted up in the urban planning debate. William H. Whyte's study from 1980 about New York plazas emphasized the role of public spaces in civic engagement and community interaction⁵⁰. These are urban ideals that cities have been based on

for centuries. Looking at an ancient Italian town the pattern follows the guide lines to a great extend. The old Mediterranean city has served as an example with a tight and dense city pattern, large variation and mixture in functions and social groups housing the buildings, a spectrum of public spaces and a strong urban character. As a result these cities have been successes when it comes to adaptability; they have survived centuries of changing society.

The traditional urban planning principles are still very much needed but we want to include a broader understanding of rhythms, process and identity. Henri Lefebvre and Catherine Régulier tested the tools of *rhythmanalysis* on the Mediterranean city. To the question how come the Mediterranean cities have survived, proving their resilience through politically shaky times and various conquerors, Lefebvre and Régulier give the answer:

“In our opinion, through time and rhythms. This underlines the consistent and solid character of urban times in the Mediterranean in relation to the politically dominated space.”⁵¹

There is a diversity of rhythms in the Mediterranean cities. Spaces, such as squares or monuments, can suggest certain rhythms, political for instance, but the citizens appropriate the space in a non-political manner. Through a certain use of time the people resist the state. Rhythms play a major role in this struggle of appropriation. Through them the civic and social, in many ways untamed, time gets space alongside the organized state time. This way the public spaces

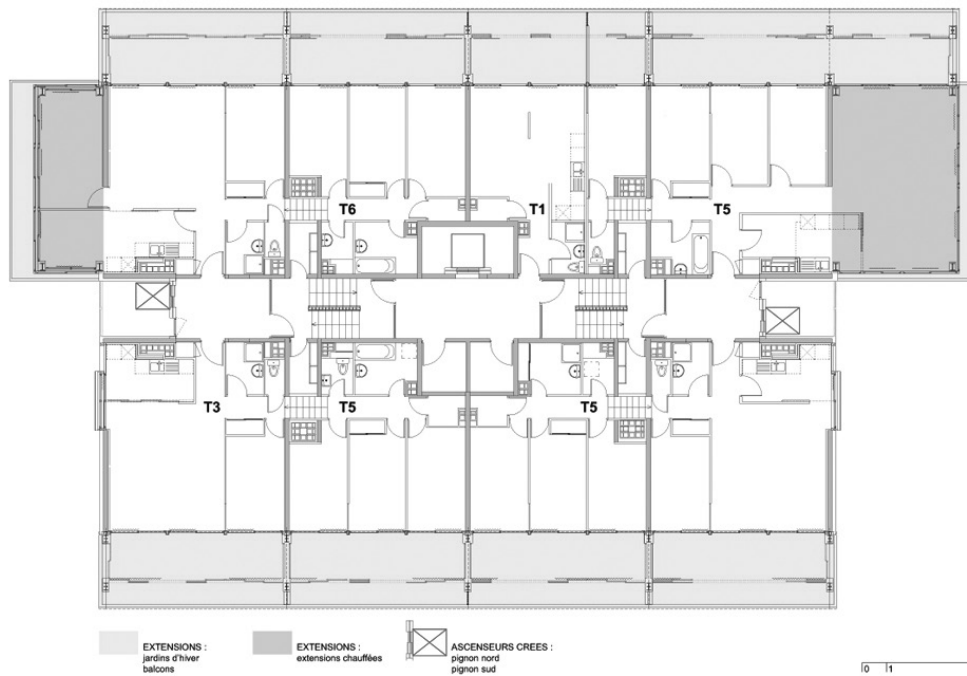
⁴⁷ <http://www.spacesyntax.com>, read June 19th 2013

⁴⁸ Brand, S. (1994) p. 18

⁴⁹ Vernez Moudon, A. (1986) 'Build for Change.' Cambridge: MIT Press p. 188

⁵⁰ Whyte, W. (1980) 'The Social Life Of Small Urban Spaces.' New York: Project for Public Spaces

⁵¹ Lefebvre and Régulier in Lefebvre, H. (1992) p. 97



Lacaton and Vassal make intelligent re-use of the existing, minimising new building through innovative design, and through an appreciation of the transformative possibilities in each situation. Transformation of Housing Block - Paris, Lacaton & Vassal's project avoided the planned demolition of the building block and proposed a generous extension of the apartments instead. Rooms for collective activities are established and the inhabitants can stay in the apartments during the construction works. <http://www.lacatonvassal.com/index.php?dp=56>

become a place for encounters and negotiations. The time and the rhythms of the people occupying the space are linked back to space.⁵²

Rhythmanalysis emphasizes process, the act of creating space. According to Lefebvre spaces are created through social activity: “(social) space is a (social) product”⁵³. Social life is essentially spatial and one must not assume that the space is a passive locus, lieu in Lefebvre’s words.⁵⁴

We think that an important part of inserting time into planning and building practices is through shifting our focus to process instead of seeing the built environment as finished products. Lefebvre’s concept of social space supports the idea of a process. The production of space is ultimately a shared enterprise through its social character. The process is also a central concept in the book ‘Spatial agency: Other Ways of Doing Architecture’. Planning and building, according to the authors, should not just be in the hands of professionals but the role other contributors is emphasized. A social space is also a dynamic space; the production of a space continues over time independent of official completion moments.⁵⁵ A space, as well as a building, is a process that keeps on being redefined. As Stuart Brand puts it: “A building is not something you finish. A building is something you start.”⁵⁶

One of the true challenges of achieving adaptability and resilience in our physical environment is to dissolve the

static way of thinking about it. To bring adaptability into the picture we need to change our mindset from considering architecture as something permanent to something dynamic. This considers the entire spectrum of the architectural building stones: experience, space, use, structure and actors. A space can host a multitude of different activities and can be interpreted in many ways if we allow it. Tschumi does this through shifting the focus from the physical structure to the activities that it allows and encourages to. He encourages to experiment in creating conditions for events that interpret spaces in new ways.⁵⁷ By challenging the static mind set we can find that there already are many spaces that enable different interpretations.

Identity is a fundamental piece of our resilience puzzle. Identity is the essence of a city’s physical structures and the social community. If the building blocks of a good city are similar in general, the main thing telling cities apart is the identity. Tschumi writes about the dual nature of architecture: it defamiliarizes, creates experiences and surprises, and on the other hand architecture provides constancy, comfort and nostalgia of permanence.⁵⁸ Identity is similar: It relies on the strengths, history and the special qualities of a place and it is under continuous redefinition. Identity is the quality of a city that enables people to belong to a place. There is a strong connection between identity and our physical environment. To enable belonging there has to be something that is lasting in a physical sense. We need this for our collective memory, our collective recollections⁵⁹. In this way identity is essentially

52 Lefebvre and Régulier in Lefebvre, H. (1992) p. 96

53 Lefebvre, H. (1991) ‘The Production of Space.’ Oxford: Blackwell p. 28

54 Lefebvre in Elden, S. (2004) p.193

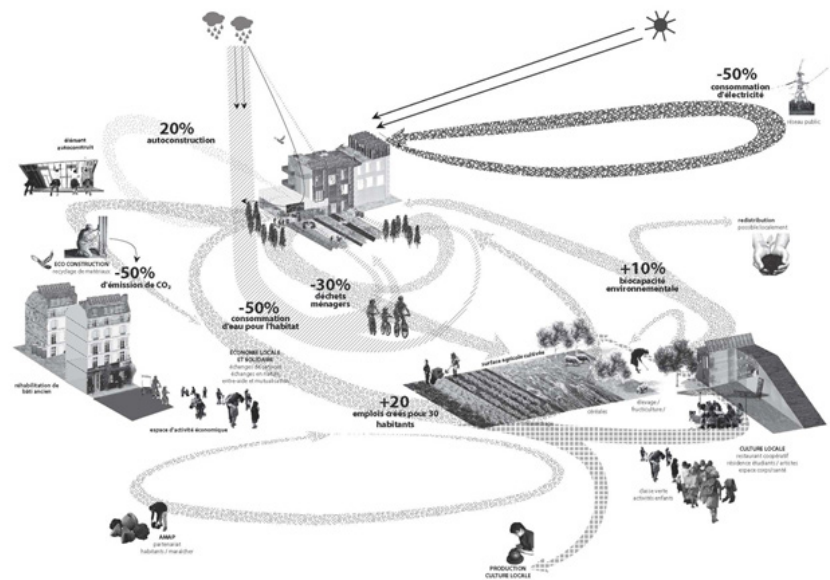
55 Awan et al. (2011) p. 29

56 Brand, S (1994) p.188

57 Tschumi, B. (1996) p. 256

58 Ibid p. 235

59 Leupen, B. (2005) p. 20



Atelier d'architecture autogérée's project R-URBAN in an example of the approach to create a network of self-managed places by encouraging residents to take an active role in their neighbourhood.
<http://r-urban.net/accueil/>

connected to the community and through community to the social structures acting as platforms. Identity is also the collections of frames, permanences of a city.

Our strategy of diversity in adaptability is essentially connected to David Harvey's concept of relational space and Lefebvre's lived space, especially the concept of identity. A space is something physical and representations on a map but also something beyond that. A space includes lived moments and people's memories, expectations, dreams and fears. The identity of a space cannot be understood without seeing the space as relational and lived. The meaning of a single building can be unproportionally large due to collective memories of the society. Here we cannot expect to find a single answer or an objective truth: identity in relational space is open, fluid, multiple and indeterminate, in short "immaterial but objective".⁶⁰ This doesn't mean that the search of the identity of a space or of the community would be in vain. We can find multiple identities, multiple important spaces and multiple interpretations.

PASSIVE VERSUS ACTIVE

The inclusion of Lefebvre's rhythmanalysis and Tschumi's programming expands the notion of adaptability. Should a city or a building just adapt according to changing needs without passing a comment on that change? Or can our physical environment create possibilities and tools for us to affect the change and direct our environment, enable us to take an active role in the process? In the end one of the main questions regarding adaptability and flexibility is:

Do we want only to follow the change at hand or affect the development through tools of planning?

The final fundamental lesson on space and time we learn from Lefebvre is that social space is always political including notions of power, control and interaction due to the social production of space.⁶¹ From this arises a new, more active and political role for architects, the professionals of space. In the book 'Spatial Agencies' by the Nishat Awan, Tatjans Schneider and Jeremy Till the title term *spatial agent* is lifted up as the new potential role for architects. A *spatial agent* is a negotiator of existing conditions in order to partially reform them. A *spatial agent* is a political actor, something in between the two contrasting architect roles: that of an omnipotent author, a genius that single-handedly takes on the world or of a lackey of commercial forces, the one who just does as he is told. A *spatial agent* is an active actor that engages otherwise, a concept first introduced by Anthony Giddens⁶², acting with intent and purpose to create critical difference and take social responsibility.⁶³

The architect Doina Petrescu defines 'acting otherwise' as getting engaged with the politics of a place and questioning the rules and regulations of current architectural and urban practise. Petrescu introduces alternative ways of working as an architectural agent: participatory approaches directed away from the traditional client-professional orientation. Petrescu emphasizes relationality: a collective process that empowers both architects and users. The main focus lies on the processes that the projects generate and who

⁶¹ Lefebvre, H. (1991) p. 360

⁶² Giddens, A. (1987) 'Social theory and modern sociology.' Cambridge: Polity. p. 216

⁶³ Awan et al. (2011) p. 31

⁶⁰ Harvey, D (2011) p. 28

they involve in making and using rather than on a final product. This way a spatial including process not only makes the architects into agents but also empowers the other actors to the same extent. Architecture becomes a shared activity. Doina Petrescu's and Constantin Petcou's architectural practise *Atelier d'architecture autogérée* in Paris has used this approach to create a network of self-managed places by encouraging residents to take an active role in their neighbourhood. Underused and available spaces are transformed together allowing the architects to eventually leave the project completely. Petrescu calls this preservation of urban biodiversity, enabling flexible and reversible use of space, a wide range of coexisting lifestyles and living practices.⁶⁴

This notion of architecture brings the main ingredient of a resilient society, the community, to the surface. If space truly is a social product, as Lefebvre suggests, then a functional community is a key to a resilient city. The concept of heterotopia that has interested Lefebvre, Foucault and Tschumi becomes obviously relevant in the context of the need to act otherwise and change our mind set.

CLOSING WORDS

In the introduction to this essay we started with the question: How can we introduce time into urban projects? We have found that the separation of space and time in our way of dealing with architecture creates a conflict that we try to solve with the concepts of adaptability and flexibility.

Our contribution to the discussion is an attempt to liberate the often static way of thinking about strategies for change. Instead of trying to find one way to solve the conflict we should welcome a multitude of approaches. We agree with Bernard Leupen and his frame theory: buildings should be constructed with a clear idea of enabling a process, adaptation and future. We think we should have fun with the notion of future. We cannot know what will happen but we can innovate, create different logics and include the notion of change, process and development. We should strive towards changing our mindset away from the static way of thinking about architecture and urban planning and see the potential in acting otherwise. We believe that we should also dare to be political. We are not just following or preparing for an unforeseeable future, we are creating that future.

Finally, how can our findings be used in the practical work of an architect? These conclusions have been developed through a combination of theoretical discussions and practical experimentation in our case studies. In the second part of this thesis, *Practice*, we show two examples on how the theoretical exploration can be combined with architectural design.

⁶⁴ Petrescu, D. (2012) "Relationscapes: Mapping agencies of relational practice in architecture, City, Culture and Society," no 3 2012 pp. 135–140

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PRACTICE

CASE STUDY I

MAXA STADEN

The frame of the first case study is a student competition, Skanska sustainable cities challenge 2013, held by the Swedish building company Skanska. The competition task was to innovate and develop ideas on how to make Göteborg a more creative and tolerant city and to promote social interaction between people.

Our approach on this challenge was to explore how densification can be reached in an untraditional way through an analysis of use and users over time. We show that the city can expand within existing structures and spaces by allowing a diversity of uses and users.

Maxa staden is inspired by the concept of social construction of space presented in the essay, and the concept of the architectural situation, i.e putting focus on what is happening inside and around a structure instead of on the physical structure itself. Or in Henri Lefebvre's words: "(social) space is a (social) product".¹ Bernard Tschumi's concepts crossprogramming, transprogramming and disprogramming that seek not only to mix programmes and functions in a building but to liberate them from their predestined qualities and create freedom for interpretations². In *Maxa staden* we question planning based on singular functions deriving from our usually static architectural thinking.³ Existing structures and spaces as a departure point also makes the proposal very realisable, 'start Monday'.

1 Lefebvre, H. (1991) 'The Production of Space.' Oxford: Blackwell p. 28, see pp. 17-19, 27, 29 and 35 in this thesis

2 Tschumi, B. (1996) 'Architecture and Disjunction.' Cambridge: MIT Press p. 234, see p. 27 in this thesis

3 see pp. 35-39 in this thesis

In the essay we introduce the term *heterotopia*. Lefebvre's *heterotopia* is a space of difference and of potential transformation created by different groups through their activity in the space.⁴ This is essential in *Maxa staden*: existing spaces are redefined through access and new uses of existing spaces.

Maxa staden becomes political in the aspect of who uses different spaces. We discover that there is a shortage of non-commercial spaces that can be used regardless of income, social class and age. Many structures are only available for a paying audience or are "off limits" for other reasons. Public space should be accessible for all citizens and we suggest different ways of reaching this. *Maxa staden* will not only make more spaces available but can also empower people to take charge of their physical environment. These thoughts were inspired by *Atelier d'architecture autogérée's* working methods that encourage residents to take charge of their neighbourhood by transforming underused and available spaces together.⁵

The modus operandi of the architect is often to add something physical to our environment regardless of the situation. We question this. Finally, the proposal *Maxa staden* can be summed up with the words of Cedric Price "the addition of a building is not necessarily the best solution to a spatial problem"⁶

4 Harvey, D. (2011) 'Ojämlikhetens nya geografi.' Stockholm: Atlas p. 36-39, see pp. 17-19 in this thesis

5 Petrescu, D. (2012) 'Relationscapes: Mapping agencies of relational practice in architecture, City, Culture and Society.' no 3 2012 pp. 135-140, see the chapter *Passive versus active* pp. 37-39 in this thesis

6 Awan N., Schneider T. and Till J. (2011) *Spatial Agency. Other Ways of Doing Architecture*. New York: Routledge, p. 31, see the chapter *Passive versus active* pp. 37-39 in this thesis





MAXA STADEN



Maxa staden, “Maximize the city” explores how densification can be reached through time instead of through space and how public space can become accessible for more people.

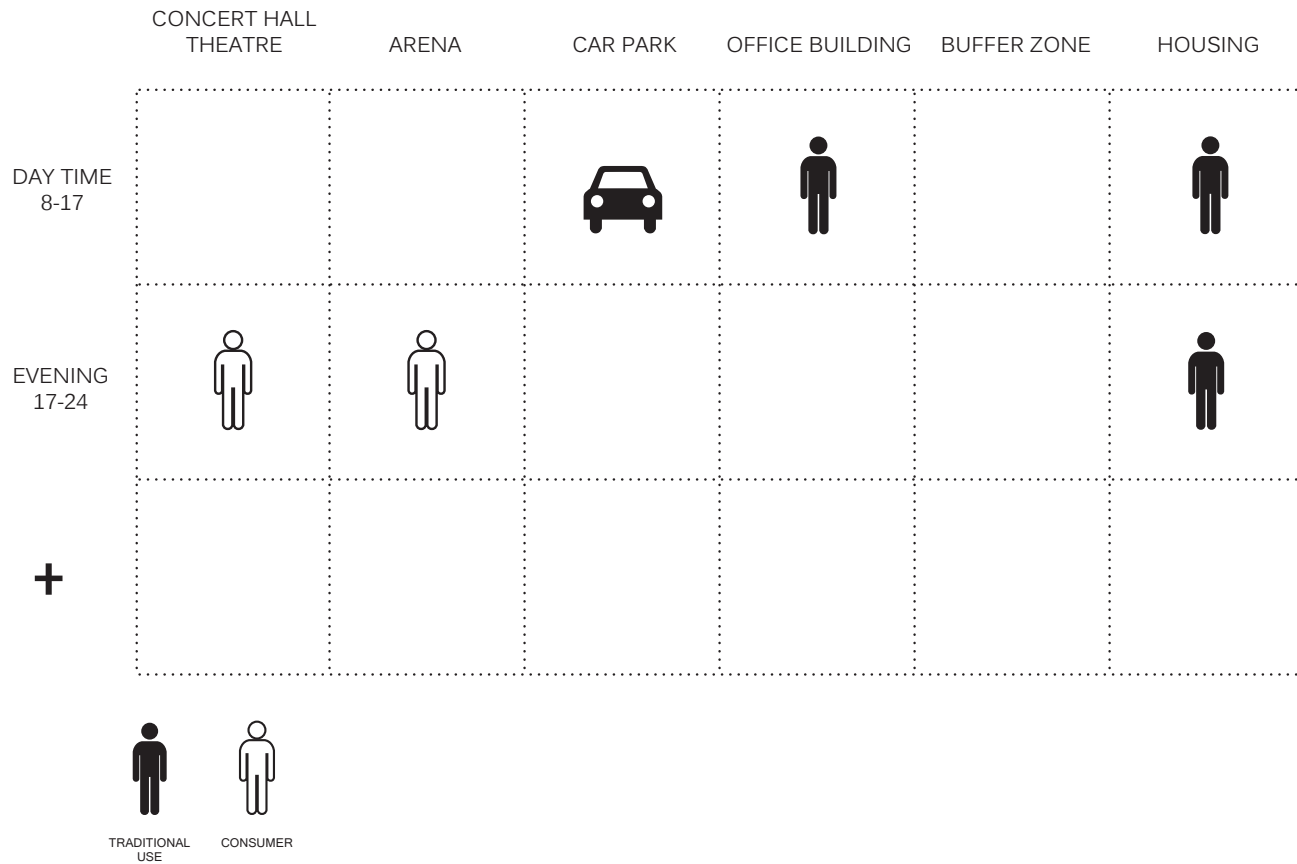
We believe that it is unsustainable that buildings and spaces are left empty large parts of the day. Göteborg has potential to expand in already existing structures and the activity in the city can be maximized just by expanding our mindset.

If public space becomes more accessible for more people with different backgrounds, a broader group of people will make the city into their own platforms which will lead to a more vibrant and tolerant society.

	CONCERT HALL THEATRE	ARENA	CAR PARK	OFFICE BUILDING	BUFFER ZONE	HOUSING
DAY TIME 8-17						
EVENING 17-24						
+						

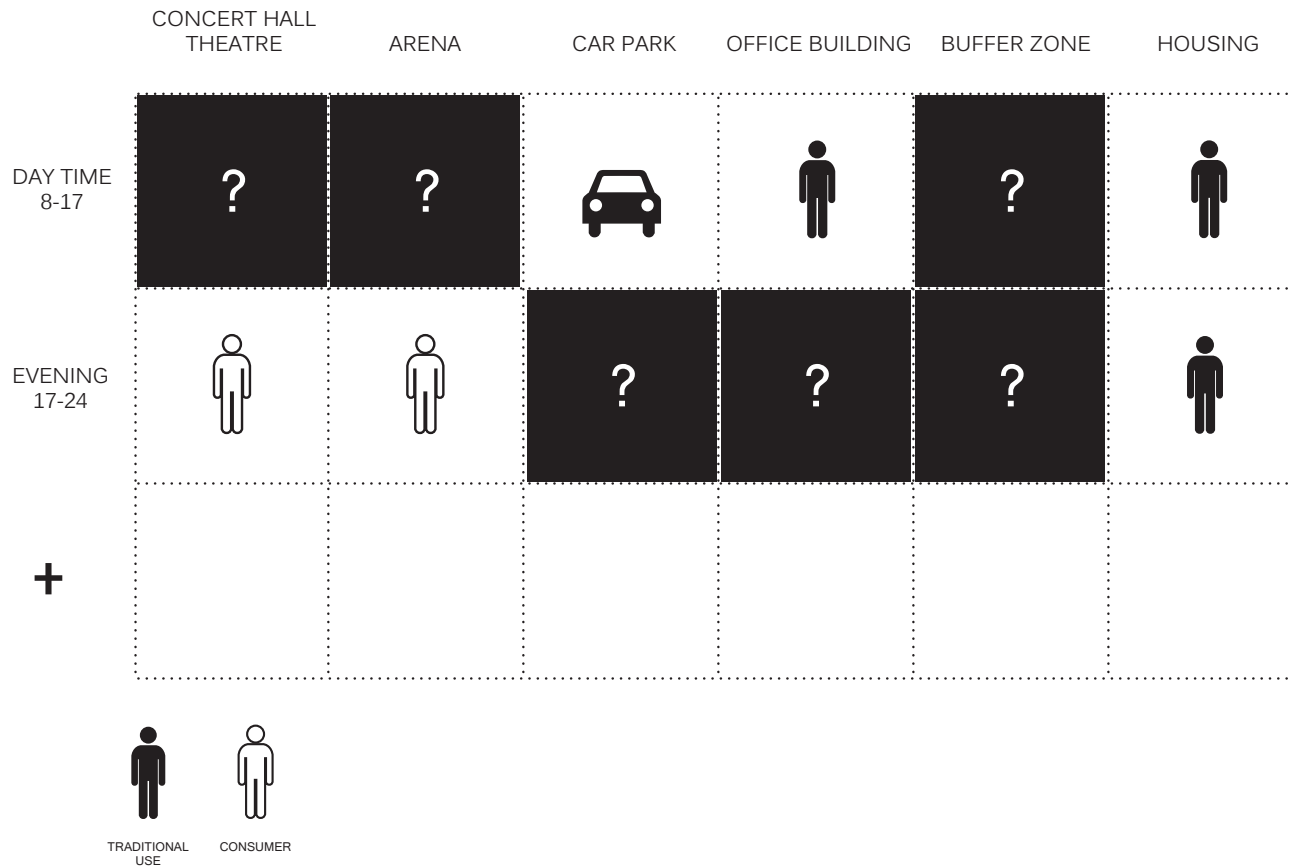
We start off by challenging the way spaces in the city are traditionally being used and by whom. We illustrate this maximization with the help of a matrix.

The horizontal rows in the matrix contain different existing spaces and buildings. The vertical rows hold the hours of a day. How are these spaces used during the day and during the evening?

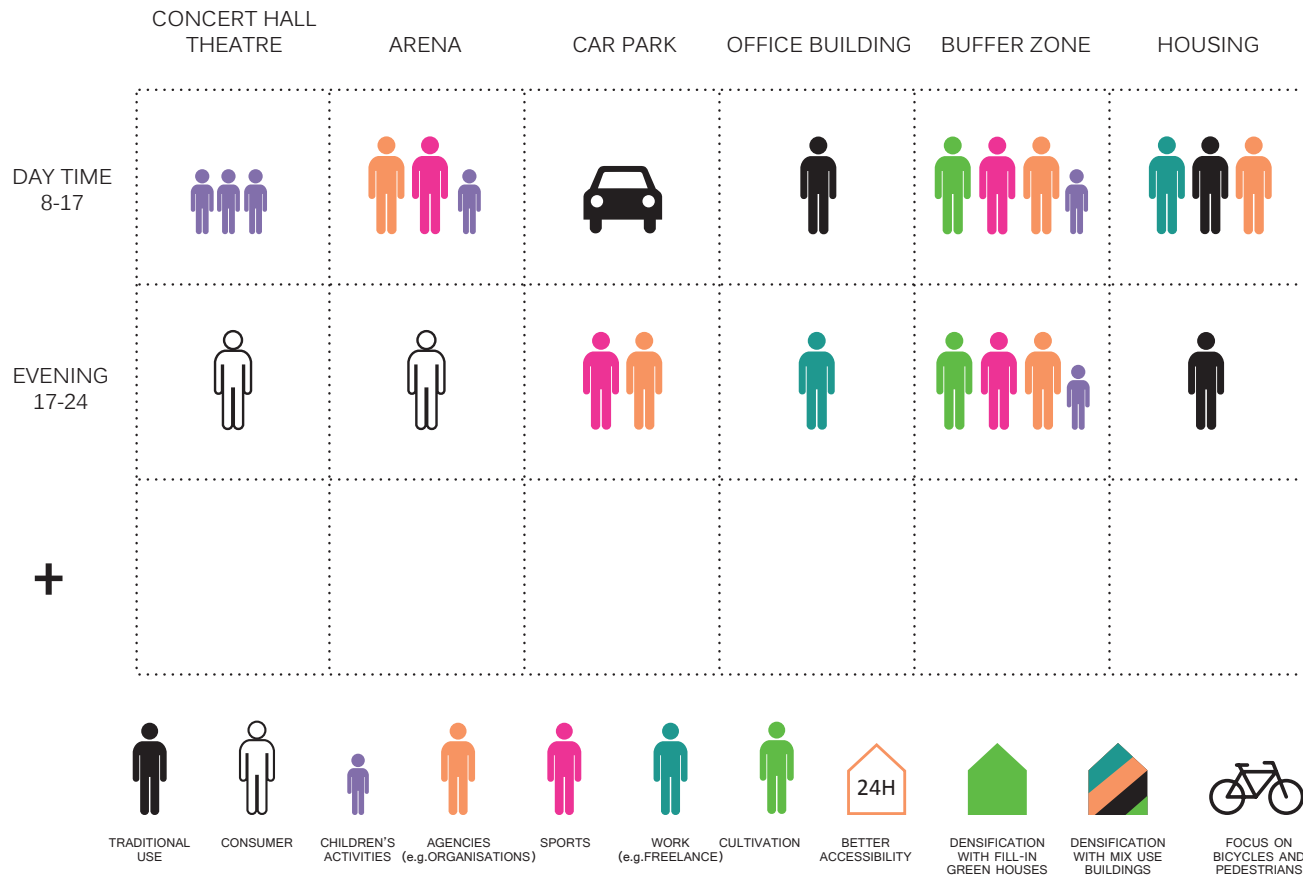


This diagram shows the typical use and users of the spaces today. The black figures represent the typical use - such as dwelling and working. The outlined figures

symbolize a public that pays to participate or to get access to the space.



Here we can clearly see a potential to maximize!
 What do we fill the gaps with ?
 And which activities could benefit from this?



What would happen if the preschool class started to eat lunch at the concert hall ?

Could the arena become the people's arena some days during the year?

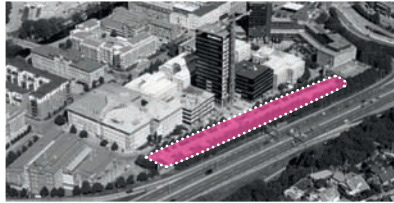
Could we turn parking spaces into sports fields in the evening?

Can office facilities be used by others after office hours?

Or what if the citizens were allowed to cultivate and transform public buffer zones ?



ARENA



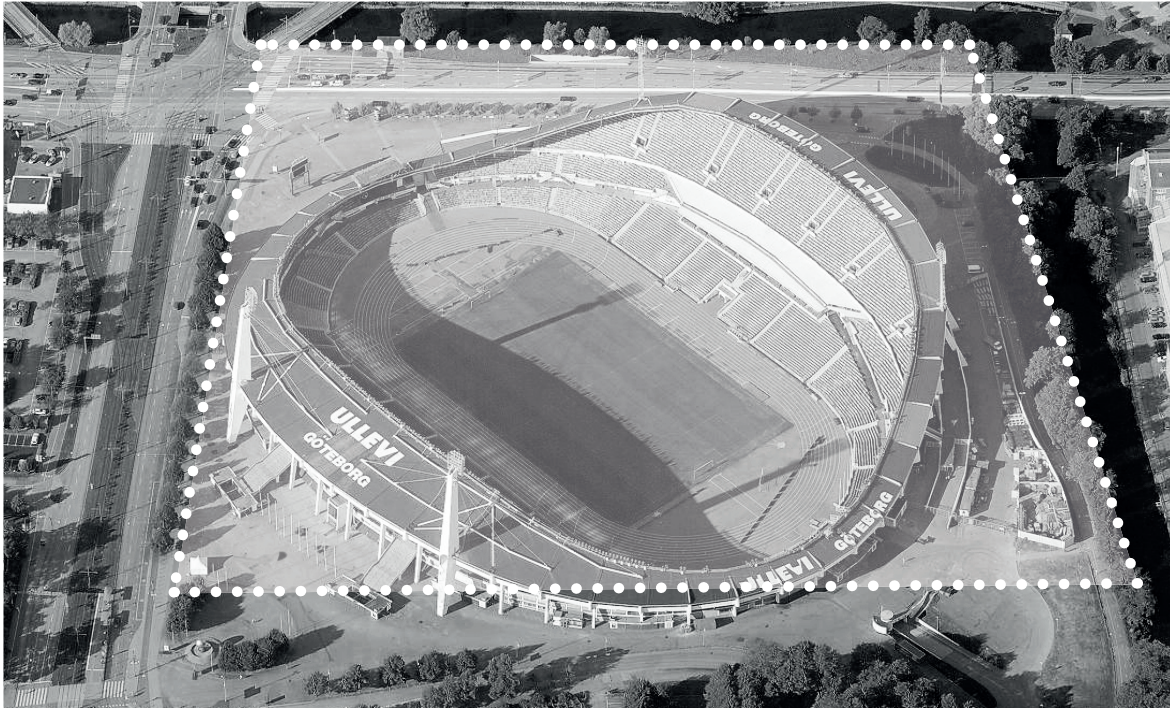
CAR PARK



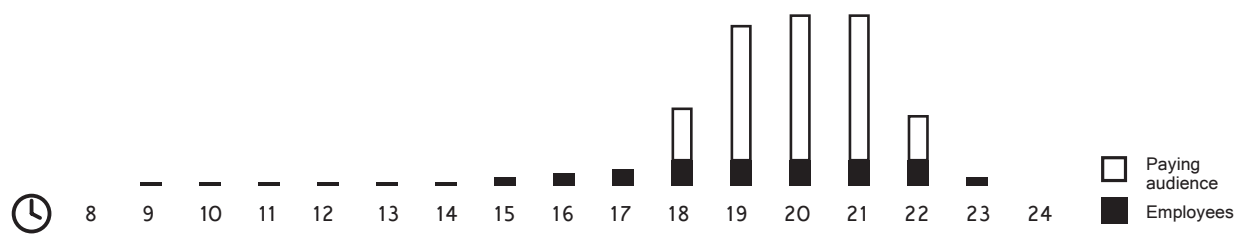
GREEN BUFFER ZONE

EXAMPLES

To concretize these thoughts we present three examples in Göteborg: a commercial arena, a large parking space next to an office complex and a left-over green buffer zone in the middle of the city.

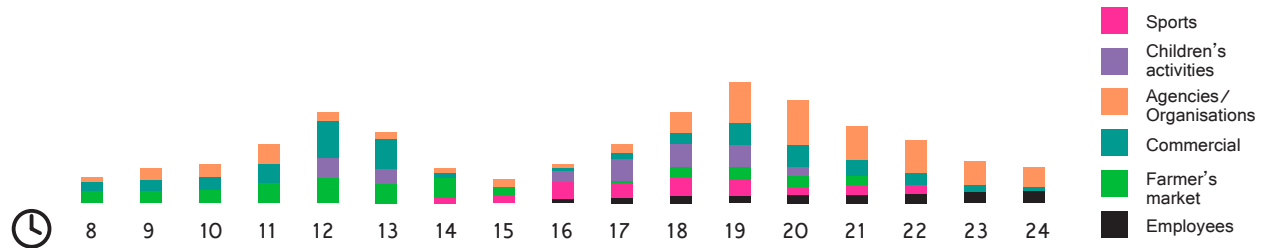


EXAMPLE 1: ULLEVI ARENA, GÖTEBORG



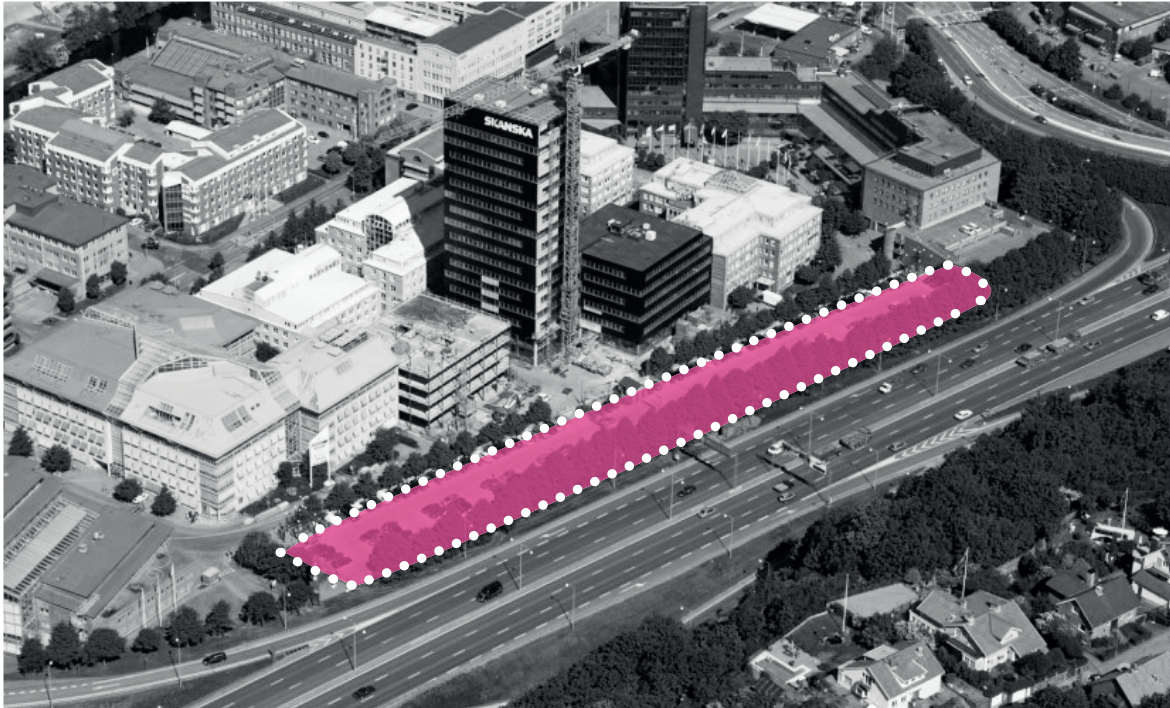
TODAY The bar graph describes the relationship between time and user density during a regular day.

For a few hours - during a football game - the arena is filled with a paying audience.



MAXA STADEN This is Ullevi during a people's day when the venue is open to everyone. A more even distribution of a large number of users. On this particular day, the graph shows how a farmer's market starts early and continues until at 14-15.

In the evening local established and unestablished actors turn Ullevi into a celebration venue with food and music. Ullevi has the facilities that support an event like this and the city can continue to function as usual without being cordoned off like during other festivals in the city.



EXAMPLE 2: SKANSKA'S CAR PARK , GÖTEBORG

8-17

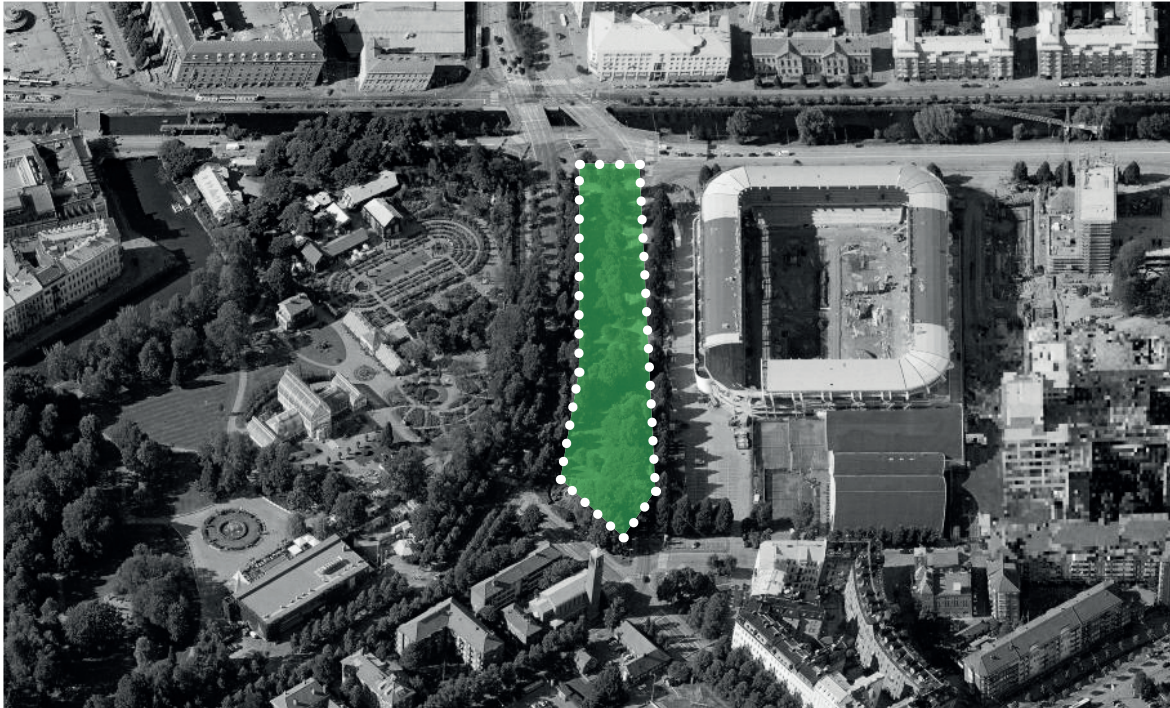


TODAY The second example is a large car park that provides parking spaces for hundreds of cars during the day but after office hours the space becomes empty and desolate.

17-23



MAXA STADEN The footprint of the carpark is equivalent to 7 basketball courts and 18 tennis fields. By simply painting the lines of the sports court on the paving, the empty parking space is transformed into an active meeting place in the evening.



EXAMPLE 2: GREEN BUFFER ZONE, GÖTEBORG

?

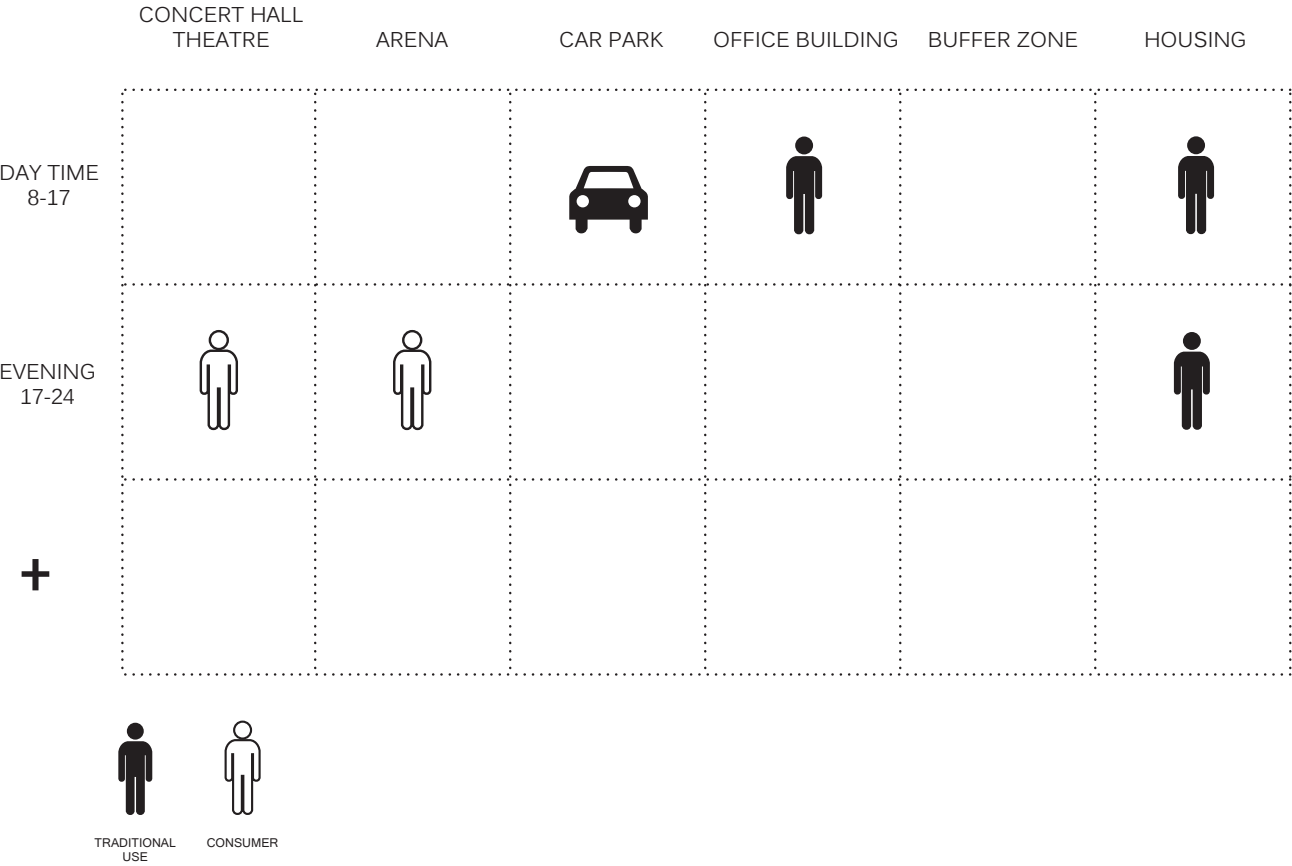
TODAY The third example is a typical left-over green space that functions as buffer zone between the streets Parkgatan and Nya Allén. Today this space has an unclear purpose and character and it is very underused.



MAXA STADEN Here we have a huge potential to create a sanctuary for the people of Gothenburg which they are allowed to cultivate and transform the way they want without having to own the land. Someone wants to cultivate, some people play a game of boule while others build a stage or exhibit their sculptures.

An inspiration to this type of taking over unused spaces can be found in Norra Sorgenfri in Malmö where citizens and local actors have turned an industrial space into a flourishing urban garden with exciting activities and events.

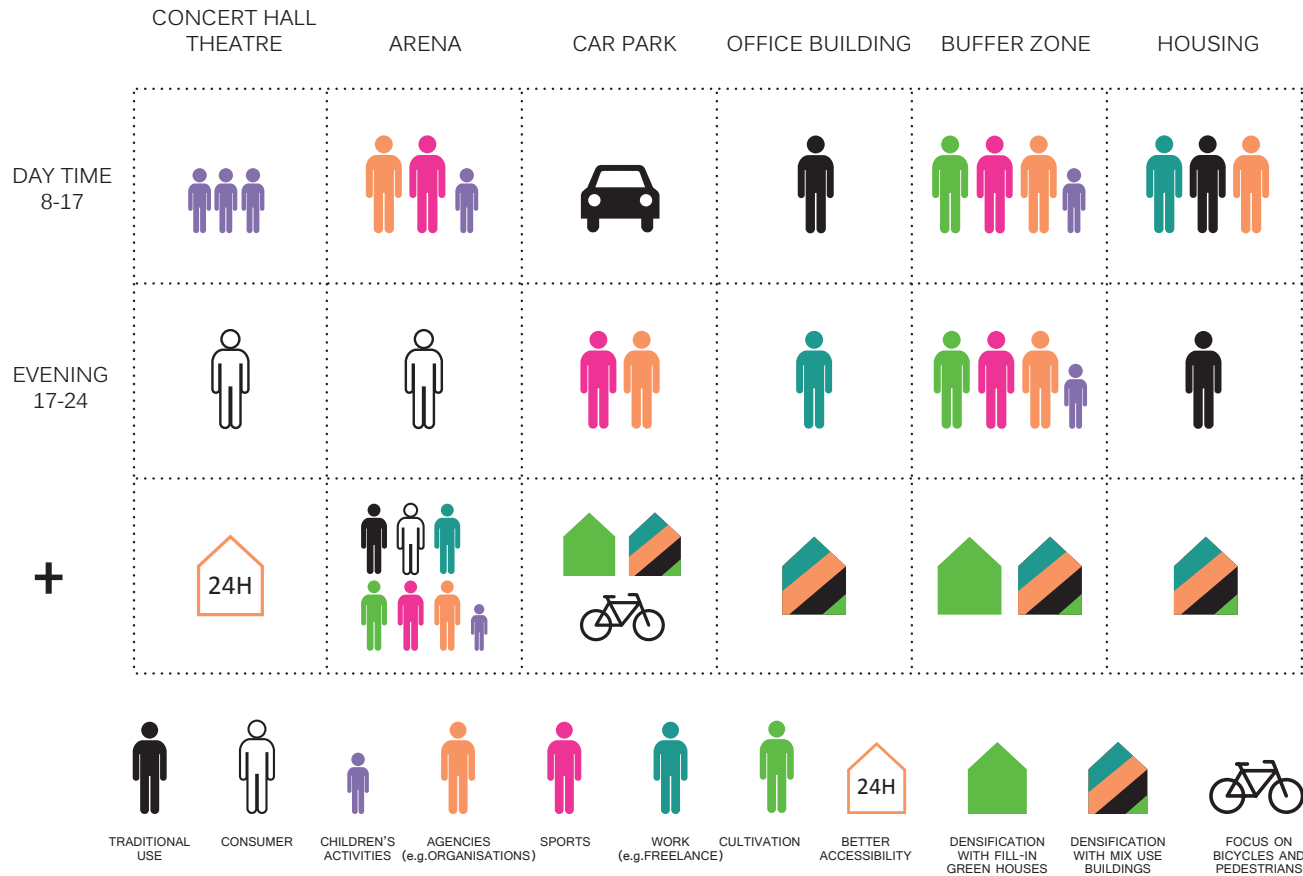
WE WANT TO GO FROM THIS ...



What we have showed so far how to maximize existing structures and spaces with relatively simple means.

In the future we need to include the time factor in the planning and building processes.

...TO THIS.



The last row of the matrix is our future vision.
In the future we need to take into account the time factor - thinking flexi-space, multi-use and sharing the public space. By thinking flexibly about densification

and time we can create a more vibrant and tolerant society - a maximized city that provides space for everybody.

GÖTEBORG 2021



ALBIN, 36, PRE-SCHOOL TEACHER

In the morning Albin rides his bike to work in Slottskogen where his outdoor preschool has taken over a piece of public land for cultivation. The kids are excited to harvest carrots an entire morning. Lunch is served at the concert hall which is easily reached by tram. The afternoon offers exciting activities and a change of scenery when the preschool group visits an urban zoo at the old industrial area in Gullbergsvass and Albin downloads their urban farming app to his phone.

After work Albin leaves a bag of clothes to the “free market”, the free second hand market at Ullevi. Today the big arena is at the people’s disposal. Albin enjoys the market’s atmosphere, finds a nice plaid shirt and listens to a jazz gig outside the stadium. On his way home he passes a group of friends barbecuing at Heden. What a Saturday feeling on a Tuesday night!



ANNA , 63, ACCOUNTANT

Anna locks the door to her office - a flexible space of 36 sqm in her apartment building. Few have the luxury of living this close to their work place, she thinks to herself.

There is one flexi-space in each floor in her apartment building and the tenants decide how they are used - some are offices, others are rented by students and some are jointly rented and used as guest rooms for visitors from afar.

Anna walks briskly towards the harbour and “Läppstiftet”. It’s 18:15 in the evening and the parking lot has been transformed into two basketball courts. The breeze is warm and the seagulls’ sound is accompanied by the tramp of feet against the paving. The ferry honks and the game is on. The evening ends at the pier with delicacies from the urban farm at Gullbergsvass and tactics talk for the next game.



HANEEN, 23, ART DIRECTOR

Thanks to the densification project of the city at strategic locations Haneen is able to rent a small apartment in central Göteborg. Perfect, she can walk everywhere. Today she started her day at the small greenhouse that was built two years earlier on a piece of empty land. There will be a farmer’s market tomorrow and this time Skandinavium will be transformed into a giant market hall for the day. Haneen delivers two bags of tomatoes to a friend from the urban farming group.

A workshop with a potential new customer is starting in a few hours and Haneen is preparing the meeting in her coffee, a dynamic work space combined with a café which she shares with other creators - perfect for her freelance lifestyle. The workshop takes place at Bostadsbolaget’s meeting room that can be booked by anyone in the evenings.

After the meeting it’s time to pick up the DJ set for the evening’s gig. Tonight the Opera transforms into a hip club with a new kind of audience.

CASE STUDY II

EURHYTHMIA

The frame of the second case study is European12 - the world's largest recurring architectural competition. This year the topic is Adaptable city - inserting urban rhythms, and from the 50 available sites around Europe we chose to participate in the Norwegian municipality Ås - a small town 30 kilometres south of Oslo. This particular site has expanded urban potentials due to its connection with a larger entity, the capital region. While Ås at first glimpse can appear small and fairly isolated, a closer look reveals a potential for richer urban life, mixes of different programmes and more complex urbanity.

The major challenges for Ås introduced in the competition brief are the fast growth of population due to improved train connection to Oslo and the desire to develop Ås, a sleepy small community, into a vibrant university town. The competition programme consisted of an art museum, commercial and public space and housing. One question in the competition brief really caught our attention: could Ås adapt to the possibilities of major changes to the network of Oslo and its surrounding municipalities through defining its own urban and architectural characteristics?

Our site visit gave us a deeper understanding about Ås' real potential, apart from being a town with a university it had more qualities that could be developed into fundamentals for Ås' identity. We mapped a number

of qualities that we could develop and use as planning strategies. Further analysis revealed that the town centre was lacking nodes and clarity in directions, there were too few defined public spaces and above all, the qualities or strengths of the region were not represented in down town Ås. The concept of the final proposal was to gather, concentrate and develop the qualities that could build the identity of Ås, connect them and this way create a town centre with clear nodes, directions and defined public spaces.

Our thoughts on the building stones of a resilient city, presented in the essay, with focus on diversity, are to a great extent developed together with this case study.¹ In *Eurhythmia* Ås gets several public spaces with different characters. We agree with Henri Lefebvre's thoughts on the social creation of space² which highlight the importance of public spaces. The public spaces of *Eurhythmia* seek to encourage to many different activities and inhabit many different rhythms. This, we think, welcomes a larger variety of inhabitants of Ås, and enables an active city centre throughout the seasons of the year. Lefebvre's Rhythmanalysis has been one of the main sources of inspiration in *Eurhythmia*. The concept of rhythms enables the citizens to take charge of a space through their actions. The name *Eurhythmia* derives from Rhythmanalysis and is defined by Lefebvre as "constructive interaction between two or more rhythms, such as occurs in healthy creatures"³.

1 see p. 33 in this thesis

2 Lefebvre, H. (1991) *The Production of Space*, Oxford: Blackwell p. 28

3 Lefebvre, H. (1996) *Writings on Cities*. Oxford: Blackwell pp. 104 -105, see p. 29 in this thesis

Through the multiple public spaces we seek to encourage *heterotopia* in Lefebvre's understanding of the term⁴: different spaces and structures, the pavilions, for example, enable various interpretations of the space and thus the space can be reinvented through our actions. This is also Tschumi's line of thinking, he wants to liberate spaces from their predestined programmes.⁵ Here our pavilions follow Tschumi's thoughts: they have no predestined function and welcome different interpretations.

In the essay we introduce the idea on a multitude of different approaches on adaptability and flexibility on a building level.⁶ This is something we have investigated in practice in *Eurhythmia*. The new structures proposed in the project all have their own logic, their own type of adaptability. This approach is greatly inspired by Bernard Leupen's frame theory. The frame is the permanent part of a building that allow the rest of it to change.⁷ In *Eurhythmia* each new structure has a different type of adaptability making space for changes in various ways.

In *Eurhythmia* we have also explored the concept of identity⁸. This can be seen clearly in our search for qualities in Ås and especially with the existing Åsheim building. We see Åsheim, the old community building in Ås, as an object of a many collective memories. Because of this Åsheim is given a new, more dignified location at the end of one of the main axes and sightlines in the town.

Davis Harvey's concept of *relational space* and Lefebvre's *lived space* presented in the essay have been starting points for the search of qualities. Both of these concept include our subjective memories, expectation, dreams and fears as a part of understanding a space.⁹ We have asked ourselves: What is historically important in Ås? What are they proud of? What is special about Ås?

4 Harvey, D. (2011) 'Ojämlikhetens nya geografi.' Stockholm: Atlas pp. 45-46, see pp. 17-19, 27 and 35 in this thesis

5 Tschumi, B. (1996) 'Architecture and Disjunction.' Cambridge: MIT Press p. 265, see p. 27 in this thesis

6 see p. 31

7 Leupen, B. (2006) 'Frame and Generic Space. A Study into the Changeable Dwelling Proceeding from the Permanent.' Rotterdam: 010 Publishers p. 18, see p. 25 and 31 in this thesis

8 see p. 35 in this thesis

9 Harvey, D. (2011) p. 27-39, see pp. 15-17 in this thesis

ÅS IN NORWAY

Ås is located 30 kilometres south of Oslo.



EURHYTHMIA

[Constructive interaction between two or more rhythms, such as occurs in healthy creatures]

Henri Lefebvre



TRAIN CONNECTION



UNIVERSITY



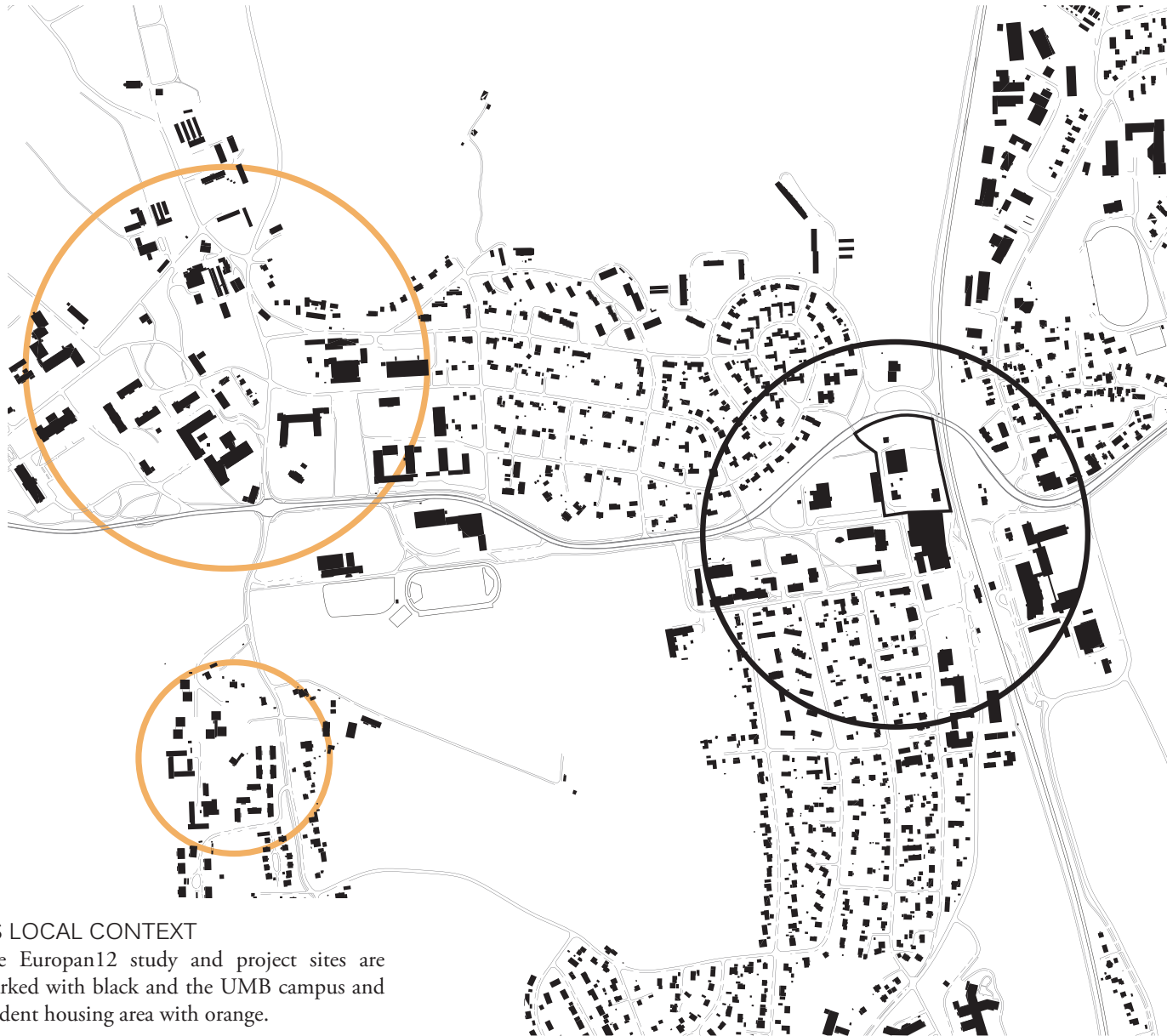
AGRICULTURE



ART & CULTURE



ÅSHEIM



ÅS LOCAL CONTEXT

The Europan12 study and project sites are marked with black and the UMB campus and student housing area with orange.

BACKGROUND

Ås is about to double its population by 2040. The growth provides a great possibility for Ås to develop into a university town with an strong identity built on local qualities and with a flourishing town centre.

Ås has many qualities. The continuously developed train connection allows Ås to be an integrated part of the Oslo region. The university, *Universitet for miljø- og biovitenskap*, in Ås is becoming an international node in the area of life science and has a historical value due to its 150 years old campus area. The long agricultural tradition provides vicinity to locally produced food. The cultural scene is active and Ås is the home town of the well-known artist Odd Tøndberg.

Today these qualities are scattered in what resembles a collection of islands that do not interact nor connect to each other sufficiently. The town centre lacks nodes and clarity in directions, there are few defined public spaces and, above all, the strengths of the region are not represented in down town Ås.

The concept of *Eurhythmia* is to gather, concentrate and develop the qualities that build the identity of Ås, connect them and this way create a town centre with clear nodes, directions and defined public spaces. *Eurhythmia* includes diversity in rhythms, functions, typologies and activities for a resilient future.



The project site is marked with a white, dashed line.

ÅS TODAY

- ① THE TRAIN STATION
is situated parallelly to Moerveien.
- ② THE TOWN HALL,
the library and the cinema are
gathered around one space
overlooking the park.
- ③ THE CULTURE SCHOOL
consists of traditional red brick
buildings on the other side of the
park.
- ④ MOERVEIEN
is one of the main axes in central
Ås.
- ⑤ RADHUSPLASSEN
is the second main axis in central
Ås. Today it mainly functions as a
parking space.
- ⑥ THE UNDERPASS
leads to the other side of the
railway.
- ⑦ ÅSHEIM
is the old community building. It
was moved to its current location
recently and now awaits a complete
reconstruction.

- ⑧ MEGA
houses a grocery store on street
level and offices on the rest of the
floors.
- ⑨ ODD TANDBERGS VILLA
with his sculptures in the yard is
located at the southwest corner of
the project area.
- ⑩-⑫ UMB UNIVERSITY CAMPUS
- ⑬ THE BUS STATION



1. TRAIN STATION



2. TOWN HALL



3. CULTURE SCHOOL



4. MOERVEIEN



5. RADHUSPLASSEN



6. UNDERPASS



7. ÅSHEIM



8. MEGA



9. TANDBERGS SCULPTURE



10. UMB CAMPUS



11. DETAIL FROM THE UMB MAIN BUILDING



12. LANDSCAPE



TRAIN CONNECTION



UNIVERSITY



AGRICULTURE



ART & CULTURE



ÅSHEIM

CONCEPT

TRAIN CONNECTION

The commuting time to Oslo will in the near future be only 16 minutes. The fast train connection makes Ås an integrated part of the Oslo metropolitan region and will attract new groups of people to consider living, working or studying in Ås. A larger diversity in dwellings, services and public spaces will be needed to meet the demands of the growing population.

UNIVERSITY

The UMB is recognized as a leading international centre of knowledge, focused on higher education and research within environmental and biosciences. The campus area from 1859 is beautifully situated, built in typical brick architecture and has a park that is considered to be the oldest arboretum in Norway. Despite the long history, the university is hardly present in the centre of Ås and the perceived distance to the historical campus area appears longer than its actual 1,5 kilometers. The presence of the university and the social life provided by soon 5400 students should be more visible down town. The physical connection should be improved so that the perceived distance diminishes.

AGRICULTURE

Ås is famous for its agricultural landscape, the wide field panoramas and the open skies. In the meeting point between urban and rural, the vicinity and abundance of locally produced goods, agricultural knowledge and entrepreneurship provide many possibilities.

ART & CULTURE

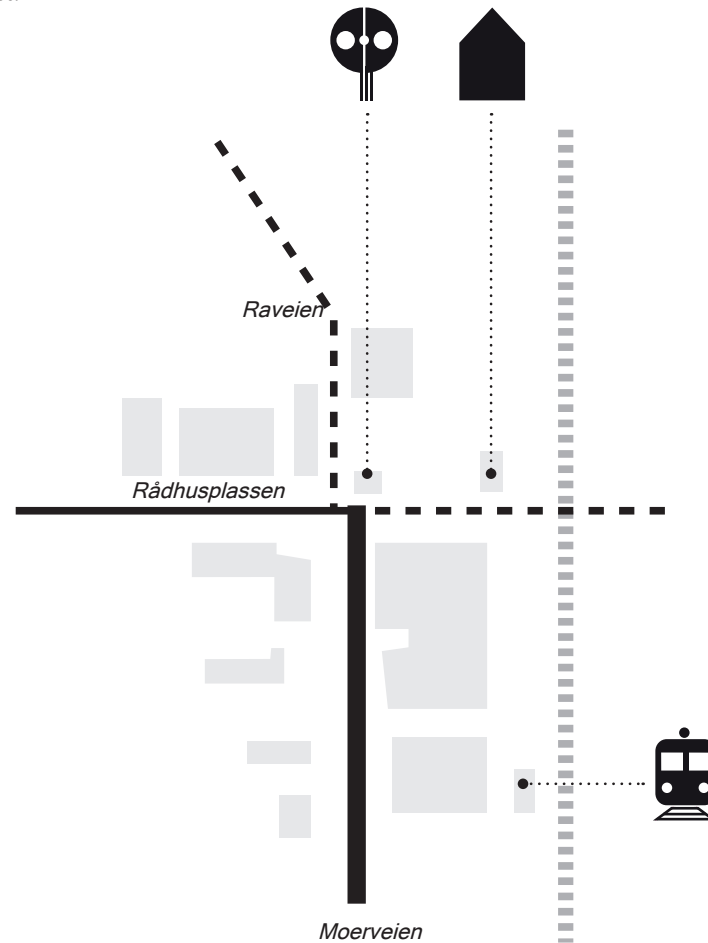
Ås has a rich cultural life and the local artist Odd Tandberg is recognized as one of the pioneers within nonfigurative art in Norway. His artistic heritage can become the back bone that enables Ås to further develop into a creative cultural hub.

ÅSHEIM

Åsheim has a strong symbolic importance for the community. It represents a layer of history that includes the collective memory of the community's cultural and social values. The building lost its original context when relocated and now stands before a total reconstruction. This is an opportunity for a new strategic relocation where Åsheim can position itself as a symbolic and concrete node in a suitable environment.

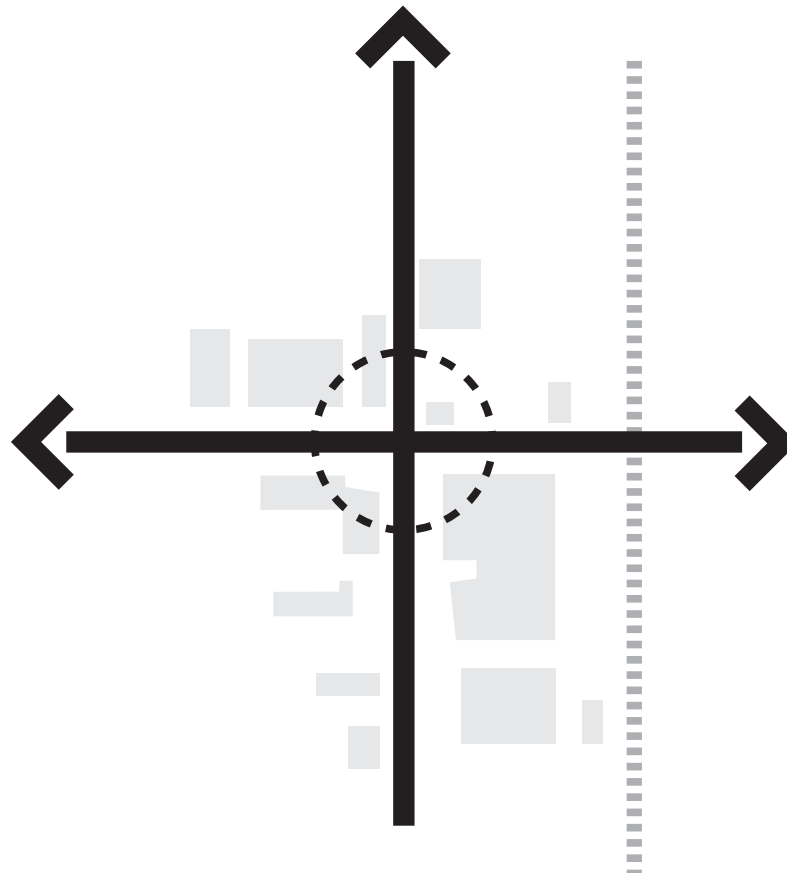
TODAY

The project site is located where Moerveien and Rådhusplassen, the two main commercial streets, meet.



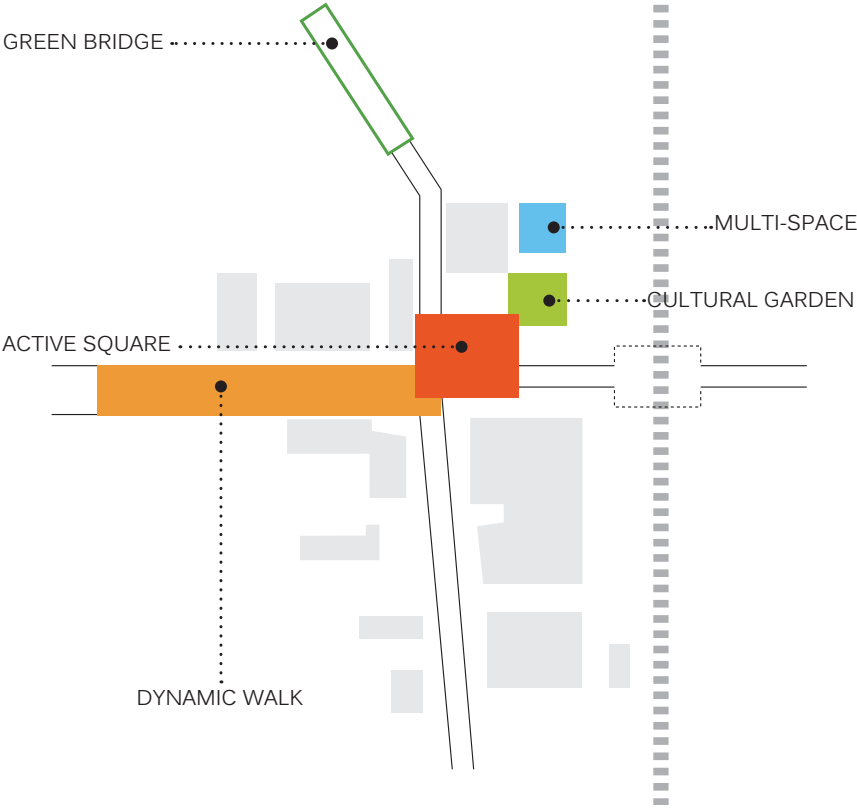
AXIS

The axes are emphasized and the crossing point becomes the central meeting point in Ås.



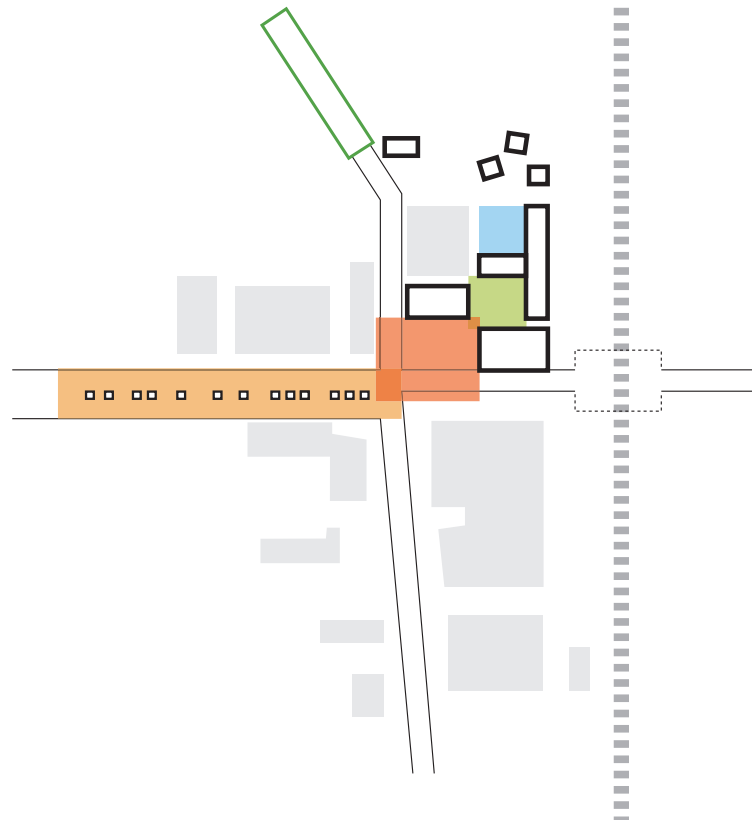
PUBLIC SPACES

A sequence of public spaces is programmed with different rhythms and characters that can function individually as well as interact and complete each other.

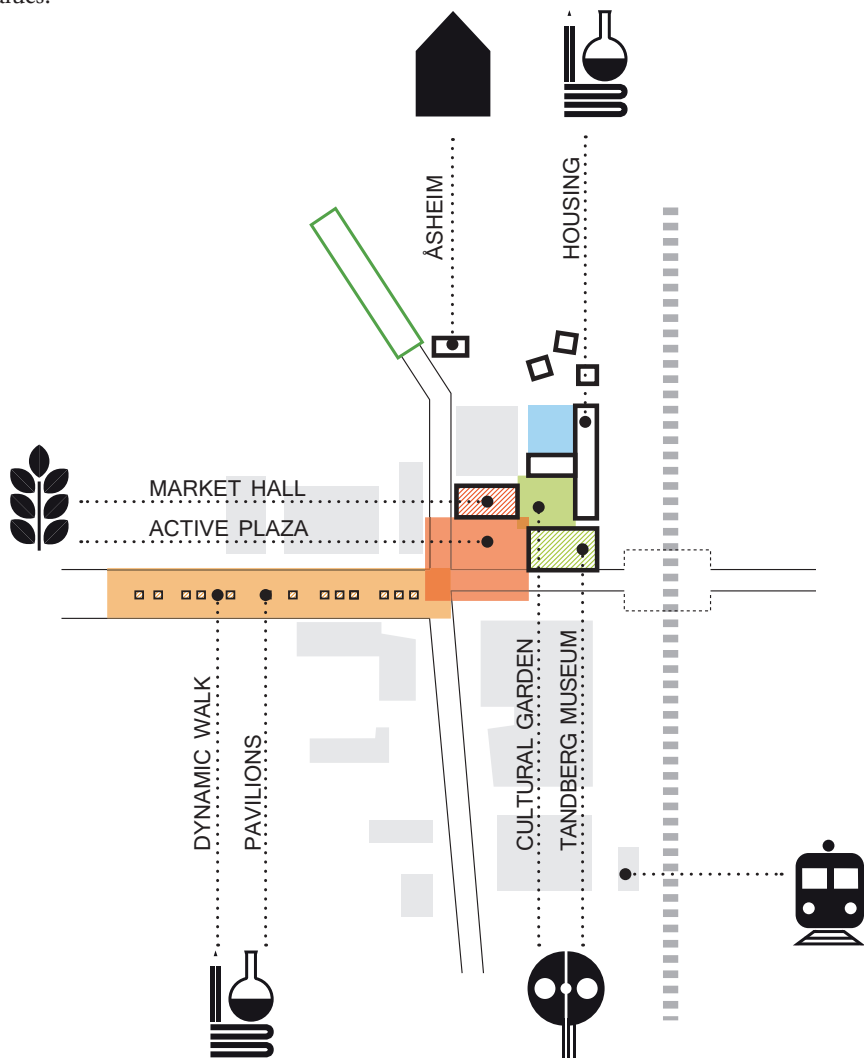


STRUCTURES

The new structures are programmed and situated on the site to frame and support the new public spaces.



EURHYTHMIA
Development of existing values.



In *Eurhythmia* the existing qualities are developed to strengthen the community's identity:

The mobile pavilions are used to exhibit and communicate the work of the UMB and bring the university into the centre.

A market hall is the natural place for locally produced goods, embracing Ås' agricultural knowledge and reinforcing entrepreneurship.

Ås as a cultural hub will be strengthened through the new art museum, representing Odd Tandberg.

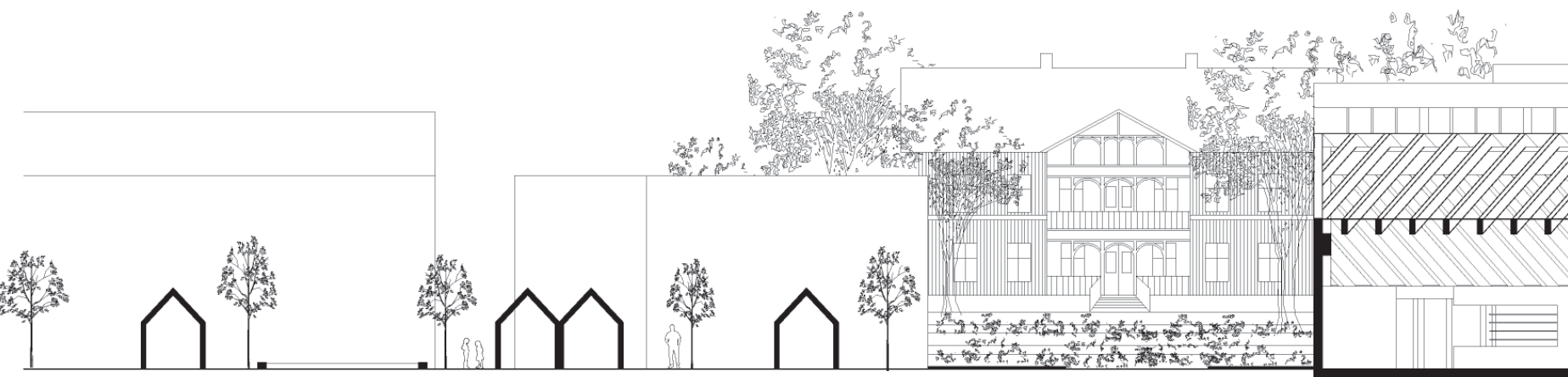
Åsheim is relocated to the green grove and will appear uplifted and in direct sightline when entering one of the main axes. This gesture strengthens Åsheim's symbolic value for the community.

The new housing accommodates students together with other demographic groups for increased social diversity.



SITE PLAN

- ① THE NEW STREET
connects Raveien and Brekkeveien.
- ② ÅSHEIM
is relocated to the green grove.
This becomes an idyllic place and
an important node emphasizing
the connection to the north.
- ③ GREEN BRIDGE
provides a generous and a more
visible connection to the north for
bicyclist and pedestrians.
- ④ THE CROSSROADS
of Moerveien, Raveien and
Rådhus-plassen is simplified.
Moerveien gets a more diagonal
direction which opens up the
street space in front of the plaza
and makes room for a possible
expansion of the town hall.
- ⑤ LIBRARY & CINEMA
are opened up towards the
dynamic walk. The building can be
expanded towards the walk.
- ⑥ BICYCLE STATIONS
where you can rent a bike or fill
your tires are located in different
spots in central Ås. A yearly
subscription allows free use of the
town bikes all season.
- ⑦ THE UNDERPASS
is widened. The stairs along the art
museum provide a sunny spot to
hang out.
- ⑧ DYNAMIC WALK
- ⑨ ACTIVE PLAZA
- ⑩ CULTURAL GARDEN
- ⑪ MULTI-SPACE
- ⑫ TANDBERG MUSEUM
- ⑬ MARKET HALL
- ⑭ YARD BUILDING
- ⑮ APARTMENT BUILDING
- ⑯ ROOF TOP HOUSING
- ⑰ URBAN VILLAS
- ⑱ MEGA BLOCK



DYNAMIC WALK

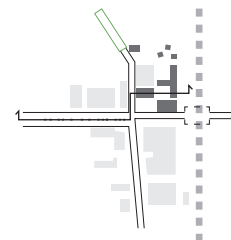
ÅSHEIM



MARKET HALL

YARD BUILDING

APARTMENT BUILDING



SECTION A-A 1:300



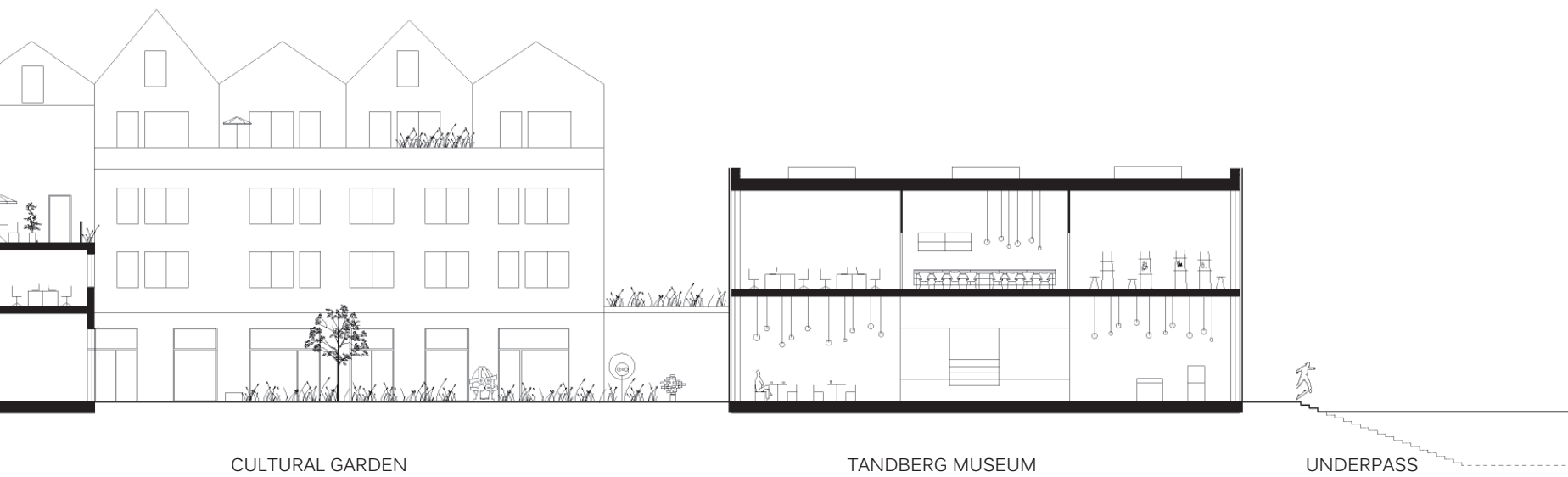
ÅSHEIM

NEW STREET



MULTI-SPACE

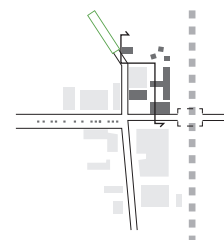
YARD
BUILDING



CULTURAL GARDEN

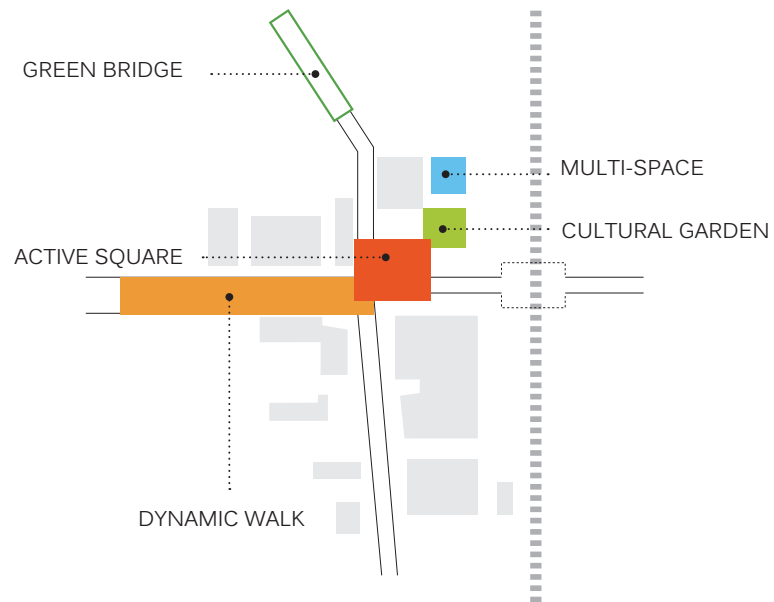
TANDBERG MUSEUM

UNDERPASS



SECTION B-B 1:300

PUBLIC SPACES

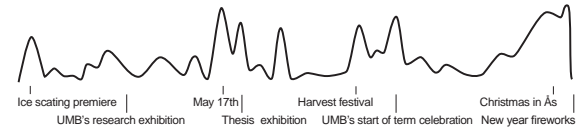






DYNAMIC WALK

Mobile pavilions, where different activities can take place, are situated along the dynamic walk. They can provide exhibitions space for the UMB to show innovative projects or graduation exhibitions. They can also function as weather protection, as cultural infoteks, for community information or as vending booths for national holidays or other events. The flexibility in the pavilion design along with the greenery and water features provide a range of different scenarios which makes the dynamic walk a non-static identity building public space for citizens and visitors of all ages. Experience and education characterize the dynamic walk. The pavillion structures come in two sizes. All pavilions have the same section and they can therefore be combined to create infinitely long pavilions.



RHYTHM OF EVENTS

YEARLY RHYTHM

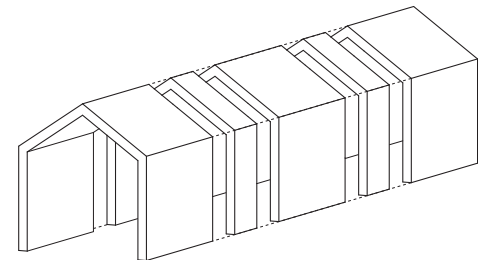




DYNAMIC WALK & RED CARPET 1:500

RED CARPET

The red carpet invites locals to visit the historical campus area and in the other direction invites the students to come and spend time down town. It is a red brick “carpet”, a bicycle and pedestrian lane with a clear direction and character, that connects the UMB with the town centre starting at the active plaza. To shorten the perceived distance, the red carpet is activated starting with the pavilions on the dynamic walk and continued with a variety of active hot spots such as art installations, arranged viewpoints, air stations for bicycles, benches, lighting design and so on. During winter a part of the bicycle lanes become a “white lane” for skiing or kick sleds. The red carpet becomes a new of a kind hiking walk for visitors and locals with clear points of destination.



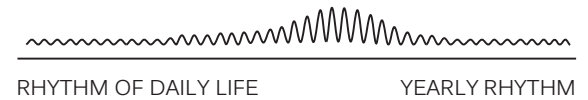
PAVILION STRUCTURE





ACTIVE PLAZA

Active plaza, the main square of Ås, is situated where the two axes meet and is where everyday life takes place. The tradition of agriculture becomes visible here as the active plaza hosts outdoor farmers' markets which complement the range of locally produced goods from the market hall on the plaza. The active plaza also serves as a gathering space in front of the Tandberg museum. The function of a meeting point characterizes the active plaza.

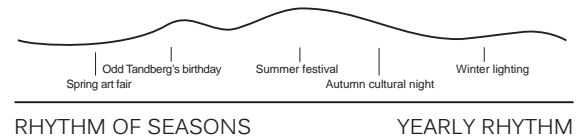






CULTURAL GARDEN

The cultural garden provides a new scene for Ås' culture life. Sculptures are situated among the urban untamed vegetation creating spaces with an intimate scale. The garden plays on seasonal variation. In the summer this public space with its greenery and outdoor art installations are mixed together with the life of the outdoor servings. In the wintertime the cultural garden gets a more serene atmosphere created by different light settings on the snow, the sculptures and the bare trees. The character of the garden is cultural.

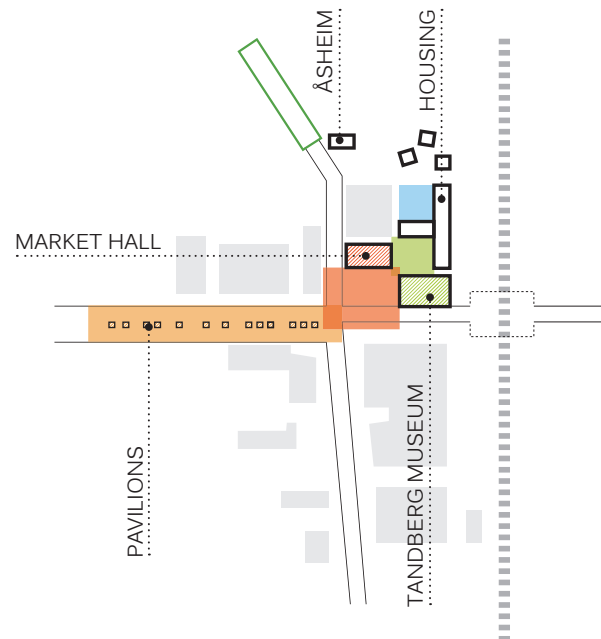


MULTI-SPACE

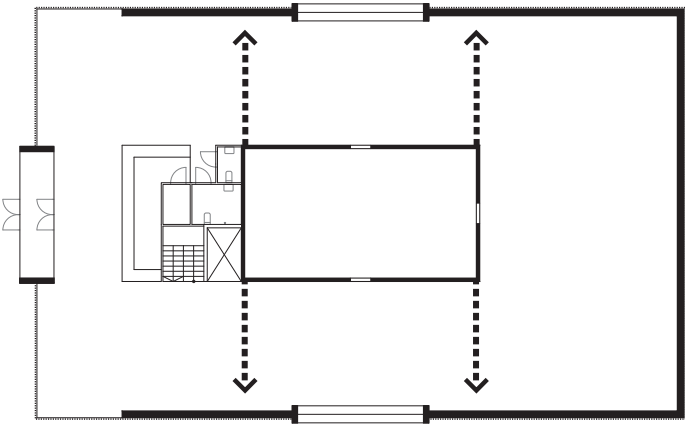
The multi-space is based on multiple functions sharing the same space. The hard surface is marked for parking but also has markings for sports courts. During office hours the cars use the space for parking and after office hours it turns into a venue for sports activities. The general car dominance in the area is balanced with a bicycle station to give the residents an environmentally friendly transportation alternative. Multi-use characterizes the space.



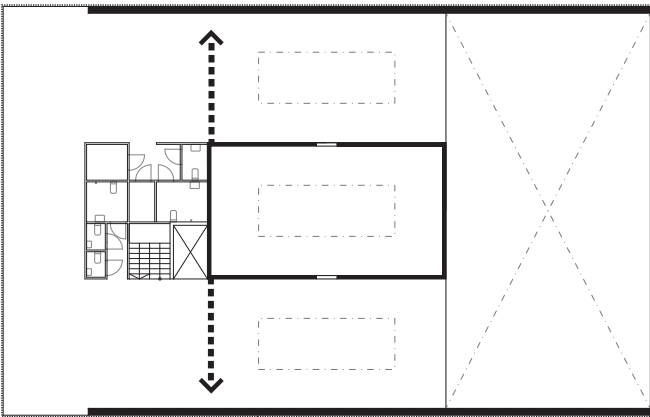
STRUCTURES



NEW STRUCTURE
TANDBERG MUSEUM



GROUND FLOOR

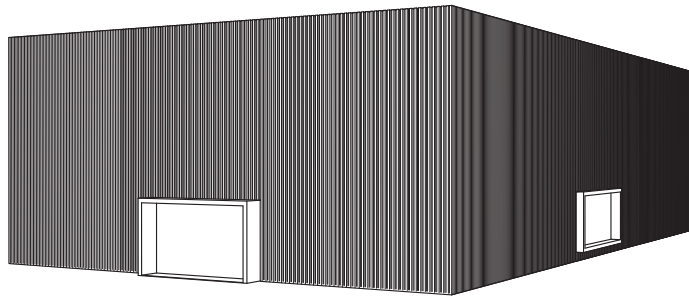


FIRST FLOOR

1:300

TYPE OF ADAPTABILITY
flexible division of space

HOW
functional core with sliding door elements



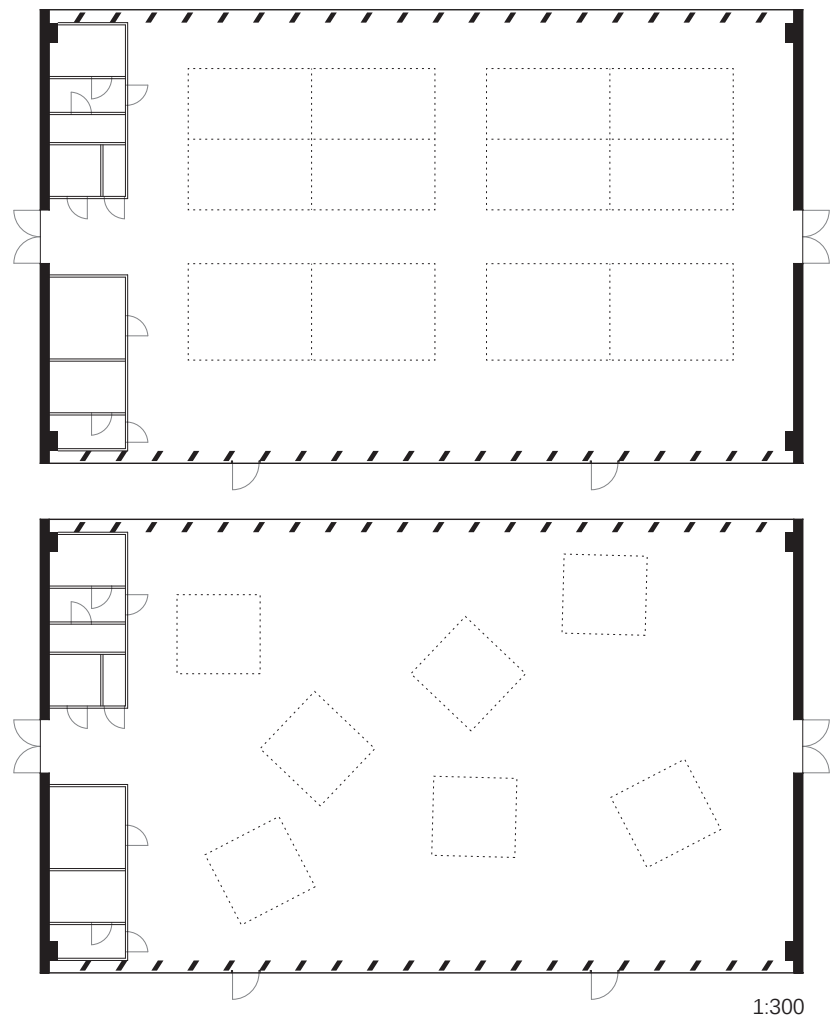
TANDBERG MUSEUM

The two storey building has a functional core hosting apart from vertical communication; reception, café, restrooms, service, black box on the first floor and on the second floor functions for museum staff and archive. The space around the functional core can be divided through sliding door elements on both floors creating different spaces if needed.

A generous window facing the cultural garden has double functions as seating for the museum visitors. The facade consists of wooden ribs, letting the light through at strategic places, with burned surface demanding very little maintenance.

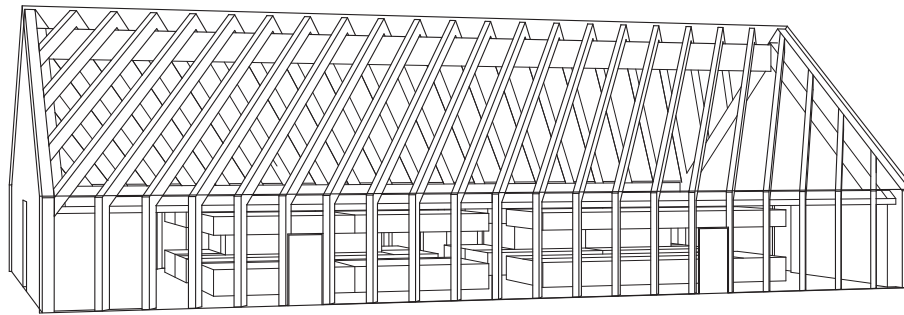
area: 1535m²

NEW STRUCTURE
MARKET HALL



TYPE OF ADAPTABILITY
flexible interior

HOW
load bearing facade
enables free interior plan

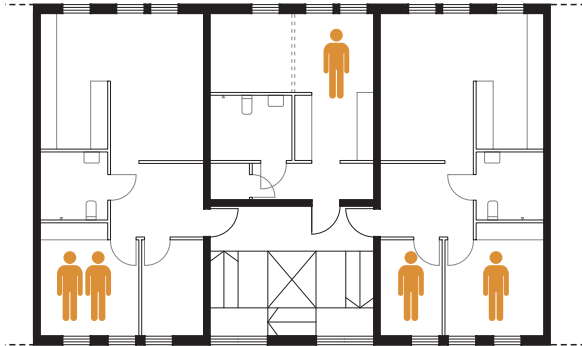


MARKET HALL

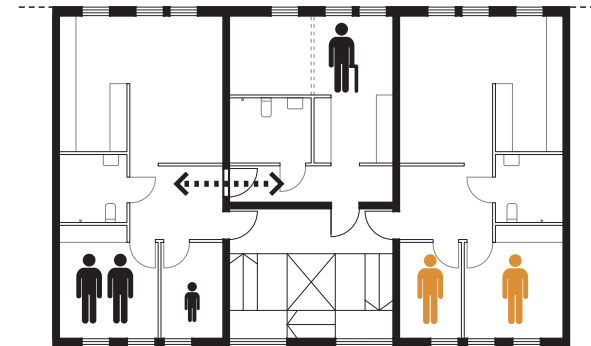
The structure of the new market hall consists of load bearing glue laminated beams and cross laminated timber wall elements. The angled roof beams give a varied effect when approached from different directions. Untreated wood creates a warm atmosphere visible from the outside. The load bearing facade enables a flexible interior.

area: 680m²

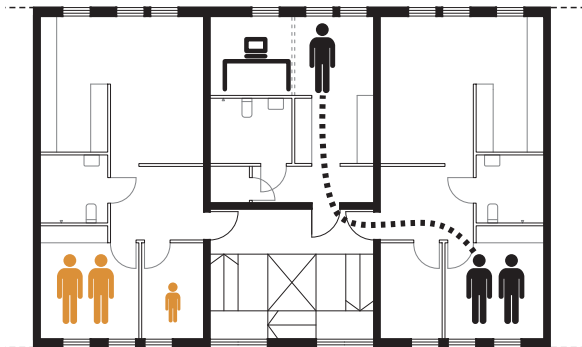
NEW STRUCTURE
APARTMENT BUILDING



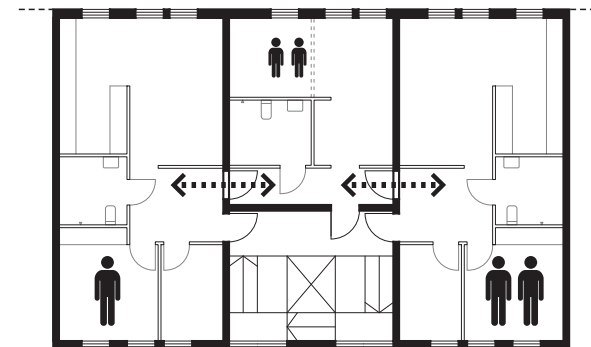
STUDENT HOUSING
Orange figures represent students.



MULTIGENERATIONAL LIVING
The middle unit can be connected to the either of the larger units (66m²).



OFFICE
The middle unit (38m²) can serve as an extra office space for an entrepreneur.



SHARED MIDDLE UNIT
The middle unit can function as a children's room when the parents get separated. SCALE 1:300

TYPE OF ADAPTABILITY
flexible dwelling function

HOW
middle unit enables multiple
dwelling combinations



APARTMENT BUILDING

The apartment building has a flexible, double sided commercial ground floor that can host larger businesses facing Brekkeveien or smaller towards the cultural garden.

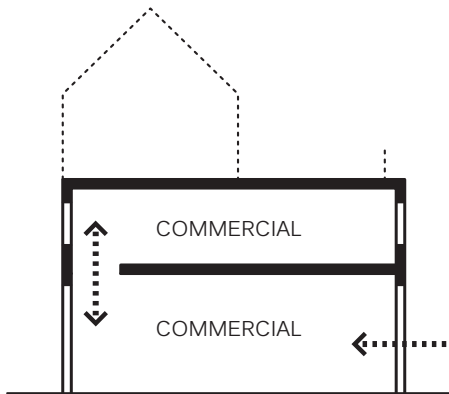
The second and third floor host apartments arranged to fit many different demographic constellations and not only the traditional single living young student for increased social diversity.

area: 1875m²

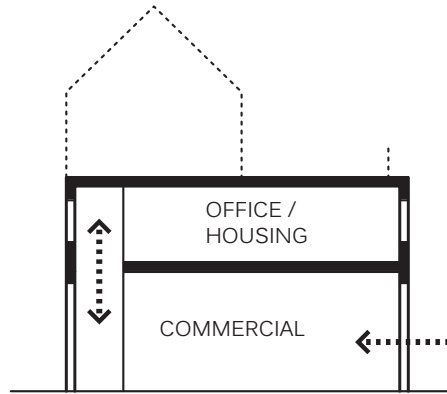
commercial: 625m²

housing: 1250m²

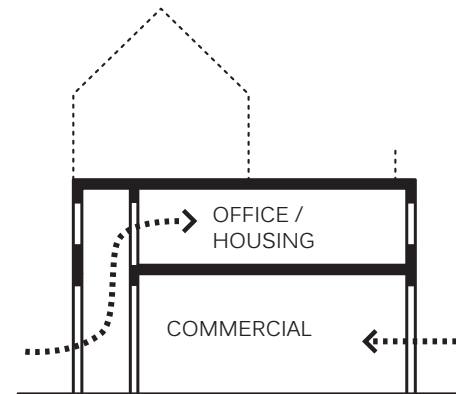
NEW STRUCTURE
YARD BUILDING



ONE FUNCTION
The entire space functions as one.



TWO FUNCTIONS,
ONE TENANT
The floors share a tenant but have
different functions.



TWO FUNCTIONS,
TWO TENANTS
The floors have different functions
and different tenants.

TYPE OF ADAPTABILITY
flexible user combination

HOW
c + c, c + h, c + o, c / h, c / o

c = commercial
h = housing
o = office



YARD BUILDING

The yard building has a commercial ground floor which activates the cultural garden with smaller enterprises that will encourage entrepreneurship. The second floor can, apart from being used as conventional apartments, also function together with the first floor in a variety of combinations.

area: 620m²

NEW STRUCTURE
ROOF TOP HOUSING & URBAN VILLAS



TYPE OF ADAPTABILITY
flexibility in choice of dwelling

HOW
villa qualities + easy maintenance + central location



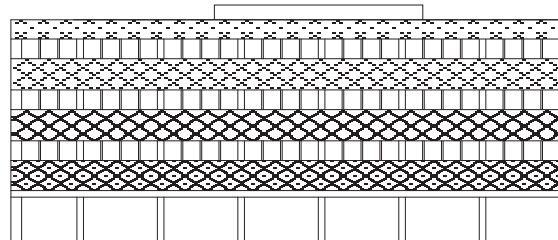
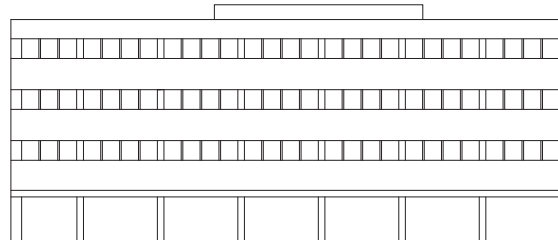
ROOF TOP HOUSING & URBAN VILLAS

On the roof of the apartment building a new typology is introduced. Row houses with villa qualities that are suitable for people, in particular seniors, with high demands on closeness to service and public communications and who might be tired of the maintenance of a traditional villa. This will give a circulation on the real estate market and open up possibilities for younger families to settle down in Ås.

It also brings diversity in architectural expression. In the grove there are urban villas in forest like surroundings that introduce an additional typology to enhance diversity to what is being built in Ås.

area: 1750m² (roof top) + 1000m² (urban villas)

EXISTING STRUCTURE
MEGA BLOCK



Mega is today a building with a supermarket on the ground floor and offices on the other floors. The structure is fairly new and will therefore be kept with minor changes in the facade. The commercial ground floor will be opened up towards Raveien through generous wooden framed shopping windows to further activate the street.

The original brick facade will undergo a rain art treatment which means that patterns will appear when in contact with water. The pattern chosen is inspired by the traditional brick architecture of the UMB.

EXISTING STRUCTURE
ÅSHEIM



The new location of Åsheim provides a node and strengthens the central axis towards the new development in the northern part of Ås. Åsheim will now be in direct sightline on the hill when entering the town from Moerveien. The idyllic surroundings suggest a potential garden café function during summer.



ÅS 2021



ALI, 36, ENGINEER

Ali is celebrating his first year as a villa owner in Ås. Earlier he and his partner used to live in Oslo but they started to long for the countryside after their family grew. Ali and his partner chose Ås because the real estate market offered a great deal of options due to the new housing development in the centre. Ali commutes to Oslo for work, but since the ride only takes 16 minutes, he feels like they have only moved to another neighbourhood.

Living in a small town has both its advantages and disadvantages, but how nice to know your neighbours by their first name, he explains. There is a feeling of community that I really appreciate - especially when the town gathers on special occasions - like the yearly celebration of Odd Tandberg at the museum. It provides a sense of togetherness I guess, he finishes before running off to help his son with a sledge that got stuck in the snow.



KRISTINE, 27, LANDSCAPE ARCHITECT

Kristine is a former student at the UMB and after graduating she opened her own landscape architecture practise in one of the commercial spaces in the yard building. At the moment she lives on the second floor with the office practically downstairs but as the business slowly expands she is planning to eventually move to an apartment instead.



REIDAR, 73, SENIOR CITIZEN

Last year Reidar and his wife decided to sell their villa in the outskirts of Ås and buy one of the modern roof top row-houses in the centre of the town.

The maintenance of the villa and the size of the garden had become more work than enjoyment and they both wanted to live closer to the centre since Reidar's diminishing eye sight stopped him from driving. To have all services within walking distance is luxury, Reidar is often the first one in line to buy the morning bread in the market hall just a few meters away from their home. And, he adds, ironically I am a more frequent visitor in Oslo now in my seventies than ever before. After all these years driving a car, who knew traveling by train could be so comfortable.

EPILOGUE

In the beginning of the thesis process we were, through research, expecting to find strategies, tools and approaches that could directly be adapted into the case studies. We were looking for the perfect answer. We found no such silver bullet. Instead we found new, broader ways of thinking and a multitude of different approaches.

Both of our case studies were contributions to architectural competitions. We won Skanska Sustainable Building Challenge 2013 with our first case study project *Maxa Staden*. This has opened up great possibilities for us during the year. In April we presented our project at Skanska's Framtidsdag (Future Day) to local decision makers. At Ekobygg convention in September we discussed *Maxa staden* with many different actors within the building sector, and in the autumn we travelled to New York together with Skanska for a study trip. In the second competition, European12, our project *Eurhythmia* was sadly not rewarded.

When comparing the processes behind the two competition entries we can see that the work on *Maxa staden* was to a greater extend based on intuition and

a vision about the inclusion of time into our spatial processes. This is something that has greatly affected our way of thinking about architecture: You can see new potential and new potential roles if we just think in a different way. In *Eurhythmia* our search for the perfect answer resulted in more general solution where the visionary level was not equally high.

The method of parallelly developing a practical case study and theoretical explorations was, although tough, very rewarding. We were allowed to explore the field of architecture in a much broader understanding than usually: we could include philosophical thoughts, historical processes and visionary thinking into one semester of intense work. Through constantly ongoing and evolving discussions we challenged our own understanding of architecture: In the everyday work it is easy to get stuck in norms and regulations and lose the sight of the bigger picture including visions and challenging our own mindsets.

