



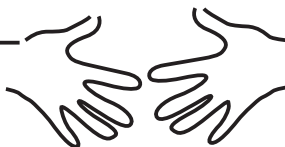
COME TOGETHER

urban co-housing as a new social catalyst at Amtssygehuset

A minimalist line-art illustration of a city skyline with several buildings of varying heights, positioned above the main text box.

COME TOGETHER

*URBAN CO-HOUSING AS A NEW
SOCIAL CATALYST
AT AMTSSYGEHUSET*



ABSTRACT

The concept of co-housing as originally perceived is going through a revival these years, as a steady reaction to contemporary social and societal issues. The modern, individualized society, that is partly a result of extensive urbanization, has affected the way we live out our cities - the blasé state of mind (Simmel 1995) and an increasing issue of loneliness have been descriptive of the contemporary city, and yet there are seemingly no authorities willing to take the matter in their hands.

Solving the problem, is a question of translating the intangible social issues of loneliness and mental distance, and turning them into physical, strategic parameters.

Through the introduction of co-housing in a dense urban context, we seek to make possible the elimination of loneliness and foster communities in the city.

Designing for communities is hard, and to develop a strategy for facilitating them, we have given concrete expression to the issues of loneliness through an iterative process bouncing between social parameters and the physical framework of Amtssygehuset in Aarhus.

Geological conditions make Aarhus a city struggling to employ sustainable rainwater management, but with the natural element of water that biologically draws and attracts people (Pradhan 2012), it is our belief that urban spaces and the communities that happen within can gain a surplus value through innovative ways of handling rainwater.

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READING GUIDE

The theme of this Master's Thesis project is Urban co-housings and their ability to catalyze urban communities and togetherness exemplified through the design of Amtssygehuset, a new urban district in Aarhus, Denmark.

The booklet consists of six chapters and seven appendices containing referenced material.

It is structured according to the general approach of the project, comprising an introductory part 01 setting the scene for the motivation of this thesis.

Part 02 presents the challenges that form the initial problem statement and basis for the theory. Part 03 introduces the concept of co-housing and discussions of implementing co-housing in a dense urban context.

The project site is presented in chapter 04 that ends with a problem statement 2.0, whereupon the design and presentation of Amtssygehuset follows in chapter 05. In this chapter you will occasionally find fully coloured pages that discuss themes related to the urban reinterpretation of co-housing. Final remarks are discussed in chapter 06.

The Harvard method is used to source referenced works, and the booklet is furthermore accompanied by a drawing folder containing plans, sections, detailed plans and an illustration of the imagined development process of Amtssygehuset.

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1

SETTING THE SCENE

INTRODUCTION





ill.: 2 - Happy young ones

“ The world we have created is a product of our thinking; it cannot be changed without changing our thinking.

Albert Einstein

IMAGINE ...

“ *In the beginning was the city. But even in the beginning the city was no static entity.* ” - (Juul, Frost Arkitekter 2009:7)

The primary characteristic of the city is, and has always been, change. Cities are organically changing in line with technological, social and economic conditions. Immigration, unemployment, family constellations and political shifts are all variables that influence the change of cities and the life that plays out in its streets.

The main force of the city is its diversity, its places, where people of various ethnicity, culture, interests and age can meet spontaneously. Through times, this

diversity has made cities the framework of meeting places, adventure zones and innovation hotspots, a place where everything can happen, and a lot *does* happen (Juul, Frost Arkitekter 2009). Maybe even too much?

Georg Simmel, the father of modern sociology, described with a hint of concern the consequences of big city life and its baffling impulses, impressions and rapid tempo. The individual does not have the mental capacity to comprehend all these impressions, and becomes blasé, distant. Since Simmel wrote this text all the way back in 1903, the tempo and the impressions of the big city have definitely not grown smaller (Juul, Frost Arkitekter 2009). The blasé city attitude is perhaps one of the reasons why people in the big city of-

ten feel lonely, even though they are constantly surrounded by other people.

It is our belief, that the contemporary city can be bettered through a revival of the former community ideas that are present in the co-housing ideology. People need a personal grounding, a fixed point in the urban life that is formed through strong urban communities, relations and places.

Communities have always existed. In different types and sizes; it could be a garden community of vegetable cultivators, co-workers in a workplace or a greater national community - or even a European community like the European Union (in Danish formerly *Europæisk fællesskab*, EF) (Hermansen & Nørretranders 2011).

The Danish Dictionary (Den Danske Ordbog) defines community as follows: 'when a group of people come together around something and thereby feel a mutual connection' (Den Danske Ordbog 2017).

Søren Hermansen and Tor Nørretranders deal with a certain kind of community, a community based on the administration of common resources, the so-called commons (*fælled*). In earlier agrarian society, a *commons* was an important common resource shared between residents of a village, most often a grazing land where the villagers let their cattle graze. According to Hermansen and Nørretranders, the air we share and breathe, the seas full of fish or the languages full of words also comprise commons. Critical for the definition of a commons is that everyone has

equal access, no one has ownership or control - it is no one's and everyone shares it. The problem of a commons appears when everyone recklessly takes from its resources. If every villager let an extra cow graze on the common grazing land to gain extra profit for himself, eventually the grazing land would die from overgrazing. With the villagers being extremely dependent on the commons, this would have serious consequences for the individual. This risk appears when no one feels responsible for the commons, because no one owns it. To the problem, there are two solutions; privatizing the commons (so it no longer is a commons) or jointly and democratically administering the commons as a community. However, with earth's great commons there is really only one choice. The

atmosphere and its greenhouse gasses, the oceans and their fish, culture and its creations - no one can claim these to be theirs. When it comes to these, we need to act as a unity, a community to administer the great commons of society (Hermansen & Nørretranders 2011).

Humanity is eating into the natural capital of the planet, and the emissions of our existence has consequences for the global climate. If we want to solve the issue of climate change, if we want to preserve the commons that is our earth, we need to act in unity, and share one approach. In Denmark, the repercussions of climate change are increasing amounts of precipitation, extreme rain events in particular that cause great parts of the cities to flood.

In 2011, we saw a 100-year rain event in Copenhagen, a rain event that can theoretically only be expected once every century. The rain caused sewer flooding and transfixed much of the infrastructure in the capital area. It required a comprehensive and long-term emergency response to reconstruct the area (DMI 2011) and the damage cost was more than three bil. DKK (DMI 2012). If the negative development of climate and precipitation statistics continues, we can expect 100-year rain events much more frequently than just once every 100 years - and they will be even more intense, affecting the water balance in cities distinctively.

However, water is in fact the most vital life sustaining resource for humans right after the air we breathe (Pradhan 2012). We use it for drinking, washing, cooking etc. and it is an important part of the wildlife habitat as well as it offers a recreational value within the city (Aarhus Kommune 2010). Water is in other words a resource; a commons that we all share and perhaps we need to modify the way we perceive this resource. Water holds an attractive force that might be utilized to gather people in the city, to make space for communal activity.

In the context of this thesis, we would like to investigate the idea of the commons - and the community that is formed around the commons - in the setting of the Danish city Aarhus. Rainwater will be perceived as a resource that everyone can gain from, be it monetarily, socially or even ideologically. By reusing water for everyday purposes such as flushing the toilet or watering the garden, we can save perfectly clean water. By holding back rainwater above ground, we can utilize it for recreation and the movements of water on surfaces can be used as leading and guiding features. Yet the most important community introduced in this thesis is the

community formed in a co-housing, more specifically an urban co-housing. Co-housings are in many ways centred around a commons; a commons of physical and human resources. The core thought is sharing these resources - if the co-housing community has it all, the individual needs less. Most co-housings share a common room or common house, washing facilities and outdoor spaces. Some share tools and cars, and some eat together all days of the week. The sharing economy makes co-housing an affordable choice, or alternatively a luxury choice - the 'nice-to-have' things become accessible when the financial resources of all members are pooled into one.

We believe that every individual brings a quality to a community; his or her human resources: helpfulness, frankness, humour or maybe a specific skill such as sewing, cooking or fixing a bike - there really are no limits. In a co-housing community, all these qualities comprise a commons that is not visible, but still everyone can gain from it. We can call it a social commons. The notable thing about the social commons is that it provides a feeling of being needed, and thereby being an important part of the co-housing community.

Now is the time for us to review the issues of contemporary urbanism and focus on fighting loneliness by utilizing our sense of community, before it becomes an all-encompassing issue with serious consequences for our civilization. It is time for us to reach back in time and incorporate previous ideas about communities and co-housing in a reinterpretation that suits modern society. The reinterpretation is a necessary approach, since co-housings are almost completely reserved to the rural and suburban areas of Denmark.

We believe that our role as Urban Designers is to influence the world in which we live. It is our obligation to turn urban problematics to attractive solutions that catalyze urban life, strengthen the citizens' affiliation to the urban spaces, and thereby obtain a happier population.

As designers, our motivation is to create better cities that afford society's everchanging needs, and spaces that interweave the different and new layers of city morphology in a holistic gesture hoping to make the population interested in and want to engage in the urban life.

Our motivation for this thesis is how we as urban designers can create more urban communities within the modern city through clever use of water and new ways of dense urban living!

METHODOLOGY & THE DESIGN PROCESS

Looking at the city we can see the changes that have happened over time; the densification, the new buildings, parks turned into parking and the transformation of characteristic old architecture. But the change we are dealing with in this project is almost invisible. The notion of community is intangible and it can be hard to see what happened to society that so radically changed our sense of community. Yet we do believe that through a general understanding of contemporary social issues such as loneliness and what caused it, we can facilitate the community feeling that may ultimately dismiss these issues.

This project links personal interests, investigating theory, analysis and technical solutions in the attempt to bring innovative design thoughts and a new agenda into the field of co-housing and city morphology.

Struggling to observe or discover an obvi-

ous approach to the issues of loneliness, rainwater management and the physical design of an urban district, we have attempted to seize every inter-disciplinary bone in our body, and make them work together. Realizing the theoretical weight of the project, and the importance of understanding planning processes, the premise of this project is how the approach to urban space and the ability to view the role of planners and policy-makers in relation to the meaning of space, are just as important a part of planning as the actual compilation of designs for the physical space (Juul, Frost 2009). Rome was not built in a day and communities do not appear overnight, which is why planning for them is hard.

The assembled work, thoughts and analysis conducted throughout this project form the basis of understanding the social issues we are facing. To try and solve these issues, it is necessary to transform them into concrete or physical parameters that

can be processed through the design of urban space.

Amtssygehuset in Aarhus has therefore functioned as the 'guinea pig', tested and improved several times in an iterative process. A process that not only demarcated but simultaneously broadened the perspective of the project.

The project report reflects the general approach, where analyses of current issues, the history that brought us to where we are, and the thoughts of sociology's great thinkers form the groundwork. Amtssygehuset is later analyzed in order to place the current issues in a physical context. Lastly a design for the new Amtssygehuset district is proposed through the work with urban communities.

An informed collaboration with planners of the municipality has further made possible a continuous discussion of the possibilities of designing for stronger urban communities.

THE INTERVIEW:

We have tasted their coffee and we have petted their goats. We have seen the inside of their houses, and talked to the founders, the enthusiastic souls that make possible the vibrant life of Danish co-housings. Designing for community is not easy, and it does involve quite a lot of people and personal opinions and interpretations - therefore the task can not be carried out without involving the people that devote their time and energy to urban development in the name of community. There are things that you can simply not read - you need to talk to the people that are the driving forces and experience the world they live in. We believe that these people are the success criteria for the creation of good urban spaces - and the life that plays out within them.

When seeking knowledge from the people involved, the qualitative interview is an important agent in understanding the humane and personal aspects of a given case. Interviews constitute a great platform for interacting with people, reading their expressions and body language.

When conducting a semi-structured interview, it is furthermore possible to continuously develop the interview, add new questions along the way depending on the answers given. This informal style of the interview makes everyone relax, lowering the risk of interviewer bias, where the interviewee might feel pressured to answer a certain thing.

The interviews are conducted for general understanding of the

co-housing movement and as a sub-method for case studies. The interviews have especially served as a way of learning how the process of establishing a co-housing works. What did not work in the process? And how it could be made easier for future co-housing founders?

THE CASE STUDIES:

The strength of the case study is that it can teach by example. Case studies serve as a good example for others to understand a general idea for a project. It has been a useful tool to give ourselves and potential readers a picture of the traditional Danish co-housing community that is sought reinterpreted through this project.

Combined with interviews of founders and inhabitants of the co-housing subject to the study, the case study provides a number of experiences

A case study of these co-housing communities is not only about architecture, activities, the number of dwellings or inhabitants. It is about the process of creating a fellowship of people with shared values and interests, it is about the administrative organisation of the entire project, and it is about the ups and downs along the way from idea to completion and inhabitation.

SOCIETAL CHALLENGES

BACKGROUND

Denmark is perceived as one of the happiest populations in the world - but is that really the case? This chapter introduces the societal challenges of a growing sense of loneliness on a national level, and the human consequences of feeling lonely. But loneliness mistrives in communities and thus this chapter will examine the sense of community and the evolution of the term through history in the aim of stating why communities are needed in contemporary urban planning. The city must be perceived as a commons that we all must care for to achieve better ones. Introducing different terms of urban communities and how they can intersect will emphasize on how the notion of communities can be used as an engine in urban design. Finally, the chapter will explore the urban challenges related to extreme rainwater events, yet the vital, aesthetic and recreational ability water has to draw and gather people into new meetings.



LONELINESS AND IT'S IMPACT ON LIFE

We call it a national disease. A disease just as dangerous as smoking if you ask John Cacioppo, one of the world's leading social neuroscientists, who has been studying the consequences of social isolation and loneliness for most of his career (Cacioppo 2014).

Many of us have probably tried it ourselves or know someone who has been lonely or expressed the feeling of loneliness. Measuring loneliness is a difficult matter because the experience is subjective, but even the mere feeling of being lonely has the effects of actual social isolation - you can be lonely in company with others.

Experiencing loneliness for a short period of time is not a problem, but recent research reveals that long-term loneliness is a far more serious problem than expect-

ed, and has significant impacts on health and well-being (Lasgaard & Friis 2015). A growing number of studies suggest that loneliness increases the risk of high blood pressure and cholesterol levels, cardiovascular diseases, fatigue, pain, sleep disturbance, and depression. Inadequate social interaction, loneliness, isolation and low degree of integration and social support have an impact on our well-being and can ultimately have fatal consequences (Lasgaard & Friis 2015).

Social media and rapidly growing technologies within all forms of communication have made it easier than ever to communicate, find new acquaintances, maintain relations to friends far away, or talk to family without even leaving the house; *'... the new media make possible a kind of engagement-with-the-world at home:*

we don't need to go out at all.' (Walzer 1995:325).

The new possibilities are good and interesting tools, but behind the enthusiasm for the technical advancements, lurk the restraints of loneliness. There is a risk of losing time to actually gather around something, be with someone, and be something for someone else.

In Denmark, 4,6 % of the population feels lonely on a regular basis (Lasgaard & Friis 2015:13). This is more than 210.000 individuals, and for years, the problem has been increasing, especially because it is considered a taboo to be lonely and alone - If you are lonely, it must be because no one else likes you.

We need social life and interaction with other people to be satisfied as humans.

The popular movement against loneliness

'Folkebevægelsen mod Ensomhed' is an organization founded by more than 60 organizations, associations, schools, municipalities and businesses as a reaction to the increased loneliness (Folkebevægelsen mod Ensomhed 2017, a). Loneliness mistrives in communities. Therefore, the annual event 'Danmark spiser sammen' arranged by the organization gathers small communities all over the country with communal eating and events, where people can meet and enjoy the company of others. The intention is to create an awareness and spread the messages, and at the same time make it easier for citizens to invite others to eat together (Folkebevægelsen mod Ensomhed 2017, b)

III. 3

According to Statistics Denmark, the Danish government spend an extra 2,2 billion kr. yearly on treating and nursing citizens that are lonely, compared to citizens that are not lonely. (Eriksen et al. 2016)

According to the Red Cross Denmark, 6,1% of residents within the municipality of Aarhus feel lonely on a regular basis, leaving Aarhus number 25 out of 98 on the list of Denmark's most lonely municipalities. (Knudsen 2014)

8.400 years of life are lost annually due to loneliness, decreasing the entire population's average life expectancy with two months. (Eriksen et al. 2016)

400.000 extra doctor's appointments are made by lonely people. (Eriksen et al. 2016)

DENMARK, THE HAPPY PEOPLE

Since the UN launched their 'World Happiness Report' in 2012, Denmark has been in the very top of the list of the world's happiest countries. The list measures countries on parameters such as trust, freedom, health and generosity. According to Christian Bjørnskov (Bruhn 2016), professor of economics at the University of Aarhus, the reason why Danes are so happy is because of our *sense of community*.

“ The Danes trust each other. When we stand together, we can succeed in everything.
- Christian Bjørnskov

(Bruhn 2016)

These statistics are very much contrary to the apparent issues of loneliness in our population. If we have such a strong sense of community, why do so many people at the same time feel lonely?

HOW COMMUNITIES CHANGED

The old-type community described by Hermansen and Nørretranders (2011) represents a kind of community that people were dependent on - they were a part of it simply to survive, and if the commons mis thrived, every individual of the commons community mis thrived.

In the last decade of the 1900's sociology's classic writers such as Tönnies, Simmel, Durkheim and Weber, have described these 'old' communities; Com-

munity is a social organism in which individuals can see themselves because they have a *place*, a *role* and a *function*. Everyone contributes to the community and thus feels needed and acknowledged - it is through this community that you obtain a *social identity*. Communities in traditional society were decided by norms, roles, rules and power structures - everyone was 'locked in position' according to their social identity, status and profession. Family was the strongest network and it was normal for a child to inherit a parent's profession. The course of your life was laid out from the beginning, representing a strong social heritage (Jørgensen 2009). But the form of family life has changed.

NEW FAMILY STRUCTURES

In Denmark, we have a strong welfare system that helps us take care of our children, our old ones, and those physically, mentally or financially impaired. Children are sent to daycare, elderly to a nursing home and impaired citizens receive care from the state. Generations are no longer co-dependent, and the consequence of this welfare model is therefore a radical change in family structure. In former times, people had children because they were needed - needed to help with daily work and tasks, needed to provide for the family in the future and needed to take care of their parents once they were old.

Today eldercare is often managed by the





The Notion of Communities

Community is defined as a unit of people who share common interests and are linked with a connection, whether it is a location, a religion or social interests. (Merriam-Webster 2017).

ill. 4: - Denmark's population is perceived as being one of the most happy with a great ability to stand together when it comes to something special, still a high degree of loneliness

state, and there is a significant reduction in childbirth, because they are no longer a necessity, they are a choice. Because of this development, housings with more than two generations are rare. In other European countries like Italy or Slovakia, the percentage of 'children' over the age of 25 living with their parents is extremely high compared to Denmark. In these countries around 50 % live at home, whereas in Denmark only 1,8 % live with their parents (One Europe 2014). At the same time, state pensions are not nearly as high as they are in Denmark, and therefore many of the parents invite their own parents to live with them too. Consequently, up to four generations can be living in one single house creating much stronger family ties.

SOCIETY INDIVIDUALIZED

Through the European modernization, the meaning of community lost its worth. The rapid change in society and its institutions caused a general insecurity and a lapse of tradition. On the other hand, this new, modern way has given people a chance of self-realization, where nothing is pre-determined by who your parents are, where you live or what religion you might belong to. Every man decides his own faith, he chooses his own job and way of life - every man is his own fortune.

With this development follows the chance to choose one's communities, and form one's own social identity. Communities and identity are no longer *attributed*

through language or nationality, job or social status, but *chosen* based on interests. They therefore call for a reason to join and must be meaningful for the stage of life in which one finds oneself - putting it on edge; community is an investment that must carry a social profit. This does not mean that all solidarity and fellowship has been taken out of the present, but for those who might remember the collective thoughts of the 70's, there is a doubtless loss linked to the development of modern society. A loss of culture and community feeling. Question is, if maybe there is also a possibility of actually finding an even stronger personal anchorage in a chosen community (Jørgensen 2009).

“ There is perhaps no psychic phenomenon which is so unconditionally reserved to the city as the blasé outlook.

Simmel 1995:35)

THE CITY DWELLER

Cities have grown bigger and denser due to the general increase of population and are characterized by many people living close to each other. Everyday the city dweller meets a countless number of people, he hears neighbours upstairs and downstairs, the sounds of people in the street - he is never really alone in the city. However, city dwellers do not feel less lonely than residents in small villages where people live more isolated. The city dweller does not necessarily know or interact with the people he passes by daily or the upstairs neighbour that he hears (DAC 2014,a).

Moreover, world's cities follow the increasing globalization and are constantly adapting to new technologies. The issue of virtual relations is that they are superficial and non-physical. Relations in the metropolis are the same, as Wirth states in his 'Urbanism as a Way of Life': *"The city is characterized by secondary rather than primary contacts. The contacts in the city may indeed be face to face, but they are nevertheless impersonal, superficial, transitory, and segmental"* (Wirth 1995:68).

THE STIMULI OF THE CITY

Continuously new urban initiatives stimulate our daily life, and to be able to find our way in the jungle, the individual embraces himself because of an incapacity to react with the required amount of energy that it takes (Simmel 1995).

"If the unceasing external contact of numbers of persons in the city should be met by the same number of inner reactions as in the small town, in which one knows almost every person he meets and to each of whom he has a positive relationship, one would be completely atomized internally and would fall into an unthinkable mental condition." (Simmel 1995:35)

As Simmel states, the city is so full of impressions and stimuli, and the human body and mind cannot grasp all that information. To protect ourselves we create a shielding organ around us, that

lets us eliminate the chaos, we experience in the city. To the urban dweller impressions and events become a homogenous mass, gray and flat in its colour. Simmel contrasts the life of big cities and small towns - he does not make himself the judge of whether big city life or small town life is better - but he is concerned with the influence the big city can have on mental life, and how the individual adapts to its terms. The small town is characterized by close human-to-human relations, a bigger emotional engagement and a personal familiarity with other town residents. The economics of trade are alive and well in light of the personal acquaintance with the person selling you goods. According to Simmel, this quality is better than the quantity that represents the big city (Juul, Frost 2009).

A NEED FOR COMMUNITIES IN URBAN PLANNING

In the big city relations and communities can be exchanged because they are not actually binding (DAC 2014,a). In the city there is a wealth of opportunities and choices, you are no longer bound by social affiliations. The freedom of choice in the big city can make the individual rootless and restless, because no limits are predetermined, and often we end up deselecting instead of making the hard choice for ourselves. However, the social interaction between people is necessary to fulfil basic human needs, and these needs are met by having daily contact with other people or act in relation to others.

Community and solidarity are some of the foundations of the Danish welfare state, and there is a general desire to enhance and develop communities in the society to accommodate future challenges of loneliness, as seen with the several movements arising. There is a unique ability to stand together, and we need this strong community in the global chaos of insecurity - *We need to make it easier to join communities that are meaningful and substantial, allowing everyone to engage and feel needed!* We need to reassess the way we perceive the community.

A bit of history

Since the end of the 19th century, urbanization has gone wild. Increasing wealth and better nutrition and health in rural areas caused an excess of births over death, and through the extension of transportation systems the expanded population were now able to move to the city and work in factories and craftman's enterprises. In just fifty years, a large portion of the population had moved into the cities, so in 1921 around half of the population were city dwellers (Busk-Jensen 2015). Today 38% live in Denmark's ten biggest cities and only 12% live in rural districts. Just five years ago these numbers were 36% and 13% (Danmarks Statistik 2017).

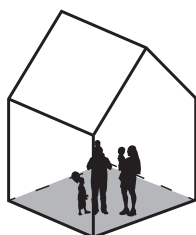
URBAN COMMUNITIES

The community can exist in many constellations and is not as homogeneous as perceived pre-industrial, where it was mostly facilitated by the family or as a unit within the small society. The contemporary community may occur as brief meetings or as long-term relations between people.

Even though the city already holds different communities, we believe that in order for new urban communities to occur, we must perceive the city as a commons, a shared 'grazing land' that everyone must care for. Through careful design of the urban space,

these communities can target different people, different engagements and different needs, and thus bring together a diverse group of people, forcing and encouraging them to interact.

In the following, four types of communities within the city are defined. Terms, we have defined on the base of the written theory, and deduced from studies of how communities occur in contemporary urban spaces. As explained in the previous part, these urban communities defined are more often chosen by the participants than attributed through social heritage.



ill. 5

THE FAMILIAR COMMUNITY

The Familiar Community is the attributed community - the only un-voluntary community - that is centered around everyday life within the settings of a family's private dwelling. It includes few people, and generally only members of a single family, however, it can include other relatives or very close friends.

Over the past decades the configuration of the familiar community has changed radically, from consisting mostly of one nuclear family, to being a mix of split-up families forming new ones. However, the characteristics of the community stay unchanged; laid-back, caring and informal.

Members of this community may include:

- Family
- Close friends



ill. 6

THE INTIMATE COMMUNITY

As its name suggests, this community is one that is somewhat small and intimate. It is a community where everyone knows each other, or at least recognizes each other, and where participants share a kind of identity.

Members live in close proximity to each other, making the Intimate Community an everyday kind, where people follow each others' lives, and maintain strong and continuous relations.

This community may exist as:

- An owners' association
- 'The meeting over the hedge' (neighbours)
- An ecological community



ill. 7

THE LOCAL COMMUNITY OF INTEREST

This community is hard to define. The word 'local' is relative and can have different meanings in different contexts. In a small village, the local community will be the entire village. In a bigger city, a Local Community can be a district or merely based on common interests such as sports. The local community is thereby something you choose and engage in, something that will only survive when someone has interest herein.

A Local Community may be based on:

- Local associations, sports clubs
- Local politics
- Shared interests



ill. 8

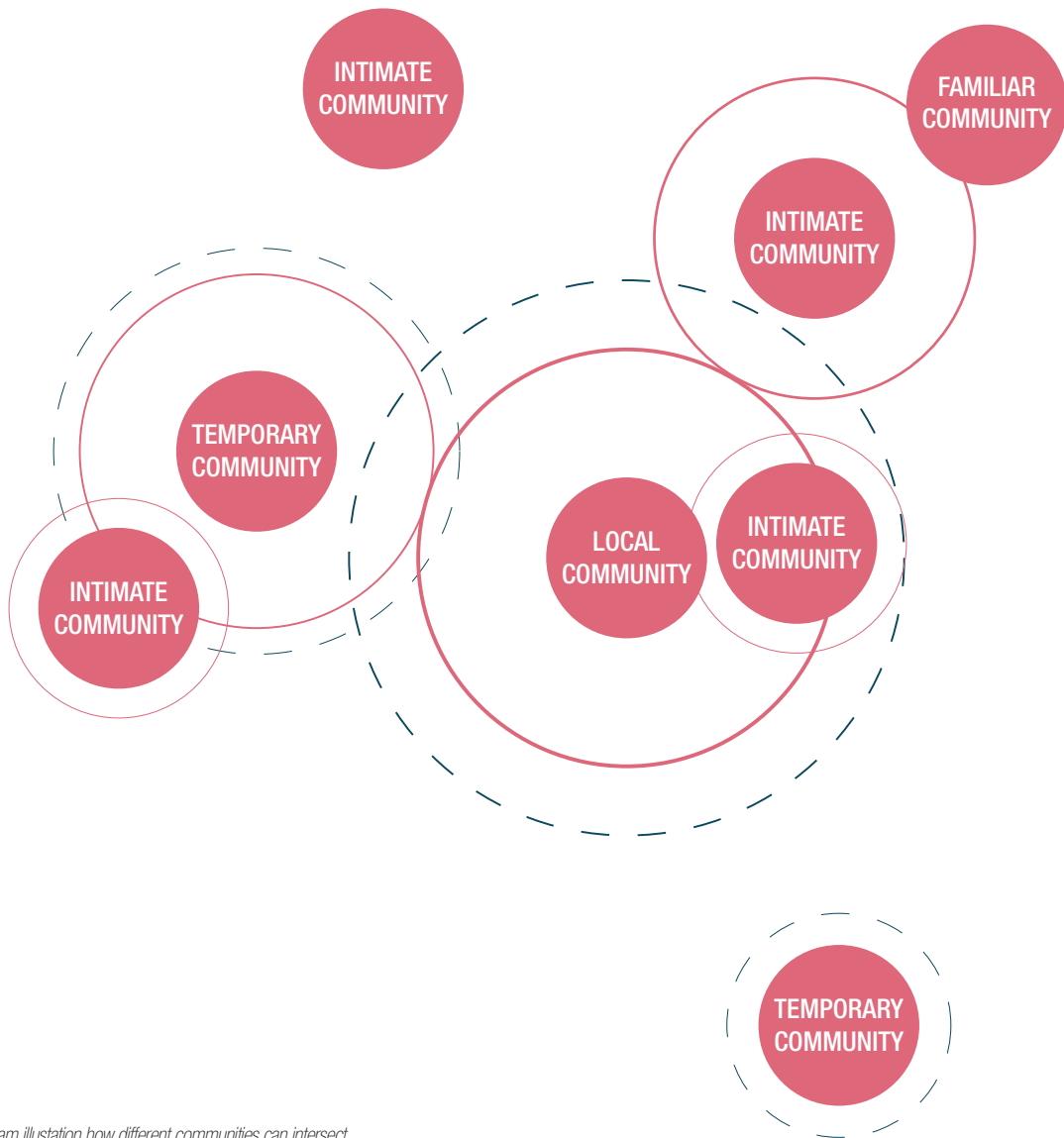
TEMPORARY COMMUNITIES

Temporary Communities are generally based on interest. When at a concert everyone is there for the same purpose; to listen to an artist, which they find particularly talented or interesting. You are so to speak in the same boat.

The temporary sense of community often arises from an unpredictable meeting, dependent on time and space, making it the kind of community possible between strangers. It is short-lived but has potential to develop into a lasting community or simply a relation.

Temporary Communities may appear:

- At events
- On the playground
- In a waiting line
- On a bench



Ill. 9: - Diagram illustration how different communities can intersect.

INTERSECTING COMMUNITIES

The Urban Communities introduced should not be understood as societies that necessarily exist cut off from other communal environments. Rather, they must be perceived as abstract communities with undefined edges, in which people act with others, whether these are neighbors, like minded peers or even people of completely different lifestyles. The Urban Communities can exist in parallel, with or without interaction, overlapping each other or exist as separate communities. However, it is when the communities intersect that the interesting meetings take place, where people are confronted with other communities, different behaviors, new lifestyles etc.

Exemplified, a meeting between different communities can occur when the smaller community in the food club invites new members to communal eatings, and thereby creates an interaction between the Intimate and Temporary Community. Two parallel communities, such as a small knitting club use the premises next to a larger chess club in a local community hall. Here, two Intimate Communities exist in parallel with each other, without necessarily having any interaction.

In that way there are lots of ways, in which these different communities can interact. Through the right urban planning we believe that this can be facilitated in the urban space by giving concrete expression to the physical framework of these communities.

WATER - A VITAL, AESTHETIC AND RECREATIONAL RESOURCE IN SOCIETY

Since 1873 the temperature in Denmark has increased with 1,5 degrees. In the same period the precipitation has increased with 15%, a development that do not appear to better (Klimatilpasning 2015). Forward 2100, the climate changes are expected to increase even further. Investigations predict that the climate changes will cause more intense and extreme weather conditions with more extreme and frequent precipitation and storms, as well as rise of temperature and sea level (Olesen et al. 2014).

Cities mostly consist of non-permeable surfaces making them extra exposed for such extreme events. In Denmark the biggest challenge in relation to urban areas will be the increased risk of flooding caused by insufficiency of the sewer system (Olesen et al. 2014) as the ones we saw in Copenhagen in 2011, but also 2012 and 2013 that caused devastation

between 6 - 9 billion DKK (Københavns Kommune 2015).

We need to adapt to the future climate situation to avoid economical challenges and insecurity among the urban population. However, the water must not only be seen as a problematic within the city, by also as a resource adding a recreational value to the city scape.

Water represent life and is essential to earth's existence. It can occur in many different ways and take on a wide specter of characters adding another level of mysterious to the fabric of the city space, for example the glittering ice crystals on the city gutters, the pealing sound of the city fountain or the mirror-bright basin reflecting the city life (Polácková 2012). In its many forms, whether it is dynamic or static, natural or artificial water fascinates people in an unconsciously way, however never explicitly proved. Nonetheless, it cannot be

denied that the physical presence of water and contact with the water has a positive effect on humans and the ability to evoke a sense of joy (Pradhan 2012). Water invites humans to see and touch, and the presence of water in the city positively affects the microclimate and thereby the physical urban setting making cities more pleasant and aesthetic to live in. Water has a replenishing and rejuvenating effects on humans mental hygiene additional to a healing effect on human mental mind and everyday worries (Polácková 2012).

Wallace J. Nichols, a marine biologist and writer, states that humans often feel awe





III, 10: - Water's ability to draw people.

when in relation to water. This positively affects the humans' relations to others and their compassionateness (Gregoire 2016):

'When you experience that feeling of awe, you get that 'one with the universe' feeling. You feel connected to yourself, the world around you, and whoever you happen to be with. That puts you in a 'we' state of mind ... our brains are hardwired to react positively to water and that being near it can calm and connect us, increase innovation and insight, and even heal what's broken'

This value must be seen as an aspect that can be utilized in urban design by the means of especially rainwater management and act as a tool in the effort to create a sense of togetherness in the urban space.

Water is not something we can choose to deal with in the city - it is something we have to deal with in the aim of preventing catastrophic consequences of flooded sewer systems damaging both living conditions and human health.

"An aesthetic of urban design must therefore be rooted in the

normal processes of nature and of living. It should link function, feeling, and meaning and should engage the senses and the mind." (Spirm 1988:108)

Hence, it is important to think about a multipurpose usages of the storm water management design to make the citizens as well as the city benefit from the presence of water. If the water facilities are well designed, it holds both technical, aesthetic and usable solutions that can host activities and create aesthetic value in the city while it create a sense of togetherness facilitated by these solutions.

LIVING TOGETHER

INTRODUCING CO-HOUSING

Introducing co-housing on the urban fabric will set a new innovative agenda exposing innovative ways of living focusing on coexistence and togetherness - an urban design tool in fighting loneliness. The following chapter will unfold the definition of co-housing, a concept that started in Denmark back in 1967 as an attempt to address a societal issue. Co-housings have always had an agenda, it has always evolved around special wishes and ideologies shared by its residents. Three of Denmark's co-housing communities will be investigated - from Sættedammen the very first co-housing to UrbaniaCPH, an urban co-housing community still on the drawing board in the aim to understand the ideologies and how they have changed through times related to the current society. The three cases reflect different motivations for initiating their community, and though these we will inspect possible motivations to form one today. The chapter will add yet another definition to the concepts of urban communities and assign how the communities can intersect and influence the urban space for in the end to emphasize how city co-housing must be understood compared to ordinary low-rise co-housing.





The map illustrates the more than 100 co-housing associations in Denmark. The co-housings are distributed all over the country, however most of them are located in the suburbs of the major cities. The red circles indicate co-housings located more than six kilometers from the city center of the major cities: Copenhagen, Roskilde, Odense, Aarhus, Randers and Aalborg, whereas the green circles indicate co-housings within six kilometers from the city center. What the map also indicates is, that those co-housings located within the six kilometers from the center are still in the outskirts of the city giving the possibility of open spaces and low-rise architecture as opposed to the dense districts with minimized space.

THE NOTION OF CO-HOUSING

On a global level, there might be several ways to perceive co-housing, and it very much depends on the context in which one seeks the concept. Co-housing is where privacy and community are sought united.

In the context of this thesis, the word co-housing must be perceived as several individual separate housing units, which are arranged in symbiosis with each other.

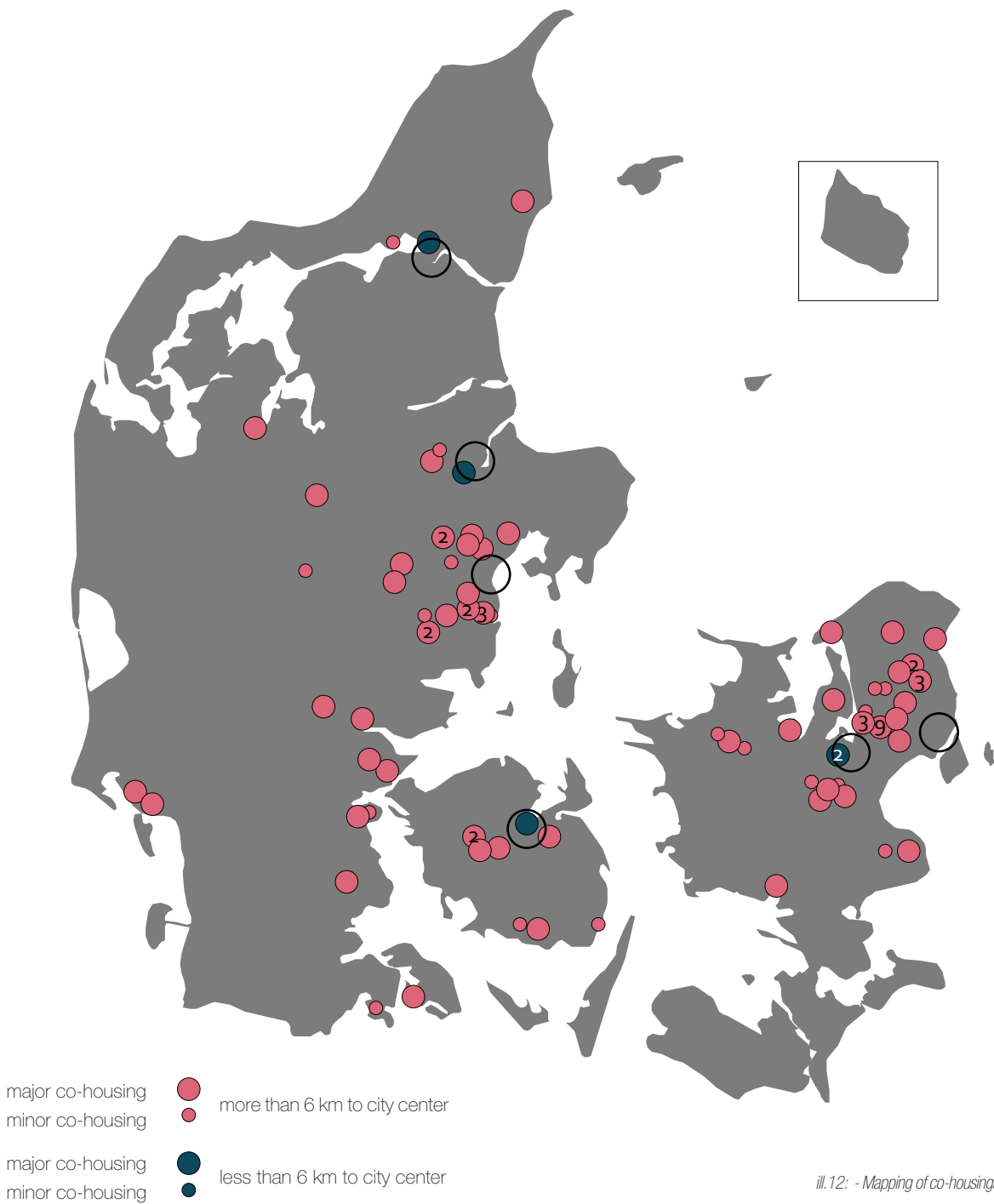
Co-housings can both consist of single houses located in a landscape, an apartment block adapted to a community or a terraced house building organized around a community. It is not the architecture that is important. The essential is that the members in the spirit of the community

commit to different practical and social obligations in the daily life. Still, a high degree of privacy is ensured, with the opportunity to retreat to private living units. Consequently, the concept of co-housing is not to be confused with the collective as a housing form where the daily life is much more organized collectively and where the bedrooms are the only private spaces. The co-housing concept thus embraces a wide target group, where young people, families with children as well as old can live in symbiosis, because the co-housing residence offers a degree of private space. Thereby co-housings target the increasing loneliness in the city by utilizing the facilities for more togetherness by means of common spaces. In the spirit of an enhanced togetherness, a part of the individual space is given up for the benefit of the community and designated to common areas, which

all have access to - a take that intensifies the ideas of coexistence.

The mentality behind co-housings could be a confrontation with the consumption world we live in. Sharing cars, appliances, electronics or services, living ecologically or sustainably or even with a passion for taking care of others in need.

In the attempt to understand the motivation behind co-housings and the process related to the establishment of these, it is necessary to investigate existing co-housings with different motivations and approaches. Additionally, it is important to understand the effect of the co-housings to their surrounding environment and the programs integrated to ease interactions and new meetings.





CASE

1972 - SÆTTEDAMMEN

Hillerød, Denmark, 1972
Residents: 70
Dwelling units: 27

community // flexibility // sociality // families //
children // elderly // family life // hens // eggs
// no cars allowed // micro-farming // rethink //
Hillerød

MOTIVATION:

In 1967 Politiken published a feature article by Bodil Graae named '*children should have a hundred parents*'. It dealt with a sad societal trend of children constantly being told what to do - and especially what not to do. Children had no freedom of play and they were born into a world of adult regulation. Her point was that through good neighbourship, children should have a hundred parents to look after them, and they should be allowed to play as they desired. Bodil Graae encouraged people to contact her if they were interested in creating a new way of living together and altering the norms and conditions of family life (Graae 1967).

Several people responded to her plea, and in 1972 they formed *Sættedammen*, Denmark's and world's first co-housing. They were of course inspired by previous and also ancient ideas of dwelling forms all over the world, but they formed the first co-housing community based on an idea of and a shared ideology of reorganizing the everyday structure of family life.

They wanted to influence the built environment, and had realized that the environment with which we surround ourselves has a big influence on family life and the only people to do anything about it is ourselves! In their opinion it was unreasonable that a con-





ill. 13: - The typology of Sættedammen

ill. 14: - The community within Sættedammen

tractor's profit, a municipality's lack of fantasy or money, or a pure case of coincidence should decide how something as important as family life is lived (Bendixen et al. 1997).

FACILITIES AND COMMON INITIATIVES:

Sættedammen has one common house and common washing facilities. They have outdoor areas where no cars are allowed, enabling children to run around as they like without compromising their safety. With several playgrounds, the co-housing is visibly centered around the initial idea of making better conditions for children and their pursue of doing what is fun.

Up to four days a week, residents in *Sættedammen* can join the communal dinner, taking place in the common house. Besides the weekly dinners and the weekly Friday Get-Together ('fredagstræf'), residents can choose to engage in walks, poultry- and rabbit keeping, several orchestras, the summer-, christmas-, new year's- and midsummer party, the saint Lucia parade and much more activities (*Sættedammen* 2017).

ARCHITECTURE AND TYPOLOGY:

The buildings in *Sættedammen* are arranged in a cluster surrounding a common outdoor area.

The possibility of individual adjustments was of great concern for the originators of the co-housing. The ability to organize the private dwelling for all stages of life, and thus making possible a lifelong residency in the co-housing was essential. So the co-housing organisation hired architects Theo Bjerg and Palle Dyreborg. A few years earlier, the architects had presented an interesting building system of small houses that had no permanent inner walls, just one bearing beam in the middle, and easily movable walls. The building system had never been carried out before, and *Sættedammen* is the only example hereof.

Among residents the buildings are called 'adult LEGO bricks'. Many of the houses have been modified since they were built in 1972 and some of them even constitute small 'collectives' after families have split up and one parent or the other has readjusted and welcomed other adults to share their dwelling amongst them. Several of the buildings now also feature additional annexes and sheds (*Sættedammen* 2017, Bendixen et al. 1997).

CASE

1992 - ANDELSSAMFUNDET HJORTSHØJ

Hjortshøj, Denmark, 1992
Residents: **270** - 170 adults and 100 children
Dwelling units: **119** divided in 8 dwelling groups

Sustainability // ecology // farming // agriculture
// De Fire Istider // wednesday cafe // bakery // protected workplaces // shop // green // lakes // nature // shared cars // vegetable club // Hjortshøj

MOTIVATION:

The idea of creating an environmentally sustainable co-housing near Aarhus, was initiated back in 1986 in a night school course taught by Jørg Gaugler and Kaj Hansen. Attendants of the course were inspired and joined forces in the establishment of *Andelssamfundet Hjortshøj*, with the idea that people should live their life on earth without leaving a footprint.

The first buildings were finished in 1992, and their ways were unconventional. Buildings were built with soil and covered with clay, a way of building sustainable that was way ahead of its time - or far behind, some might argue.

The many years from the first initiative to the actual execution of the co-housing, was spent trying to convince Aarhus Municipality that houses could actually be built from clay, stamped soil and non-impregnated wood. They managed after successfully making a test house, and hereafter dwelling group 1 was on its feet. Dwelling group 2 followed shortly after with houses built from bricks manufactured by the inhabitants themselves (*Andelssamfundet Hjortshøj* 2015).

The houses represent a number of experiments in the field of sustainable housing, energy, insulation, building materials and architecture.

24 years ago when the community was started they were far ahead of legislations and the environmentally sustainable demands that were the norm, however, today the demands for building sustainably are very high, and the buildings from 1992 can therefore not compete with today's norms. But since the community is constantly growing and evolving, new and innovative ways of building sustainably and saving energy are tested. Even those that are not universal. *Andelssamfundet Hjortshøj* even has its own power supply through passive energy, solar heat, solar cells, a local heating station running on woodchips, a stirling

motor and a stove mass heater (*Andelssamfundet Hjortshøj* 2015).

FACILITIES AND COMMON INITIATIVES:

The co-housing community has five common houses in total, which means that some of the dwelling groups share a common house. In these are laundry facilities, a kitchen, a big room for communal dining and a variety of entertainment facilities like a stage, a small bar and sound systems.

The co-housing owns two shared cars - electric of course - that residents can subscribe to and use for a small monthly fare.



Every Wednesday there is a cafe open to the public where coffee, tea and bread can be purchased for a symbolic price (Andelssamfundet Hjortshøj 2015).

In the spirit of their sense of community, *Andelssamfundet Hjortshøj* holds one dwelling group that accommodates 16 people with special needs. The community therefore features a number of protected workplaces, among these a small shop where they sell organic goods, meat from own farming, eggs from their own hens and bread baked in the community kitchen along with pack dinner-kit of leftovers from the monthly communal eatings.

Besides animal stock, the co-housing has a vegetable society, where not only members of the community but also inhabitants in the city of Hjortshøj can join. 100 members pay an annual fare of 1100 kr. per person to participate in the growing community

and maintaining of plants and vegetables, and when fruits and vegetables are ripe they are free to collect as much as they need (Andelssamfundet Hjortshøj 2015). Thereby they also engage the local society in their community.

ARCHITECTURE AND TYPOLOGY:

Andelssamfundet Hjortshøj features an endless number of different architectures and different ownerships; owner-occupied accommodation, leasehold accommodation and social housing. Many of the houses are built by the inhabitants themselves experimenting with unconventional ways of sustainable building, bringing a diversity and a creativity to the architecture. Honorable mentions are an octagon house, a log house, round wooden balconies - You name it (Andelssamfundet Hjortshøj 2015).

ill. 15: - A selection of the typology i Andelssamfundet Hjortshøj



CASE

2018 - URBANIA.CPH

Maximum 5 km from the Town Hall Square, **Copenhagen**, **Not yet built**
Residents: Not yet known, but there are approximately **250 members** on the waiting list
Dwelling units: **100**

Urban // life // dense // social housing // coexistence // city center // diversity // apartments // multi-storey // kindergarten // inclusive // Copenhagen

MOTIVATION:

Live densely, live together, live in the city.

As with *Sættedammen*, the first move of motivation for *Urbania* was a written essay in 2009 by Anne Mette Lorentzen, co-founder of what came to be *Urbania*. She got the idea one day trimming the hedges in her garden suddenly realizing how the hedge was actually a symbol of a housing tendency she disapproved. She immediately wrote the essay on rethinking the way of city dwelling - rethinking the classical co-housing so often placed too far from the city dominated by low-rise buildings. The lead motivation of *Urbania* is the idea of living in a socially sustainable community where inhabitants are enriched by the benefit of togetherness in a diverse group of people who all share the same interest in living with and learning from each other.

The concept of environmental sustainability is also a core concern for the community, that wants to secure square meters of their new property to grow and cultivate their own produce (*Urbania* 2017). The future building and the surrounding environment must facilitate a sustainable way of living in general. A wished location maximum 5 kilometers from the town hall square means a limited need for motorized transportation and makes it easy to travel by bike. Bike parking and a bicycle repair shop are therefore planned, however should the need for a car appear, the community will have shared cars to their disposal (*Urbania* 2017).

UrbaniaCPH aims for a community of 100 dwellings with smaller groups of dwellings as a part of the overall community. The basic idea is one single building that can house all residents, where

everyone gives up 20% of their private area to the benefit of the community, making possible the establishment of extraordinary facilities, they call them 'nice-to-have' facilities.

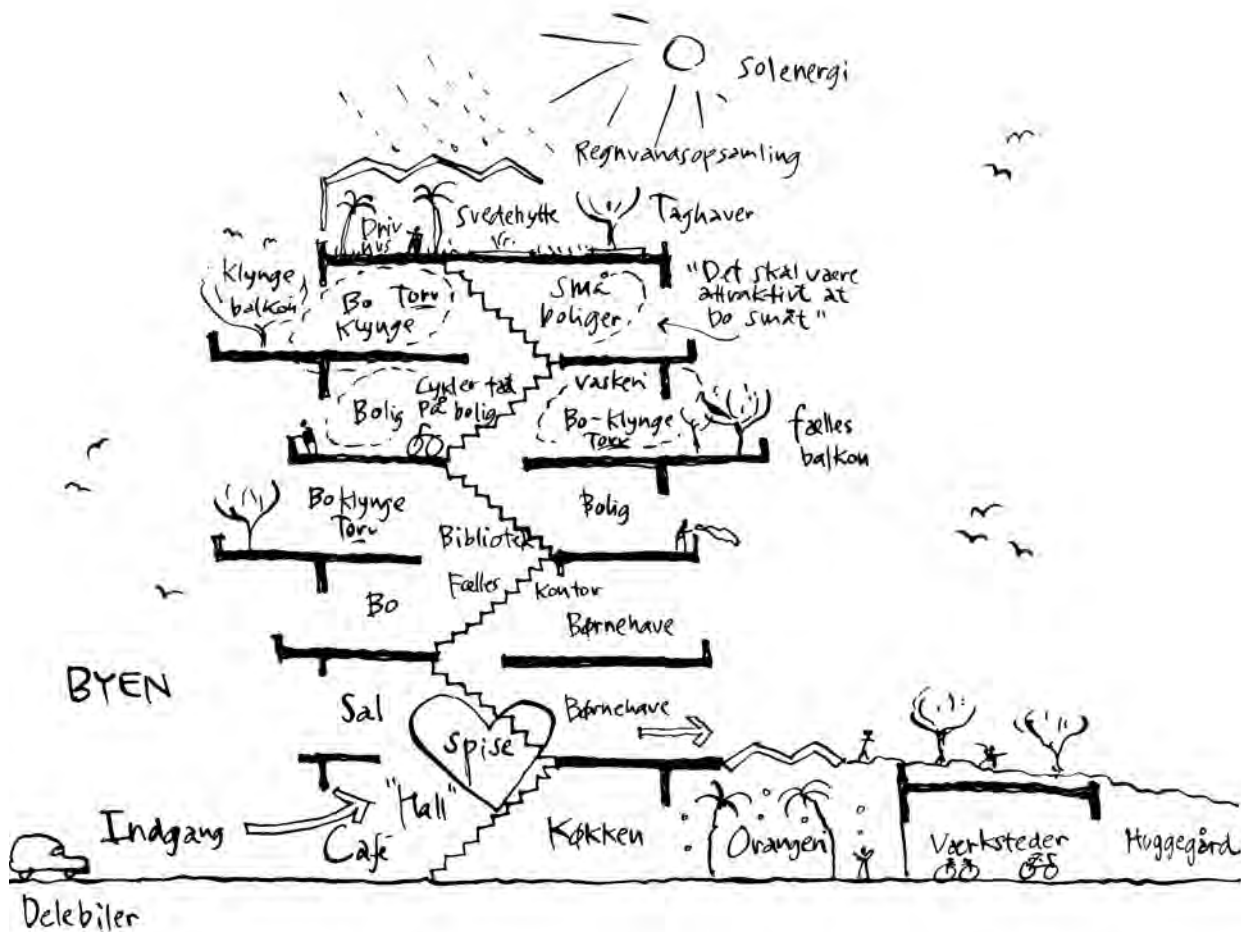
Urbania will be a part of a social housing association and will house small businesses and a number of dwellings for people with limited funds (such as students or people receiving transfer income) (*Urbania* 2017).

FACILITIES AND COMMON INITIATIVES:

The planned facilities of *Urbania* include almost all imaginable necessities such as a Kindergarten, wood workshop, bicycle repair workshop, clay and clothing workshop, community gardens and a common kitchen. These functions will be complemented by 'nice-to-have' functions like a Turkish Hamam, an orangery, sweat hut, musical practice facilities, a cafe and an activity hall (*Urbania* 2017).

ARCHITECTURE AND TYPOLOGY:

The architecture of *Urbania* will be very different from traditional co-housings, as introduces with the other two case studies. Placed in the city center of Copenhagen there are certain demands for plot ratio and density, and *Urbania* will therefore form a new form of high-rise co-housing in a dense urban context - hopefully revolutionising the way of co-housing and urban dwelling. Some of the common functions of the co-housing will be private, and some will open up to the public, and the architecture will therefore have a gradient of openness reaching from very open sphere in the bottom to very private sphere in the top (*Urbania* 2017).



ill. 16: - Urbania's diagram of their vision for the organization of the future co-housing

SUMMARIZING

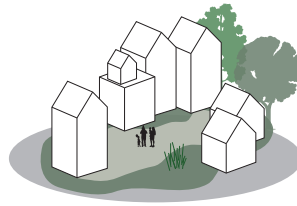
In all three cases presented, the initiative to form a co-housing has been taken by a group of enthusiasts with a set of shared values and ideologies of how life can be fundamentally altered to the better. The different motivations are expressed in the ideology of the co-housing, but also in the organization and the everyday life. *Sættedammen* was based on a social issue, addressed by Bodil Graae, who thought that children were increasingly living on the premises of adults. She wished for modern ways of living together with neighbors and thereby create a better environment for children to grow up in. The initiative in Hjørtshøj was more based on a counter-reaction to the increasing climate challenges and an attempt to show a way of living in symbiosis with nature leaving a minimum or no footprint on earth. *Urbania's* motivation returns to the problem of a social confrontation with the way we interact with each other and the way in which we live in modern cities. All three co-housings base their belief on fundamental issues of their time's society. The motivation to establish a co-housing today would also arise from current society issues, such as world's increasing resource consumption, the attempt to reduce climate changes, or as this projects suggests: an attention to the comprehensive problem of loneliness. When proposing a contemporary urban co-housing it would therefore only make sense to base it on the main challenges that we face in the context of Aarhus. Aarhus has for years been referred to as the 'city of smiles' and to the municipality it is essential to keep this a fitting association (Aarhus Kommune 2016), but even though they might smile a lot, there could be something behind that smile that hides the truth that 6,1% of Aarhus residents feel lonely on a regular basis to an extent where they find it compromising their happiness (Knudsen 2014). In addition Aarhus is a city with great hydrological challenges because of its geological conditions and its low-lying location. At any time possible, Aarhus would therefore attempt to include water sensitive urban design in the planning of new areas. The climate challenges experienced in almost every Danish city might therefore form a grounding for a co-housing community with a main motivation of ultimately exploiting the positive features of rain water.

THE BUREAUCRATIC CHALLENGES

In all three cases, there is a time span from the first initial to form the co-housing to the actual construction of the buildings. For *Urbania* this has been an ongoing struggle, first of all a struggle to negotiate with Copenhagen's Municipality, to convince them of the need for urban co-housing, and second of all to find a suitable building plot. *Urbania* was initiated in 2009, and in the year of 2017, a building plot has still not been bought.

After years of struggle, Copenhagen's Municipality has agreed to help *Urbania* in the process, but by certain demands and conditions. If *Urbania* wishes to build their co-housing maximum five kilometers from Rådhuspladsen, the demand of the municipality is that it must all be social housing. *Urbania* initially aimed for diversity through various types of ownership; leasehold, owner-occupied, rental (Urbania 2017). The demand somehow compromises the general idea of a co-housing - it is supposed to be a unification of people who share the same values. So how is this possible with social housing, when apartments are managed through desperate waiting lists, and when the municipality holds the right to assign up to 25% of the dwellings to people with limited resources? These people do not necessarily choose this co-housing based on its fundamental values, but because they desperately need accommodation or the authorities assigned it to them.

Andelssamfundet Hjørtshøj in the modest beginning of their creation, also experienced difficulties with the local authorities. They quickly convinced Aarhus Municipality that a co-housing was a great idea - a site was found and an official local plan was made, but they were met with downright distrust, when their idea of building houses of clay was presented - the municipality simply did not believe it was possible. However after three years of struggle, they were allowed to build a test house by means of voluntary labor. The house still stands today and functions as the main common house of *Andelssamfundet*. The municipality reluctantly agreed to let the enthusiastic people build more houses like the first and in 1996, the last people moved into their houses of dwelling group 1. Dwelling group 2 was planned to be social housing. Like *Urbania*, they aimed for diversity by offering different ownership possi-



ill. 17

CO-HOUSING COMMUNITY

This kind of community in many cases challenges the others, mixing them together, allowing them further to facilitate each other. The size of the intimate community can grow to larger numbers, the familiar community can have its boundaries broken and the local community can be strengthened through this single institution.

bilities, but again the odds were against them - no social housing association was willing to go that extreme in the effort to build sustainable dwellings. They had to reach all the way to Copenhagen to find one that was willing to try something new.

The slow-moving process of establishing Urbania and a constantly ongoing struggle with the municipality, might make people become impatient and opt out of the project, ultimately (but hopefully not) leaving Urbania a dream that never came true. And it is a shame, because urban co-housings have potentials in the modern and future society, where it can show new ways to live in the dense city. New ways to think about the organization of our society and new ways to perceive the structure of everyday lives. If Aarhus or any other Danish city for that matter, in the future wants to make room for urban co-housings, they must accommodate their needs, and facilitate its genesis throughout the processes of urban planning. In order to maintain an innovative passion for thinking and creating new ideas, public administrations and regulations must be reconsidered.

With the introduction to co-housing and its implementation in a new context, the dense urban context, we have automatically introduced yet another type of Urban Community to our list; the Co-housing Community. A community that comprises all of the others in one:

The Familiar Community exists within the walls of a single dwell-

ing, but at the same time it is challenged as the general idea of co-housing involves extra care and togetherness between residents, breaking the boundaries of the regular family, and even giving the opportunity to form a kind of 'family' that is not necessarily tied together by biological bonds.

The intimate community lives on in the relation between residents of a building, neighbors sharing outdoor spaces or the entire co-housing sharing washing facilities. However, as with the Familiar Community, the constellation of this community might be altered, when the group of people with whom the members have daily contact increases in size. The Intimate Community therefore grows bigger.

The Local and Temporary Communities are the ones that ensure contact between the co-housing and the surrounding parts of the city. As learned through the case studies, founders of co-housings are often enthusiastic souls that possess great human resources. The intention is that these people become a catalyst for life and community not only within the co-housing, but also between the co-housing and its surroundings.

However, the introduction of the *Co-Housing Community* also leads to new ways of perceiving the concept of the home and the private dwelling are needed.



ORDINARY CO-HOUSING VS. CO-HOUSING IN THE DENSE CITY

Most contemporary co-housings are located outside Denmark's major cities. Places in which they have the space to spread, as indicated in the mapping of co-housings in Denmark (See also Appendix 3). Here they have the possibility to arrange the typically low-rise co-housing units encircling the community platform. In the dense city, this kind of space is not available. Instead there is a need to rethink the organisation of the ordinary co-housing typology. The way that the private dwelling or home is perceived needs to be adjusted to match modern as well as future flexibility needs of the family and ways of organising everyday life. A more abstract or flexible home that could adapt to the changes related to different life demands, and a way to integrate more communi-

ties within the buildings, could solve some societal issues as urbanization and its needs for buildings, along with the problem with loneliness.

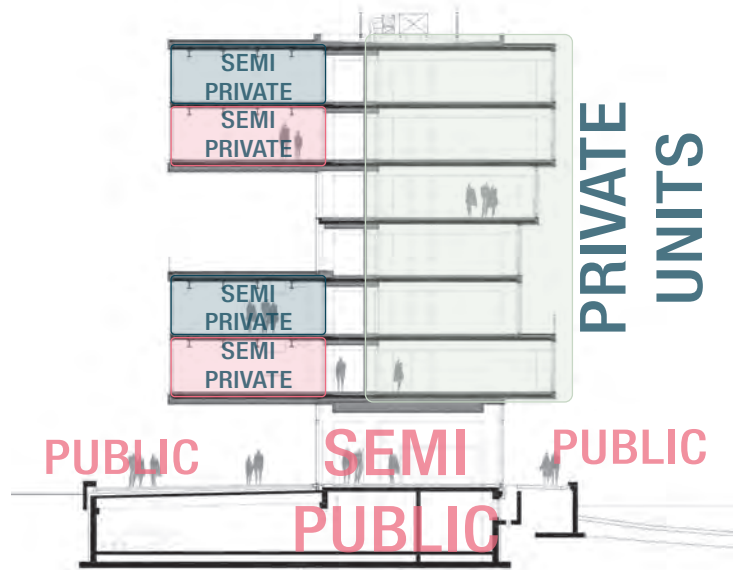
NETVÆRKSBOILIGEN

'Netværksboligen' introduced by Force4 Architects in collaboration with the ethnologists Hausenberg and the psychologist Helle Folden Dybdal and Signe Grith-Brodersen, is a type of dwelling that accommodates and offers something different and more than present buildings and current communities can offer (Force4 Architects 2008). With 'Netværksboligen', Force4 Architects try to cope with the traditional perception of the dwelling as the frame of 'classic' family life, and instead see it as a changeable and flexible unit, which can adapt to the cycle of life and

the uncertainty of future circumstances. 'Netværksboligen' is a vision of more community within the private sphere and more spaciousness (Mortensen 2008). Family patterns have changed from the dominant constellation of the nuclear family to nowadays covering several ways of organizing a family. Family life does not appear to be a fixed setting anymore, and because the gap between the public and private spheres has become more fluid, people today seek other types of chosen communities. In modern urban planning, the boundary between the public and private sphere should be modernized so that the private space can expand or reduce when needed. The common facilities should be able to endure other needs and accommodate more than those interactions with neighbors, as well as open up to the sur-



Ill. 18: - An interpretation of the concept of 'Netværksboligen'



Ill. 19: - Section of Tietgenkollegiet indicating the private, semi-private, semi-public and public programs

rounding city (Sommer 2008).

THE GOOD AND BAD EXAMPLE

Tietgenkollegiet in Copenhagen is an example on how a modern community can be facilitated in an high-rise building. Even though *Tietgenkollegiet* functions as a dormitory, parallels can be drawn to the organising of the modern co-housing.

Tietgenkollegiet is organized around three types of communities: *the kitchen*, *the committees* and *the whole unit*. *The kitchen* is the small community - 'the small family' - where 11-12 units are sharing kitchen and a common room, which can be adapted to the community's wishes (Tietgenkollegiet 2017). Members of *the kitchen* share a common commitment belonging to the kitchen, and three times

weekly communal meals are held in which the residents can choose to participate.

The committees are jointly integrated across the kitchens, and they work with how to utilise the community in the whole unite, like how the community can be enhanced through different events, initiatives and organization. Here, residents can contribute to embodying life and the sense of community at the college, but also networking across the intimate communities (Tietgenkollegiet 2017).

Lastly, there is the large community that encompasses all the residents of the college, but also relevant stakeholders. Living at *Tietgenkollegiet* residents interact with other residents, but also with locals in the area. The notable architecture provides

unique opportunities to form the framework of events and features, which also benefits the surrounding area (Tietgenkollegiet 2017).

The architecture and organization of the college allows residents to participate in the daily life in other kitchens when staying at their own, as all the common areas face the courtyard with large open glass windows. However, the architecture also expresses a gated community in the city with the private, almost closed individual units facing the city. The design of the architecture also radiates to be introvert, which does not necessarily invite the locals. Here, it is the extrovert arrangements that involve the surroundings and create a linkage in the city (Tietgenkollegiet 2017).

PROBLEM STATEMENT 1.0

As elaborated until now the co-housing does not only have the ability to enhance the sense of togetherness in a more individualized society, but it can also be a generator for more urban life and social interactions. Relating that to the beneficial effects of water, it might be possible to create an urban environment framing communities and occasional meetings in the urban space summarized to the overall problem:

How can co-housings in a dense urban context based on a community focusing on social relations or centered around water, create the framework for new ways of living together in the city and act as a catalyst for even more urban communities?



ill.20: - Mapping of the location of the site in a nationally context

THE PROJECT SITE

TRANSFORMING AN OLD HOSPITAL

Where the previous chapters focused on societal challenges and the concept of co-housing as a solution to the increasing loneliness in our population, this chapter will explore the location, the cultural and building heritage, the users as well as the spatiality in the later aim of connecting the benefit of co-housing to physical surroundings. In this case, Amtssygehuset in Aarhus. In the process towards understanding the chosen site, it is important to understand the physical settings along with the demanding issues that the area is facing. In 2014, the Municipality of Aarhus bought the old hospital 'Amtssygehuset' in Tage-Hansens Gade with the vision of transforming the area to a new and interesting district in the city focusing on its original identity reflected in a new one enhancing a sense of community among residents. This chapter will introduce the site and the issues related to its composition.

THE COMPETITION

In the fall of 2016, Aarhus Municipality arranged a competition and invited three multidisciplinary teams to propose a development plan for the transformation of Amtssyghuset. Aarhus Municipality's intention with the area is to create a gathering district focusing on the community among citizens. The keywords are density, high liveability for all generations, attractive urban spaces providing the framework for life, close relations to other people and diversity in terms of age and life styles (Aarhus Kommune 2016). The history of the area must be conveyed in the new identity of the site, and the original health-promoting ideals as light, air

and smells must appear as notable parameters in the design, as well as the area needs to be designed as a linkage so that the entire district will achieve coherence.

On the opposing page, Aarhus Municipality's vision for the project area is presented. With the theory and issues presented in the previous chapters, the marked words in the vision indicate the parameters connecting the presented theory and Aarhus Municipality's intention for the site with our motivation for the project.

"Tage-Hansens Gade is to serve as the cohesive urban quarter that promotes a **sense of community** among residents. Tage-Hansens Gade will be a high-density urban quarter with high-quality housing for people of all generations who wish to live in the city and enjoy life in the urban spaces and in proximity to other people.

The local area lacks diversity. It particularly lacks families with children. Tage-Hansens Gade will therefore offer activities for children and their families, so the area supports close **coexistence** between children, youth, adults and the aged. Both in the housing and in the urban spaces.

The future district on Tage-Hansens Gade must carry on its history within the quarter's new identity. **The physical characteristics** and health promoting ideals such as light, air and fragrances which the county hospital was built on in 1935 must remain noticeable in the area.

Tage-Hansens Gade should be seen as a **link between the surrounding housing areas**. Tage-Hansens Gade must be considered within a wider context, to ensure better cohesion throughout the entire district and greater diversity in the age lifestyle forms of residents."

(Aarhus Kommune 2016)

THE PROJECT SITE

The project site, Amtssygehuset, is located in the periphery of the city center of Aarhus. The area is located in-between three of the major roads of Aarhus; Viborgvej to the north, Vestre Ringgade to the west and Silkeborgvej to the south.

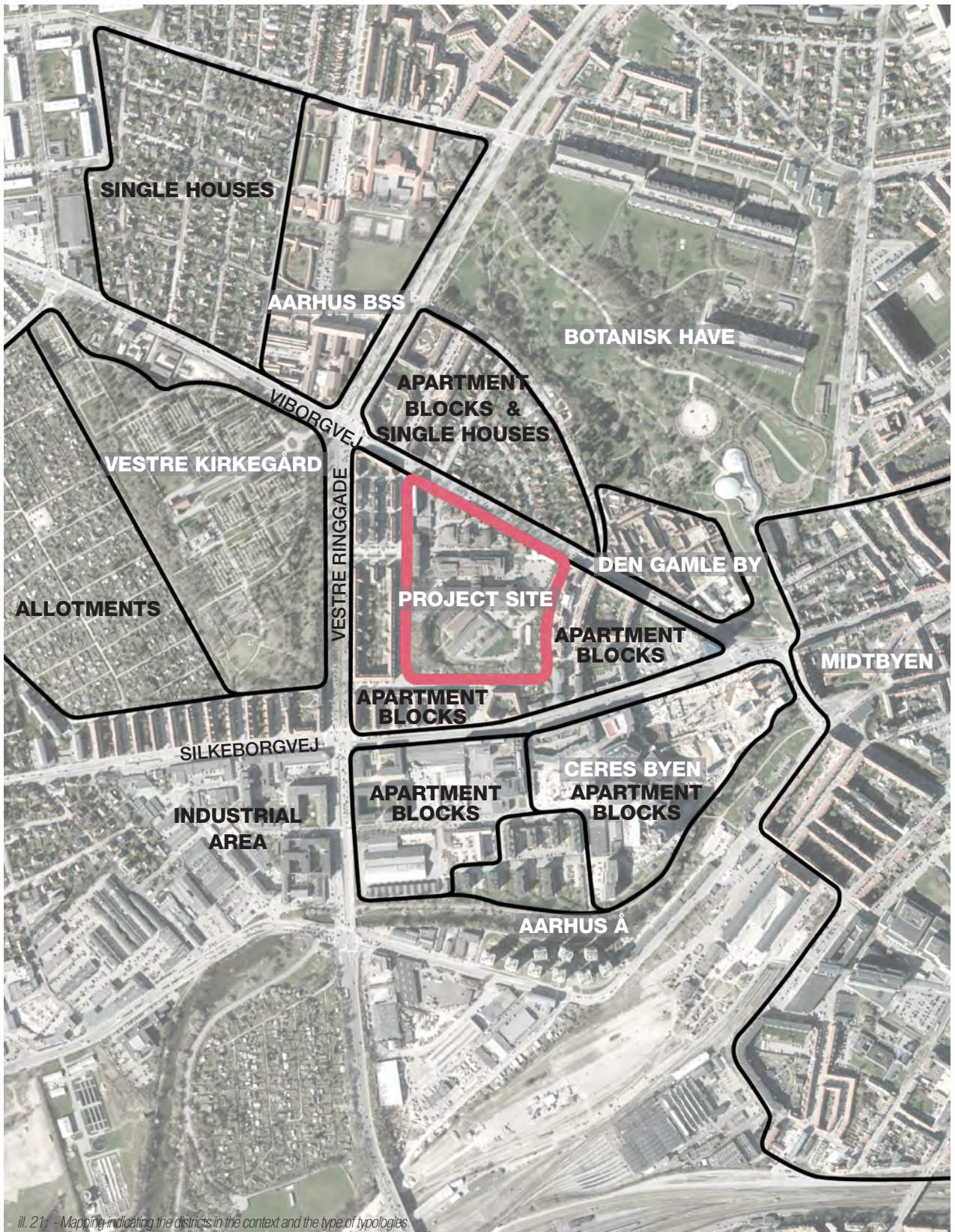
As the map illustrates the site is surrounded by various typologies and city districts. In the nearby context within the three major roads, mostly parallel apartment blocks and squared apartment blocks are to be found. North of the site, a smaller residential area with low-rise single houses with private gardens and a few apartment blocks are located, and further north 'Botanisk Have' (Botanical garden), one of the major recreational and green parks of

Aarhus offers spectacular flora at all times of the year. The park is used by most citizens of Aarhus, and holds major green spaces and a larger greenhouse serving as tourist attraction. Northeast of the site, one of Aarhus' most famous attractions is located; 'Den Gamle By', which shows a collection of ancient houses and city environments.

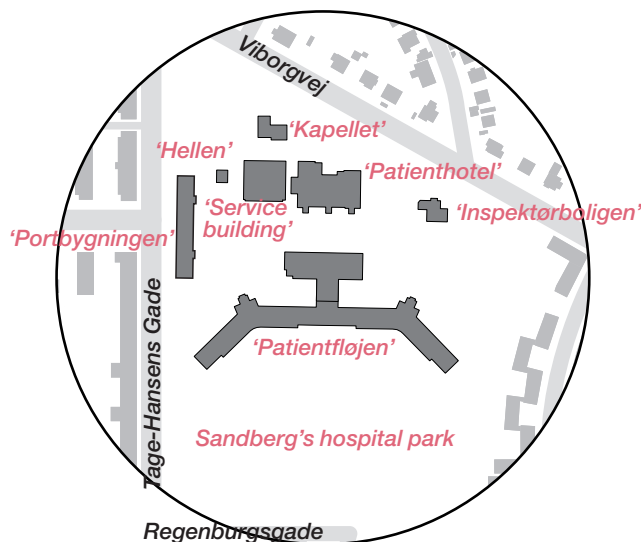
South of the site, the old brewery of Ceres is in the process of being transformed and developed into 'Ceresbyen'. This new urban high-density district will in the future have more than 2000 residents, 5500 students using it daily besides commercial and office facilities (Ceres Byen 2017). West of the site, 'Vestre Kirkegård' (the Western Cemetery) offers another green

and recreational space, and further west three different allotment societies bring live and activity in the summer. Northwest of the site, Aarhus School of Business and Social Sciences is located, with thousands of daily users (Aarhus BSS 2017) and further northwest another low-rise residential area with single houses is located.

The project site is located in an attractive location of the city in an intersection of many different typologies and districts that hold many different programs and addresses a broad target group throughout the day. In the further design, this complexity must be considered to be able to integrate the new district in the city life and atmosphere and make that linkage in the entire district.



ill. 21: - Mapping indicating the districts in the context and the type of typologies



ill. 22: - Mapping of the buildings worth preservation

THE HISTORY

In 1930 the architect Axel Høegh-Hansen won the competition of designing a new modern hospital located - at that time - in the periphery of Aarhus. The area provided by the municipality was located on a south-facing hillside with a significant decline in the terrain towards Aarhus Å. Therefore, the area emerged as a monumental plateau in the city with a magnificent view of the valley (Aarhus Kommune 2016). The county hospital was built on the vision of taking care of others. The words: *'Helbrede – Lindre – Trøste'* (heal, ease and comfort) are chiseled into *'Portbygningen'* – the main entrance to the area, and stand as a clear sign of the original identity.

The main intervention of the area was a characteristic division of functions and buildings related to treatment and technical functions in the northern part and a rec-

reational park sheltered by a recreational patient wing, *'Patientfløjen'* in the southern part of the site (Aarhus Kommune 2016). Høegh-Hansen created a beautifully connected hospital complex consisting of 4-storey red and yellow brick buildings, which today stand as characteristic monuments in the city. Sandberg's hospital Park is also an interesting area that tells a lot about the development and importance of the hospital. Today, most hospitalizations are ambulant, but back then this was not the case. Here the idea of light, air and smells were important parameters of healing and treating patients (Aarhus Kommune 2016). This vision Sandberg has been able to express in the huge park that creates space for recreation and healing.

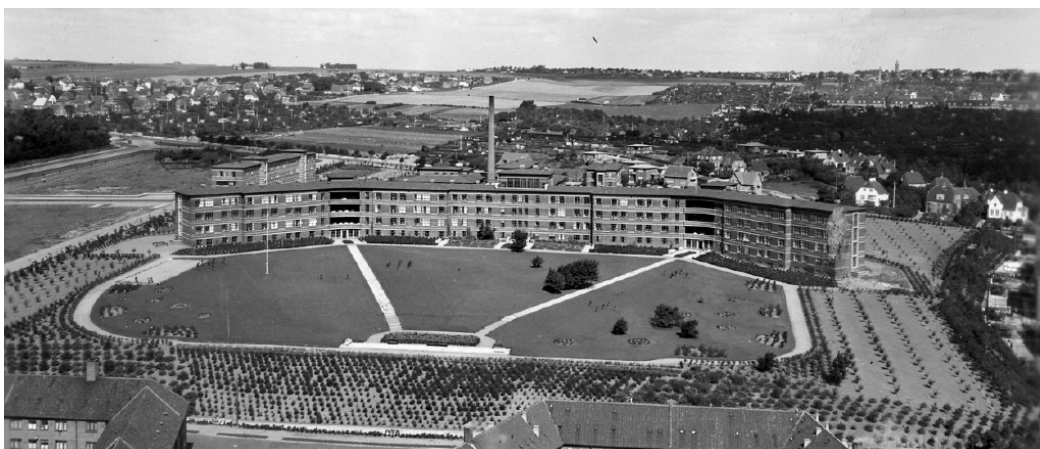
For more than 130 years, *'Amtssygehuset'* has had a significant impact on Aarhusian history, life and the healthcare environment

with the vision of taking good care of the city and the inhabitants of the rest of the county. It is a characteristic area in the city with a lot of atmosphere, history and identity. A place that many people have a relationship to and stories of.

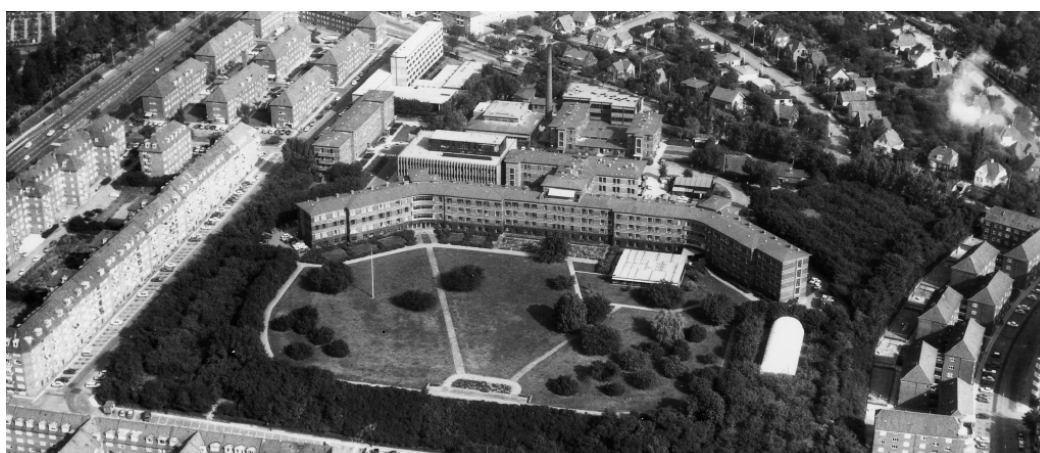
Now this attractively located place in the city center of Aarhus surrounded by *Botanisk Have*, *Aarhus University*, and *"Den Gamle By"* has to be transformed. In 2014, the municipality of Aarhus bought the area of *'Amtssygehuset'* with the vision of changing it into a new vibrant residential district in the city focusing on the original character and preserved buildings reflected in a new identity. At the beginning of 2018, all the hospital functions are being outsourced to the new university hospital in Skejby and the construction of the new Amtssygehuset can begin.



ill. 22: - 1935: 'Portbygningen' before there was built around it



ill. 23: - 1936: An overview of the park after it was finished



ill. 24: - 1950: An overview of the original buildings

THE LOCAL HERITAGE

As with many former industrial areas in the cities, the outsourcing of functions at Amtssygehuset will leave empty buildings. When the development of an existing area is in process, it is important to consider the future existence of these buildings as they represent heritage and history of the place. A building stands as a historical symbol representing the historical period in which it was built. *"Buildings tell the cultural- and architectural history of Denmark through the ages."* (Kulturministeriet n.d., translated by author)

Nevertheless, the spirit of a place does not necessarily have to be an evidence of the imprint of the place's time and history. Marie Stender (2014) argues in her Ph.D. that the spirit of a place can be interpreted in different ways. The spirit can be derived from the remains of an industrial past. Stender also argues how another type of spirit that does not relate to time and history can be found in; a community of a place, the residents' engagement to the place or contact to nature. This means the things that make the place distinctive in

relation to the specific place or the people who live there (Stender 2014).

"The new aesthetics is thus as regards the producers a general theory of aesthetic work, understood as the production of atmospheres. As regards reception it is a theory of perception in the full sense of the term, in which perception is understood as the experience of the presence of persons, objects and environments." (Böhme 1993:116).

Amtssygehuset is a monument in the spirit and history of the city; a place, which many inhabitants of the region have a relation to. For years, the area has been the focal point in many people's lives, and a place where they have gone through the ups and downs. Many have worked within the buildings, some have been patients, some have visited relatives that were patients and some have even ended their life in the hospital. This heritage must in the future development be considered and integrated.

RELATIONS TO THE BUILT ENVIRONMENT

In our everyday practices we are surrounded by the built environment where bonds are created between people and places. The individual person's social perception of the history and the attachment to the place can be told through tales and knowledge of the place.

"Architecture enables us to perceive and understand the dialectics of permanence and change, to settle ourselves in the world, and to place ourselves in the continuum of culture and time." (Pallasmaa 2012:76)

The buildings of Amtssygehuset are a physical evidence of a societal development taking place in the years of the 1930's, where a new idea of building bigger hospitals with the capacity to treat patients requiring extra treatment grew. Hospitals from this period are often standing as significant buildings in the cities.

ill. 25: - One of the characteristic entrances from Hagh-Hansen's original buildings



ill. 26: - One of the courtyards between the buildings worthy of preservation



ill. 27: - The characteristic main entrance in 'Portbygningen'



ill. 28: - The facade of 'Patientfløjen'



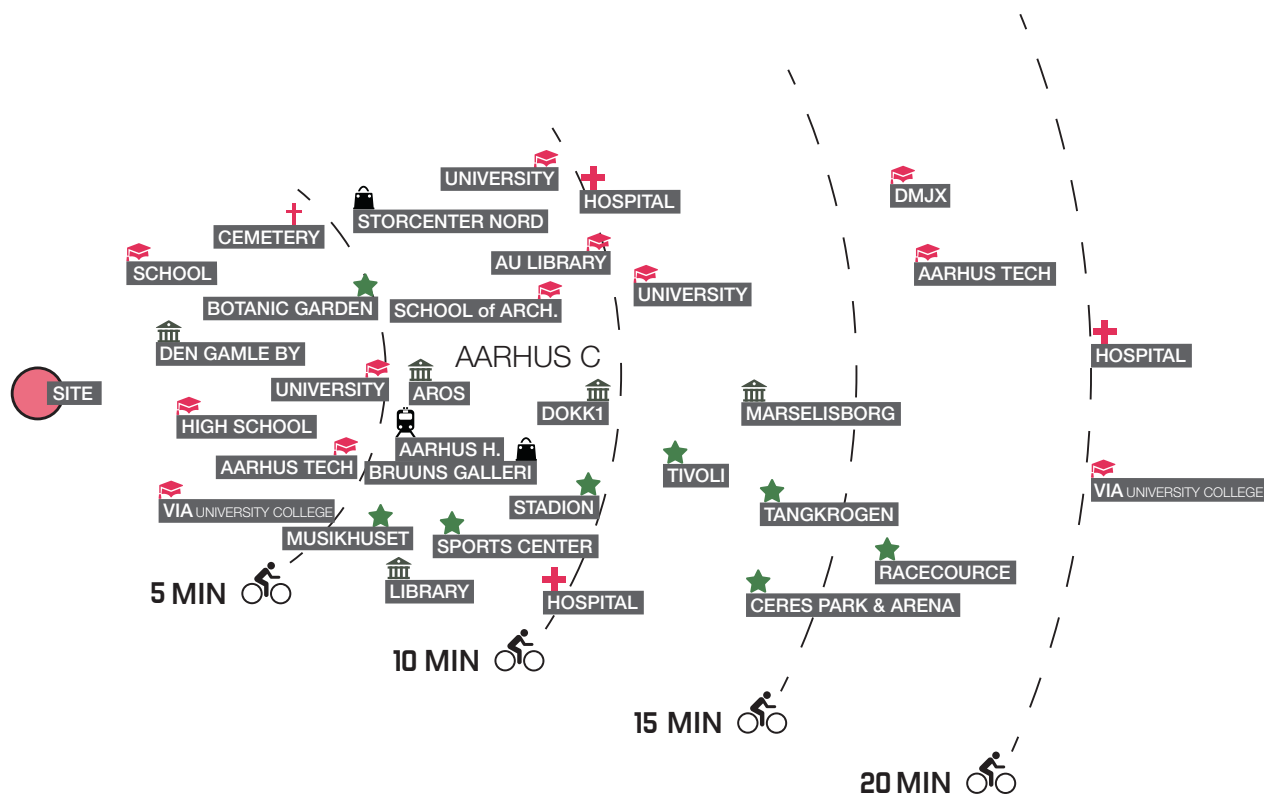
ill. 29: - The entrance to 'Kiosken'



ill. 30: - The park next to 'Hellen'

We believe that the existing buildings of Amtssygehuset have great potential if preserved and reused in the further development of the site. The iconic buildings bear witness to a time with focus on humanity, as well as they hold a great deal of history and atmosphere.

We believe that the characteristics of the buildings can help reinventing the identity of the district, and that the existing buildings worth preservation have potential to accommodate programs for the diversity and community of Aarhus.



ill. 21: - Diagram of the distance on bike to popular programs in the context of Aarhus

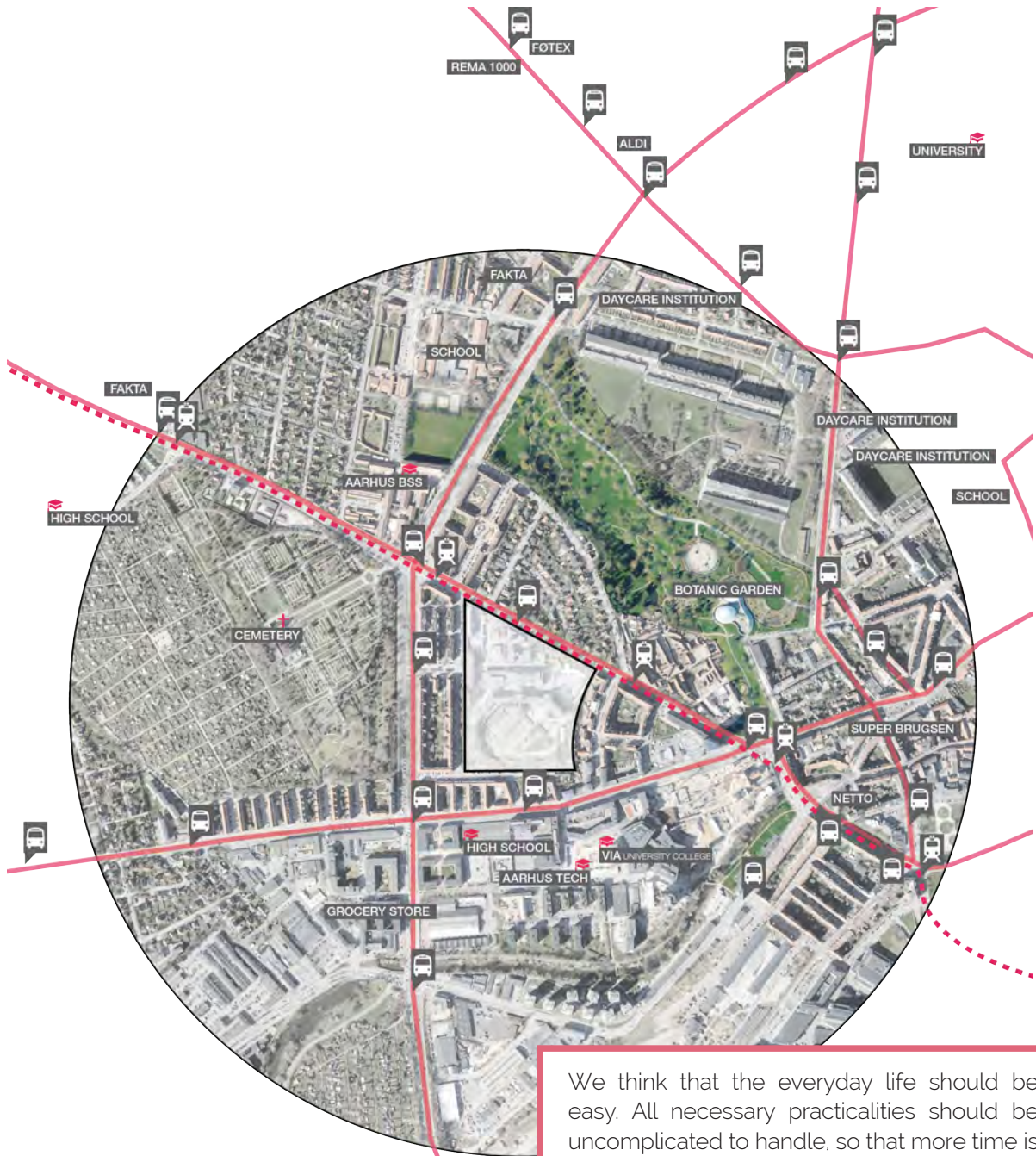
PROGRAMS IN THE CONTEXT

Mentioned in the paragraph about the location, the position of the site is very attractive due to the short distance to several popular functions and places in Aarhus. As the above diagram illustrates, one on a bike is in five to ten minutes able to reach the city center and most popular attractions in Aarhus as well as the train and bus station. In 20 minutes one can reach the major business districts placed in the outskirts of the city. This easy-to-reach location makes

the project site popular to both developers and new residents. The diagram illustrates how the location accommodates the needs for cultural life in the city, and offers green and recreational spaces in the nearby context. Moreover, the site is connected very well to the public transport system with bus stops located in the periphery of the site, seen in the mapping on the opposing page. Also the future light rail system planned to run at Viborgvej, secures service to the site as one stop is planned

in the intersection between Viborgvej and Vestre Ringgade and another next to 'Den Gamle By'

As the mapping indicates the nearby context also offers the residents of the surroundings most everyday functions as daycare facilities, schools and grocery shopping within a radius of 5 minutes on a bike.



We think that the everyday life should be easy. All necessary practicalities should be uncomplicated to handle, so that more time is released to social relations and activities that provide quality of life. Work, schools, shopping and cultural activities should be within a decent reach of the home. This will reduce the need for private owned cars, because it is faster and more manageable to use public transport or bike over shorter distances, and thereby release more room in the urban fabric for attractive spaces and activities. Imagine if the only means of transport you need is a bike to get around in the everyday life...

ACCESSIBILITY

As previously mentioned, Amtssygehuset is located on a hillside and designed as a plateau with a recreational park and the possibility of looking over the city for the purpose of the patient's health. However, this design of a plateau and a shielded park has its consequences.

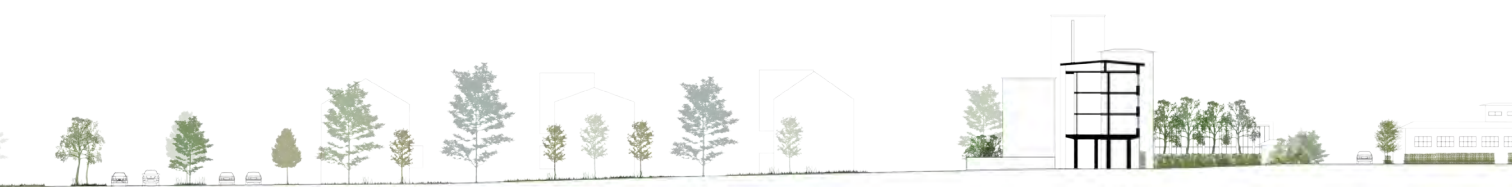
In the north towards Viborgvej, the terrain declines with approximately three meters all the way. Also the dense planting shielding the hospital's functions from the noisy road makes the site difficult to access. Except the two roads from the hospital towards Viborgvej, one with a sidewalk along it, there is only one staircase giving pedestrians access to the site.

Towards east and south, the site adjoins areas with apartment blocks lowered compared to the site. In the east, the terrain drops with around five meters, whereas in the south the terrain drops with almost eight meters. As in the north, also here a dense planting shields the recreational park from the surroundings.

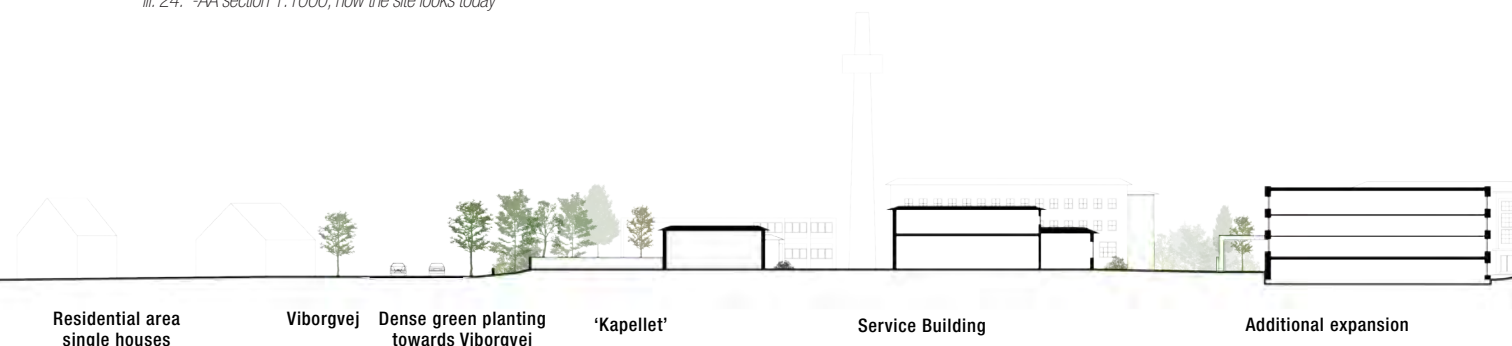
In the south, a staircase leads pedestrians from Regensburgsgade

to the recreational park. However, the staircase appears sinister and filthy and has no light. Not at place one enjoys going. Towards west, 'Portbygningen' is located with a welcoming gesture for pedestrians and cars. However, the rest of edge towards west appears as the others, shielding the site with buildings and dense planting.

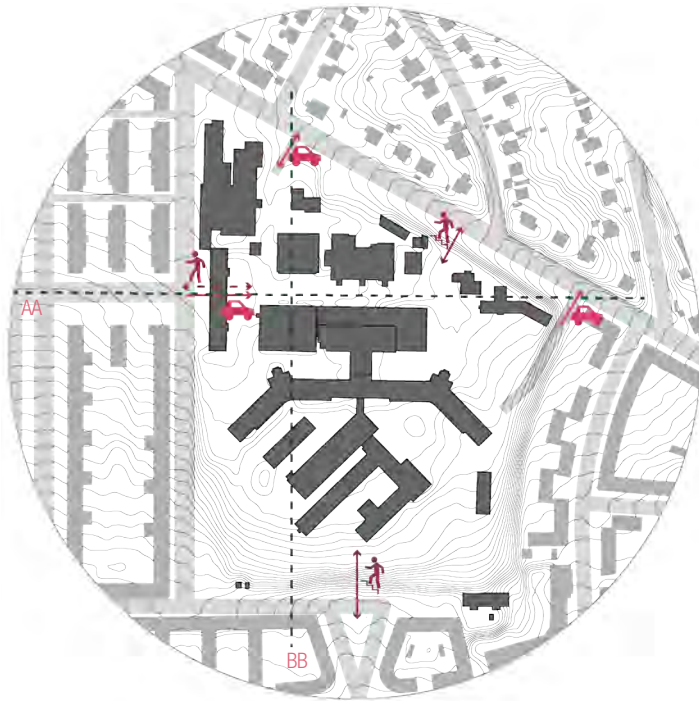
Today the area serves as a hospital with certain semi private functions on the behalf of the patients concern. Mostly, people have a purpose going there. With this in mind, the steep slopes and the dense planting shielding the site, the site appears as gated area in the city. It has had its advantages with the present purpose of the site, but in the future development this has to be changed. With an intention of creating a district for the majority and a new lively area in the city, the boundaries have to be broken and people must feel welcome.



ill. 24: -AA section 1:1000, how the site looks today



ill. 25: -BB section 1:1000, how the site looks today



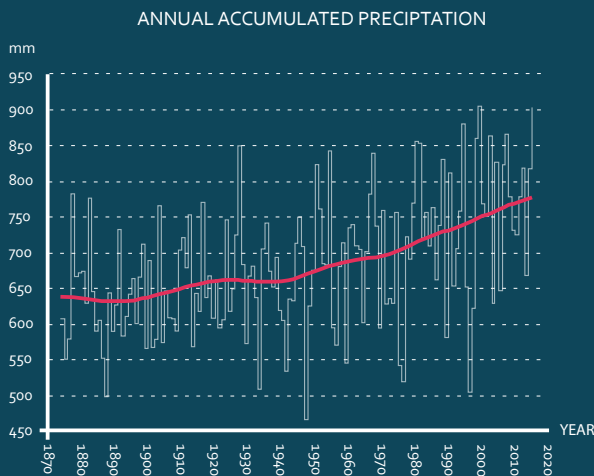
ill. 23: -Mapping of the accessibility to the site and indication of the sections



We believe that the water management solutions on Amtssygehuset must be an inspiring recreational element within the city that will help promote urban communities. The water will lead pedestrians to the urban spaces framing the communities by guiding water elements and programs related to water. By integrating active water solutions changeable due to weather and time, we design an attraction enticing to watch and a continual purpose for people to visit the area.



ill. 26: -Mapping of the storm-water flow around the project site



Ill. 27: -Annual accumulated precipitation for Denmark based on the national average in the period 1874-2015. The pink curve represents the average through 9 years (DMI 2015)

WATER CHALLENGES

Water is a naturally occurring element everywhere, a vital resource to human survival.

When we see it as a problem it is merely because of an imbalance between the increased amount of water falling down as rain and the technical system that is supposed to handle it. Water bears a strong potential that we have to exploit!

"Byens vand er en integreret del af byens vækst. De stigende nedbørsmængder

bruges rekreativt i byrummet og anvendes efter tidens bedste praksis. Regnvandets kvalitet skal løbende søges forbedret."

(Aarhus Kommune 2010:10)

At Amtssygehuset and in Aarhus in general, geological conditions make it hard for

water to infiltrate into the ground that mostly consists of late glacial on top of glacial sediments in which the primary type of soil is moraine. The complicating factor of moraine is its heterogeneous structure, that is unpredictable and makes it difficult to decide the correct way of handling rainwater locally. However in 2016 13 drillings were carried out revealing a high concentration of sandy clay and considerable amounts of gravel - both soils well suited for infiltration. These soils were found a single or few meters below terrain making possible the use of fascines for detention and infiltration of rainwater. The best conditions were measured in the north-west of the site, making invitations for creative use of the water.

Throughout the site groundwater levels were gauged at an average of 6 meters below terrain, the highest level of groundwater at 3,1 meters below terrain.

Water from Amtssygehuset will be infiltrated or lead to Aarhus Å, with a maximum amount of 15 liters per second. This corresponds to ca. 2 liters per second per hectare in the 7 hectare area (Aarhus Kommune 2016).

Handling water in Aarhus must follow the legislative measures of Water Vision 2100 (Aarhus Kommune 2010) urging any new building projects to incorporate water sensitive urban design. In these measures there is a rule, that no stagnant water is allowed in the urban space for more than 24 hours. This sets high demands for handling stormwater from a 50-year or a 100-year event, however, in this case we are going to accept stagnant water in the case of an extreme rain event. Alternatively it can have damaging consequences for other parts of the design.

We believe that the site have the potential in offering more community based activities in the effort to create a common platform, where people can relate to one another. The willingness to engage in communities relies on the individual, but is is our job as urban designers to create attractive social platforms where want to stay.

Creating more communities in the city enhances people's living conditions and life quality, and thereby the society gains a happier population.

THE DEMOGRAPHY

The project site is located in an intersection of many different districts and typologies, and thereby also in and intersection of different residents.

In the area of Aarhus the spreading of different age groups is very evenly distributed (Aarhus Kommune 2015). However, this is different in the area around Amtssygehuset, as seen in the mapping on the opposing page. In this area there is a clear overrepresentation of the young people in the age 18-34 years, who make up 71% of the population. This is typical people, who study in higher education in the near-

by institutions. With such a large and uniform part of the same population sharing so many common parameters, there is a great opportunity that the area may appear as a closed part of the city, a gated community. Aarhus Municipality states in their vision for this area, that they want a district for the diversity (Aarhus Kommune 2016). This requires that other age classes are attracted by either activities or other types of dwellings.

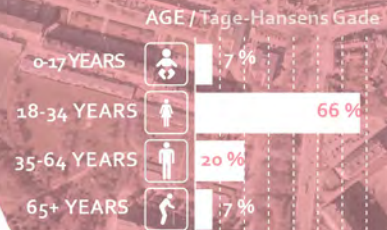
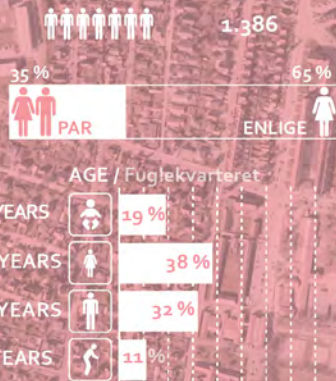
In the region of Aarhus 60% of the population live alone (Aarhus Kommune 2015). In the area around Tage-Hansens Gade the distribution is even more compelling. In

this area 73 % of the residents live alone. These people do not necessarily engage in social constellations daily. As stated in the chapter about 'Loneliness and its Impact on Life' this is not healthy for humans, and can have huge impact on our society.

In the future transformation of the project site the two issues need to be addressed. Therefore the mission of introducing co-housing and more communities in the dense city can accommodate a social platform in the city.

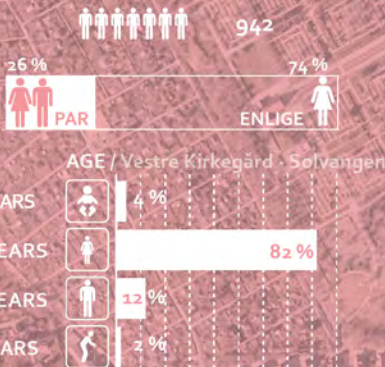
Fuglekvarteret

TRANSFORMING AN OLD HOSPITAL 4



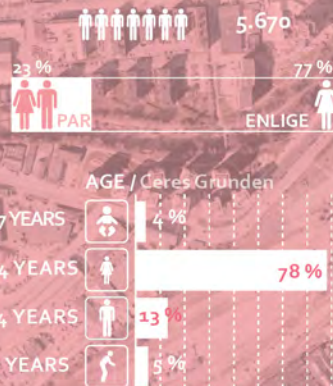
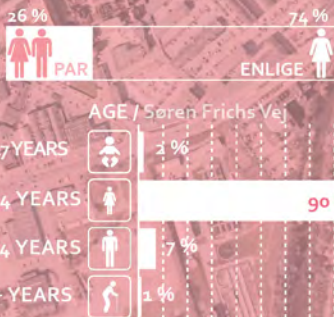
Vestre Kirkegård

Tage-Hansens Gade



Søren Frichs Vej

Ceres Grunden





III. 29: - Overview of Amissygehuset

AARHUS AND THE NEED FOR COMMUNITIES

Amtssyghuset was fundamentally based on the idea of taking care of others with the word 'Helbrede - Lindre - Trøste', and this mentality is to be considered in the future design of the area. Moreover, the municipality in their vision for the new district focus upon more spaces for community and coexistence between different age groups, social classes and way of lifestyles. They want an innovative urban environment with room for experiments and new solutions.

Putting that on the edge, the introduction of a co-housing in the urban context will set a new innovative agenda in the city and expose new ways of urban living.

Co-housings attract not only residents, but also the local society, as seen with Andelssamfundet Hjortshøj. Introducing urban co-housing at Amtssyghuset will create the framework for more communities, inside as well as outside the building and thereby integrate the local citizens in the new district.

The demography of the surrounding environments set the stage for an opportunity to create more communities that could enhance a sense of togetherness and social interactions in the area, accommodating the high degree of people living alone. Not in the intention of relocating them in new typologies on the site, but in the effort of integrating them in new urban communities in the area.

We believe that this place has the right potentials and visions to introduce the urban community. Starting with 'a white canvas' as is the case with Amtssygehuset, it is possible early in the process to influence local planning so that the possibilities for areas reserved for communities and the co-housing are accommodated and integrated into the future environment.

Aarhus is the right city to introduce more community based features because so many experience the feeling of loneliness, pointed towards the section about 'Loneliness and its impact on life'. A development in Aarhus is higher than the national average, and should therefore be addressed.

PROBLEM STATEMENT 2.0

This project will investigate the concept of co-housing and diverse communities in the dense urban area, Amtssygehuset in Aarhus. Revealing the project site, the problem statement 1.0 introduced earlier can be specified in the intention of relating it to the characteristic issues connected to the site and the municipalities vision for the future district of Amtssygehuset.

In the fight against loneliness how can we through a transformation of Amtssygehuset accommodate a sense of community and coexistence in the area, that allows people to benefit from each other across generations and social classes?

As a reaction to present and future challenges, how can we through visible water management gain a recreational advantage that invites people to stay in urban spaces and create a platform for social life that invites the surrounding neighbours?

In the effort to enhance and renew the identity of Amtssygehuset, how can we use the physical characteristics, history and local heritage as the framework for diversity and different usage creating new social interactions and relations?

FROM HOSPITAL TO URBAN DISTRICT

'Come Together' holds a proposal for the transformation of Amtssygehuset in Aarhus, where communities, activities and a general well-being create quality of life for a diverse group of new residents. The design is based on the belief that better city life is created through togetherness and involvement, where vibrant city life can act as a catalyst for new urban communities.

The proposal targets the societal problem of loneliness by introducing co-housing in this dense urban context, and will thereby elaborate the benefits of introducing co-housing for the new districts and its surroundings.

Further, it introduces how different urban communities can be facilitated by the use of integrated water solutions, that attract a diverse group of people, just as the public programs in the buildings and urban landscape will target a manifold audience and form the base for communities to happen.

It may take years to develop the district for which reason the development of the area is presented through a process plan with a flexible framework that targets the overall process of development rather than the details of the design. Nobody knows how our population will live in the future and if technological achievements have changed our habits. This is why the process plan emphasizes different initiatives and steps to involve and engage users and stakeholders - In the end, it is the future residents who will make the project's vision vibrant.



An aerial photograph of the Amtssygehuset (County Hospital) in Copenhagen. The image shows a large, multi-story building complex with a central courtyard. A semi-transparent white overlay covers the upper portion of the image, featuring the title 'AMTSSYGEHUSET' in large, bold, black capital letters. Below the title is a thin horizontal line. The background shows various urban buildings, including a tall, thin tower in the distance and a parking lot with several cars in the foreground.

AMTSSYGEHUSET

Ill. 30. - An overview of Amtssygehuset as it looks today

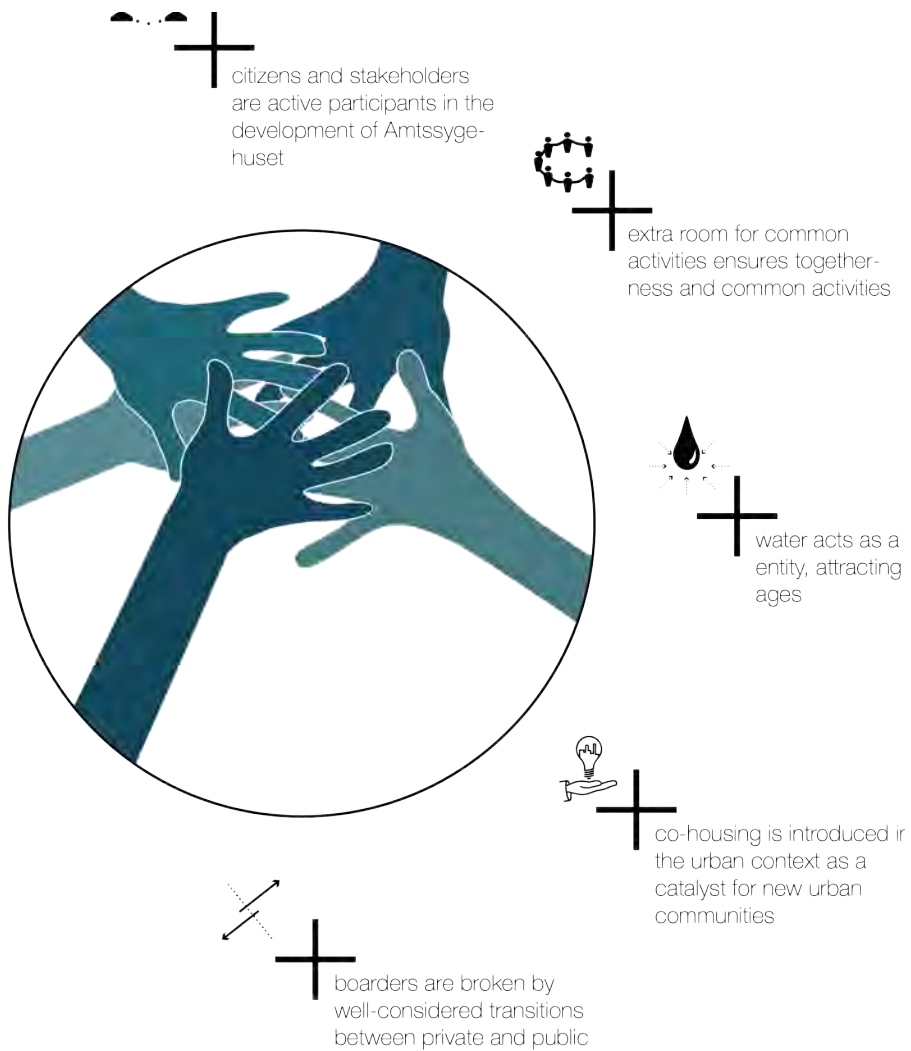
VISION

We want to create a co-housing, a strong social community that reaches out to its surroundings, includes and inspires people to reflect upon the ways of city life.

It challenges the traditional geography of a co-housing by its placement in the heart of a larger city, Aarhus, and the conventional typology of a co-housing with a high-rise structure creating a variety of meetings between the architecture and urban space ensuring smooth transitions between private, semi-private, common and public programs. Square meters are set free for common facilities as a step away from materialistic values and a step towards togetherness and social interaction.

Turning the challenges of climate change to its advantage, the new co-housing will use water as a resource, a recreational element and a basis for leading and gathering people in union all over Amtssygehuset.

'Come Together' throws light on how co-housing can be a catalyst for urban communities with the transformation of Amtssygehuset in the spirit of the old hospital.



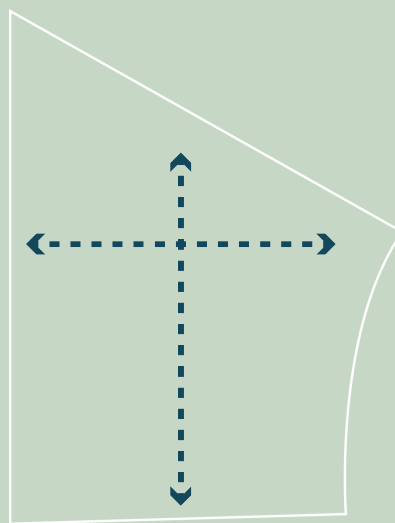
ill. 31

PHYSICAL INTERVENTIONS



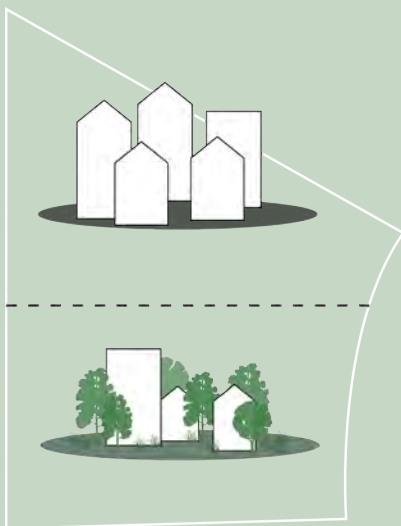
preservation of buildings

Høgh-Hansens original buildings are preserved in the spirit of Amtssygehuset. All later building extensions are demolished.



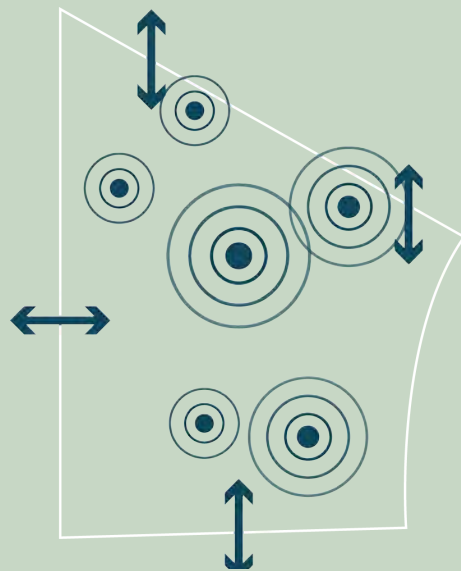
enhancing the axes

The original axes from the initial park are enhanced to match the existing architecture and accommodate better connectivity



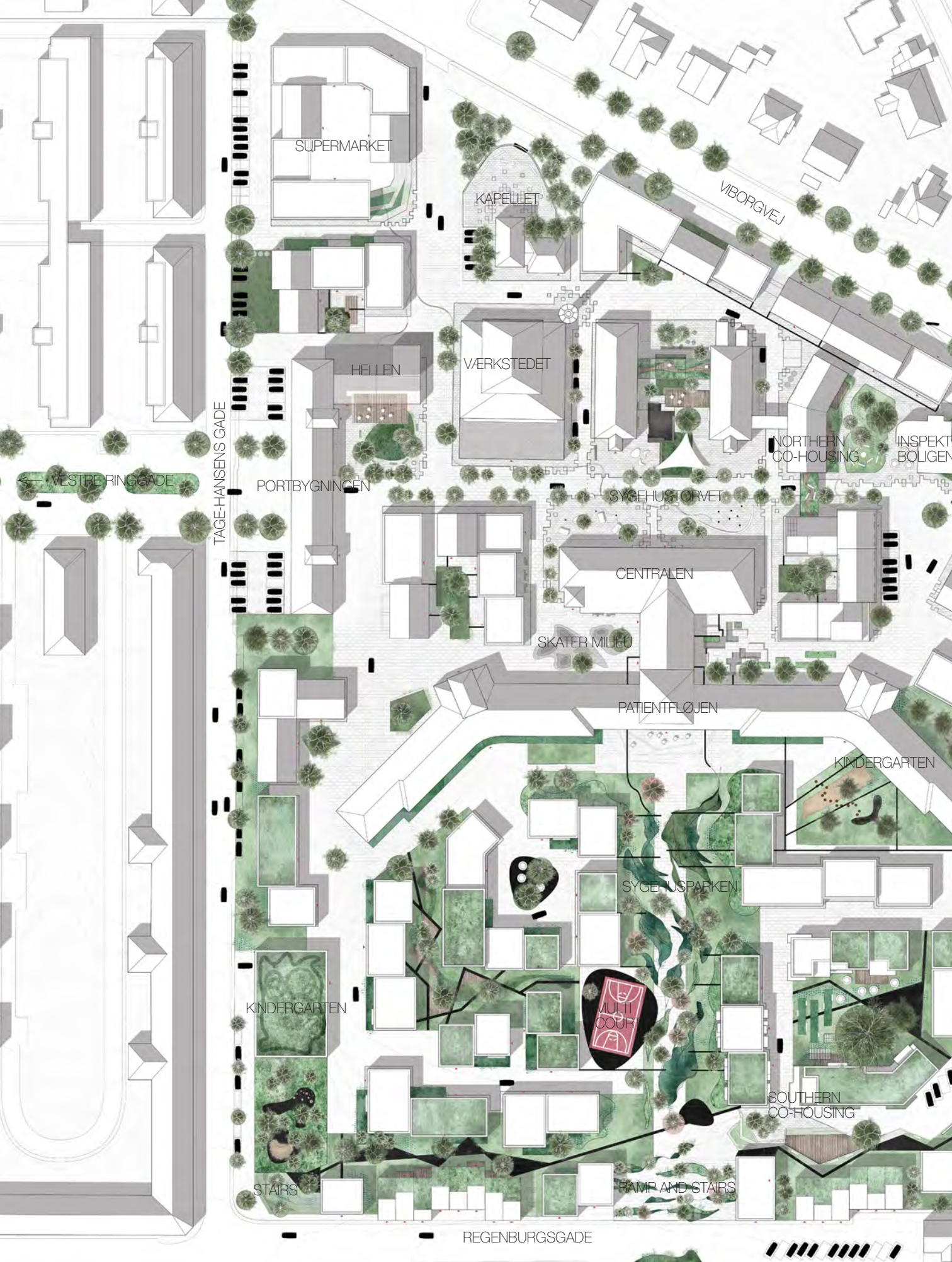
two characters

The general characters of the site are carried on in a new interpretation, the urban north and the green recreational south.



attraction points

Welcoming entrances and attractions points will open up to the surroundings and invite users.



SUPERMARKET

KAPellet

VIBORGVEJ

HELLEN

VÆRKSTEDET

NORTHERN
CO-HOUSING

INSPEKT
BOLIGEN

TAGE HANSENS GADE

PORTBYGNINGEN

← VESTRE RINGGADE

SYGEHUSTORVET

CENTRALEN

SKATER MILJØ

PATIENTFLØJEN

KINDERGARTEN

SYGEHUSPARKEN

KINDERGARTEN

MULTI
COURT

SOUTHERN
CO-HOUSING

STAIRS

RAIN AND STAIRS

REGENBURGSGADE



Ill. 33: - Masterplan of the site. Not in scale.

A NEW DISTRICT

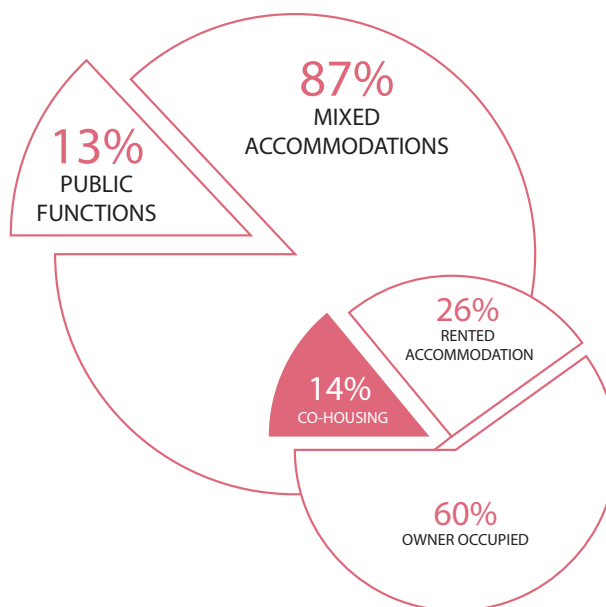
Amtssygehuset becomes a new district in Aarhus with space for new urban communities and social interactions to happen. It will be the meeting place in the city for young and old, families and singles and hold a variety of activities at all times of day.

With the introduction of an urban co-housing located at and defining the central square 'Sygehusstorvet', it will act as a catalyst for social life in the urban spaces with inviting programs for local communities, and it will welcome citizens and expose new ways to organize everyday life and the sense of togetherness.

Locals and pedestrians from the surrounding environments are led with recreational water channels and guiding sidewalks into the spaces framing communities and urban life. By breaking down original barriers, the new area opens up to the surroundings and creates more openness, visibility and accessibility in the effort to invite the population into the new district.

The area of Amtssygehuset combines the urban and recreational identities existing today in a new expression embracing the history and the heritage of the original hospital. The new area offers a varied program in the urban spaces, targeting different users, and directing people to confront imaginary zones and undefined spaces in the intention of breaking boundaries and direct people to unconsciously interact with others.

A plan in scale 1:500 is enclosed in the accompanying drawing folder.



ill. 34

A DIVERSE ASSEMBLY

In the new urban district of *Amtssygehuset* a diversity of people and programs will ensure life and activity throughout the day. Since a specific composition of residents is hard to arrange, the urban design must accommodate the wishes of all kinds of people through a variety of programs, possibilities, and urban characters and through a wide range of different types of dwellings making possible a varied demography. Dwellings in the area will therefore consist of both social housing, leasehold accommodation and owner-occupied accommodation distributed throughout the entire site.

The new public functions at *Amtssygehuset* both within the buildings and in the public space are of multiple use, making possible an ever changing character of the district. Some programs and spaces change character daily, while others change character according to the time of year or weather conditions.

“*Værkstedet*” is active in the daytime as a workplace and in the afternoon as a workshop open to the public.

The kindergartens will be active in the daytime and they will be able to use *Centralen* for extraordinary activities and thereby interact with the city. Both *Værkstedet* and *Centralen* are flexible for different types of usages, which makes it possible for the residents and users of the area to influence what activities play out in the buildings.

The kindergarten's playground will be open for kids living in the area in the afternoon and on weekends.

A rappelling club is an example of a special program that will activate the characteristic chimney, that stands as a landmark and can be seen from various other places in Aarhus. Moreover, student facilities in *Portbygningen* will be an attractor for students and will generate life both inside and outside the building. The student environment is open to all, and is a supplement to the

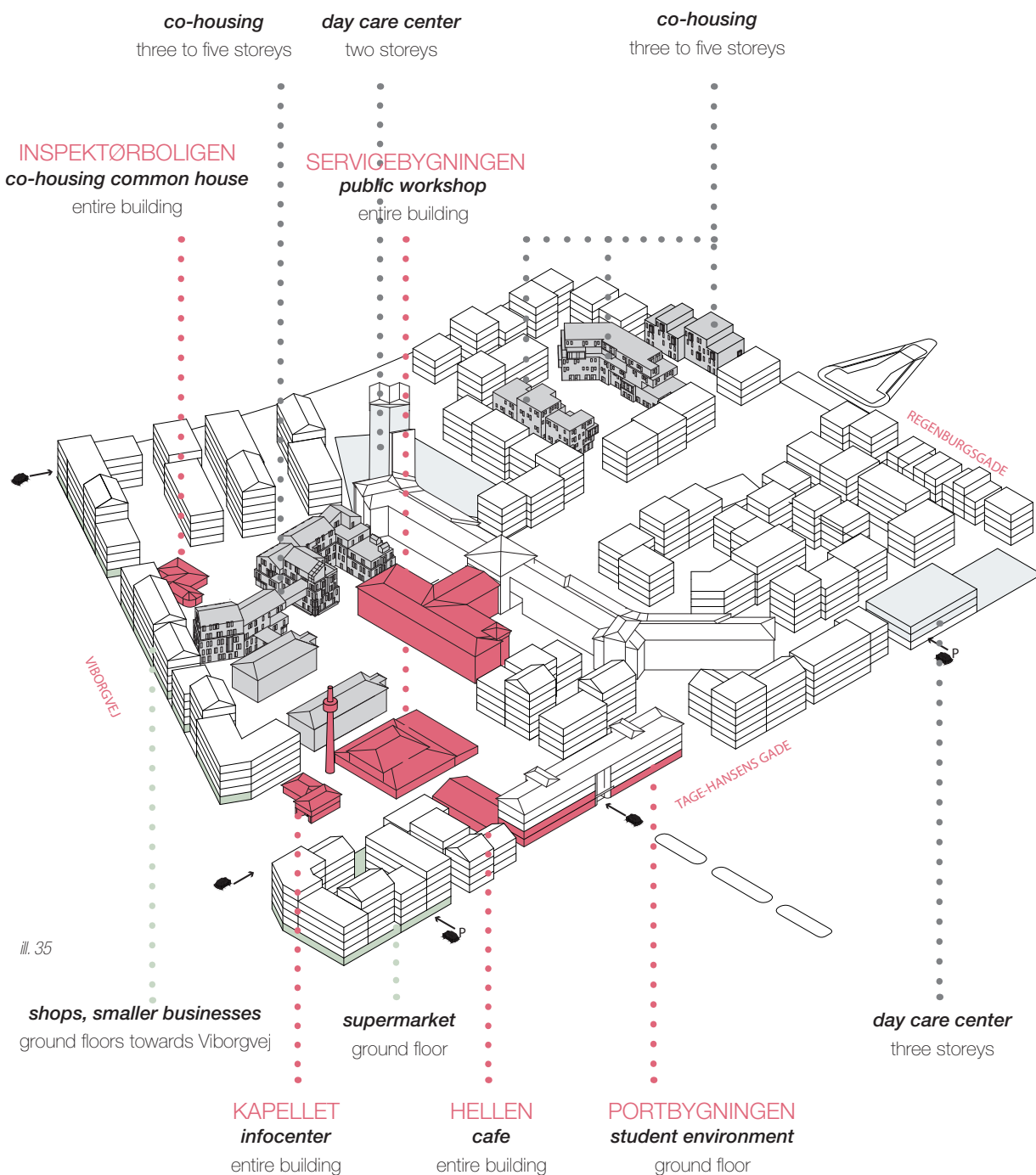
educational institutions in the area, that lack physical but relaxing study facilities.

A medium-sized supermarket will provide *Amtssygehuset* and the surrounding area with close-by grocery shopping possibilities.

The need for small businesses, shops and offices is limited, and should they become unnecessary, the location of these will allow a transformation into new programs.

‘Hellen’ is a relic from the former hospital, that functioned as a café and meeting place for patients with cancer and their relatives. The spirit of the café is sought carried on, and the size of it has been extended with a glass structure that holds the green relaxing atmosphere of an orangery, and serves as a breathing space in the northern urban part of the area.

The programs vital for the development, life and community of the district, are shown in on the opposing page, and some will be further elaborated and illustrated later on.



THE LIFE OF WATER

The pursue of a diverse demography in the new district calls for innovative measures of designing urban spaces that can gather a manifold group of people. Water has always had a drawing effect, no matter who you are or where you are from - it is a biological impulse. The aesthetics of the water management are changing throughout the site to obtain a synergy between functionality and recreational value. In certain areas the water is used to stimulate the senses by being activated and even made available to touch.

As water has a strong power of attraction on people it is used as a catalyst for social interaction between manifold groups of people.

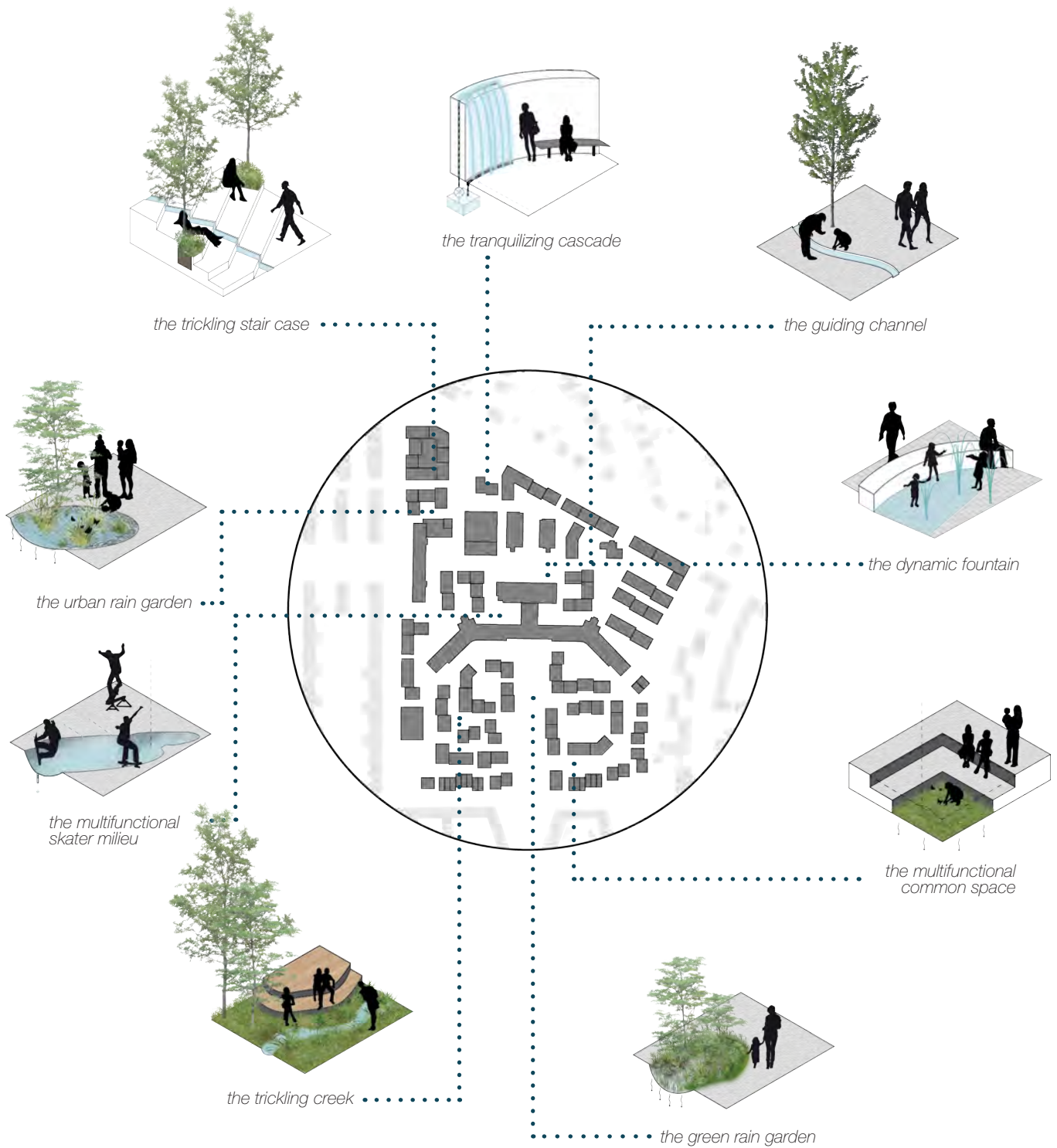
A GUIDING ELEMENT: Throughout the site rainwater channels are used as guiding elements. Being filled with water only a small percentage of the time, and usually only when people stay indoors, the channels are creatively designed to guide even in dry weather.

A GATHERING POINT: People have at any time been attracted to water, and by utilizing its alluring qualities to create meeting places in the city, water can become the gathering force of people feeling the urban space.

A RESOURCE: Water is a free resource. Collecting water for watering gardens, flushing toilets, doing laundry or

washing cars is a sustainable and inexpensive way of living in future times where water will continue to be a superfluous source of nature.

AN INVITATION TO PLAY: Especially attracted to water are children. By using water as a playful element, it is possible to turn water into an appreciated element from the very beginning of life while it has the superfine possibility of teaching children about the cycle of water in our cities.



ill. 36: - Diagram showing how the water is used as a recreational element in different places on the site

THREE PRINCIPLES OF WATER SENSITIVE URBAN DESIGN

On a 10-year rain event - the kind of rain that can theoretically only be expected every 10 years - soakaways will be able to handle the water coming. Some will detain water invisibly under ground until it has infiltrated, and some will be combined with rain gardens offering an aesthetic and recreational value to the urban space. Rain gardens will hold these values by rain or by dry weather and will therefore contain plants that can both handle dry soils or standing in water for a couple of days.

At extreme rain events it will be necessary in certain spaces with great impermeable areas to detain water locally, above ground. This is where we get the chance to exploit potentials of the superfluous amounts of water in new and creative ways and in the same time give rise to changeability in the urban space.

EVERYDAY RAIN:

Everyday rain is collected from roofs and from ground in rain gardens that are dimensioned to handle everyday rain. From here it infiltrates slowly, leaving a bit of water in the garden for aesthetic value. Some rain gardens in the northern, urban part of the site, will be sparsely planted,

and consist of mostly beautiful stone, to match the overall hard surface character of the urban half.

To lead the water into the rain gardens, rainwater channels are used - and also serve as a guiding and leading element for pedestrians. So wherever it makes sense and is possible to use rainwater channels this is the case.

THE 10-YEAR EVENT:

Below many of the rain gardens is placed a soakaway (or a detention basin in case infiltration is simply not possible) to handle a 10-year event. Between the two is a filter consisting of geotextile (filtering cloth) and a sand table of 10 centimeters. These filter the water before it is lead into the soakaway or detention basin and prevent leaves and other sediments from clogging the soakaway system.

In case water from the rain garden infiltrates too slowly to the soakaway, an overflow pipe can lead water to sewers.

THE 100-YEAR EVENT:

In case of a 100-year rain event - the one that can theoretically only be expected once every century - it is possible to detain water above ground certain places, as with the skating landscape, raingardens, detention facilities and multi functional

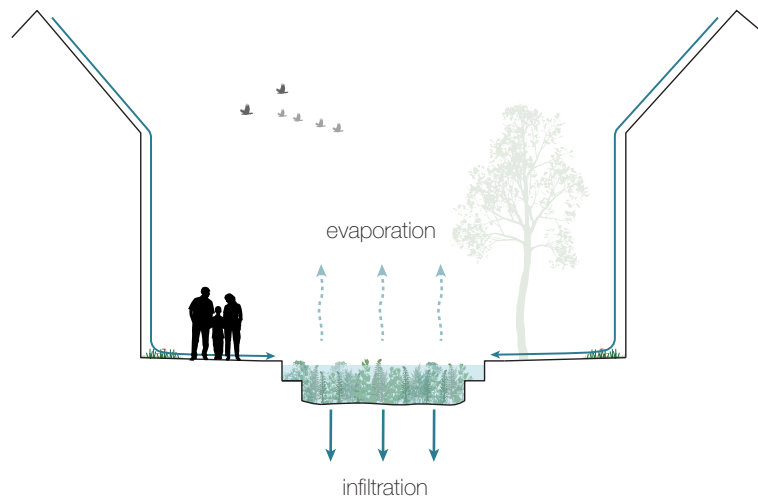
common areas. This gives the chance of creating water solutions that witness the changing of seasons and weather conditions - even after the rain has stopped falling. These systems will not be necessary very often, and few people will ever experience the filling of the detention volume, but they are however a vital apparatus to ensure that water is not flowing to places unintended.

The soakaways are dimensionally configured to handle a 10-year event, and in cases of extreme rain events where space for delaying water is minimized, soakaways under ground are dimensioned to detain the 100-year event.

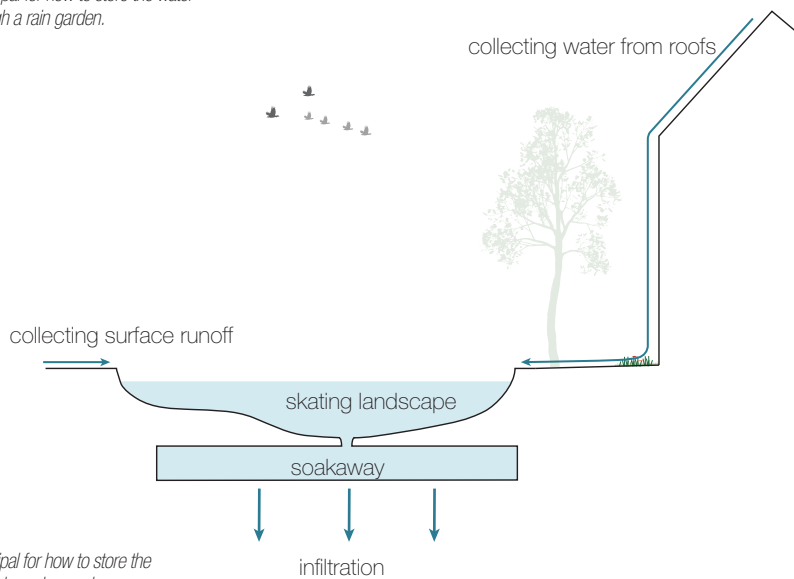
REUSING WATER:

Based on the motivation of reuse and saving environmental resources, the co-housing reuses water collected in water reservoirs underground. Pumping the water from the reservoirs to the co-housing, it will be used for toilet flushing and laundry in the common launderette.

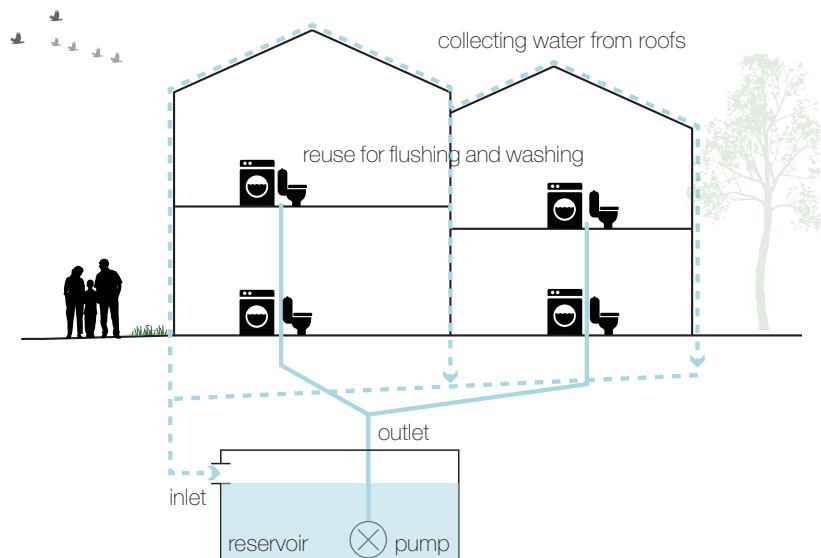
Appendix 8 and 9 show calculated volume for the water reservoir and retention volume for two different catchment areas with infiltration through a soakaway and through a rain garden.



ill. 37: - A section of the principal for how to store the water and hereafter infiltrate it through a rain garden.



ill. 38: - A section of the principal for how to store the water and hereafter infiltrate it through a soakaway.



ill. 39: - A section of the principal for how to collect, store and reuse water in the co-housing

CO-HOUSING

AT 'AMTSSYGEHUSET'

In the new urban district of Amtssygehuset two co-housing communities will work as catalysts for more socially inclusive urban life and create a good framework for the social meetings that are important to many people in the attempt to fight loneliness. The co-housings will live in symbiosis with the surrounding environment, and will by their activities invite and include the citizens of the local surroundings and generate a lively and seductive urban environment within the district of Amtssygehuset. Diverse programs, indoors as well as out and a diversified supply of dwelling sizes and organizations, target young people as well as seniors, singles or families, resourceful people or those impaired in any way.

Members of the co-housings can relieve each other in the busy daily life by sharing their human resources - giving a helping hand, looking after each others' children, cooking together or shopping for neighbours. Single residents become part

of a 'big family' and can seek company any time they want, senior residents experience an ordinary day with rich contact to younger generations, and the children and young people have a home full of playmates and are able to express themselves in challenging yet safe settings of the common spaces.

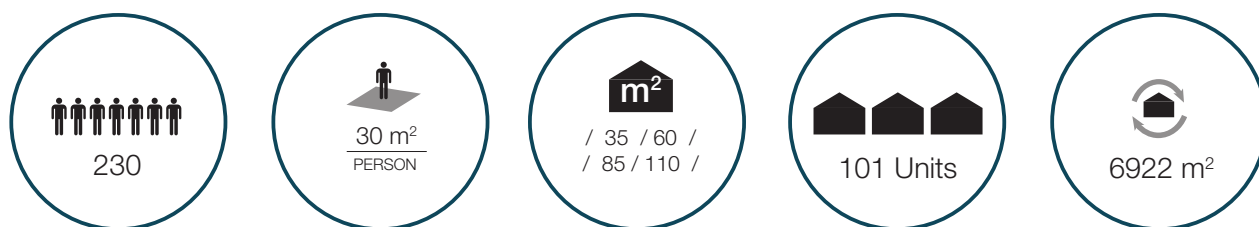
20% of the private dwelling is given up for the benefit of the community, and residents thereby share both necessary and somewhat luxurious functions that provide a good basis for interactions and a sense of community. Furthermore the sharing economy provides a better exploitation of resources, in terms of heating, water and electricity consumption as well as domestical waste.

The following pages will elaborate on the atmosphere of the two different co-housings and their respective programs, typology and relation to the surrounding environment.



THE NORTHERN CO-HOUSING

- motivated by the idea of togetherness, cohabitation and the fight against loneliness



ill. 41 - An overview of the co-housing society.
See appendix 7 for the basis for the numbers.

CHARACTERISTICS

The urban co-housing, located in the northern part of the site, becomes a catalyst for activity, events and inclusion of the local area; it is a place that gives life to the city through visibility and through inviting strangers to join communal dinners, intimate communities of knitting clubs, sports events and a flea market arranged by the co-housing. They administer the workshop, which in the daytime employs impaired residents of the co-housing, and in the afternoons/evenings serves as a creative workshop for everyone. Through these and other activities, the community creates an important linkage in the city.

Residents of a co-housing are the often fiery souls that possess the human resources needed to contain and accommodate every citizen no matter their background, occupation or social status. This enthusiastic and inclusive lifestyle is what will hopefully form

a passion for enhancing the urban communities and creating a communal atmosphere.

The co-housing shares all practical functions such as laundry facilities, electric cars and bikes, common kitchen, living room and guest rooms. In addition they share some 'nice-to-have' functions like a sauna and a small rooftop orangery. But the most important thing these people share is the commons of human resources that form the basis of living unitedly, living with other people and sharing the tasks of everyday life. Shopping for neighbors, looking after their kids - kids that might someday look after you - and sharing experiences. These are the core values that must help reach a social sustainability, where no one feels lonely, isolated or just a part of the mass.



Activities organized by the northern co-housing include 'Lopper på Torvet' the monthly flea market where recycled, upcycled and handcrafted goods can be bought alongside seasonal foods and vegetables of own produce,





A number of sports activities are available around the northern co-housing, be it rappelling, badminton, rope skipping, yoga and folk dance, just to name a few. Here a young man is playing table tennis at Sygehustorvet,



MOTIVATION: TOGETHERNESS



KITCHEN



COMMON DINNER



GUEST ROOMS



URBAN GARDENS



LAUNDRY
FACILITIES



LIVING ROOM



GROCERY
SHOPPING



ELECTRIC BIKES
AND CARS



ORANGERY



ELDERCARE



HOME
OFFICE



SAUNA



CHILDMINDING



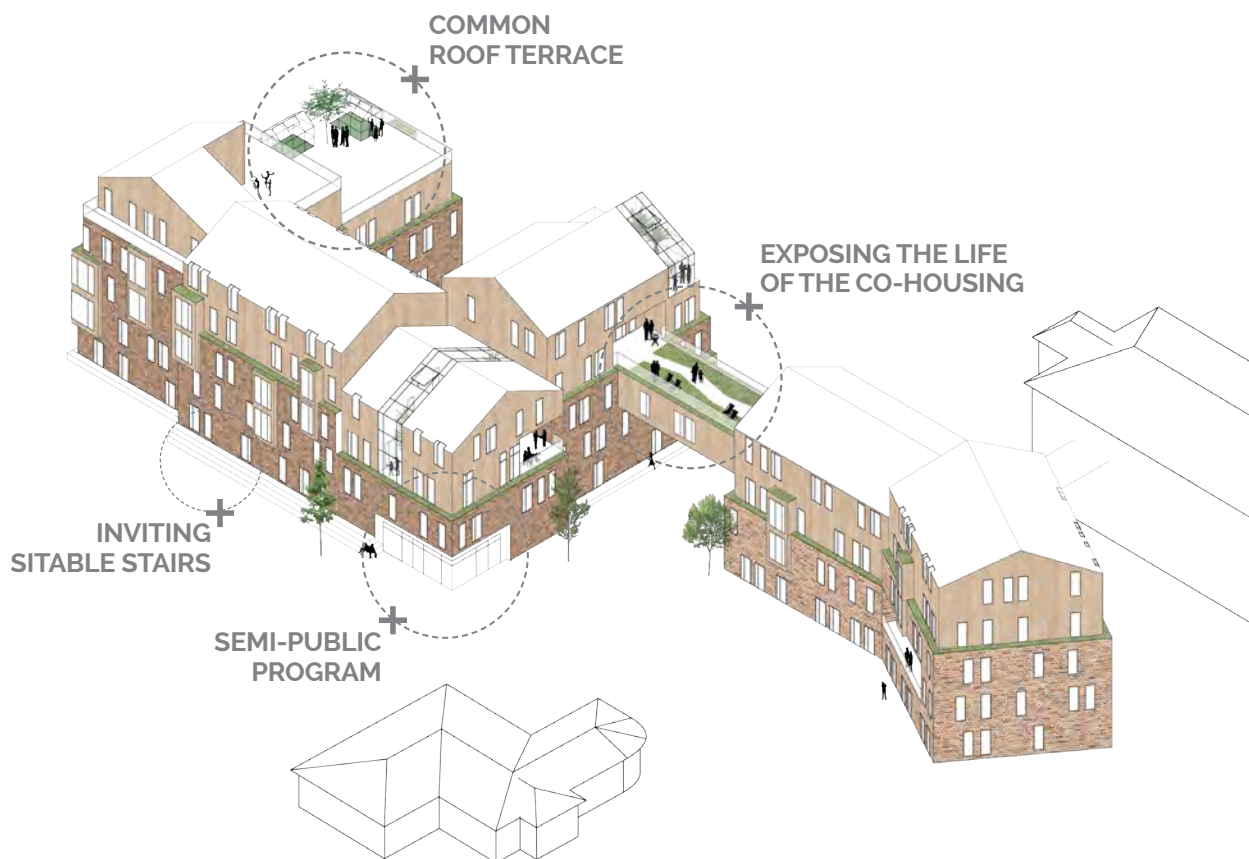
GARDENING
EQUIPMENT



FLEA MARKETS

ill. 44

When sharing all possible functions in a co-housing, the individual obtains a surplus amount of energy and finances, that can be reinvested in the community fostering a positive spiral of personal resources. These exact shared resources and facilities form the basis of the motivation of fighting societal challenges of loneliness.



ill. 45: - Isometry showing the northern co-housing and the exposure of the life inside and outside the co-housing.

RETHINKING THE TYPOLOGY

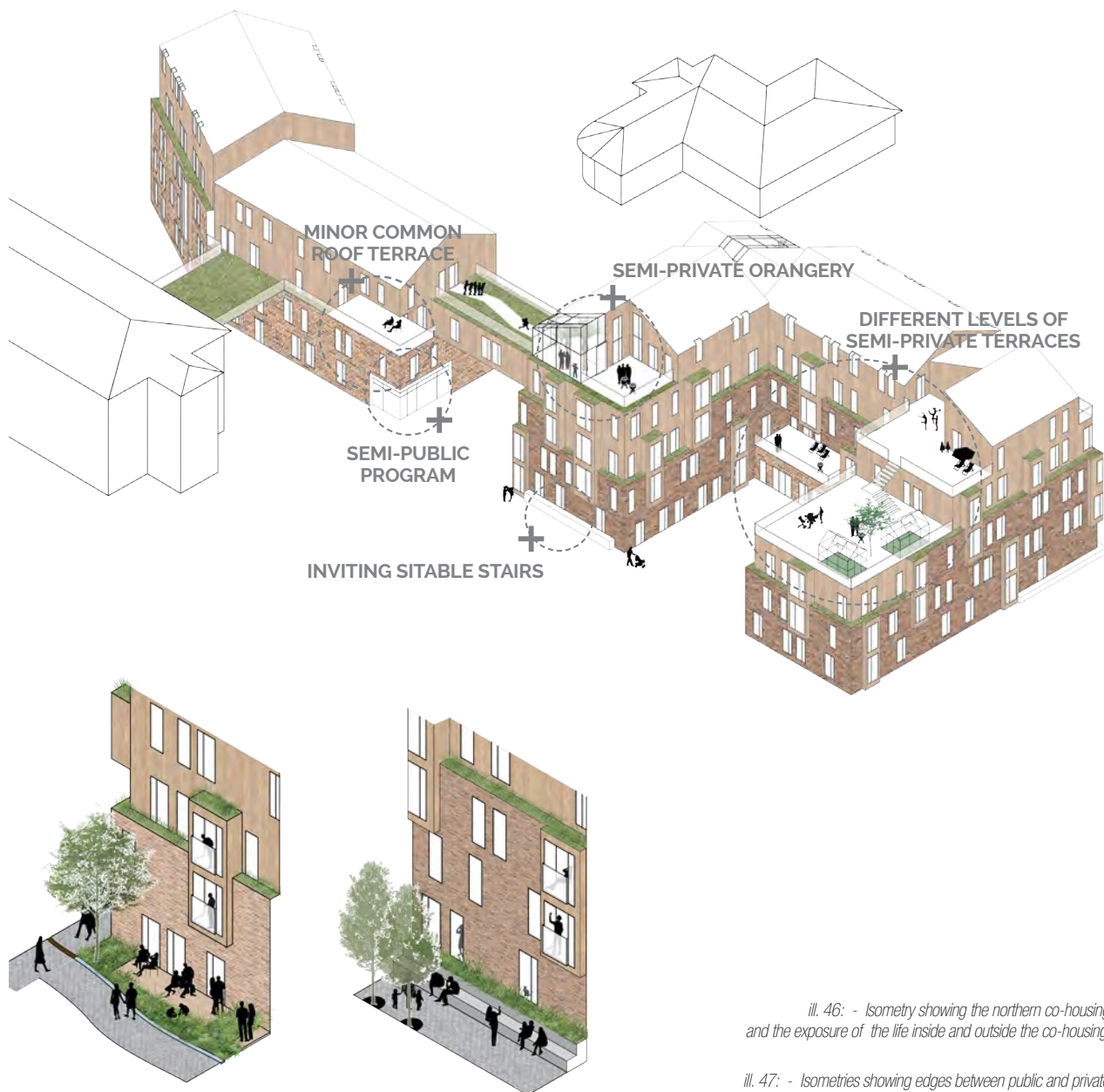
The co-housing in the northern urban atmosphere consists of three buildings in total, with very different basic typologies. Two are transformed hospital buildings, more precisely the old patient hotel, one forms a bended parallel block (*stok*) and yet another forms an open block structure (*åben karre*). The buildings are distributed between other buildings of *Amtssygehuset*, to ensure visibility and connection, and especially to avoid an architecture and distribution of buildings that might suggest a gated community idea. The typology and detailing of this urban co-housing challenges the ordinary way of dense urban living. The future residents in the co-housing will live in smaller units - but with a considerable higher degree of shared facilities as the frame for more communities.

The architecture exposes the communities within the co-housing on the outside with minor niches accommodating different activities visible for pedestrians. Major glass facades uncovering the location of common facilities act as a display for the sense of togetherness to the surrounding environment. The aim is that the common areas and common rooms have open features that can occasionally invite the rest of the city inside the physical body of

the co-housing. It is the general idea that the co-housing common house in the old inspector's dwelling (*Inspektørboligen*) and the common kitchen also function as public features open for local citizens when they want to arrange attractive events.

The urban spaces surrounding the co-housing are open both visibly and physically; there are no hedges and no showy front yards. The outside areas of the co-housing melt together with the remaining urban spaces, giving it the character of a common backyard for residents and their neighbours.

With all outdoor spaces being common or public, it is important to still afford a level of privacy for the members of the co-housing. The private community takes place inside each dwelling, and it is therefore important to identify the edge zone between building and urban environment in the intention to make people feel welcome and be tempted to engage in the social life, but simultaneously respect the need for occasional privacy. In that matter, the co-housing focuses on semi-public ground-level transition zones between the public sphere in the streets and the semi-private indoor spaces.



ill. 46: - Isometry showing the northern co-housing and the exposure of the life inside and outside the co-housing.

ill. 47: - Isometries showing edges between public and private

A GREETING TOWARDS THE CITY

Not only do inclusive programs and attractive edge zones invite citizens and activate the surrounding environment to a lively milieu. There is also a possibility of integrating social economy companies into the building's facilities related to the urban space. Social economy companies allow innovative entrepreneurs and others on the edge of the labor market to start business. It may be the exposed young or creative entrepreneur, who will start a recycling shop, a cafe or bicycle repair workshop that can be motivated within the co-housing framework. Another option is to place a smaller community for physically or mentally disabled people in

the building. Some of the residents can be employed as a working capacity in the social economy businesses or in 'Værksteden', located next to the co-housing. An example of this is seen in *Andelssamfundet Hjortshøj*, where one dwelling group houses young people with disabilities. Andelssamfundet comprises a corresponding proportion of jobs in the community bakery, kitchen and shop. It is essential for social sustainability that opportunities for such initiatives be created, and spectacular if they can serve as a social catalyst as well as a transition tool linking the life of the co-housing to the remaining urban life.



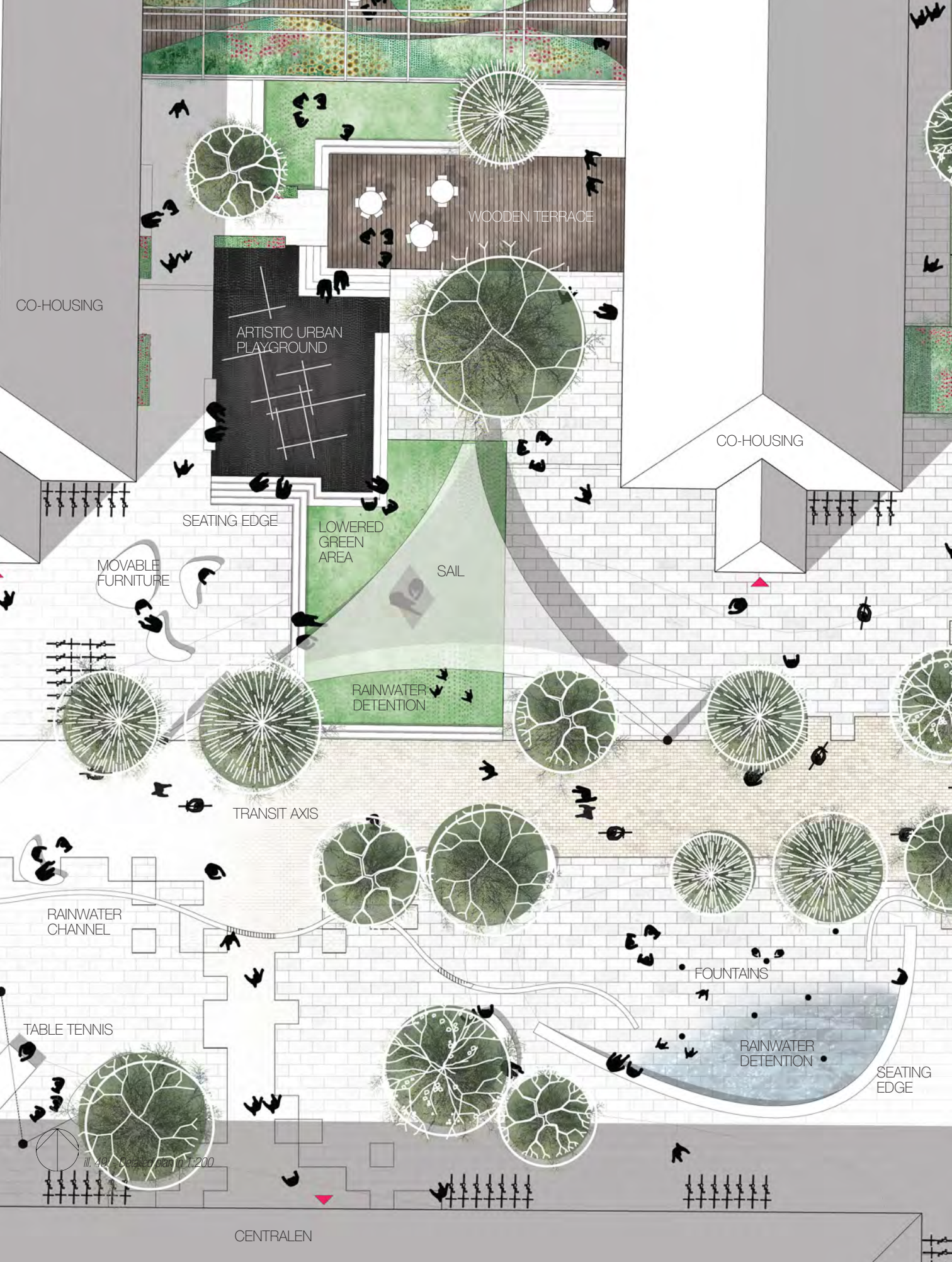
table tennis





temporary
communities

transit axis



CO-HOUSING

WOODEN TERRACE

ARTISTIC URBAN
PLAYGROUND

CO-HOUSING

SEATING EDGE

MOVABLE
FURNITURE

LOWERED
GREEN
AREA

SAIL

RAINWATER
DETENTION

TRANSIT AXIS

RAINWATER
CHANNEL

TABLE TENNIS

FOUNTAINS

RAINWATER
DETENTION

SEATING
EDGE

Ill. 49 - Detailed plan 1:200

CENTRALEN



SYGEHUSTORVET

Urban areas should be available for everyone. In that spirit the urban space affords facilities for a manifold quantity of people.

Sygehustorvet is the district's largest square, where people on the move, people hanging out, and people using the city's public programs intersect. At *Sygehustorvet*, the two orthogonal axes in the area meet, and public programs such as *Centralen*, a multifunctional common house, and *Værkstedet* intersect with the co-housing and housing units. It is a space where many people daily will pass to get to the site's new features, the new light rail stop at Viborgvej, and the space will serve as an inviting and embracing urban environment.

The square has a multifunctional character and can be adapted to different everyday situations as well as special events. It holds only movable furniture, maximizing the flexibility for temporary activities and events. Furthermore, the programs from *Centralen* can be extended out onto the square and thereby expose the inside environment. When converted into an event space, *Sygehustorvet* may hold programs such as markets, concerts, an open-air cinema or sports events arranged by the co-housing or other enthusiasts. *Sygehustorvet* features water sensitive urban design that holds back rainwater above ground making it a recreational element that invites users to play and stay on the square. The water is contained in an open basin with a seating edge and a fountain that occasionally gushes with water.

It becomes a public open-minded space in the city that embraces a broad audience and creates a platform for social relations and new communities to happen.

SYGEHUSTORVET

- a flexibility within the space

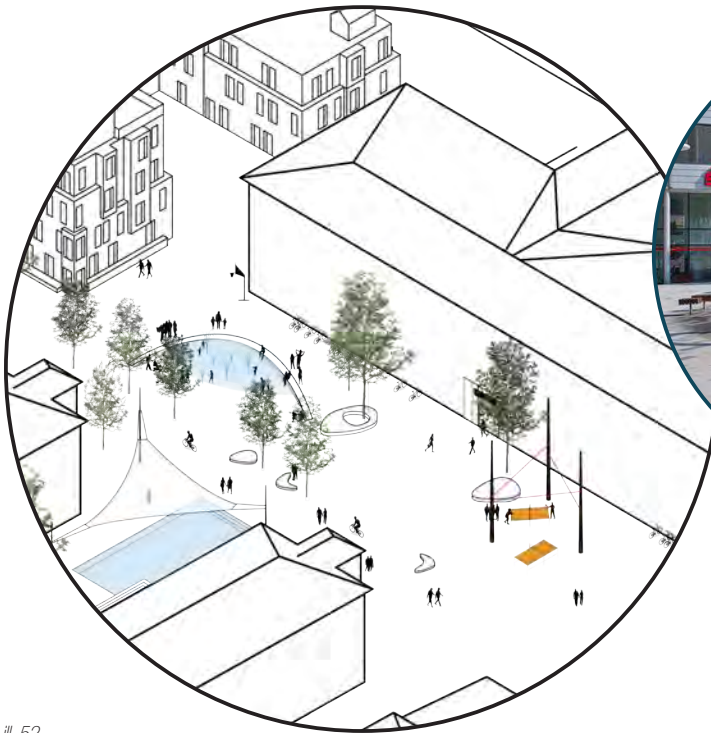
At the monthly flea market *Sygehustorvet* is temporarily transformed into a manifold and atmospheric market place gathering people from around the city. A variety of quality goods are available, and the authentic character of the flea market assists in tying people to the places and programs of *Amtssygehuset*.



ill. 50 - The atmosphere of the flea market



ill. 51



ill. 52



ill. 53 - How the fountain could look like

The fountains at Sygehustorvet are a playful element, that attracts people of all ages. The unpredictable frequency of water splashing from the nozzles makes the fountains a changeable quality of the square, where children can have fun.



ill. 54 - Atmosphere of people playing table tennis at Sygehustorvet

The table tennis facilities create a zone for activity taking place on common grounds since the playing rules are always the same for everyone. This makes a basis for meetings and interaction between all kinds of people. At the same time they provide an attraction point for both players and spectators.



ill. 55

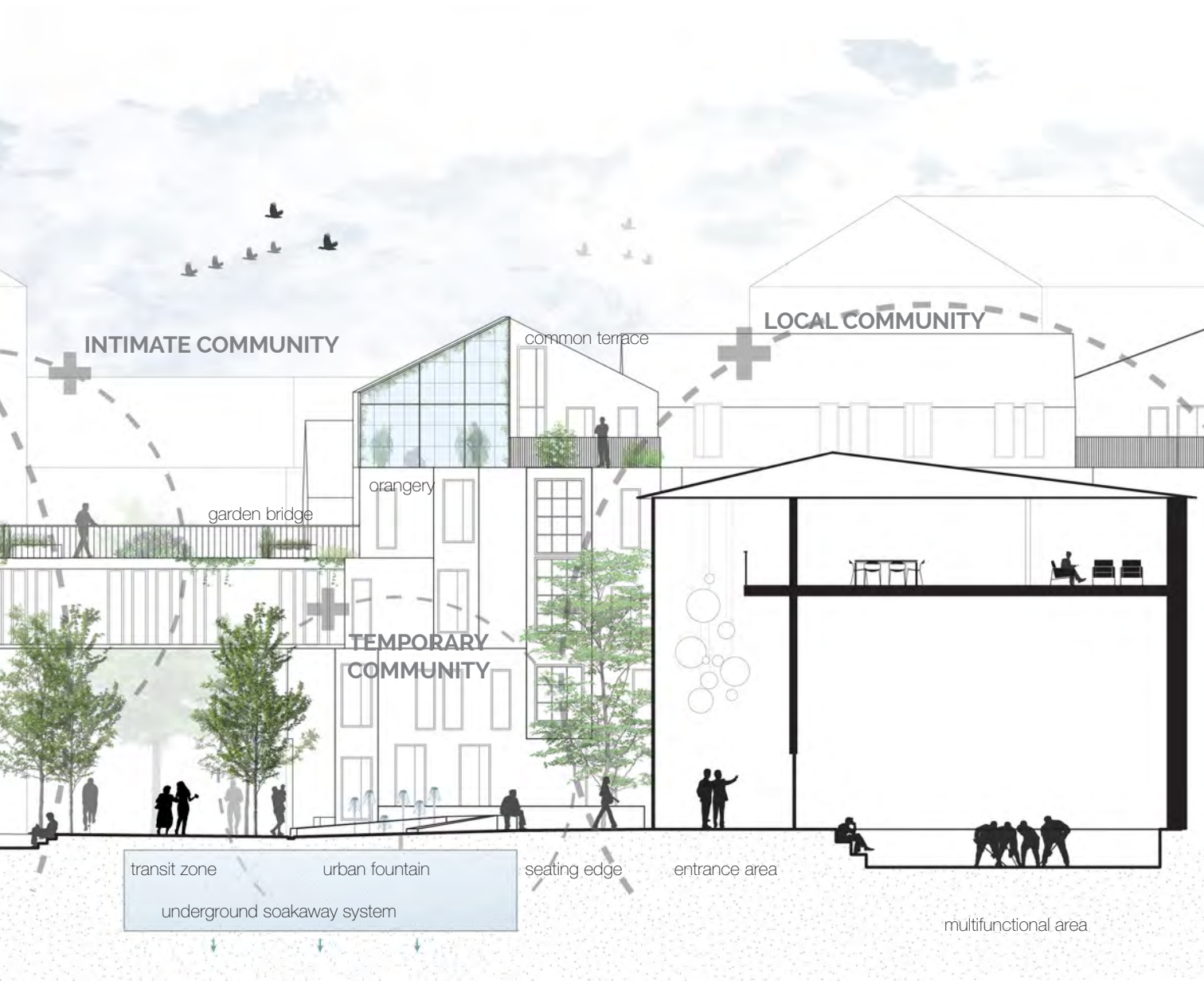
SYGEHUSTORVET

- an intersection between different communities



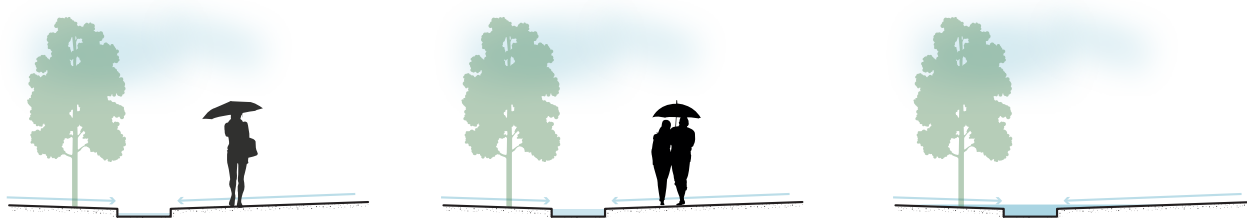
THE CO-HOUSING

ill. 56: - Section of Sygehustorvet in 1:200 indicating different communities - location of section is indicated on the 1:500 plan

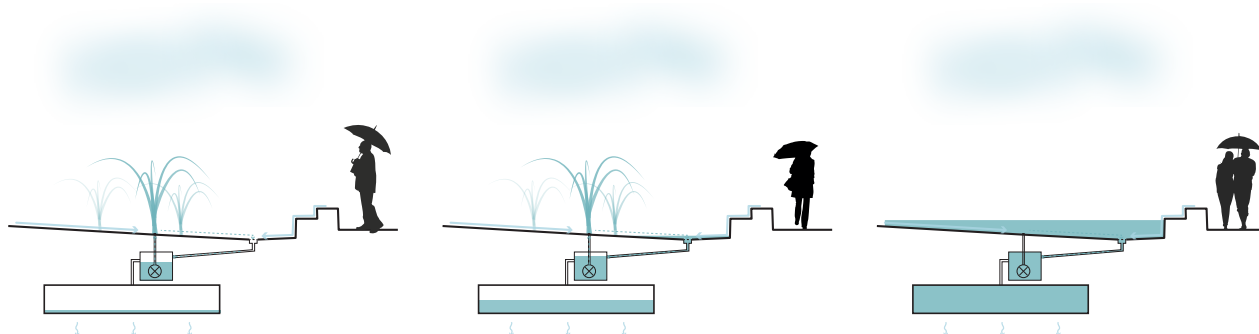


SYGEHUSTORVET

CENTRALEN



ill. 57: - Principle of the guiding channel and how it will change during everyday rain, a 10-year rain event and a 100-year rain event



ill. 58: - Principle of the dynamic fountain at Sygehus Torvet and how it will change during everyday rain, a 10-year rain event and a 100-year rain event



ill. 59: - How the urban garden will change during everyday rain, a 10-year rain event and a 100-year rain event

RECREATIONAL WATER

The sections show how different designs allow a shift in character after a rain event. The strategy is to make the water visible by holding back water on the terrain instead of leading it to an underground sewer system. Not only the visible, recreative character benefit from water sensitive urban design - the economic aspect also gains from

WSUD as it is cheaper and more flexible than a sewer system.

The sections show how an on-ground detention volume can function both as a lowered area gathering people as well as a detention volume holding back a 100-year rain event. Another section shows how the water channel has an overflow volume to handle cloudburst situations where the

volume of the channel is not sufficient. Even small interventions can make huge differences when it comes to rainwater management, this is visible on the section that shows different situations at Sygehusstorvet where a slope and raised seating surface create a detention volume on ground that has recreational value both in wet and dry weather.

CENTRALEN

- a catalyst for diversity

From ancient time, the concept of Centralen was associated with the life nerve of the smaller village societies, and the place where all life and information went through. A centre point for exchange and of crucial importance for the societies.

In the new district of Amtssygehuset, Centralen reflects an interpretation of the original meaning and perform as an engine enhancing the urban life placed centrally in Høgh-Hansens originally building for recreation and healing. The new public building will hold a variety of programs, activities and clubs and embrace a diverse target group of kinds, young people, seniors and families and different new communities.

Vast open glass facades will invite users inside and create a dynamic with the inside and the surrounding urban environment.

It could generate the framework for:

day nurseries, for the day care centres in the area

singing classes or choirs

sports activities, like different dancing, yoga, gymnastic

public lectures

concerts for upcoming entertainers

events, such as exhibitions or trading markets

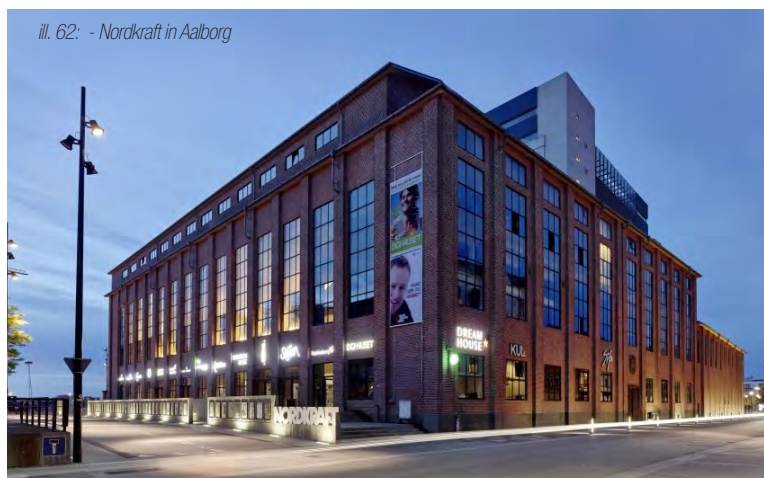
different clubs, for example political based, sports, etc.

communal eating's



ill. 60

A reference of the identity, program and involvement in the city life could be Nordkraft in Aalborg. An old power station transformed to a dynamic space including both sports facilities, restaurants, university facilities, a music venue, a small cinema, a culture club among other and target a broad audience.



VÆRKSTEDET

- the creative community

Værkstedet is placed in the original service and technical building from the hospital environment, and will in the future continue original identity. The idea is that the building partly will be drive by the co-housing, creative volunteers and few employees organizing the daily life and the machines. Here residents along with locals can come and get help with DIY projects or engage in small classes in the many different workshops. Thereby Værkstedet will function as a meeting place, and like Centrale, a place where new relations and communities can arise

The existing will need a modest renovation of the outside and in that phase a more welcoming entrance will be integrate along with an extension of the building providing room for exhibitions or lounge area.

It could generate the framework for:

wood workshop

handicraft workshop

pottery workshop

drawing workshop

graphics workshop

metal workshop



ill. 63

A reference of the environment and activities in Værkstedet could be Huset in Hasserisgade, Aalborg. A culture and activity centre that houses art and cultural functions, café facilities, many different workshops, such as glassworks, pottery workshop, handicrafts workshop, media workshop and practice rooms, and thereby involves many different user groups. The house thus creates the basis for creativity and personal development.

ill. 64: - Costa del Sol in Aalborg

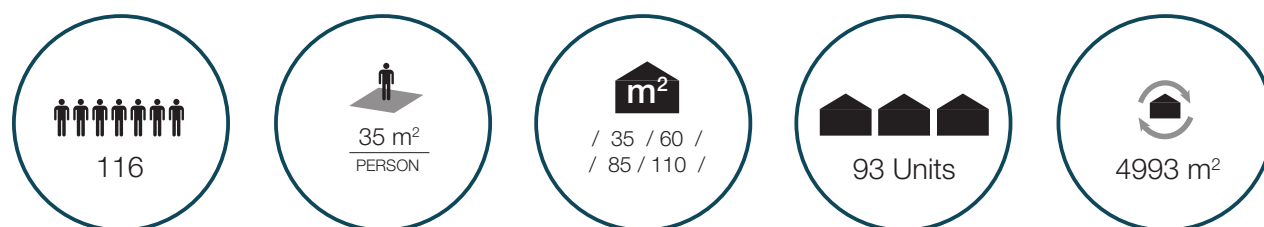


ill. 65: - The 'backyard' of Huset in Hasseris



THE SOUTHERN CO-HOUSING

- motivated by a sustainable initiative, where the free resources of rainwater are core



ill. 66: - An overview of the co-housing society.

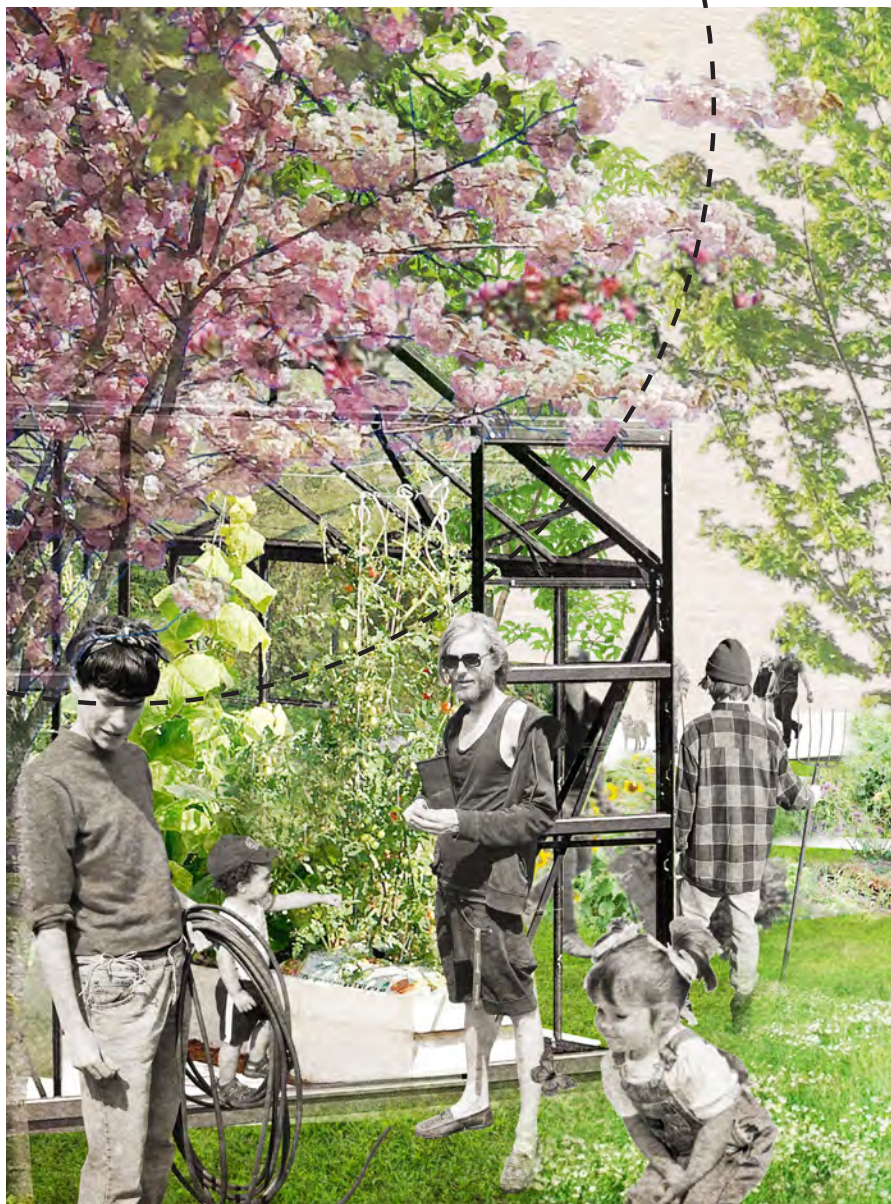
CHARACTERISTICS

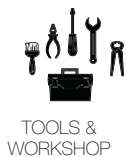
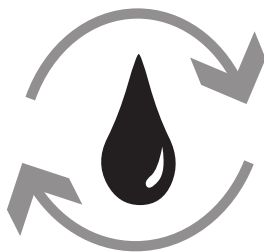
The urban co-housing, located in the southern part of the site, becomes a catalyst in the recreational environment. The community presents a varied urban space with a focus on modern environmental approaches inviting for activities and exposure of new ways of living sustainably in the city and thereby becomes a demonstrator for how to grow own vegetables, reuse rainwater for toilet flushing and washing clothes and managing water so it becomes a gathering point and a resource. The *commons* in this community, is thus the resource that rainwater constitutes when exploiting its potential to the fullest. For this kind of community to thrive, members must share a common passion and sustainable ideology - luckily this ideology of the sustainable lifestyle is increasingly grasped by 'the man in the street' in the realization that the wellbeing of earth means the wellbeing of humans. The quali-

ties of small towns are sought implemented in the green spaces, where urban gardens, hydroponics, greenhouses and trees en masse are the main features that people can share.

Considering, that this co-housing is located in the southern part, in an environment more concentrated around housing units than public functions, the range of semi-public programs within the buildings relating to the surrounding environment is lesser. Instead, this co-housing focuses upon green activities integrating and inspiring local citizens. With the outdoor programs and their openness to others, the framework for new urban communities both Local and Intimate is set. The gardens can furthermore contribute to the growing of produce for the community kitchen, communal eatings in Centralen or for local restaurants and cafes.

The southern co-housing revolves around the idea of using and reusing the free resource that rainwater constitutes, in the attempt of achieving a sustainable way of utilizing the urban space. With rain gardens, vegetable gardens, greenhouses and hydroponic growing systems, the co-housing manages to produce their own foods for everyday use.

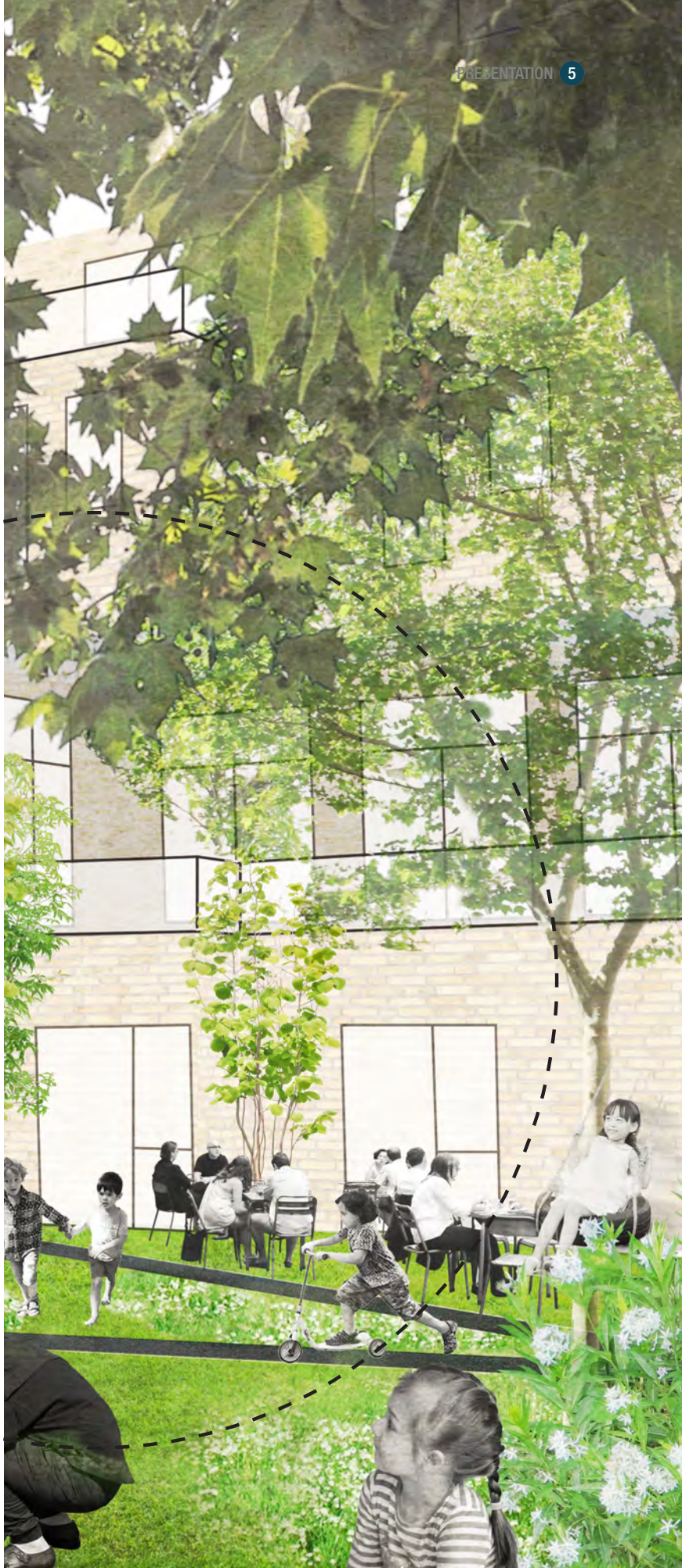
*ill. 67*



MULTIFUNCTIONAL CAFE



Communal dinners are a recurrent event in the southern co-housing. With the output from their gardens they obtain extremely cheap or even free foods so they can arrange gatherings with free meals for both co-residents and fellow citizens.





ill. 70: - Isometry showing the southern co-housing and the exposure of the life inside and outside the co-housing.

THE TYPOLOGY

The southern co-housing has three apartment blocks of different ownership and different sizes. Two of the blocks are part of a bigger block structure (*åben karre*) that consists of totally four blocks - the remaining two are not a part of the co-housing community, but because of their arrangement and proximity to the co-housing and its functions, residents of these two buildings are easily engaged in the activities of the co-housing.

Like the northern co-housing, the southern one also reflects the life of more togetherness on the outside of the building. A visual interaction is an important strategy to facilitate interaction between the co-housing and the city. Open facades are a part of the strategy as they expose common rooms and the activity taking place within them.

Shifts in the facades of the building create small outdoor niches in different levels and of different sizes, creating pocket spaces for stays and meetings among residents, and possibly also between the local citizens in certain places.

In that way, it becomes possible for people in the urban spaces to follow the life in the rest of the community as well as residents of the co-housing can engage in the life across the buildings. For example, parents can enjoy the sun on the terrace while the children play in the garden. The visible life on the facades of the building contributes to an environment where interaction among residents is possible but also the possibility of engaging with the surroundings.

... AND THE GREETING TOWARDS THE CITY

The co-housing is placed and designed to promote an inviting gesture with openings towards "Sygehusparken" in order to enhance the contact to the recreational and transit area that is Sygehusparken. Visibility is an important promoter of contact and possible interaction between the co-housing and its surroundings. The facades of the southern co-housing are transformable, so the borders between indoors and outdoors can be erased, extending either the urban space or the common rooms, thus making room for whatever activity they might like.

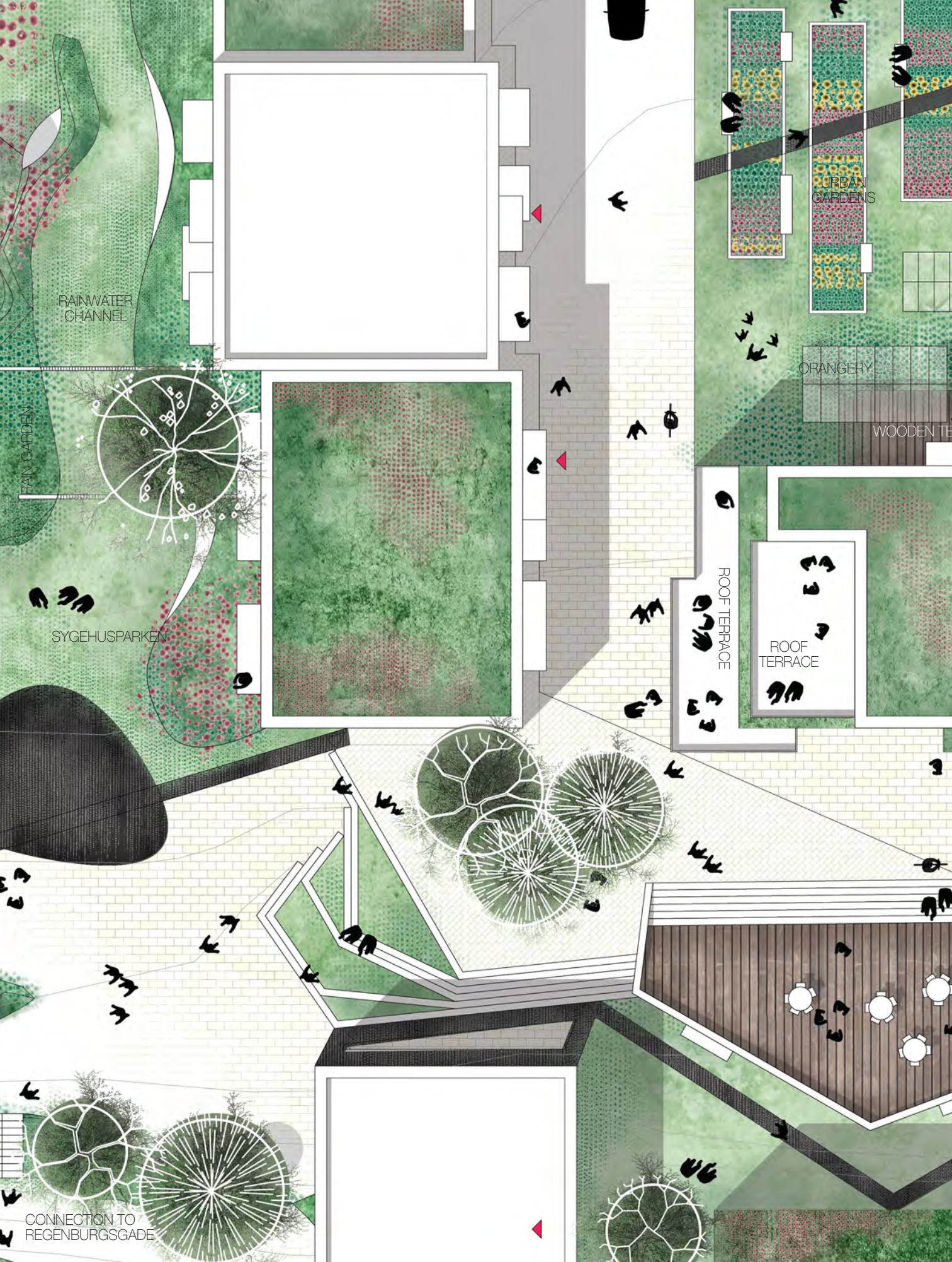
group of urban gardeners in the co-housing are able to organise attendance of a composting plant, city-beehives or even a food community that can provide the co-housing and parts of the local area becoming a gastronomic epicenter for homegrown plants, vegetables and herbs, and a catalyst for gastronomical communities and experience exchange groups.



ill. 71: - Diagram showing the edge zone of the co-housing







RAINWATER
CHANNEL

RAIN GARDEN

SYGEHUSPARKEN

URBAN
GARDENS

ORANGERY

WOODEN TERRACE

ROOF TERRACE

ROOF
TERRACE

CONNECTION TO
REGENBURGSGADE



THE SOUTHERN CO-HOUSING

Gehl describes how gardens and the work around these can serve the same purpose for adults as a playground can for children, a place to go for - a place for activity.

The placement of the garden is important. If the garden is placed, where others pass by or where it is visible in the urban area, it has potential to facilitate other recreational and social activities and meetings. Common activities gives something to talk about and thus provide a breeding ground for a community to arise (Gehl 2007).

Around the co-housing, placed in the south, many diverse activities ensure a connection to a broad user group and thus a meeting space for new interactions in the middle. A breeding ground for new communities to happen. Different variations of stays is provided with urban gardens in the courtyard of the cohousing, a multi house relating to the minor square south of the building and comfortable seats on wooden planks in the lowered common facility able to handle extreme rain events invite residents and locals to engage in the environment.

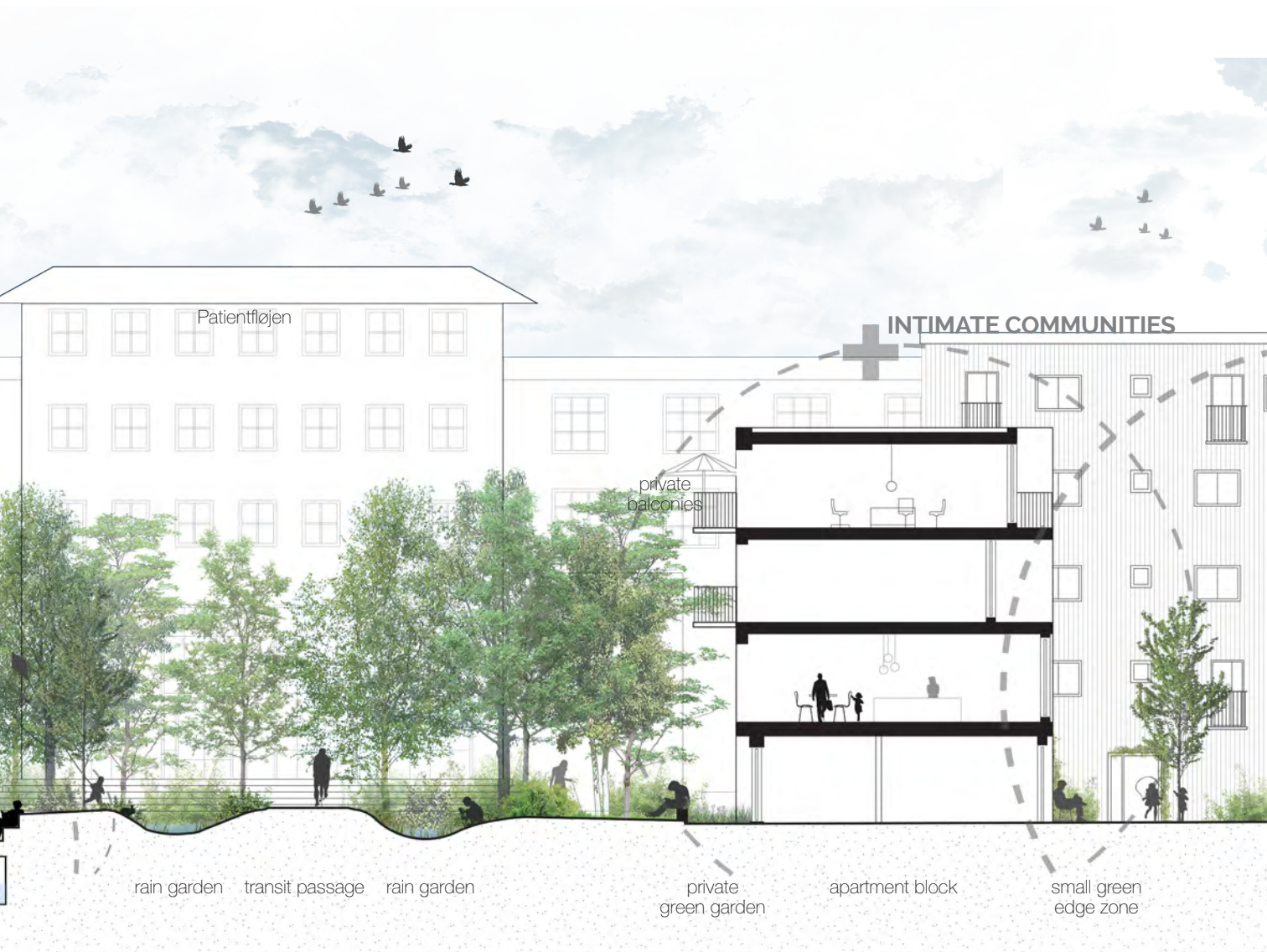
As pointed towards in the presentation of the co-housing, the southern co-housing is located in close relation to Sygehus Parken, the major green recreational park located in the original axis of Sandberg's park. Sygehus Parken provides a variety of programs, such as a plaza related to Patientfløjen, a multi-sport court, rain gardens, clay court for petanque, and lawns for stayings or activities. This major park will function as a main traffic artery connecting the new district to Silkeborgvej and Ceresgrunden. Thus, the staircase towards Sygehus Parken make an inviting gesture in the effort to lure people into the area and expose the life of the co-housing environment.

SYGEHUSPARKEN

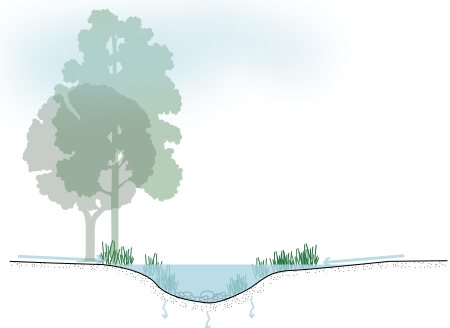
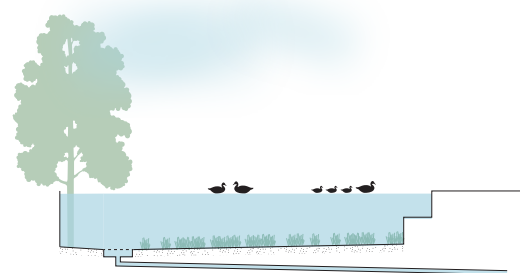
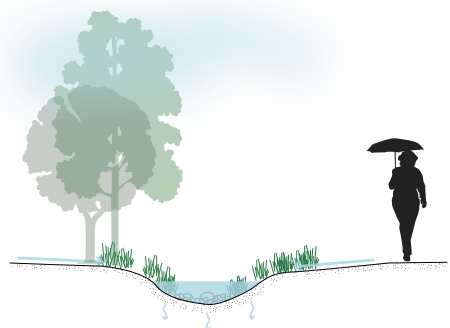
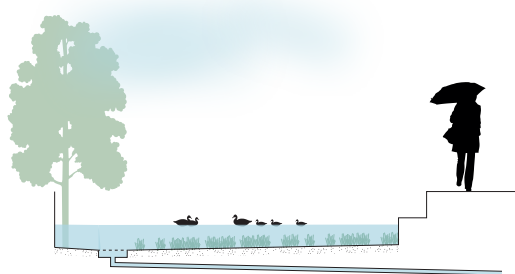
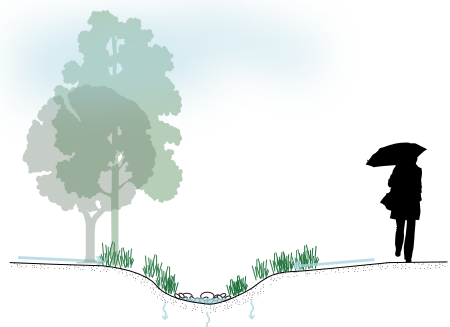
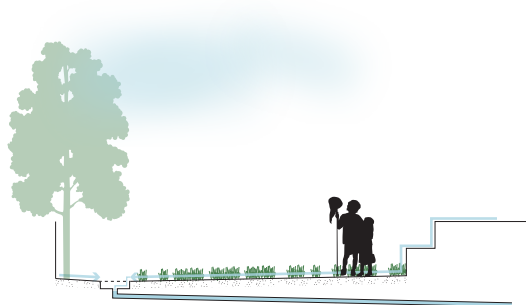
- a green recreational oasis in an urban district



ill. 73: - Section of Sygehusparken in 1:200
- location of section is indicated on the 1:500 plan



SYGEHUS PARKEN



ill. 74: - How the co-housing's common area will change during everyday rain, a 10-year rain event and a 100-year rain event

ill. 75: - How the recreational rain gardens will change during everyday rain, a 10-year rain event and a 100-year rain event

RECREATIONAL WATER

The southern area is greener and lushier than the urban characterized northern area. The southern area represents a wild and green recreational city nature where a variety of grasses and trees give character to the area. A lower degree of impermeable surfaces result in a lower surface runoff. Runoff from roads and paths is gathered in rain gardens along the original north-south axis. Here rain gardens with wild and varied vegetation create atmosphere and ensures experiences along the path. After a

rainfall the rain gardens will delay the water as it slowly infiltrates and will in this wet period appear as small lakes. In dry seasons the experience will be the whistling sound of the wind moving the grasses.

In the south west, the small creek leads water from the roads of the western part through a green passage of the buildings adding recreational character along its way to the rain gardens in the axis where the journey ends by infiltrating to the groundwater.

In the southern co-housing a lowered area is designed for common activities and stay in everyday situations. The lowered area function as a dry detention pond. It is able to delay water on terrain in extreme rain situations where the underground reservoir for reuse of water has reached its capacity. The dry detention pond will delay the water while it is slowly led out to the sewer system through a controlled outlet in the bottom of the pond

ESTABLISHING AN URBAN CO-HOUSING

W Aarhus Municipality is today the owner of Amtssygehuset - who will buy it afterwards, no one knows, but it will definitely have consequences for the foundation of the new co-housings. Will a developer buy the entire site? Is there a need for social housing? Alternatively, could the

community idea be taken to the next level with a Baugruppe? In the following are listed three different scenarios, and a suggestion for how they can all go hand in hand with an urban co-housing project. Most important, is to make sure that a diversity of people with different resources have the chance to influence the area.

BAUGRUPPE

WHAT IS A BAUGRUPPE?

A Baugruppe is a community of people who join forces and resources to build an apartment building of their personal and common desire with apartments that are affordable. To avoid problems and controversy, they lay down clear rules from the beginning, and often hire a contractor to take care of the organization. When they find a plot to build on, in this case at Amtssygehuset, they pool their financial resources to buy the plot and pay for the construction. An architect is hired to translate the members' individual ideas into a building design, and when the construction is complete, they become owners of their respective apartments (Kopec et al. 2015).

THE PROCESS

Commonly, the architect proposes an estimate of costs for the project, and it is quite important that the Baugruppe members are precise with their payments, as this shows seriousness, and heightens the level of mutual trust. The contractor is often one familiar with or even an expert in Baugruppe housing projects, and he manages the general process from beginning to end.

Groups that seek professional help use approximately six to nine months from initiation to delegation of the property. If the Baugruppe attempt to manage the process themselves, it will often take five to seven years (COWI 2008).

- Affordable - A Baugruppe can save up to 30% because the real estate developer is left out of the process (COWI 2008).
- Customized project - As opposed to ordinary apartments that are determined by the market demand, you get the chance to set your own standards, and build an

apartment in line with your personal style (Kopec et al. 2015).

- Sustainable investments - as a Baugruppe you get the chance to invest in innovative and sustainable solutions that increase the future value of your apartment investment (Kopec et al. 2015).
- Neighbors - you are acquainted with your neighbors even before you move in, and often you share the same values - after all, you did all choose to engage in this project.

BENEFITS OF A BAUGRUPPE A MUNICIPALITY'S ROLE

The municipality needs to show willingness to create the requested conditions that set the base for a Baugruppe. If the municipality owns the building plot, certain parts of the area can be reserved for the Baugruppe with opportunities of renewal if the process turns out to be slower than initially assumed. In addition, an employee from the municipality can be attached to the group and work as a consultative professional in the process (COWI 2008).

A DANISH EXAMPLE

The Ecovillage concept is based on the model of a Baugruppe (EcoVillage 2017).

Ecovillage administers the purchase of the building plot. In the meantime, the Baugruppe hires their architect and contractor and when the final drawings have been approved for construction, the Ecovillage foundation buys the building plot. This will only happen when a Baugruppe is fully assembled, the architectural drawings are completed, the joint expenses are announced and the contract folder is ready. This way, they buy the plot on behalf of the Baugruppe members, to make sure that the project does not fall through leaving members with a vain land purchase.

SOCIAL HOUSING ASSOCIATION

WHAT IS A SOCIAL HOUSING ASSOCIATION?

Social housing focuses on the principle of housing for everyone. It should be affordable to reside here, construction must be cheap, and all earnings from rent are employed within the housing association. Distributed all over Denmark there are more than 550.000 social housing units administered by different associations - The apartments are most commonly rented through smaller housing departments (Lejerbo 2017).

BENEFITS OF SOCIAL HOUSING IN A CO-HOUSING CONTEXT

- Affordable - The rent is inexpensive, because tenants only pay for the actual expenses of the housing department.
- Service - The level of service is high. Social housing associations always have property management clerks attached to each property.
- Democracy - Co-determination is given to residents through democratically chosen executive committees

composed of residents in their respective housing departments. Each department is an independent entity that manages its own budgets and programs in the area, so it reflects the residents of the area (Himmerlands Boligforening 2017).

OPPORTUNITIES FOR INFLUENCE AND PARTICIPATION

Social housing associations are based on democracy among residents, which means that residents have a high degree of influence and co-determination according to the area in which they live. Therefore, they can choose to be committed themselves. This can be accomplished by attending department meetings, joining the board or actively working with the club work in one's own department (Lejerbo 2017). In that way, residents facilitate their own property, and thereby it becomes crucial that grassroots and enthusiasts passionate by their neighborhood and for democracy engage in life and co-creation of the departments (Himmerlands Boligforening 2017).

PRIVATE DEVELOPER

WHAT IS A PRIVATE DEVELOPER?

A private developer can be a contractor such as Enggaard (who is also the developer of Ceresgrunden just southeast of Amtssygehuset) or a pension company, like Danica Pension. The developer pays all expenses and builds apartment buildings for renting or selling, usually adapted to contemporary demands.

A MUNICIPALITY'S ROLE

If the site is sold to a private developer, and the creation of the co-housing needs to be ensured, it is important that this is provided through official local plans with regulations and demands. The location of Amtssygehuset is extremely attractive and a number of developers will probably make a bid for plots once the development plan is completed.

It is difficult to decide which process is right for the co-housing, as it very much depends on the people going to live there, and how they feel that the highest degree of diversity can be ensured. Thus, the different approaches are suggested to indicate, that any solution may actually work. The co-housing will act as a catalyst nonetheless.

The municipality is the owner of the site, and basically they can decide what should be established in the area, and thereby have the right to reserve building plots for the co-housing. In the process, it is their job to ensure that the co-housing is established either through a Baugruppe, where the site is reserved, through a social housing association or through the process of local plans if they sell the area to a local developer.

TOP-DOWN VS BOTTOM-UP INITIATIVES

In the book *City Design Strategi*, Steffen Gulmann outlines that modern city planning has to challenge the way of making strategies. *"The most cities has a great and unexploited potential of creative people that knows the city and can contribute with new thoughts."* (Gulmann 2015:233). Gulmann emphasises the bottom-up approach as valuable strategic tool in urban planning used at the right times and levels in the process of a development. Both top-down and bottom-up initiatives and strategies have different advantages and disadvantages in the process of urban planning. The top-down approach has professional strength and knowledge in ways of organizing the city in the broader perspective that citizens do not have. However, rarely they have insight into a specific area and urban life in the same way that the local citizens have. Bottom-up has great strength in local knowledge, but lacks professional robustness in the broad planning perspective (Gulmann 2015).

Alain Bertaud describes the balance between top-down and bottom-up in his article "Housing affordability: Top-Down Design and spontaneous Order":

"...as we move down the scale from metropolitan area to individual neighborhoods and toward individual lots, top-down design becomes less useful and should progressively disappear to let spontaneous order generate the fine grain of urban shape." (Bertaud 2014:1)

Bertaud discusses where the transition between top-down and bottom-up planning should emerge. Moreover, he describes the importance of finding the right balance between when something should be decided top-down or bottom-up. In the process it is

vital to consider whether it is an urban planner or a citizen that has the best basis for taking the best decision.

CO-HOUSING AND TOP-DOWN // BOTTOM-UP APPROACHES

To our knowledge, no cases of a co-housing emerged top-down exists. Traditionally, the co-housing is generated through a bottom-up initiative with basis in a common motivation, as seen with the three case studies of co-housings. Different obstacles in the startup process meet people who wants to start a co-housing. For instance, they can have problems finding a building plot or getting permission to build. This can be a problem as co-housings often are started by volunteers that run the risk of losing their drive because they meet strong opposition throughout the process.

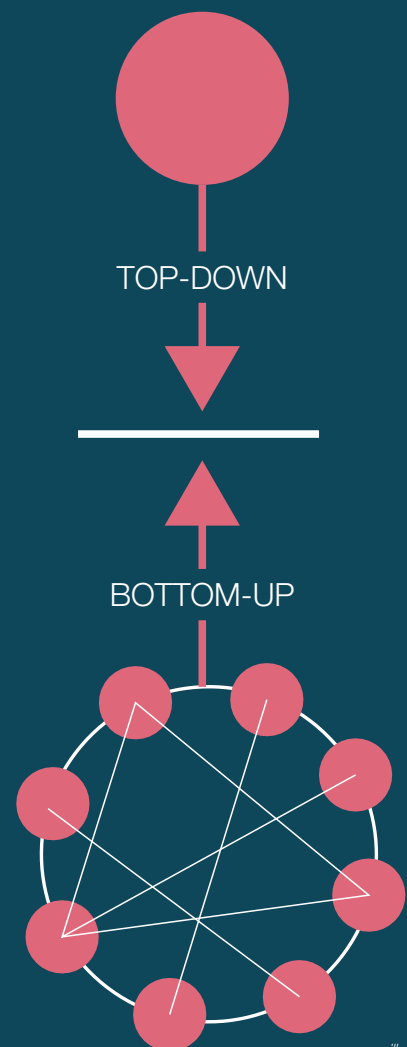
By creating co-housing through a top-down initiative the process of building a co-housing should be easier to go through with a successful result. It will require that the municipality incorporate co-housing in their work with local plans by reserving areas for communities and co-housings within the urban context. However, it is difficult to predict if the top-down strategy works and the enthusiasts pushing the process are driven with the same passion, if they do not feel a little resistance in the process of their innovative solutions coming true.

It is hard to plan communities top down because it is about the individual people involved in them. Nevertheless, through our role as urban designers we should be able to create the physical framework for communities to arise.

What is Top-down // Bottom-up?

Top-down and bottom-up are terms of different ways to handle initiatives and decisions in the urban planning process. Top-down is an expression for planning made from above by urban planners or on a political level. This approach is governed by political decisions and ensures legislation compliance. It is driven by experts with professional, theoretical and technical skills related to city planning and the major structural systems of the city (Bertaud 2014).

Bottom-up is initiatives made from a local level and often driven by local people or enthusiasts with a certain passion. Citizens using or living at a place has best insight to the everyday matters and conditions, and often have a better feeling with the pulse of the city compared to the planners located in the office. The bottom-up approach is driven by volunteer work with a focus on the local resources and opportunities, because they activate the local players (Casazza and Pianigiani 2016).



ill. 76

THE PROCESS OF THE SITE

USER APPROACH

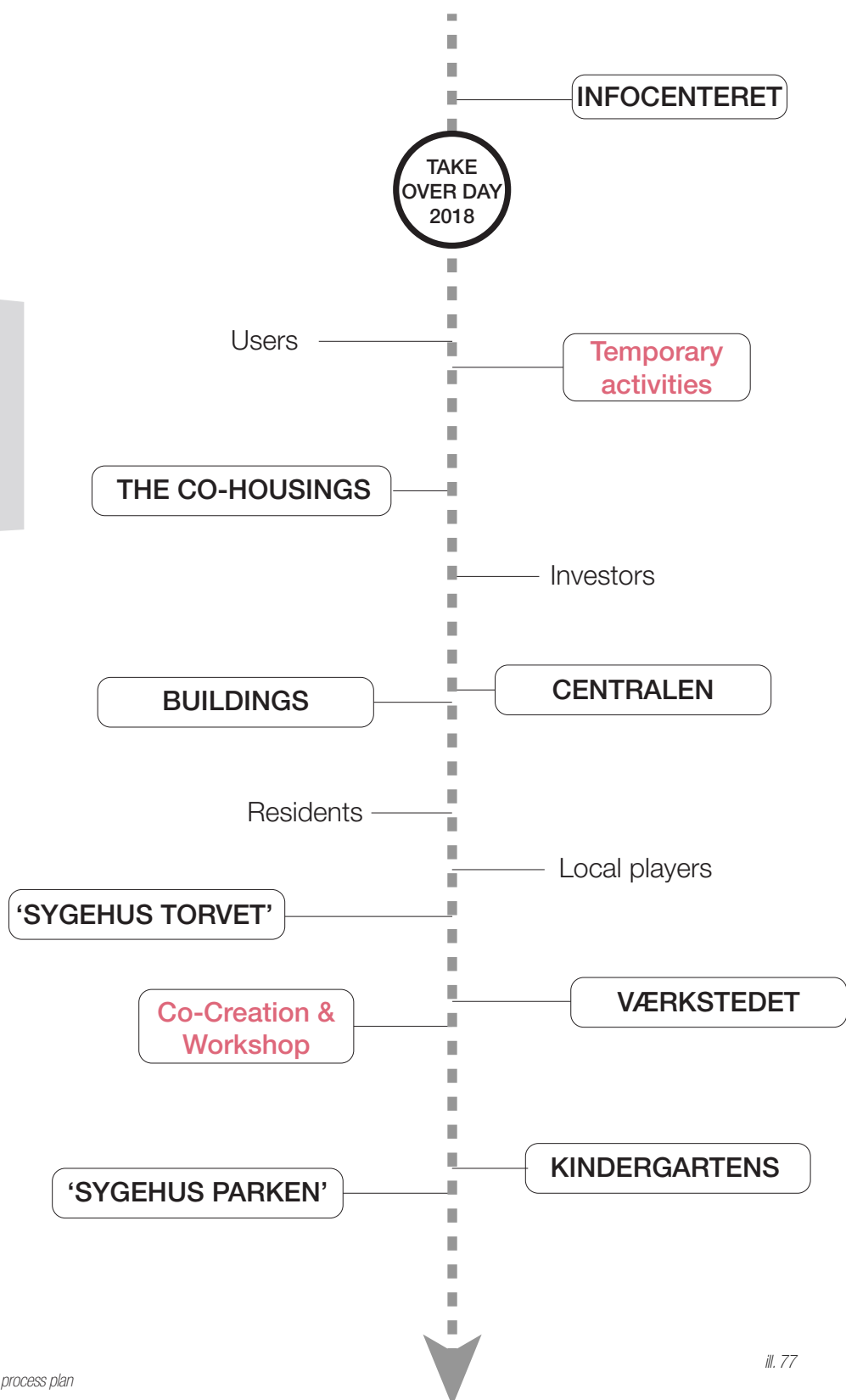
Not only is it difficult to create a co-housing top-down, because it requires commitment from people to create atmosphere and identity. Likewise, it is difficult to create a city district and the associated lively surroundings and urban life top-down.

In order to create vibrant cities life summing of atmosphere, initiatives and attractive urban, it requires that the people in the area engage and participate in the process.

Therefore, the development of Amtssygehuset should be considered as a process, where the most important matter is to engage citizens, thus creating an affiliation and awareness of the development.

The following section presents how the development of the district must be addressed and which initiatives must be integrated to involve people in the process.

In the accompanied drawing folder, a process plan specifies steps in the process, which communities that will occur during the process along with the municipality's role in the process in the spirit of being the stakeholder.



ill.: - A diagrammatic illustration of the process plan

ill. 77

TEMPORALITY - A STRATEGIC TOOL IN URBAN PLANNING

Temporary activities and facilities can contribute to urban quality and value creation in both temporary, as well as a long-term perspective (Realdania By 2013).

To activate the site from the very beginning, we use temporary activities as a catalyst for urban life, even before buildings are added on the site. Instead of creating a traditional building fence shielding the entire upcoming district from the public, creative souls are invited to participate in the process with ideas for future development and a new identity. The temporary activities' presence and use attract users to the area, and expose new ways to use this area. In that way a kind of 'city life-laboratory' are created. If the temporary activities are used in the right way - and strategically, they can (Realdania By 2013:10):

- Act as driver for the development
- Provide the area value
- Affect the future permanent town
- Create ownership of the site
- Create awareness

THE PROFIT

In short term, the aim is to avoid a deserted area in the city, while the development is ongoing. In the long term, the aim is to strengthening the upcoming area's new identity and future urban life. By including the users and stakeholders, and engage them in the local development, it may be possible to jointly create the basis for a positive and new urban life. The temporary users will be involved and can come up with ideas and activities that can be tested in the urban space. These new initiatives can develop into communities with the possibility to conquer more land and space to develop. In addition, an ownership and sense of belonging for

About temporary activities

Temporary activities are events or programs in the urban sphere with a limited duration. It covers events with a short time frame to programs lasting several years. Temporary activities depend on the remaining spaces in the geography of the city. Spaces that are in transition from one function to another (Hausenberg 2008). In recent years, temporary activities have gone from being an underground phenomenon perceived as a threat to the urban development, to a strategic tool used in urban planning with acknowledgment (Realdania By 2013). In most major long-term development projects, temporary activities are incorporated as a dynamic tool that involve users and stakeholders in the planning process, and as a tool that creates life in urban spaces, while areas are being developed.

The idea is that temporary activities can help to kick-start new urban life and identity. Temporary activities can act in different ways (Hausenberg 2008: 8). As:

Stand In.

No long-term activity. It replaces something, with the intention of being replaced by something else later.



Impulse.

The temporary activity gives impulse to the permanent attractions and activities.



Foundation.

The temporary activity gradually becomes a permanent action or activity.



Coexistence.

Temporary activity breeds through the urban development and exists alongside the new permanent use.



Pioneer.

The temporary activity is the first on site and establish a new use of the area.



Parasite.

The temporary activity utilizes the existing and the use and occurs together with it.



ill. 78

the new district will arise. Thereby the local community achieve better city life and a social and cultural development of the new neighborhood-area (Realdania By 2013).

In the development of new urban projects, it is crucial in relation to the temporary that not everything is planned in detail from the beginning (Realdania By 2013). There must be space for the professionals continuously throughout the project to involve and collaborate with users and stakeholders in the aim of developing

new activities and programs in the urban space. The intention is that the project will set the framework, but with a high degree of flexibility and openness to new initiatives in the urban space. In addition, it is important that the temporary activities are a display of the future profile, and thereby become a showcase for the new quarter, as well as a testing ground for future permanent activities (Realdania By 2013). Through involvement and dialogue with users during the whole process, it is possible to create activities with success, where the experience of participating in them can create joy, a sense of community and perhaps even pride in being part of the event and the area (Realdania By 2013).

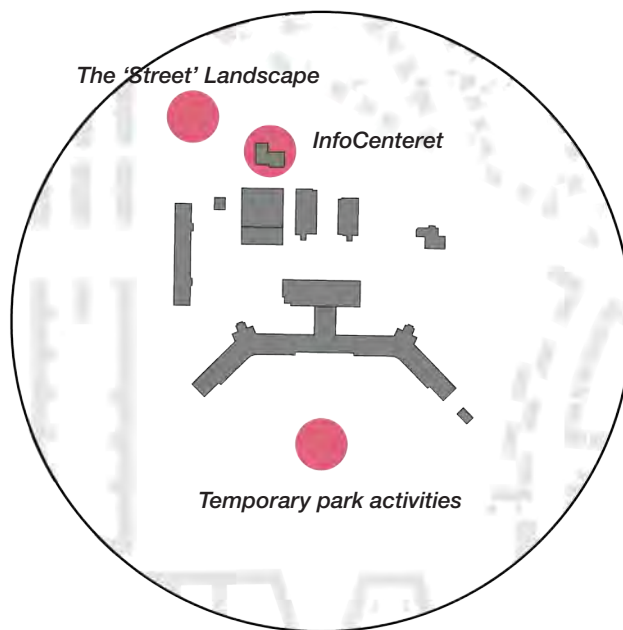
THE TEMPORARY ACTIVITIES

- a user approach

Communities do not always occur by themselves, sometimes they need a little boost and the framework for new interactions. As a strategic tool the temporary activities will not only be a generator for life, and expose the future identity of the area to the users and citizens, while the building is going on, but also provide the basis for new urban communities to happen. By integrating different activities targeting different user groups the framework for new interactions is created. Further the activities will expose the future identity of the new district in

the hope to create an awareness of the area, not only for the neighbours of the district, but also to the rest of the citizens of Aarhus.

On the following pages the temporary initiatives presented in the process plan will be elaborated based on program, the communities create with the activities and which role Aarhus Municipality has in the process of establishing these temporary activities.

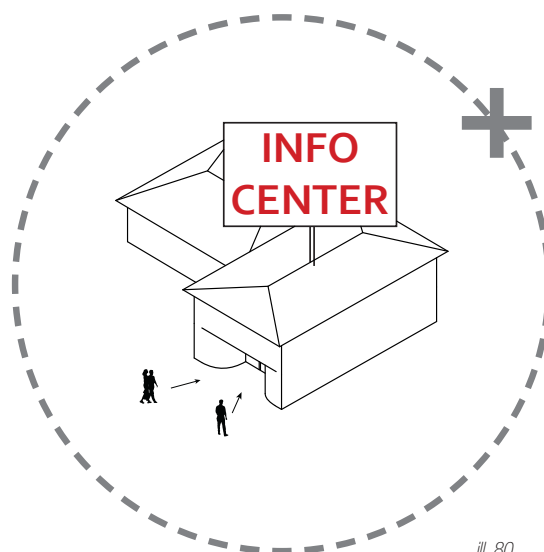


ill. 79: - Map indicating the location of the temporary activities

INFOCENTERET

Duration: start - very end
Location: 'Kapellet'
Managed by: Municipality

catalyst // activate // attention // invite // guiding
 // engage // public involvement // new ideas //
 listen // exhibition // satellite office // relaxed at-
 mosphere // notable // informative //



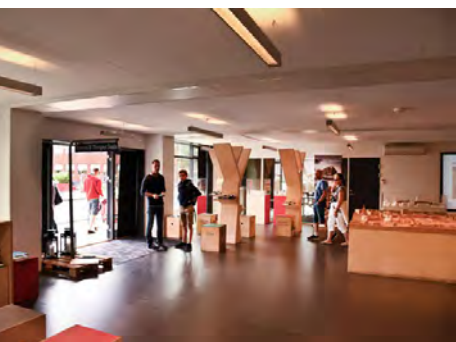
ill. 80

An important feature in the development of this new urban district is the establishment of the InfoCenteret in order to continue the public involvement process focused on by Aarhus Municipality. With its location in the former chapel after it has been renovated, its intention is to act as a satellite office ran by the municipality, in order to meet the citizens on site.

InfoCenteret will function as an exhibition for the future urban district, and expose models and visualization of the upcoming area. While having a cup of coffee citizens and interested people can come and talk about the development of the new district or sug-

gest ideas for new temporary activities or future programs and thereby engage in the temporary community created around the place. Further the program will create a local community in the area engaging local plays and enthusiasts.

InfoCenteret will be visible from Viborgvej and thus lure passersby to the location. Notable elements visible from Viborgvej will guide the pedestrians to 'Kapellet' and welcome them to the location. In the process of establishing InfoCenteret there can be drawn inspiration from the red Infoboksen from the projekt 'Fra Gade til By' in Odense (Fra Gade til By 2017).



ill. 81: Infoboksen, Odense - as a exhibition of the ongoing development with models and visualizations.



ill. 82. and ill. 83: ways to guide pedestrians from Viborgvej to the location, maybe by the use of seasonal flowers in the beds.

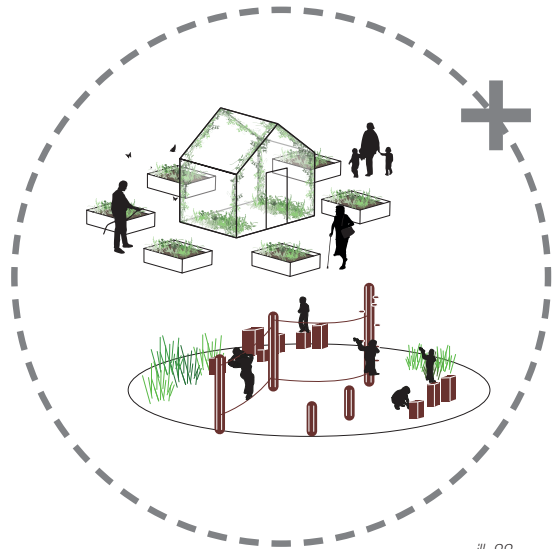


ill. 84: Infoboksen, Odense - temporary satellite office in Odense while the development of Thomas Betris Gades is going on.

TEMPORARY KITCHEN GARDENS & PLAYGROUND

Duration: start - building in zone
Location: 'Sygehus Parken'
Managed by: Municipality and local players

urban gardens // multiple users // engaging // social interactions // recreational // playground // exposing new use // user involvement // relaxed atmosphere //



ill. 88

In the process of enhancing the affiliation to the site for the citizens and create activities while building, 'Sygehus Parken' is used as a generator for recreational life and will exposing new ways to use the place. In the park, temporary kitchen gardens will be established along with a larger greenhouse-inspired unit. The kitchen gardens and the larger unit will form the framework for new social interaction and possibilities for stays while enjoying a quiet moment in the intention of creating a new temporary as well as intimate communities.

In order to continually attracting new temporary users, events can be held, for example, focusing on cooking with the grown vege-

tables. In addition, the establishment of a temporary nature playground in the area for the benefit of the city's children and childish people will provide the framework for new temporary communities between children as well as adults and focus on activity and movement.

In the process of creating the urban kitchens, Aarhus Municipality can facilitate it either through their own project 'Smag på Aarhus', a project about utilizing facilities to grow one's own produce, even without a private garden (Smag på Aarhus 2017) or cooperate with local enthusiasts in the area or future residents of the co-housing.



ill. 85: *Grow Your City, FredericiaC* - temporary gardens grown to a smaller society within the city. An example of how temporality can act as framework for small communities.



ill. 86: *Impact Farm, Copenhagen* - an urban pop-up farm with a complete hydroponic growing system that is both productive and eco-effective



ill. 87: *Impact Farm, Copenhagen* - as framework for social life and temporary communities

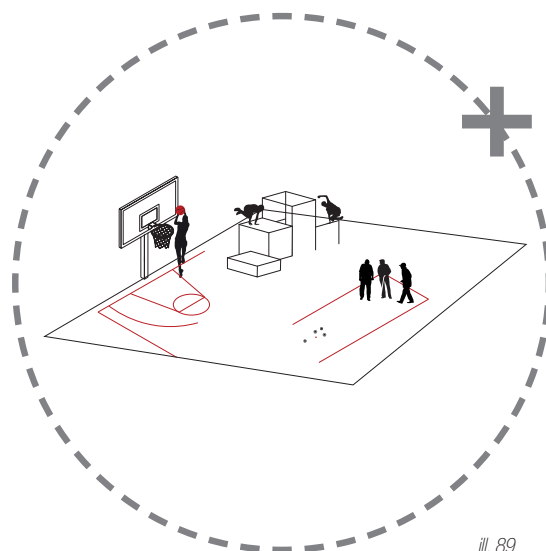
TEMPORARY STREETSCAPE

Duration: start - to building begin

Location: Northwest corner

Managed by: Municipality and local players

activities // multiple users // cafe // urban life
// petanque // hangout // basket // exposing //
skating // meeting place // table tennis // social
interactions // fun //



While the development of the new district is ongoing, a temporary 'street' landscape is created in the northern part of the district as an experiment for future permanent programs in the area. This initiative will expose the future development at Viborgvej and lure people to the site. In the laid-back environment young people can hang out on the multifunctional parkour landscape, vigorous athletes can be active on the different sport fields, senior citizens can meet over a game of petanque or the passerby can settle down at the temporary cafe and have a cup of coffee. The area will attract many different users, which will create the basis for diversity and interaction between different types of communities, such as the

Intimate Community and the Temporary Community.

In the process of establishing this environment, Aarhus Municipality can engage local organisations such as the local basketball club, Skovbakken Bears, the Petanque club in Aarhus 1900 or Aarhus Parkour as local players. The Municipality can provide the space, and the local organisations can sponsor the equipment in the hoping that more people will find an interest in their sport. If they turn out to be successful they can be integrated as permanent programs in the future area.



ill. 90: Plug N Play park in Ørestaden, Copenhagen - an example of a temporary parkour environment



ill. 91: PetanqueMekka in Karolinelund, Aalborg - a temporary petanque society existing for 5 years in the former amusement park



ill. 92: Café Venligbo i Enghaveparken, Copenhagen - an example of how a temporary cafe can create the framework for urban life

Integrating temporary activities in the development of an area a certain flexibility needs to be considered. The suggested programs can start the process and along with the development citizens, local players or other interested can have ideas to activities that can expose new ways to use the site for shorter og longer periods.

The presented temporary activities focus on using the unused spaces in the process and on the location expose the future identity. Also programs such as a temporary bike repair shop or a recycling center could be located in empty buildings or transformed contains as catalyst for life. It could also be urban installations, that could be the generator for more urban life. Events such as open air cinema, pop-concerts or markets could generate life and attract different users and thereby be a generator for temporary communities.



ill. 93: Example of an temporary open air cinema



ill. 94: Example of a temporary bike repair shop



ill. 95: Example of a temporary urban installation

CO-CREATION - ENHANCING THE AFFILIATION

Co-creation is about human resources. A very extraordinary energy among participant is created, as well as a community between the people (Madsen and Hagedorn 2014).

In the effort to enhance people's affiliation to the site along in the building process, co-creation is used as a tool to establish contact to the users and a sense of belonging to the new urban district. Instead of creating a traditional building process, where developers and public institutions make decisions on the behalf of the citizens, they are involved in the process and able to actively co-create their own neighbourhood. Different parties with different perspectives and goals are striking the piles and trying to establish a common platform. The core idea is to bring an understanding between different perspectives and create engagement in the creation of one's own city (Sørensen 2017).

BENEFITS

The co-creation workshops integrated in the process plan involve citizens, user as well as local players and developers. The involvement of local businesses creates a vivacious and positive relationship between residents and the businesses. Further, the developers of the different areas and programs on site, are able to actually create spaces that the residents and users will use, as the base for more interactions and communities in the area. Moreover, the involvement of the users in the building process have beneficial impacts on the future environment.

"... the many volunteer building projects in

which the youngers have participated have had a good impact on them. They have learned to take more responsibility. They have also been linked closer to each other and to their surroundings because they have shared something. Moreover, they understand that "this we will not destroy, because we have build it ourselves" - Hayriye, 27 years (Madsen and Hagedorn 2014:28). By involving user an attachment to the urban spaces is created that will make the user take care of the environment and the installation in the effort to maintain attractive and useful urban spaces.

We believe in co-creation. That a collective effort from authorities and citizens will create the commitment and engagement needed to make citizens care for their city and want to make it a better place. Some of the drive in co-creation is that everybody contributes. Even though, some contributes more than others, all participants are involved showing a kind of interest that creates a cohesion among the participants and a stronger commitment as well as community (Toustrup 2017).

"What you invite to, when co-creating is a disturbance of one's own logic." (Larsen 2017). By participating in co-creation one's perception of other views and ideas is challenged. In the mind of the new identity, where the idea is to push people's perception of 'the diffemet', this logic fits very well. We want people to see other perspectives of society and feel compassion for the fellow citizens.

What is co-creation?

Originally, co-creation is used as a commercial strategy that allows companies to share ideas, resources and capabilities. It is about involving citizens, companies and associations in different development processes, and it is a strategy focusing on customer experience and interactive relationships. Co-creation allows and encourages a more active involvement from the customer to create a value rich experience. Co-creation is especially used in communication and business development and is increasingly utilized in urban planning, which have created a new innovative paradigm, thus breaking the traditional one-way communication and traditional public governance. In an urban design context, co-creations must be understood as a guided development process where the purpose is often defined in advance. Usually there is a purpose with involvement and a more or less defined result, for example a chair, but how the chair should look is for the participants to decide. Hence, it is not the public sector's role to design the city, but to facilitate the framework for the population to design their city (Larsen 2017).

WORKSHOPS & CO-CREATION

- a user approach

People like surrounding that they can influence. Only the problem is that people do not always know what they want - before they see it. As Gulmann states (2015:233): 'Most cities have a huge unused potential of creative people who know the city and who can add new thoughts to the environment'.

This potential needs to be utilized as a beneficial strategy in the area. Moreover people's affiliation to the site can be enhanced that way. In the following, the different workshops focusing upon this strategy is elaborated along with the municipality's role in the process.

'A PLACE TO SIT'

Target group: families, young people, users of park

Location: on site

Managed by: municipality or creative entrepreneurs

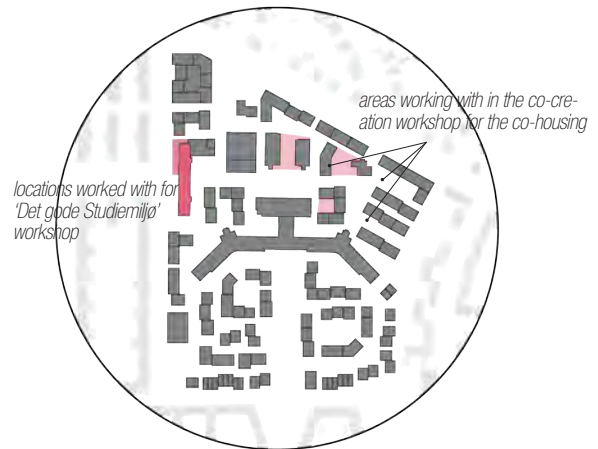
seating // installations // temporality // involvement // hangout // exposing // meeting place // social interactions // attachment // participation // multiple use // Temporary Community

As the development is going on in the northern part, the park will create the framework for a temporary recreational space. Her temporary activities elaborated in the previous chapter will create atmosphere and activities in the area, and opportunities for new

communities. In the extension of the result of create the framework for more urban live and engage the population, this workshop will enhance the awareness of the site.

The idea is to establish contact to and engage families, young people and future users, and thus exposing the upcoming area and the new opportunities it holds, such as new housing opportunities, new activities and new an urban environment in the effort to attract new residents.

The municipality's role is to establish contact to local creative entrepreneurs and engage them in organizing the workshop. These entrepreneurs could be students from some of the educational institutions in Aarhus, such as Aarhus Production School and the project office, F16, students from the School of Architecture or students from Aarhus Technical School. It could also be creative entrepreneurs from the Godsbane area. The important is to ensure creative promoter that can engage and guide the participants.



ill. 96: - Mapping indicating the workshop areas

THE CO-HOUSING'S PATIO

Target group: residents of the co-housing

Location: on site

Managed by: the co-housing

co-housing // multiple use // urban life // hangout
// communal eating // exposing // meeting place
// social interactions // enhancing community

This is a workshop arranged by the co-housing themselves in order to create their own environments as the right framework for their visions and way of organising everyday activities.

'DET GODE STUDIEMILJØ'

Target group: students in the nearby educational institutions

Location:

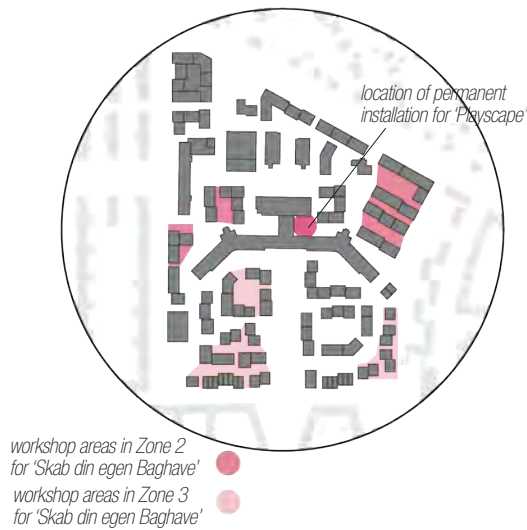
in their everyday environment

Managed by: municipality, developers or architects

attractiveness // vivid life // involvement // exposing
// meeting place // activities // socialization //
Temporary Community //

It is important early in the process to establish contact with the future users of the area, and that is what this workshop will do. It must draw awareness among the younger population about the ongoing development and the future facilities, while at the same time they will engage in forming an environment they want to be a part of. Engaging them creates ownership of the area that defines the base for future use.

Here it is the municipality's role to ensure through contracts that such workshops are held. It will be the developer or the architects' role to meet the students in their existing local surroundings and thereby get their suggestions on what needs to happen.



ill. 97: - Mapping indicating the workshop areas

'PLAYSCAPE'

Target group: users of 'Street' landscape

Location: on site

Managed by: municipality, developers or architects

activities // user involvement // continue identity
// hangout // social interactions // fun // parkour
// Temporary Community

A workshop with the intention to continue the identity from the temporary environment into a permanent program and as framework life in the urban area.

Again, the municipality's role is to ensure through contracts with relevant architects going to the design the space that such workshops are held. The co-creation in the area will create a sense of belong for the users and a sense of ownership, which will help to keep the environment accommodating. In this workshop the persons in charge of the arrangements could engage creative entrepreneurs from the city to propose innovative ideas. An idea could be to contact Aarhus Parkour, Aarhus Produktionsskole (production college) and their project office F16, or maybe students from the Architect School.

'SKAB DIN EGEN BAGHAVE'

Target group: residents

Location: on site

Managed by: municipality, developers or architects

involvement // semi-public environments // reflect users // participation // Intimate Community
// attractive spaces //

Mentioned in the *Process Plan* the workshop is held to create participation among residents to help determine their future surroundings. In that way an attractive milieu, that the users feel a belonging to and actually want to use, is created. The municipality's role is to ensure that the relevant architects or developers hold the workshop, or that they themselves facilitate it. The workshop is important, not only for the urban life in the public sphere facilitated through the semipublic spaces, but also in the effort to enhance the *Intimate Community* between residents.

FINAL REMARKS

ENDING

REFLECTIVE DISCUSSION

Coming to an end, the aim of this master thesis has been to set a new agenda on the urban scene. All the way the scope has been to propose a new way of living in the dense city and with this project, the concept of urban co-housing has been introduced as a catalyst for more social life and coexistence within the contemporary city. The co-housing is an important feature in the urban fabric because usually it is established by enthusiasts eager to enhance social life among people and improve the relations to the nearby surroundings. These people are needed in the city, where more people isolate themselves in private homes only engaging in attributed relations. In general, the co-housings seen in a Danish context are generated on the base of a bottom-up initiative trying to address a fundamental societal issue, such as climate changes or social structures. In this project, the process of establishing a co-housing is generated as a top-down initiative to facilitate a more uncomplicated process of the co-housing genesis and address the slow-moving process that seems to be in most innovative building projects managements today. This project focuses on the approach of establishing co-housing in the dense city, and thus calls for a new way to think local planning and new ways to secure modern ways of living in the city. A strategic policy plan in municipalities, not only Aarhus but more nationally, could ease the process of co-housing so that the enthusiasts important for the city environment do not lose their energy in the bureaucratic process, as seen with the URBANIA project. However, it can be questioned if the creative entrepreneurs passionate about the process of establishing these innovative initiatives such as a cohousing, or other innovative urban programs, will be as motivated in the process and have the same affiliation and feel the attachment to the project, if all of it is planned as a top-down perspective appearing as a bottom-up process. It is not exactly the innovative idea as rebellious protest against the authorities and the bureaucracy that motivate the creative souls, and will that passion be as strong if the resistance and the struggle is not real?

Society's family structures are not as conservative as in earlier nuclear families, and this sets new contemporary demands to the concept of modern dwellings. Co-housing is one way to solve the

incoherent ordinary day that many families experience considering that there are more hands to lift the everyday responsibilities. Generally, society needs new ways of thinking the concept of a home as suggested with Netværksboligen. A more flexible dwelling, that can change and follow the needs related to lifecycle and shifting requirements, and shift according to human involvement, thus we do not stay the same kind of people all through our lives.

TECHNICAL FOCUS

The choice of technical focus is based on the initial ideas and motivation that we had writing this thesis. Back then, sustainability seemed as the ideal motivation for creating a co-housing, and thus water management seems to be the technical focus that best matched. After a more thorough work with the project, however, the focus and motivation for the thesis turned in a different direction, with a greater focus on the increasing tendency of loneliness and its consequences.

Hence, it became more difficult to combine the technical solutions in an integrated design showing a new way to cope with communities through water management. A dilemma worked with through the whole process.

It can be questioned if it is the right choice of technical focal area for this thesis, however we believe so. In the field of mobility Aarhus Municipality is updated what regards modes of transportation, shared car schemes and an enhanced bike motion environment within the city. They are now in the process of integrating a new light rail system with a proposed second phase connected to Amtssygehuset. They are innovative in process of offering shared car schemes in the city and have reserved space for carpool lots. In the matter of recreational water solutions and management they are more far behind. In Aarhus, there is a big issue with infiltration and a very challenging terrain. Aarhus Municipality have a policy of not having still water on the surface. Nonetheless, with the argued recreational value water has, it can increase the value of the urban spaces and lure more people to the spaces. The municipality's demand is merely an 'over-protective' attempt to not have still dirty water on surfaces meant for recreation. A demand that has been

reflected in the design of design, which might have looked differently, if the municipality eased their demands.

Additionally, the focus area is chosen based on a personal motivation that drives us in the process. An interest for the integrated recreational value of water as a tool in urban design has also been the motivation in our choice.

THE PROCESS OF THEORY AND LOCATION-BASED DESIGN

The topic of this master thesis is chosen based on a societal problem that we believe is worth addressing, for example by the use of city planning. All the way in the process of this project, there have been a parallel work between theoretical and societal approach and tangible problematics connected to the location, leading to a physical approach. This has given feedback along in the process and parameters to evaluate and base the design on. However, occasionally it has given an overload of feedback and led to increasing problematics, which have made the project more comprehensive than first assumed. This has resulted in rejection on certain problematics that could have led to another result in the presentation.

For example, problematics and issues of how to develop this project as a process, with space and possibilities for temporality and co-creation in the effort to involve the residents and citizens in the process. These tools in planning demand a certain degree of unplanned-ness and improvisation, something in some ways contradicting with masterplanning. Moreover, the process planning and realistic time perspectives have been a troubling issues, because we do not have the proper knowledge of processes in relation to local planning, government projects or building processes. Therefore the process plan is developed as a continuous line focusing on prioritized steps instead of suggesting the process according to years.

In our believe, it is not possible to design only a co-housing in the urban context without the surrounding environment, and then conclude that the urban life will then just follow. Hence, we have focused on planning the whole area with volumes indicat-

ing buildings and suggested programs within, and a focus on the co-housing as catalyst for urban life.

Additionally, the attention given to new ways of living in the city, not only in terms of living in a co-housing, but also new ways of living and organizing private dwellings have raised question to introducing new living forms in the city. However, a comprehensive study maybe more related the architecture field of study. The typology and architecture are detailed in a certain degree, because it is important how building an urban space meet each other, and how the co-housing can expose the life to the surrounding environments in the attempt to create a lively space.

A lots of other issues and problematics could be addressed in the matter the transformation of Amtssygehuset. We have based our design choices on the theoretical issues explained in the initial phase of the report and in the believe that materials presented is the best way to tell the story of the co-housing along with the importance of introducing it a urban context.

OUR MOTIVATION

Communities is an abstract term to cope with in urban design and plan for considering that it indeed depends on the users engaging in it. It is not only the physical environments that have to be modified in the effort to create better city life that accommodate the issues of loneliness. Also a change in human behavior is needed. We as urban designers can only design the framework and platforms for more social life and thereby influence the people to engage in more communities and interact more in the urban space. However, people need to actively participate in the urban life in the effort to enhance social interactions.

As stated in our motivation we hope with our profession that we are able to influence the world in which we live. We think it is our obligation to turn societal issues, such as water management and the increasing impact of loneliness into attractive urban space in the city by the use of urban design tools, and thereby we believe that we have created an environments that in the spirit of the hospital mentality take care of our society and heal, ease and comfort the population of Aarhus in the future.

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- <http://www.andelssamfundet.dk/landbrug>
- <http://www.andelssamfundet.dk/delebil>

ILLUSTRATION LIST

- III. 1: Front page
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- III. 3: <<http://www.tmitacoma.org/2016/02/25/the-cure-for-loneliness/>>
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APPENDIX

APPENDIX 1 -

THE DESIGN PROCESS

Concepts of designing a masterplan for the site:

The original layout of Amtssygehuset designed by Høgh-Hansen in 1935 features symmetrical buildings and landscape arrangements, that most of all leads the mind towards a baroque garden. Architectural quality is high and the red and yellow brick typical to scandinavian architecture - and everything else that was built in what could be called the 'brick belt' of Aarhus.

With strong landscape features, Amtssygehuset has a potential to form an entirely new district characteristic in Aarhus. The hilly, green landscape on the south side of the site, gives challenges but also potentials to work thoroughly with landscape morphology. The first design studies therefore explored how landscape as the dominating factor could shape and lead buildings and urban spaces.

But the landscape can never be defined without buildings, they need a boundary to work up against, and these are sometimes what creates the ground for new, different and somewhat 'weird' or overly creative urban spaces.

So what actually comes first? The chicken or the egg?

Through the design of Amtssygehuset we have aimed for a diverse process that tests the possibilities of different approaches to a problem that requires understanding for both planning, sociology and societal issues.

Water has been used as a recreational gathering element in the process and in the final design. With a special focus in the design process to integrate water as an element that can strengthen the design and enhance the vision of the project.

Hierarchy in the urban spaces has been an important theme working with the masterplan. Urban spaces of different sizes creates a variety of opportunities for activities and programs in the urban spaces which is important to create an interesting and vibrant city with different experiences. A physical model with spacious building volumes was an important tool for understanding the relation between urban space, building heights and the density.

Accessibility across Patientfløjen has been an important issue to address as it in its existing condition stand as a boarder for connection across the area. Different solutions, some including more radically changes in the architecture than others, has been discussed especially in relation to the fact that the building is worthy of preservation.

The masterplan of this project shows a new urban area that embraces existing buildings and landscape features, and even looks further back to add a touch of history.

The theme of caring for each other, caring for the place and caring for the city and its elements is crucial to understand.

Co-housing:

The typology and the demarcation of the co-housings on site are highly challenging, maybe even provoking traditional understanding of this type of dwelling. In the effort to not make a gated community, cut off from its surroundings, different placements and shapings of the two co-housings have been tested - they must not withdraw into themselves, and classical typologies such as the circle, the block structure or the cluster have been banned to ensure an integration of the co-housing buildings in the nearest context. The co-housing must invite in its surroundings, and why not start with its nearest neighbours?



APPENDIX 2 - BACKGROUND

ESSAY BY ANNE METTE LORENTZEN

Anne Mette Lorentzen is educated Architect from the Royal Danish Academy of Fine Arts, School of Architecture. In addition, she has studied a Master in Organizational Psychology. For 20 years, she has worked as Project Manager at Henning Larsen Architects. Today she works at Københavns Kommune.

URBANIA ESSAY 2009

Vi tænker indimellem alle på fremtiden. Drømmer om den, ængstes, glædes, håber og frygter. Vi tænker på, hvem vi deler tiden og livet med – og uden.

Blandt mange boformer, prøver de fleste i løbet af livet at bo alene, sammen med en kæreste eller ven, sammen med børn og forældre, alle af slagsen, sammenstukne eller biologisk forbundne.

Vi udvider og indskrænker fællesskaber, i lyst og nød. Vi bosætter os i store og små rammer, inde i byer og udenfor byer, mellem parcelhusenes hække eller etagehuses etager. Som regel søger vi steder, hvor vi kan genkende os selv i dem, vi møder på gaden eller vejen, i butikkernes udbud, i parken, på gågaden, eller sågar blandt storcenterets kompakte udbud - eller mangel på samme.

Relativt få vælger en særlig boform: bofællesskabet. Her ønsker man fællesskabet blandt ligeværdige i livsfase, baggrund eller indkomst: fx oldekoller eller familievenlige rammer med fælleshus- og spisning. De fleste af disse fællesskaber er skræddersyet til og ofte af beboerne og som regel opført i tæt-lav bebyggelse langt fra storbyen.

Tæt-lavt boligbyggeri var fra 70-erne det store mantra blandt boligarkitekter. At bo tæt OG højt har imidlertid vist sig at have langt mere udtalt bæredygtige egenskaber, fx at varmetabet reduceres pga. langt mindre overflade pr. bo-enhed, den kollektive trafik kan betjene flere, så den individuelle bilkørsel bliver overflødig og man bor og arbejder typisk indenfor en langt mindre radius, således at "gå-ben" og cykel bliver muligt for alle.

Den klassiske danske bybolig stammer langt overvejende fra slutningen af 1800-tallet og meget blev opført som noget, man i dag ville kalde spekulation. Den såkaldte København-lejlighed med to værelser mod gaden og ét mod gården er opført i 100.000-vis, sådan én har de fleste nok prøvet at bo i.

De moderne by-lejligheder, som er skudt op i tusindvis i det byggeboom, som nu så brat er standset, har nok fået nye former og udtryk, men den rækker aldrig ud over en standard forestillingen om rammerne for hr. og fru Sandkage med 1,8 barn.

Gennem de sidste 15 til 20 år er flere og flere flyttet til storbyen. Den har altid tiltrukket ungdommen og de studerende, nu tiltrækker den også familier med børn og midaldrende gråt guld. En anden tendens i storbyen er også, at flertallet bor alene.

Er det smart, at singler bor i lejligheder, der egentlig blev tegnet til en familie med to børn. Ønsker man at være alene, fordi man bor alene? Kan det tænkes, at man kan dele bord uden at dele seng, børn uden at dele kæreste, have uden at dele kat osv.?

Den hektiske byggeaktivitet blandt bolig-developperne handlede tilsyneladende helt udelukkende om hurtige penge og ikke om drømme og nye visioner for fremtidens boformer.

Kunne man tænke sig at bruge opbremsningen på byggemarkedet til at spekulere, i ordets mere positive forstand, over hvordan vi også kunne organisere måder at bo på?

Kan vi transformere de vellykkede bofællesskaber til byboliger?

Kan vi blande os og få glæde af hinandens nærhed udover "gård-dagen" og det lille nik på trappen?

Kan vi bygge byboliger med en større kompleksitet og fleksibilitet, end den, der kendetegner 98 % af den nuværende boligmasse i byen?

ML

APPENDIX 3 - INTERVIEW

INTERVIEW WITH A. M. LORENTZEN

Interview den 21. Februar 2017 med Urbania
co-founder Anne Mette Lorentzen

Hvor stammer ideen om UrbaniaCPH fra?

"I 2009 skrev jeg et essay om tankerne bag at skabe et bofællesskab i København, og det var faktisk det der satte det hele i gang." Herefter begyndte foreningen at samle en gruppe og nedsætte en bestyrelse med de rigtige strukturer, for at det hele kunne gå rigtigt til. I 2011 blev foreningen godkendt.

Har I på nuværende tidspunkt et site i tankerne? Hvordan vælger I helt præcist?

"Den største udfordring for os i forhold til at finde site er prisen der er på kvadratmetre i de større danske byer - især i København." Visionen er at det skal være et mangfoldigt fællesskab og hvor der er plads til alle, men også et sted, hvor alle har råd til at bo. Gennem forskellige undersøgelser af boformer fandt foreningen frem til at almene boliger var løsningen og det bedste match i forhold til deres værdisæt. Derfor indgik de et samarbejde med boligorganisationen KAB, som er et af Københavns førende. Samarbejdet går ud på at de skal finansiere og bygge boliger. Når man bygger almene boliger må kvadratmeterprisen maks være 23.000 kr. Derfor er det en udfordring at finde en lokation i København, med en max afstand til Rådhuspladsen på 5 km.

"Vi troede jo bare, at med vores værdisæt og vores vision om nye måder at bo på, ville vi få tilbudt masser af grunde og så var

det bare at vælge. Men sådan blev det jo ikke helt."

Af boligorganisationen fik foreningen tilbudt en grund i Tingbjerg. Grunden lå i naturskønne omgivelser og med en fantastisk udsigt ud over Utterslev Mose. Denne grund kunne foreningen få gratis, da det var en overskud grund boligorganisationen stod med. Grunden passede egentlig meget godt til alle foreningens visioner og til et nyt byggeri. Udfordringen var at lokationen ikke var bynær nok. Den blev derfor fravalgt på en generalforsamling.

Næste grund som foreningen blev tilbudt var Beauvaisgrunden på ydr Østerbro. En hjørnegrund der er omkranset af nogle af de større veje i København, og som tidligere har huset Beauvais-fabrikken.

"Den grund tog vi egentlig imod, for vi ville bare i gang med at bygge." Herefter gik de i gang med at planlægge og indsendte et forslag til kommunen om godkendelse af byggeri. Kommunen afviste forslaget, fordi den ikke var egnet til byggeri grundet den meget store forurening. *"Og det er vi faktisk ret glade for i dag, at de tog den beslutning for os."*

I dag kigger foreningen på to nye grunde: Torvehallerne i Valby og på en grund i Sluseholmen i København SV. Hvis Københavns Kommune, som de nu er i dialog med ikke snart rykker på projektet, har de også et spædt samarbejde med Frederiksbjerg Kommune. Frederiksbjerg Hospital

er ved at blive solgt. De gamle bygninger kunne danne rammerne for fællesskabet. Med deres identitet. Og så kunne man lave tilbygninger til det eksisterende som var mere energirigtige. Her er en mulighed at bruge en del af det gamle Frederiksbjerg Sygehus grund til deres projekt.

Hvor store er jeres boliger?

"Tanken bag vore fællesskab er at der skal være plads til alle og alle skal kunne bo der, derfor vil vi have forskellige størrelser boliger."

"I København er gennemsnittet på boligstørrelsen idag 95 km - det er jo ret stort!" Foreningen vil have mindre boliger, helt ned til små units på måske 25 km. Disse boliger skal ikke kun være til unge og studerende, men til alle. Det kan være folk, som står i en situation i deres liv, hvor de ikke har behov for så meget. Fx hvis de er blevet skilt og skal spare på udgifter, hvis de rejser meget, eller bare har behov for et sted at sove.

Men det kræver en dispensation fra Kommunen, Men Anne Mette er ikke i tvivl om, at det skal de nok få.

Tanken bag de små boliger er også, at en del af arealet i stedet vil blive lagt ud til fællesarealer. Dermed skal man deles om meget mere. Samlet skal der fra hver bolig tages 10-20% som skal være fællesarealer fordelt i hele bygningen. Planen er at de skal bygge 10.000 m² i alt.

Alle boliger i Urbania skal være attraktive og

have hver deres værdi. Fx så kan de ske at de små boliger har den bedste beliggenhed og udsigt, og det kan være derfor man har lyst til at bo der, når man ikke har behov for plads. Det skal fungere således at tankegangen om at man ikke behøver at få noget stort, når man har den attraktive beliggenhed. De store boliger skal være attraktive i forhold til deres størrelse, så det er dem man vælger når man har behov for plads.

Foreningens ønske er at man på den måde får skabt en cyklus i bygningen og vælger boliger og flytter rundt i huset efter behov. DER skal være den her fleksibilitet for at det kan fungere og for at man bygger vider på tankegangen om at det ikke er nødvendigt at bo stort.

Hvor meget er folk villige til at dele? og er der stor forskel på hvad de forskellige generationer er villige til at dele?

"Soveværelset er privat - alt er fælles. Sådan udtaler Knud Foldschack det. Vores tankegang er dog lidt anderledes. Der er behov for flere grader af privathed og of-fentlighed."

Den måde vi tænker privathed og offentlighed stammer meget fra Jan Gehls begreber. Men for at vi kan arbejde med fællesskaber, og især bofællesskaber, er vi nok nødt til at gradbøje de her zoner meget

mere.

Foreningens tankegang er at der skal være mellem-fællesskaber. Mindre grupper i det store. Lidt ligesom den måde de har organiseret det på Tietgenkollegiet. Der er der Den private zone, den egen bolig. Så er det 'køkkenet', som en enhed af 12 boliger. De deler køkken og et opholdsrum, som de selv har kunne disponere over, hvad bruges til. Så er der etagen som et fællesskab og så hele bygningen. På den måde organiserer man mindre fællesskaber i det store fællesskab.

"Fællesskabet omkring madlavningen er nok det vigtigste der findes. Derfor noget vi lægger meget vægt på."

Hvilke bæredygtige tiltag foresliller I jer? Er der nogle ekstreme tiltag?

Byøkologi. Genbrug af regnvand, solceller og isolering. Alle de der naturlige tiltag der er. Men det er svært at være innovative og 'first mover' når det gælder alment byggeri. Det er der simpelthen ikke råd til økonomisk. Så det er ikke dette aspekt de vil fokusere på.

"Derudover er en af vores store ønsker, at slippe for parkeringspladser. Vi kommer jo ikke til at bruge det. Vi har nogle debiler og det er nok." Men dette er en kamp de har med kommunen og den traditionelle ide med at tænke parkering som en del af

byen.

"Man er nødt til at regulere sine tanker om biler i byen. Der vil være mænd der har behov for det, men så skal de jo ikke bo i byen. Så skal de på landet. I byen er vi nødt til at handle anderledes." Og den tankegang vil foreningen blive ved med at handle ud fra.

Hvordan er fordelingen af sociale grupper? Og er der nogle grupper der mangler?

Der er en overrepræsentation af kvinder i 50'erne. Dem, hvor børnene er flyttet hjemmefra og nu ikke ved hvad der skal ske i hverdagen. Disse mennesker som tænker, hvor skal de bo, nu de ikke har behov for så meget plads, er blevet alene men har masser af aktive år. Tiden skal gå med noget. De er også de ressourcestærke og initiativrige - og dem er der også behov for. Derudover er der mange børnefamilier, børn, som er blevet skrevet op af deres forældre og en smule ældre. De giver halv pris for studerende og folk på overførselsindkomst, og håber dermed at kunne tiltrække flere fra disse grupper.

Det der i særdeleshed mangler i foreningen er indvandrere, og især kvinderne. Det er en gruppe som ikke blander sig så meget i samfundet, især på grund af sprogbarrieren. Mændene er som regel en del af samfundet i forbindelse med deres arbejde, men kvinderne mangler. Foreningen tænker på at de gerne vil til-

byde kommunen at der skal være flygtningeboliger i huset. 2-4 stykker. Fx et sted, hvor flygtninge kan bo i 2 år, og lærer kulturer og sprog og derefter blive udsat i samfundet, eller flytte ind i en af de andre boliger i huset.

Hvordan har I tænkt jer at integrere lokalbefolkningen? Har I nogle konkrete tiltag i tankerne? Fysiske og sociale tiltag?

Foreningen har gennem deres mangeårige arbejde flere gange skullet fremlægge deres visioner og tanker bag projektet for forskelligt publikum. I den forbindelse har de lavet meget materiale til at præsentere deres ideer. Blandt andet et diagram over, hvordan de tænker deres hus organiseret. Tanken bag huset er at der også skal være rum til at offentligheden kan integreres og fungerer som en naturlig del af hverdagen omkring det fællesskab der opstår. Tanken er at jo længere man bevæger sig op i huset, jo mere privat bliver det også.

Nederst er tanken, at der skal ligge et fælles opholdsareal, og i den sammenhæng kunne der fx være en børnehave. Børnehaven kan have glæde af en stor sal, som de kan bruge til mange forskellige ting.

Hvordan bliver adgangen til grønne områder?

Der skal selvfølgelig være adgang til grønne og lækre udeområder, det vægter de højt. "Det udeareal der skal være, skal have en

funktion og ikke bare en græsplæne." Derfor er en af deres visioner at få parkeringen væk.

Derudover tænker foreningen at området skal give noget tilbage til offentligheden og derfor må området gerne bruges af andre end foreningens beboere.

En ting, de gerne vil have i byrummet er køkkenhaver. *"I Nørrebroparken er der stillet mange forskellige muligheder for køkkenhaver til rådighed for lokalbefolkningen.*

Der er masser af krydderurter og grønt i disse køkkenhaver, og der er en respekt for disse haver. Det skaber liv, og det vil vi gerne integrere"

Hvad er jeres største udfordring? Eller hvad bliver det?

"En af vores udfordringer er, at der er masser af drømme. Og det er svært at opfylde disse drømme i alle tiltag."

Desuden er det svært for foreningen at bibeholde interessen på nuværende tidspunkt. Det er en proces, der har stået på 8 år. Som udgangspunkt i deres første tidssplan skulle boligerne allerede have stået klar og beboerne være begyndt at flytte ind. Sådan er det ikke gået, og ikke engang en endelig grund er i udsigt endnu. Derfor begynder folk at falde fra, fordi der er gået for lang tid. Som flere erfarne siger, tager det ca. 10 år at skabe og etablere et bofællesskab. Hvis vi skal ændre den måde vi bor på og gøre det muligt med

bofællesskaber i byen, er en af de vigtige faktorer også, at denne proces bliver nemmer og komune gøre det mere attraktivt at bygge bofællesskaber.

Ellers blev der kort snakket om:

Trekroner området rosilde:

Unge fra ungdomsinstitutioner - de får en 'familie' eller voksne som kan hjælpe dem lidt på vej, og en følelse af et fællesskab.

Udviklingshæmmede, de kan have gavn af at indgå i fællesskabet og bo selv, men et sted hvor der er nogle der tager lidt hånd om dem.

Ny boformer kunne gøre det nemmer for at få disse fællesskaber i byen. Ellers jura og planlov.

Folk der bliver anvist: er det mennesker der er skide ligeglade og bare vil have en fed bolig - eller vil de deltage i fællesskabet?

APPENDIX 4 - RESEARCH

CO-HOUSINGS IN DENMARK

A conducted list of co-housings in Denmark. The list shows the location, number of dwellings or members, special information, ownership and typology, to give an insight into the variety, as well as the motivation for placing a co-housing in Aarhus.

Bofællesskaber i Danmark:

AB Allerslev Kloster	Munkedammen 1a, 4320 Lejre, Sjælland	7 enheder		Andel	Gl. gård
Åbakken	Åbakken, 4671 Strøby, Sjælland	15 enheder		Andel	
Absalons Have	Tønsbergvej, 4000 Roskilde, Sjælland	23 enheder		Ejer	
Adalen 85	Adalen 85, 8920 Randers, Midtjylland	15 enheder		Andel	Klynger/rækkehuse
Andedammen	Andedammen, 3460 Birkerød, Hovedstaden	35 personer			
Andreaslyst	Sønderbyvej 16, 6091 Bjert, Syddanmark	10 enheder	136-151 m2	Ejer	Dobbelthuse
Asgård	Asgårdvej 9, 7800 Skive, Midtjylland	47 personer		Andel	
Bakkefaldet	Tønsbergvej 154, 4000 Roskilde, Sjælland	27 enheder		Ejer	Dobbelthuse
Bakken	Bakken 27, 3050 Humlebæk, Hovedstaden	25 enheder / 75 pers.		Ejer	Gl. gård
Bauneholm	Baunevej 23, 3400 Hillerød, Hovedstaden	14 enheder	41-121 m2	Andel	Gl. gård
Blangstedgård	Kirsebærgrenen 165, 5220 Odense, Fyn	22 enheder / 55 pers.		Andel	
Blikfanget	Blikfanget, 3460 Birkerød, Hovedstaden	45 pers. / 16 enheder	65, 80, 100, 110, 120 m2	Andel	Klynge/rækkehuse
Blåhøjen	Skelagervej 415, 8200 Aarhus, Midtjylland	25 enheder / 59 pers.	70-110 m2	Andel	
Bondebjerget	Sædekildegårdvej 1-167, 5250 Odense, Fyn	80 enheder	56-112 m2	Lejer	
Buske	Raunsbjergvej 13-16, 4330 Hvalsø, Sjælland	8 fam. / 8 enheder		Privat leje	Gl. gård
Bøllingsø	Peter Svinths Vej 84-100, 7442 Ikast-Brand, Midtj.	25 pers. / 8 enheder		Andel	Dobbelthuse
Den Selvforsynende Landsby	Højgårdsvej 27, 5762 Hundstrup, Fyn	19 enheder / 68 pers.		Andel	
Drejerbanken	Drejerbanken, 5492 Vissenbjerg, Fyn	20 enheder / 42 pers.		Ejer + Lejer	
Drivhuset	Niels Ebbesensvej 24-60, 8920 Randers, Midtj.	18 enheder		Andel	
Drømmegården	Dalmosevej 1, 5881 Åbyskov, Fyn			Ejer	
Dyssekilde	Solen 15, 3390 Hundested, Sjælland	200 pers.		Ejer	
Enggården	Tåningvej 44, 8660 Skanderborg, Midtjylland	11 enheder / 18 pers.	værelser 24 eller 11 m2	Privat leje	
Fladengrunde	Fyrparken 554, 6710 Esbjerg, Vestjylland	12 enheder		Ejer	
Forsøgsgården	Spangsbjerggården 91, 6700 Esbjerg, Vestjylland	21 enheder		Andel	
Fælleden	Bispehøjen 44, 4300 Holbæk, Sjælland	75 pers. / 30 enheder		Andel	Rækkehuse
Fælleshave	Fælleshave 1, 6100 Haderslev, Sydjylland	16 enheder		Andel	Klynge/rækkehuse
Gl. Grevegården	Gl. Grevegården, 5492 Vissenbjerg, Fyn	24 enheder / 52 pers.		Leje	Landejendom
Glashusene	Tønsbergvej 54, 4000 Roskilde, Sjælland	30 enheder		Ejer	Klynge/rækkehuse
Glasværket	Ørstedsgade 28, 5000 Odense, Fyn	25 enheder	52-100 m2 - uden børn	Lejer	tdl. Glasværk
Grevegården	Gl. Grevegården 7, 5592 Vissenbjerg, Fyn	20 enheder		Lejer	
Grusgraven	Storkevej 7, 8382 Hinnerup, Midtjylland	15 enheder / 29 pers.		Andel	Stokke
Græsmarken	Græsmarken 9, 4140 Borup, Sjælland	25 fam.huse / 25 fam		Ejer	
Gundsøllille	Store Valbyvej 245A, 4000 Roskilde, Sjælland	9 enheder		Andel	
Gyldenmuld	Gyldenmuld, 8660 Skanderborg, Midtjylland	12 enheder		Ejer	
Gyndbjerg	Gyndbjerg, 6091 Kolding, Sydjylland	32 pers.		Ejer	Gl. gård
Hallinglille	Hallingebjergvej 24, 4100 Ringsted, Sjælland	20 enheder		Ejer	
Hammergården	Hammergårdsvej 12, 9440 Aabybro, Nordjylland	8 enheder / 14 pers.	200 m2	Ejer	Enkelthuse
Hesselløkke	Hesselløkke, 6400 Sønderborg, Sydjylland	18 enheder		Ejer	
Hjortshøj	8530 Hjortshøj, Midtjylland	300 pers.		Blandet	Blandet
Holdepunktet	Pionervej 2, 3520 Farum, Hovedstaden	31 enheder		Ejer	
Holtbjerg	Donstedvej 95B, 9330 Dronninglund, Nordjylland	12 enheder / 21 pers	seniorer	Ejer	Blandet
Horsager	Præsteager 211, 8200 Aarhus, Midtjylland	26 enheder		Andel	
Højen	Højen 30, 4000 Roskilde, Sjælland	26 enheder / 46 pers.			
Højgården	Højgårdsvej 27, 5762 Vester Skerninge, Fyn	30 pers + børn		Andel	Gl. gård
Højvang	Egevej 4, 8920 Randers, Midtjylland	21 pers. / 8 enheder		Andel	Gl. gård
Ibsgården	Ibsgården 62, 4000 Roskilde, Sjælland	20 enheder		Andel	
Jernstøberiet	Jernstøberiet, 4000 Roskilde, Sjælland	20 enheder	38-135 m2	Ejer	Gl. fabriksdal
Jystrup Savværk	Skjoldenæsvej 36, 4174 Jystrup, Sjælland	21 enheder		Andel	

Kildegården	Slagslunde Bygade 37, 3660 Stenløse, Hovedstaden	5 enheder		Ejer	Gl. gård
Kilen	Østerhøj Bygade 131-171, 2750 Ballerup, Hoveds.	20 enheder / 53 pers.		Andel	Rækkehuse
Kirkebakken	Kirkebakken 80, 8330 Beder, Midtjylland	8 enheder / 35 pers		Andel	Gl. efterskole
Kirstinelund	Bjedstrupvej 21, 8660 Skanderborg, Midtjylland	6 enheder		Andel	Gl. gård
Kraka	Skamstrupvej 25, 4440 Holbæk, Sjælland	9 enheder / 21 pers.		Andel	Gl. plejehjem
Kæphøj	Låddenhøj 45-87, 4000 Roskilde, Sjælland	21 enheder / 38 pers.		Andel	
Lange Enge	Langeeng 1, 2620 Albertslund, Hovedstaden	54 enheder / 200 pers.	71, 95, 115, 128 m2	Ejer	Klynge
Langhusene	Jernaldermarken 56-88, 400 Roskilde, Sjælland	16 enheder			Rækkehuse
Langekær	Bygaden 39C, 4652 Hårlev, Sjælland	6 enheder / 18 pers.		Ejer	Gl. gård
Lille Grundet	Grundet Bakke, 7100 Vejle, Syddanmark	20 enheder / 46 pers.	65-149 m2	Andel	Klynger / rækkehuse
Midgården	Byagervej 157, 8330 Beder, Midtjylland	21 enheder		Ejer	Klynger
Munksøgård	Munksøgård 1-100, 4000 Roskilde, Sjælland	100 enheder / 235 pers.		Blandet	5 x hestesko
Møllegården	Obstrupvej 12, 8320 Mårslet, Midtjylland	12 enheder		Andel	Single huse
Nonbo Hede	Nonbo Hede, 8800 Viborg, Midtjylland	12 enheder		Andel	
Overblikket	Overblikket 17, 3460 Birkerød, Hovedstaden	16 enheder	60-180 m2	Ejer	Dobbelthuse
Overdrevet	Overdrevet, 8382 Hinnerup, Midtjylland	25 enheder / 70 pers.		Ejer	Klynger / rækkehuse
Plantagen	Læsøvej 35-59, 4700 Næstved, Sjælland	12 enheder / 34 pers.		Andel	Klynger / rækkehuse
Ravnehøj	Hvesager 21, 7300 Jelling, Syddanmark	14 enheder /		Andel	Rækkehus
Regnbuen	Toftegårdsvej 1-41, 7000 Fredericia, Syddanmark	20 enheder / 51 pers.		Lejer	2 sokke - rækkehuse
Rumlepotten	Pottemaertoft 4, 8270 Højbjerg, Midtjylland	32 enheder		Lejer	Rækkehuse
Sneglebo	Sneglebo 1, 4000 Holbæk, Sjælland	20 enheder		Lejer	Rækkehuse
Sol og vind	Byagervej 245, 8330 Beder, Midtjylland	29 enheder / 83 pers.		Ejer	Enkelthuse
Soleng	Skeldevej 23-25, 6310 Gammelgab, Syddanmark			Andel	Gl. gård
Solfang	Toftegårdsvej 63, 7000 Fredericia, Syddanmark	20 enheder / 37 pers.	65-125 m2	Andel	Enkeltboliger
Stavnsbåndet	Solhøjpark 1-53, 3520 Farum, Hovedstaden	30 enheder			
Stiesdal	Lillevangsvej 8, 3670 Veksø, Hovedstaden	4 enheder / 14 pers.		Andel	Gl.gård
Stokken	Stokrosevej 0-20, 4450 Holbæk, Sjælland	20 enheder		Andel	Rækkehuse
Svalin	Ikke opført, Trekroner, Roskilde	20 enheder			Klyngehuse
Svanholm	Svanholm Allé 2, 2450 Skibby, Sjælland	120 pers.			Gl. Gods
Toppen	Toppen, 4000 Roskilde, Sjælland	24 enheder		Ejer	Nybyggeri, single
Toustrup Mark	Lykkegårdsvej 352, Sporup 8472, Midtjylland	26 enheder		Privat leje	Gård
Tranehøj	Skipingevej 25, Snerthinge 4460, Sjælland	6 enheder		Andel	Gl. gård
Trekroner Bo	Trekroner, 4000 Roskilde, Sjælland	34 enheder / 186 pers.		Ejer	Dobbelthuse
Trudeslund	Trudeslund 1-33, 3460 Birkerød, Hovedstaden	33 enheder / 100 pers.		Ejer	Rækkehuse
True Byvej 23	True Byvej 23,8381 Tilst, Midtjylland	6 enheder		Andel	Gl. gård
Uldalen	Uldalsvej 12F, 9400 Nørresundby, Nordjylland	18 enheder	62, 86, 110 m2	Andel	Klynger / rækkehuse
UrbaniaCPH	Ikke opført endnu			Lejer	
Vadestedet	Vadestedet 1-22, 8680 Ry, Midtjylland	21 enheder / 55 pers.			
Vennepunktet	Vennepunktet 16, 8300 Odder, Midtjylland	15 enheder / 40 pers.	72-112 m2	Andel	Klynger / rækkehuse
Vidjekær	Vidjekær 1, 8660 Skanderborg, Midtjylland	20 enheder / 59 pers.		Andel	Klynger / rækkehuse
Vildrosen	Byagervej 121 - 145, 8330 Beder, Midtjylland	12 enheder		Ejer	Enkelthuse
Væksthuset	Engskovvej 2, 8541 Skødstrup, Midtjylland	16 enheder / 44 pers.		Andel	Klynger / rækkehuse
Æblehaven	Æblevangen 41, 2765 Smørum, Hovedstaden	36 enheder		Ejer	Dobbelthuse
Åhusene	Trekroner, 4000 Roskilde	17 enheder	81-112 m2	Ejer	

<http://www.bofaellesskab.dk/da/bofaellesskaber/>

<https://batchgeo.com/map/6ae35d9cc5908be23111b686328e5587>

APPENDIX 5 - CASE STUDY

SUPERKILEN - BIG

During our study trip to Copenhagen we visited Superkilen, the extremely attractive space in the city. Here co-creation has been an important part of the process and had a significant impact on the finished design. The designers have managed to integrate the locals and create a space for communities within the city.

Location: **Nørrebro**, Copenhagen, Denmark

Architect: **BIG, Superflex and Topotek1**

Year: **2012**

Scale: **30.000 m²**

Superkilen is a 750-metre long multicultural urban space in Copenhagen situated between the outer Nørrebro and Tagensvej. The area of Superkilen comprises three areas with different identities;

THE RED SQUARE is where Superkilen intersect with the busiest street of Nørrebro, and is in the same time an urban extension of the life happening inside Nørrebrohallen. The area, which invites for sports, music and markets, is tied visually together by a red surfaces.

THE BLACK SQUARE is where the locals meet around permanent grill facilities, tables and benches creating what Superflex calls "the urban living room" (Superflex n.d.). Here the black as-



phalt surface defines the space and makes an interesting landscape with installations and an asphalt hill for children and childish people to play on.

THE GREEN PARK is a green-soft-hilly landscape with picnic-spots and sports facilities that creates a contrast to the other two areas characterized by paved surfaces. Superflex argues for the sports facilities because "No matter where you're from, what you believe in and which language you speak, you can always play football together." (Superflex n.d.). This part of Superkilen afford relaxation and opportunities for sitting on spaces in a hammock, on the grass or in the arranged urban furniture. Superkilen embraces and pays a tribute to the ethnic diversity and the social challenges of Nørrebro. Its multi-cultural approach

is represented and reflected in the urban space by over 100 different urban furniture from 57 different countries. The concept is developed through an *"extreme participation strategy"* to engage the residents (Superflex n.d.). Through this process, the urban space reflects the inhabitants of the area.

"Superkilen is a contemporary, urban version of a universal garden. A sort of surrealist collection of global urban diversity that in fact reflects the true nature of the local neighborhood – rather than perpetuating a petrified image of homogenous Denmark."

(Superflex n.d.)



"THE GREEN BIKE PATH" runs through the area, which also makes it a transit space for an enormous number of cyclists every day, which also adds life to the urban space. WE think that Superkilen is a popular place because the diversity of the public space attracts and assembles the different ethnicities in the area. A design that invites for different activities, where people feel a belonging.

APPENDIX 6 - CASE STUDY

SØNDER BOULEVARD - SLA

On the study trip to Copenhagen we visited Sønder Boulevard to investigate the effect of this green space in the city. In addition, literature studies have been made to find out how co-creation has been an active part of the project process.

Location: **Vesterbro**, Copenhagen,
Denmark

Architect: **SLA**

Year: **2007**

Scale: **16.000 m²**

The vision was to transform the former traffic dominated road to an attractive, liveable green urban space. Today the traffic reduced and moved to the sides in smaller roads with low speed limit adjoined with a bike path and a sidewalk. The gap between the two roads creates room for the recreational green public space that set the framework for new life and urban quality at Vesterbro.

The almost 1,3 kilometer long green park is divided into smaller zones which creates minor and intimate places for stay and among other things, there is a perennial garden, a children's playground, a fenced artificial turf field and an asphalt field for driving on BMX bikes (DAC 2014,b). The design is flexible for different usages and brings urban life to the area while it ties together Ves-



terbro and the City Center with Carlsberg area and Copenhagen Central Station (SLA n.d.). Shops, cafés, bars and food places are located along the boulevard and creates atmospheres that positively affects the green park. On a summer day, the area is packed with citizen enjoying their picnic on a blanket.

A comprehensive involvement of the citizens has been a carrying part of the transformation process where the citizens got the opportunity to take part of creating their new urban space. The product of this involvement process was lounge areas, basketball courts, skate facilities, tables, benches and small gardens (SLA n.d.). Thereby the residents in the area got an attachment to the area already before it was established.



ESTIMATING RESIDENTS AND UNITS

Northern co-housing										
Total squaremeters:										
Cluster 1	ground area	floors	m2	Total m2 in cluster	Persons	Units:				
						10% of 35's	40% of 60's	35% of 85's	15% of 110's	total
Building 1	382	3	1146	2139	71	6	14	9	3	32
Bygning 2	331	3	993							
Cluster 2				1566	52	4	10	6	2	22
Building 1	199	4	796							
Building 2	154	5	770							
Cluster 3				3217	107	9	21	13	4	47
Building 1	165	5	825	6922	230					101
Building 2	121	4	484							
Building 3	165	5	825							
Building 4	160	4,5	720							
Building 5	121	3	363							
Building 6										
Southern co-housing										
Total squaremeters:										
Cluster 1	ground area	floors	m2	Total m2 in cluster	Persons	Units:				
						10% of 35's	40% of 60's	35% of 85's	15% of 110's	total
Building 1	121	4	484	1573	52	4	10	6	2	24
Bygning 2	121	5	605							
Building 3	121	4	484							
Cluster 2				1800	60	5	12	7	2	22
Building 1	360	5	1800	1620	54	5	11	7	2	47
Cluster 3										
Building 1	180	5	900							
Building 2	180	4	720	4993	166					93
total										

APPENDIX 8 - WATER MANAGEMENT

VOLUME FOR INFILTRATION FACILITIES

- two different principles

10 year return periode

$$y = 1,4$$

	reduced area [m2]	[ha]	needed volume [m3]	fascine area [m2]	depth fascine [m]
Catchment area 1, <i>Sygehus Torvet</i>	3784	0,3784	146	500	0,292
Catchment area 2, the rain garden principle	1461	0,1461	62	155	0,4

At Sygehus Torvet we use a gabion with infiltration as the storage device.

Therefore we need to calculate the infiltration speed

Based on the type of soil we can calculate the infiltration speed

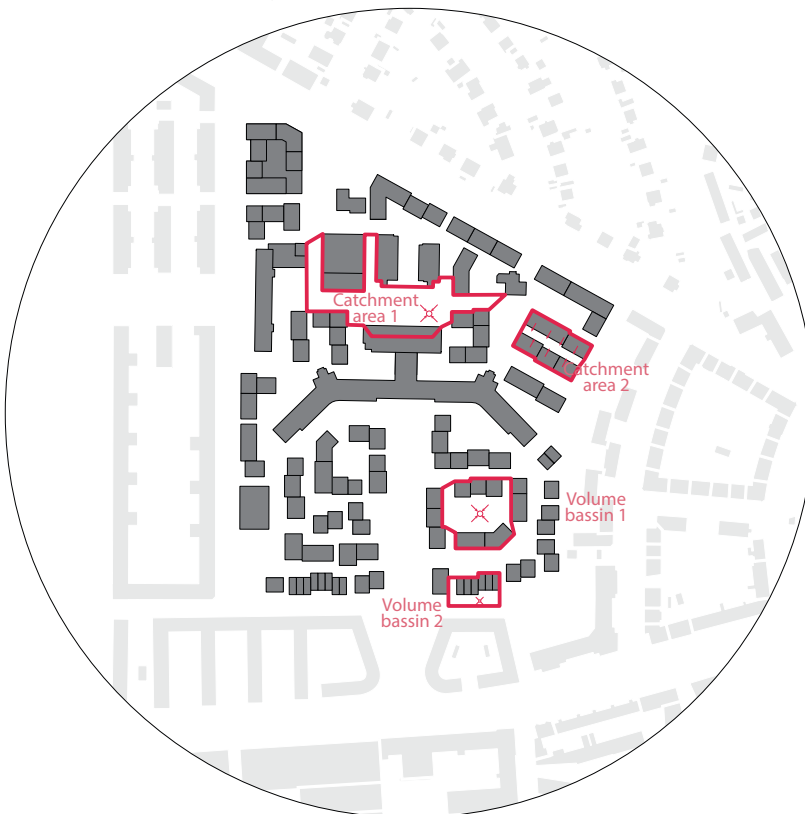
infiltration speed K [m/s]	Area of pond [m2]	Q _{out} = Infiltration capacity * Area [l/s]
0,00001	500	0,005
0,00001	155	0,00155

100 year return periode

$$y = 1,54$$

	reduced area [m2]	[ha]	needed volume [m3]	fascine area [m2]	depth fascine [m]
Catchment area 1, <i>Sygehus Torvet</i>	3784	0,3784	324	500	0,648
Catchment area 2, the rain garden principle	1461	0,1461	136	155	0,877419355

We use the same infiltration speed as calculated above.



The two areas calculated on are both placed in the northern part, where most surfaces are paved, and thereby more issues with leading and infiltrating the water. The two calculations show examples of the principals used around the site; infiltration through a fascine and infiltration through a rain garden.

To calculate the needed detention volumes the excel document Regnrække Version 4.1 is used (Spildevandskomiteen 2016).

The map illustrates the two catchment areas for the calculations above along with an indication of the catchment areas calculated in the previous appendix.

APPENDIX 9- WATER MANAGEMENT

VOLUME FOR WATER RESOUVIOR

- the Southern Co-housing

	[m ²]		
Total catchment area	2160		
total living area	3308	persons living in buildings	30 m ² pr person
			110

Month	Day ind month	Avarage precipitation [mm]	Avarage precipitation [m]	V,in [m ³]
January	31	70	0,0699	150,984
February	28	41	0,0407	87,912
Marts	31	42	0,0415	89,64
April	30	43	0,0429	92,664
May	31	57	0,0571	123,336
June	30	70	0,0702	151,632
July	31	79	0,0794	171,504
August	31	89	0,0887	191,592
September	30	70	0,0699	150,984
October	31	74	0,074	159,84
November	30	74	0,0743	160,488
December	31	72	0,0717	154,872
<u>Total</u>				<u>1685,448</u>

<http://www.energitjenesten.dk/vand-til-tojvask.html>

In the website the wateruse for washingmachines is given:

	[l/day/person]	[m ³ /day/person]
Washingmachine	15	0,015

<http://www.energitjenesten.dk/vandbesparelser-pa-toilettet.html>

In the website the wateruse for toilets are given:

	[l/day/person]	[m ³ /day/person]
Toilet	15	0,015

Month	Day ind month	(V,out,toilet) [m ³]	(V,out,wash) [m ³]	Total V,out [m ³]
January	31	51,27	51,27	102,55
February	28	46,31	46,31	92,62
Marts	31	51,27	51,27	102,55
April	30	49,62	49,62	99,24
May	31	51,27	51,27	102,55
June	30	49,62	49,62	99,24
July	31	51,27	51,27	102,55
August	31	51,27	51,27	102,55
September	30	49,62	49,62	99,24
October	31	51,27	51,27	102,55
November	30	49,62	49,62	99,24
December	31	51,27	51,27	102,55
<u>Total</u>				<u>1207,42</u>

This shows that there is way must collected water than they reuse

So if a volume of a tank is defined:

[m ³]		25	vol, new = vol + vol,in -vol,out	
Tank				
Month	Vin	Vud	tank vol	
January	150,98	102,55	25	
February	87,91	92,62	20,288	
Marts	89,64	102,55	7,38	
April	92,66	99,24	0,804	
May	123,34	102,55	21,592	
June	151,63	99,24	25	
July	171,50	102,55	25	
August	191,59	102,55	25	
September	150,98	99,24	25	
October	159,84	102,55	25	
November	160,49	99,24	25	
December	154,87	102,55	25	
January	150,98	102,55	25	
February	87,91	92,62	20,288	
Marts	89,64	102,55	7,38	
April	92,66	99,24	0,804	
May	123,34	102,55	21,592	
June	151,63	99,24	25	
July	171,50	102,55	25	
August	191,59	102,55	25	
September	150,98	99,24	25	
October	159,84	102,55	25	
November	160,49	99,24	25	
December	154,87	102,55	25	
January	150,98	102,55	25	
February	87,91	92,62	20,288	
Marts	89,64	102,55	7,38	
April	92,66	99,24	0,804	
May	123,34	102,55	21,592	
June	151,63	99,24	25	
July	171,50	102,55	25	
August	191,59	102,55	25	
September	150,98	99,24	25	
October	159,84	102,55	25	
November	160,49	99,24	25	
December	154,87	102,55	25	
January	150,98	102,55	25	
February	87,91	92,62	20,288	
Marts	89,64	102,55	7,38	
April	92,66	99,24	0,804	
May	123,34	102,55	21,592	
June	151,63	99,24	25	
July	171,50	102,55	25	
August	191,59	102,55	25	
September	150,98	99,24	25	
October	159,84	102,55	25	
November	160,49	99,24	25	
December	154,87	102,55	25	

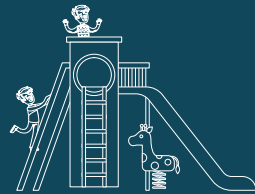
If a tank of 25 m³ is designed there will be enough water for the use in the Co-Housing to everyday use of water for toilet flushing and washing machines. An outlet is placed above the volume, so that when collected water in some months are more than the need water it will just run out and contribute the the normal water flow.

Calculation for area 2, the same approach is used. Here the total volume of the tank needs to be 4,5 m³ to fulfill the everyday needs.

What is co-housing?

Co-housings is all about community and people coming together - the place where privacy and community are sought united. Co-housing is several individual housing units arranged in symbiosis with each other embracing a wide target group of young ones, families, singles and seniors in the spirit of the community. Here the private space is given up for the benefit of the community and designated to common areas, which all have access to.

Looking after children

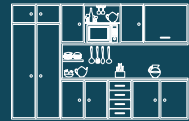


Equipment

What co-housings might share...



Elder care



Common Kitchen



Communal gardens



Laundry facilities



Electric cars and bikes



Office space

Benefits of co-housing...



Social



Affordable



Sustainable

Who lives in a co-housing?



Seniors



Singles



Young people



Families

Why co-housing in Aarhus?

The introduction of a co-housing in the urban context of Amtssygehuset in Aarhus will set a new innovative agenda in the city and expose new ways of urban living. Co-housings attract not only residents, but also the local society, and will create the framework for more communities, inside as well as outside the buildings and thereby integrate the local citizens in the new district.

Aarhus

4,6 %

OF DANISH PEOPLE FEEL LONELY ON A REGULAR BASIS

2,2 bil. kr.

ARE SPENT EVERY YEAR ON TREATING AND CARING FOR THE LONELY

6,1 %

OF AARHUS RESIDENTS FEEL LONELY ON A REGULAR BASIS