

b r e d f j ä l l s g a t a n 3 6 - 4 6

- a project by Avin Mahammad, Coline Girette, Jenny Olausson and Sofie Aronson

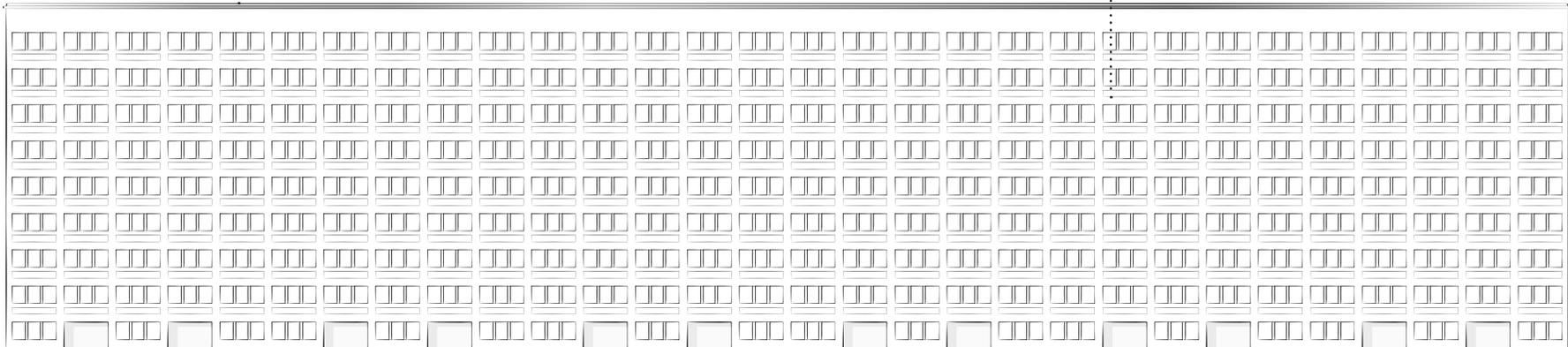
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www.suburbsdesign.wordpress.com,
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www.chalmers.se/en/education.

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the assignment



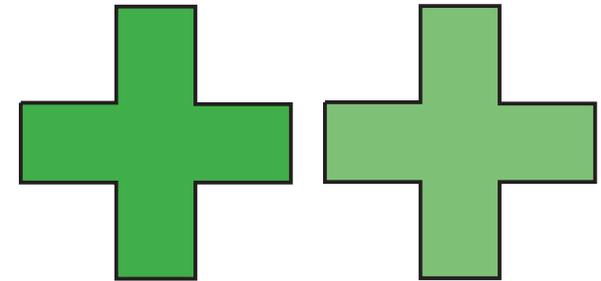
PLUS_PLUS housing

"The purpose of this project is to find new concepts for upgrading the existing building stock to reduce the carbon footprint and make it a social and economic generator in a typical 1960's and early 70's multistorey building area. The project will describe a scenario for renovating a typical building or a whole block of buildings, into both a plus-environment-building and plus-social-building, thus a strategy not only for reducing the carbon footprint but also for developing democratic processes.

Your task is to make a plus_plus design proposal of Bostadsbolaget's house on Bredfjällsgatan 36-46, based on dialogue processes with the interested users and inhabitants in Hammarkullen."

The given assignment

STUDENT
PROJEKT



the concept of plus_plus

The two pluses in the plus_plus concept stands for plus energy and plus social, but what do these two pluses really signify?

Our interpretation of the concept of *plus-energy* is a building which generates more energy than it uses and the surplus supplies the national grid with energy. This kind of project has already been realized in the plus-energy settlement in Freiburg, Germany.

The benefit of energy self-sufficiency is not only free energy which reduces the building's expenses but also the possibility to generate an income by selling the surplus. Another benefit is that if housing areas supplies the

national grid with energy it could be a contribution to solving the energy crisis that nations are facing worldwide due to peak-oil and to the climate issues created by the use of fossil fuels.

In contrast to Hammarkullen's multi-storey buildings the housing area in Freiburg consists of newly built single family residences. These different prerequisites rises the question; is it really possible to transform a multi-storey building from the late 60's to a plus-energy building?

Then there is the concept of *plus-social* which in our interpretation should, in the same way as *plus-*

energy, generate social benefits for the tenants but also contribute to the local and global context.

One way of doing this could be to strengthen already existing social networks in the building/neighbourhood in order to generate new job opportunities, ideas, activities and entrepreneurship.

In the building of Bredfjällsgatan 36-46 there are currently several active organisations working with these kinds of issues (see page 14) which could be involved in these kinds of processes. Working together could also be a way of empowering the citizens to take control over their own situation in a positive way and

to feel included in the process. When working with these kinds of issues it is very important to gain trust and create a good relationship between all of the participants in order to create a long-lasting solution.

Creating these bonds takes a long time and requires consistency in order to maintain the relationship. Collaborating with already established organisations with an existing network and commitment for the area is therefore a good way of dealing with these issues and for ensuring that the project will continue to thrive on its own.

Another important aspect in this discussion is the link between the

both pluses. How can a building generate both plus-energy and plus-social benefits?

One way of creating this link is to work together with the tenants and try to inspire them to contribute with ideas on how to solve issues such as for example how to save and create energy in their building. But how do you create an interest for these issues when there are other issues that are more pressing among the tenants?

Should you primarily try to solve the issues defined by the tenants or impose the issues defined by the plus_plus concept - or is there a way of combining them?

We will try to answer all of these questions throughout the process of this assignment.



vision

Our intention is to use the plus_plus concept not only to make the building more energy-efficient but also for creating a social and economic generator. The project's aim is to promote a long-term sustainable development in the building which will hopefully spread to the rest of Hammarkullen.

Our vision is to brand Hammarkullen in a positive way by creating a landmark that expresses the sense of community, the diversity and the positive energy in the area in a sustainable manner. By doing this we hope to enhance these positive aspects and create a building to be proud of, not only for the tenants but for all the citizens of

Hammarkullen. An icon building with good aesthetic qualities would attract visitors from the city-centre as well as from other parts of Göteborg and thereby reduce the mental barriers and the segregation of the north-eastern city districts.

More visitors could also make it possible to have more stores, restaurants, cafés etc. which is something many of the citizens of Hammarkullen would want in the area. In the long run it could also generate new job opportunities and further development in the district.

By working together with the tenants we hope to strengthen their connection to their building and create

a sense of belonging so that they continue to care for it. This will hopefully also generate a greater interest and involvement in the process of creating a sustainable future.

The project is intended for the tenants in the building Bredfjällsgatan 36-46 as well as the current associations and activities in the building and Bostadsbolaget. By transforming the existing building to a plus_plus one we hope to generate benefits that not only gains the tenants but all the citizens of Hammarkullen.

¹ Baltgren Christoffer, How to develop the million program, 2011

² Göteborgs stad, Byggande för en hållbar utveckling, 2004

the million homes programme

In post-war Sweden there was a housing shortage and the need for new housing grew quickly. There were year-long housing queues due to rapid urbanization, growing prosperity and demands for higher housing standards. The housing shortage became a political issue and the ruling Social Democratic party and the Swedish parliament decided that a million new dwellings should be built in 1965 and 10 years ahead. To do this the building process had to become more efficient. This new approach completely transformed the way buildings were produced and still are.

Although the million homes programme did solve many issues, it was also heavily criticized. The new buildings

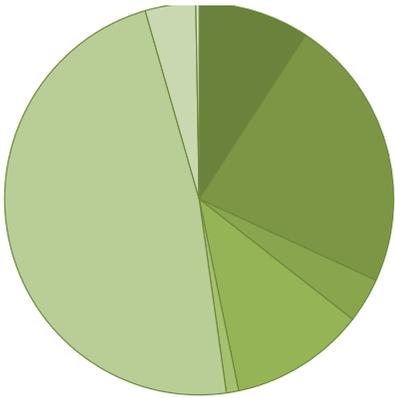
were regarded as large scaled monotonous concrete buildings which lacked the relationship to the human scale and as early as in the 1970's some of the outdoor areas were rebuilt.

Today buildings built during the million homes programme account for approximately 25% of Sweden's overall housing stock¹. This type of housing is therefore a huge contributor to the existing building stocks energy-consumption and is an important factor for reducing it. The existing building stock in Sweden is currently using 35% of the national energy-consumption, 60% of this energy is used for heating which gives an amount of approximately 85 Twh/year². A number which needs to

be heavily reduced if the building and construction sector should reach the climate targets that are required by the Swedish government. Since housing and services are the main consumers of the total electricity consumption (fig 2) and the main energy used is electricity (fig 3) the possibility of creating renewable energy within the building could contribute to heavily reduce these numbers.

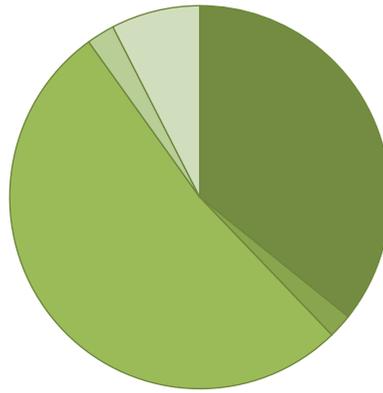
The buildings of the million home programme are currently to a large extent in need of reparations and upgrading which creates a good opportunity to transform them into plus_plus buildings and thereby reduce their energy-consumption.

Figure 1
carbon dioxide emissions
in 2009



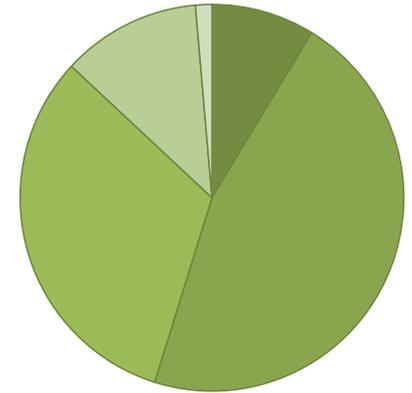
- combustion
- transports
- housing and services
- combustion in power-, gas- and heating plants
- fugitive emission
- emission from the energy sector
- industrial processes
- others

Figure 2
electricity consumption
by sector 2010



- industry
- transports
- housing and services
- district heating, refinery, distribution losses

Figure 3
types of energy used in
housing and services 2010



- petroleum products
- electricity
- district heating
- biofuel
- other fuels

Source: <http://energimyndigheten.se>



Göteborg

Built:	1604 - ongoing
Population:	500 181
Borned abroad:	21%
Amount of children:	20,1%
Employment rate (age 25-64):	75,8%
Housing typology:	21% small houses 79% multi family houses

Sources:

Stenberg Jenny, Suburbs : design & future challenges, 2008, 2009 and 2010

g ö t e b o r g

The suburbs in north-eastern Göteborg are physically separated from the city-centre by barriers such as woods, mountains, highways and long distances which contribute to a sense of not belonging to the city of Göteborg.

These barriers also creates a mental barrier which stops citizens from other parts of Göteborg from getting to and from the area and for outsiders to discover Hammarkullen unintentionally and contributes thereby to a segregation within the city. An uneven demographic distribution within Göteborg further contributes to this separation.

These barriers are also increased by prejudices among people living

in other city-districts about Hammarkullen and the rest of north-eastern Göteborg. These mental barriers are strengthened by the negative image that has been given in media since the 1970's.

But Hammarkullen is also well-known in all of Göteborg for being multi-cultural and for its carnival which attracts a huge amount of visitors each spring.

The carnival started already in 1974 and is today one of the most important and fun events in the whole north-eastern Göteborg. The carnival itself lasts only a couple of days but there is a rich cultural scene in Hammarkullen all year round.

Another important attraction of the north-eastern city-districts is the beautiful nature and the national-park Vättlefjäll which attracts many nature enthusiasts.

Even though it is difficult to visit the area by foot or bicycle, Hammarkullen is well connected to the city centre by tram (about 15 min) and to Angered centre (about 4 min). The tram is one of the most important links to the centre of Göteborg.



*Hammarkullen in relation to the city
of Göteborg and the green areas*



Hammarkullen

Built:	1968-70	Housing typology: 21% small houses
Population:	7 814	79% multi family houses
Borned abroad:	57%	No of apartments: 2 670
Employment rate (age 25-64):	45,7%	<i>Sources:</i>
Amount of children:	33,4%	<i>Stenberg Jenny, Suburbs : design & future</i>
Families 3+ children:	36%	<i>challenges, 2008, 2009 and 2010</i>

h a m m a r k u l l e n

When you exit the underground tram station at Hammarkullen the first thing you see is the building of Bredfjällsgatan 36-46 and Hammarparken. This visual connection makes this area an important factor in order to create an welcoming entrance to the whole district.

Hammarkullen is a part of the million homes programme and was built in 1968-70, which clearly can be seen in the physical structures and the planning of the area. Repetition, uniformity and effectiveness are some of the characteristics as well as the separation of traffic and functions. When moving around in the area you mainly walk by foot which also is a common way of socializing

with friends and family. The outdoor environment is highly used and the large public green spaces in between the houses have an important function in the social relations among the citizens of Hammarkullen.

Hammarkullen is also known for its "Hammarkulle spirit". There are a lot of activities going on (whereof the carnival is the most famous one) and the sense of community within the area is strong and most people tend to move within the area or to other parts of north-eastern Göteborg since they feel at home here.

The main reason for moving within the area or to other parts of the city is the need for a larger apartment

since most tenants are families with many children and most apartments in Hammarkullen only have 2-3 rooms.

Even though this is the case many of Bostadsbolaget's tenants that are offered an apartment in other parts of Göteborg tend to move back to Hammarkullen in spite of the fact that they cannot get an apartment of the same size in Hammarkullen as in Göteborg.

■ sightlines

■ green areas

many sit here in the summer

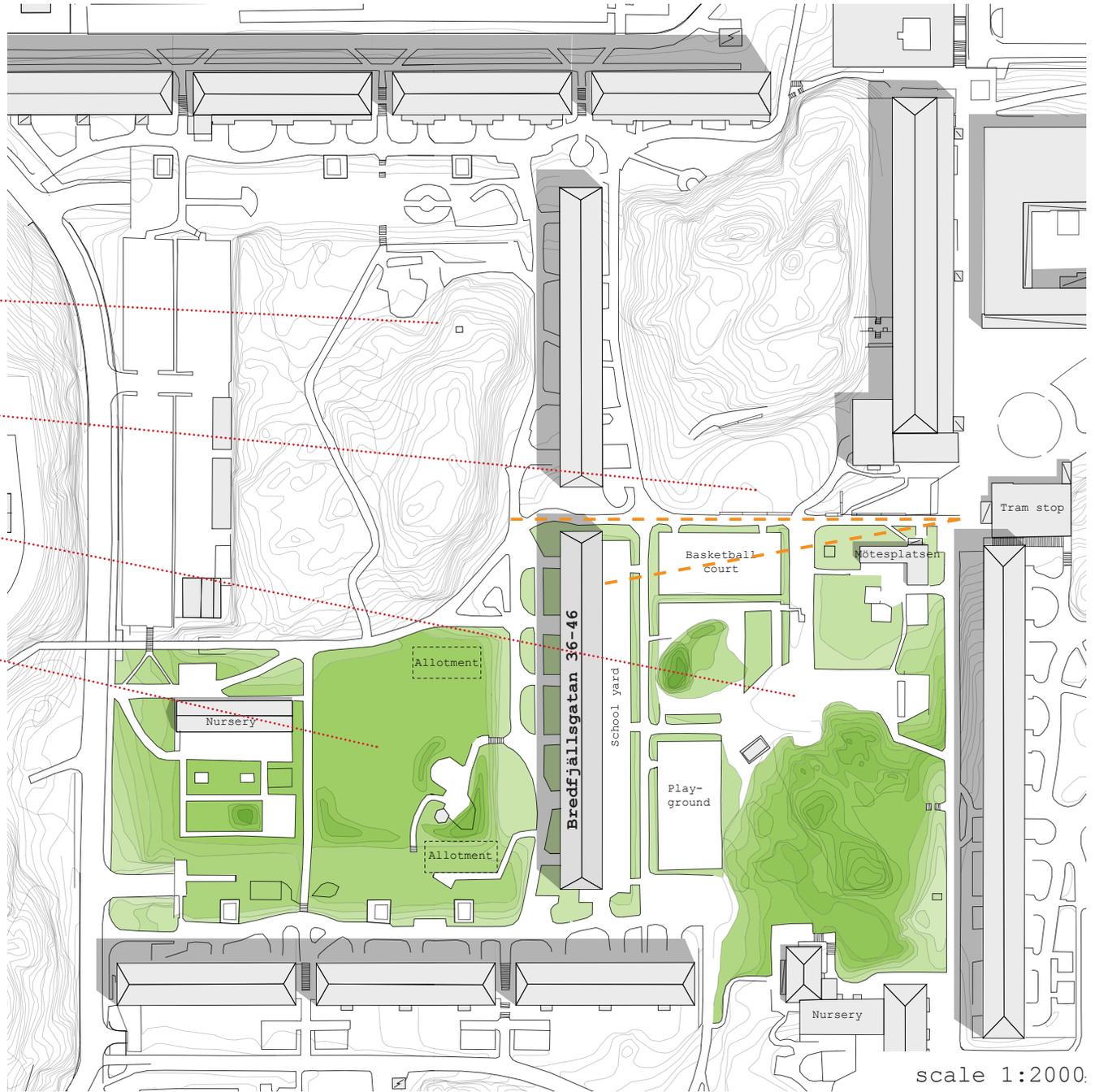
sledge hill in the winter

Hammarparken public space with long history

area used as "courtyard"



View from tram station



scale 1:2000.



Bredfjällsgatan 36-46

Architect: Stig Henrik Lundgren

Owner/manager: Bostadsbolaget

Built: 1968

Renovated: 2003

Apartments: 2 rooms - 48

3 rooms - 96

144

Sizes: 2 room 60 sqm - 4 200 skr/month

3 room 74-78 sqm - 5 000kr/month

Tenants: 460 (national register)

Ethnicity: about 60% Somalian

Employed: about 20-25%

Sources:

Bostadsbolaget

Folkbokföringsregistret

the building

Since 2001 Bredfjällsgatan 36-46 is owned and managed by Bostadsbolaget. Both Bostadsbolaget and the tenants describes the relationship as a good one. In 2003 Bostadsbolaget renovated the building in dialogue with the tenants through the local union of tenants. Some of the improvements was to change almost all windows to more energy-efficient ones, rebuilding the roof and renovating the bathrooms.

As most of the buildings from the million homes programme the load-bearing construction is in the vertical interior walls and is made of concrete. The facade is made of in-fill walls that are fastened on concrete pillars in the exterior walls. As

a part of making the building process of the million homes programme more efficient the construction is repetitive which creates a monotonous and anonymous impression with few individual characteristics. All the buildings at Bredfjällsgatan look basically the same which makes it difficult to orient in the area. There is also a lack of distinct signs that can guide you to the right address.

The constructive repetitions of the apartments in all the apartmentblocks at Bredfjällsgatan also reveal a lot of information about the tenants which makes some tenants feel uncomfortable. As one tenant explained it; "if someone knows

which door you enter to your apartment they know exactly what your apartment looks like".

Another consequence is that there are no variations of apartment sizes which has become an issue since most of the current tenants are large families with many children instead of the 2-children families the apartments originally were intended for. In order to solve this issue Bostadsbolaget have had to rent two apartments to one single family in several cases, sometimes even on different floors of the building.

Crowding of the apartments also leads to that they are worn out

more rapidly which in turn causes an extra cost for the tenants as well as for Bostadsbolaget. Today, there is a possibility of deciding yourself whether or not you want to upgrade the apartment. An upgrade might cause an extra addition to the rent and if the apartment is worn when moving out you have to pay an extra fee.

The ground floor is rented to several organisations mainly pre-schools. The intention was to create a Family centre but unfortunately this project did not succeed.

Another important aspect of the organisation of the building is that it lacks social spaces for the

tenants. The only possible place for spontaneous meetings within the house is in the very narrow staircases or in the laundry-room. This makes it difficult to get to know your neighbours.

To facilitate meetings among the tenants today there is a local union of tenants located in one of the apartments of the building. This apartment is used as a meeting place for many of the tenants and is highly appreciated. The apartment is now so frequently used that there is not enough space for all the activities that the tenants want to have there.

Since many of the tenants consist of large families who live in quite

small apartments there is a need for these kinds of social spaces within the building.

the organisations

The organizations that we have focused on in this project are the three pre-schools (the preparatory pre-school, the open pre-school and Sjöhästen), La Familia and the local union of tenants.

La Familia works with teaching Swedish for immigrants (SFI) in order to make it easier for immigrants to understand the Swedish language and culture. La Familia and the preparatory pre-school are to some extent collaborating, for example they offer the possibility to leave your child at the pre-school while the parents are in Swedish class at La Familia.

The preparatory and the open pre-school also works with facilitating

the transition to the Swedish society in many different ways. For example the preparatory pre-school help out with contacting different authorities but also look after the children when the parents are applying for work etc. Both are interested in increasing the contacts with the people living in the building. The third pre-school, Sjöhästen, is an ordinary pre-school.

We have chosen to exclude Resurseheten (the unit of resources) whom are a part of the social service centre since they told us that they are relocating to Hjällbo. The only remaining parts of their organization are the group discussion rooms - in case they need them. Since these rooms are used for group therapy and are situated on

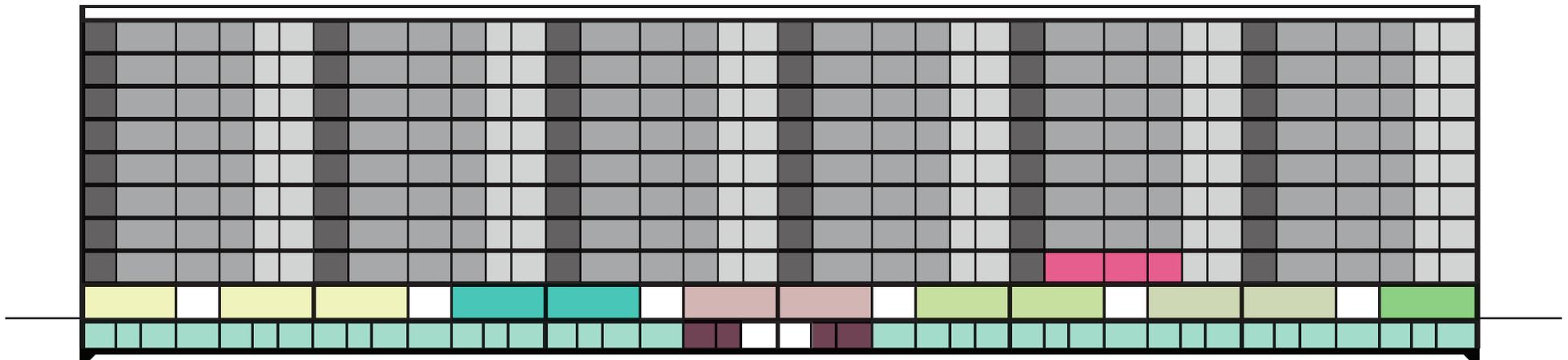
the ground floor at the most visually exposed corner of the building and will only be used occasionally we suggest that they are moved to more suitable premises.

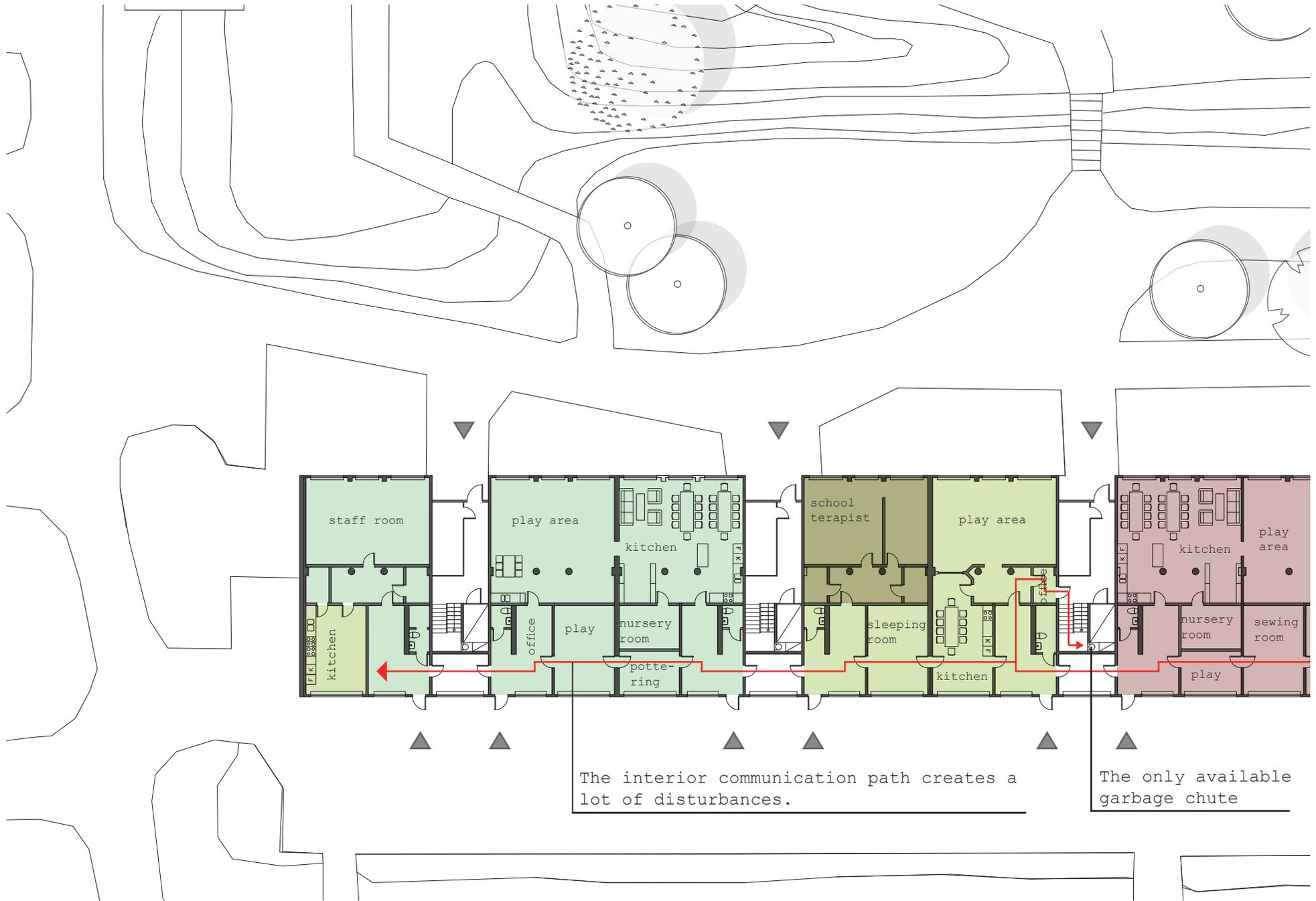
Then there is the local union of tenants whom are working with creating a social network within the building and between the tenants and Bostadsbolaget. They also organize homework help for youths living in the building, cooking classes, meetings and work out sessions.

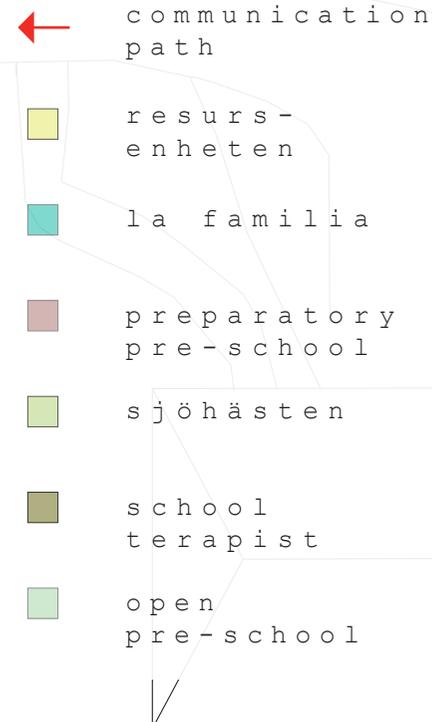
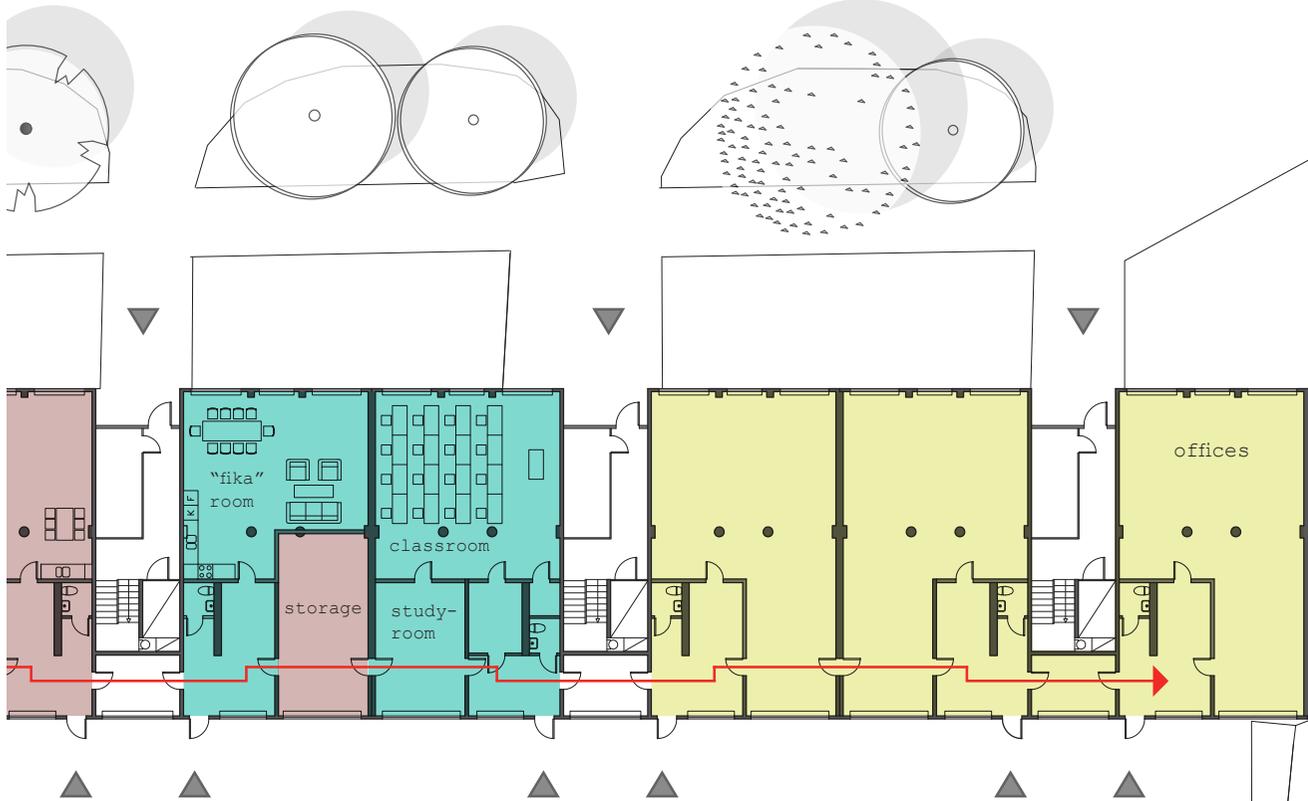
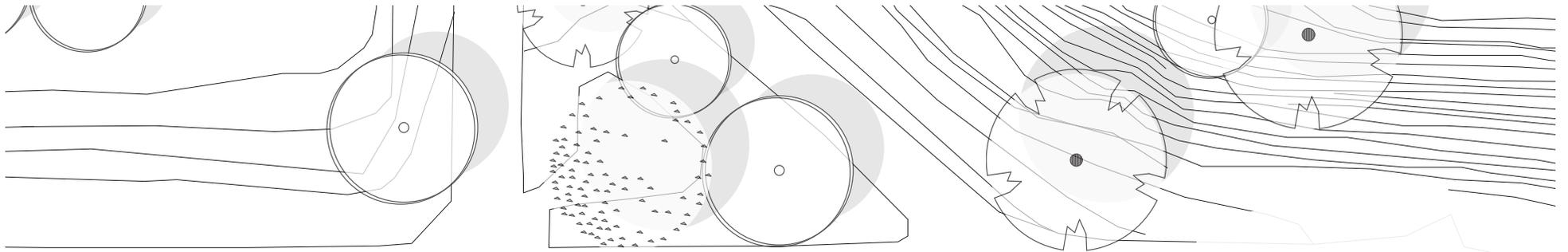
All of these organisations are working with issues that are important for the building as well as for the whole of Hammarkullen and all are well established within the area.

length section - western facade

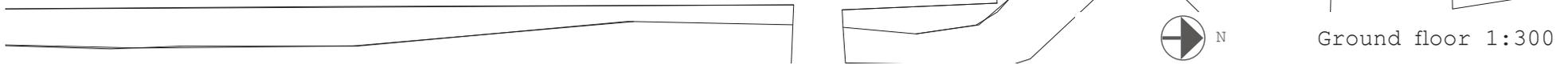
- 3-room apartment 78 sqm
- 2-room apartment
- 3-room apartment 74 sqm
- Basement storages
- Laundryroom
- Entrances
- Resursenheten
- La Familia
- Preparatory pre-school
- Sjöhästen pre-school
- Open pre-school
- Common spaces for organisations
- Local union of tenants



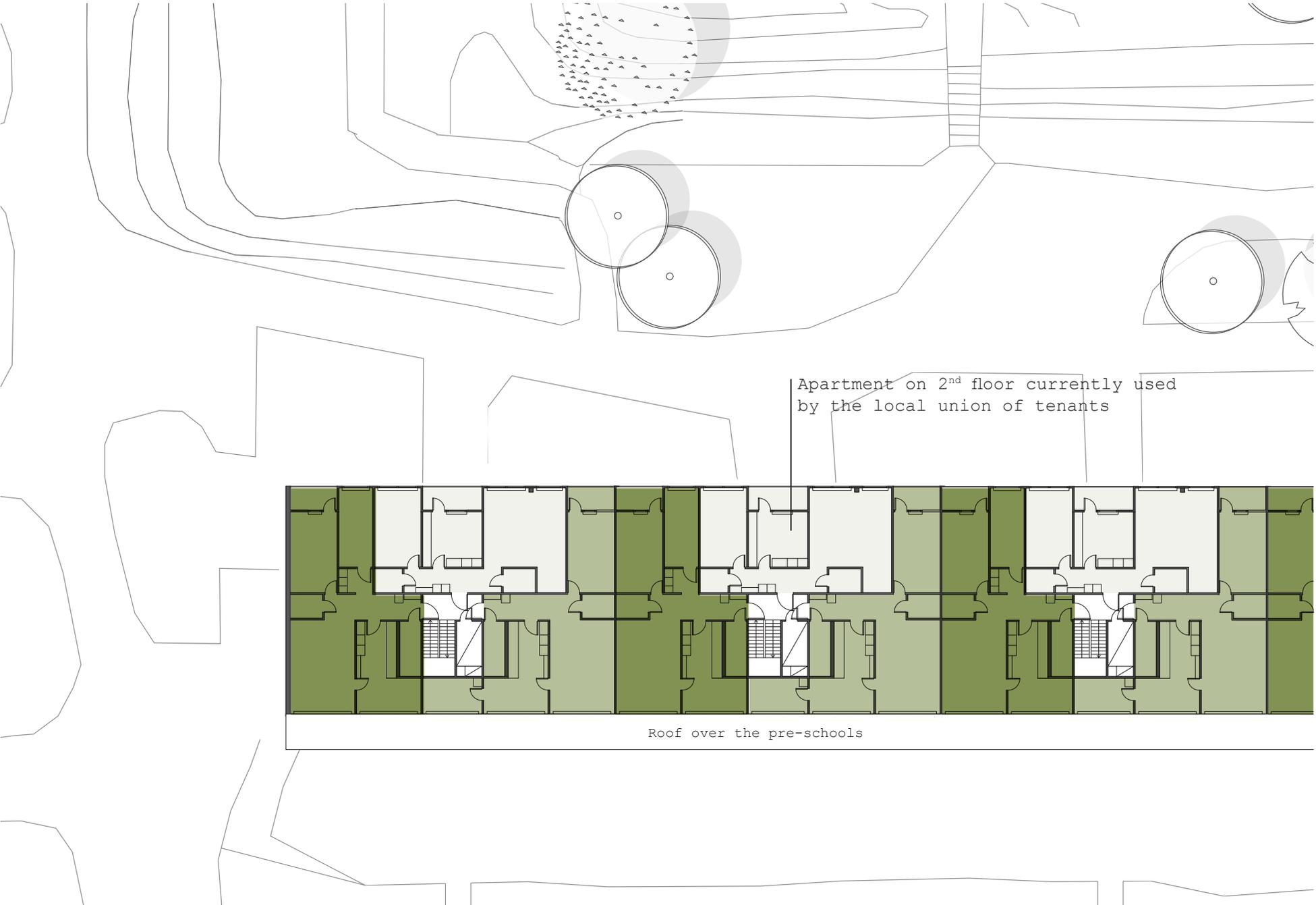




The outdoor environment is not designed for children.

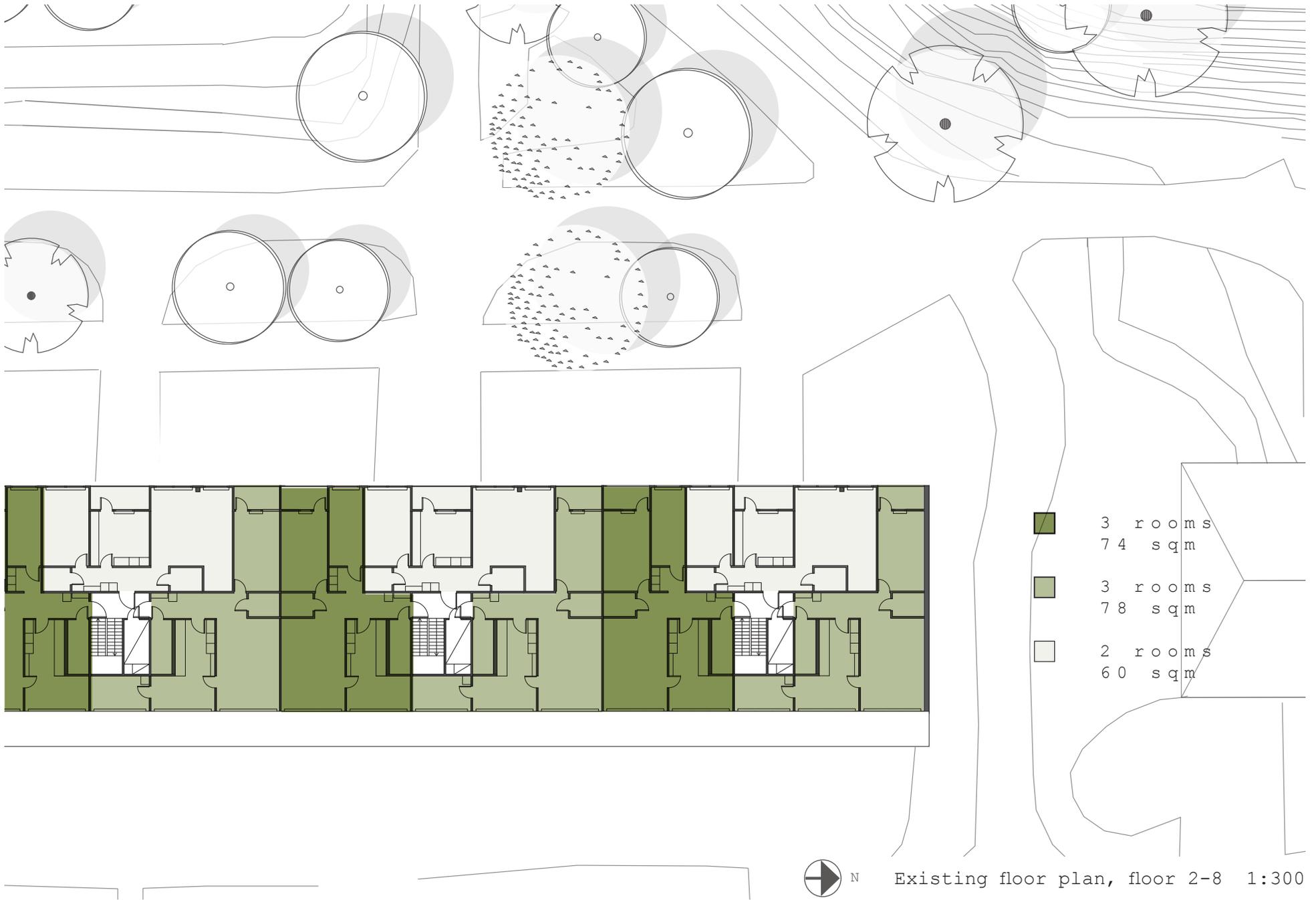


Ground floor 1:300



Apartment on 2nd floor currently used
by the local union of tenants

Roof over the pre-schools





View over the Hammarparken from one of the apartments.



View over the "courtyard" from one of the apartments.

method

Another purpose with this assignment was to investigate, develop and evaluate a method for working with participation and dialogue processes. We divided our method into four different themes *impressions*, *understanding*, *design* and *reflection*.

The intention is to first create our own *impression* of the building, the tenants and the surroundings and thereafter start to *understand* them by having dialogues with the tenants, Bostadsbolaget and other actors related to the premises. Then we will start with the *design* proposals which we will iterate together with a focus group consisting of tenants, the organisations in the building and employees of Bostadsbolaget. Af-

ter coming up with a design solution together we will finalize the design and the presentation. Thereafter we will start the *reflection* phase where

we reflect on; the process, the design and our own roles as professionals.

impressions

- walk in the area
- visit the building
- interviews
- analysis of facts, plans, physical structure and surroundings
- study literature
- study everyday life in the building

understanding

- workshops and dialogues with the tenants
- interviews
- create a mixed focus group (tenants, employees of Bostadsbolaget and the associations in the building)

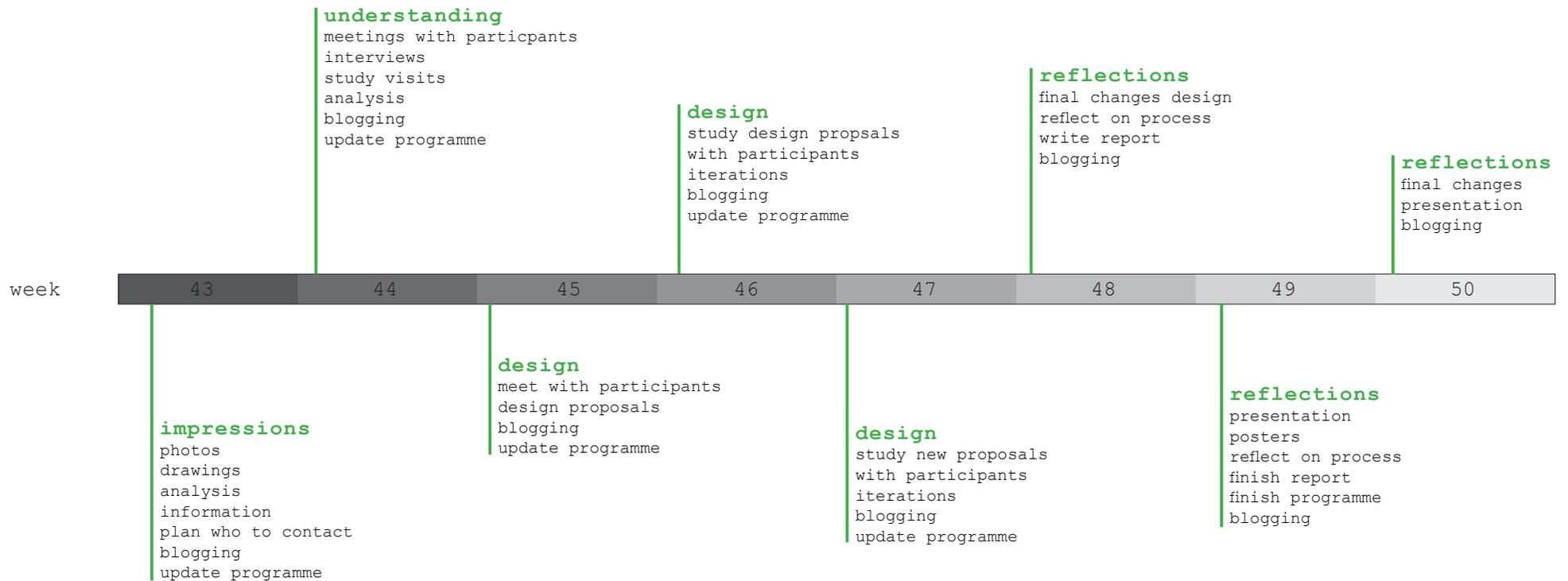
design

- design different proposals dealing with the issues that have been defined earlier in the process
- present the proposals for focus group
- iterations
- present new proposal for focus group
- finalize the design

reflection

- reflect on the method, the design, the process and our own roles as professionals.

timeline



tools

The division of our method into four different themes; *impressions, understanding, design* and *reflections*, has been the fundament for our work throughout the process and has been a good way of structuring the material and the process.

The first week was spent on creating our own *impressions* of the building, the context, the tenants and so forth. This approach gave us a overview over issues that we considered to be important and wanted to know more about such as for example;

- *why are the blinds closed?*
- *why are some of the balconies covered?*
- *how do the tenants live?*

Then we started the process of *understanding* where we developed a *set of tools* to investigate issues concerning the building and it's environment among the tenants. This part we spent on talking to different persons connected to the building in different ways. The first tool was to *interview* some of the employees of Bostadsbolaget and the local union of tenants to understand their view of the building and the management.

In order to get a better comprehension of how it is to live in the building and to hear the tenant's opinions we tried our second tool which was to put up a "*fika*" table outside the building. By inviting people passing by for a quick "*fika*" we had many in-

teresting conversations both with the tenants as well as other citizens of Hammarkullen.

To help us in the discussions and to create an interest we had made two models, one of the building and one of the apartment units in each staircase. When by passers saw the models many became interested and some of them approached us to ask what was going on. When we explained that it only is a student project some of them left while some remained interested.

In this way we got to know a lot of information about the building as well as the surroundings. Since one of our intentions was to try to

the process

fika workshop

When: Thursday 3/11

How: We put a table at Bredfjällsgatan 36-46 with fika and two models - one of the building and one with the 3-apartments unit - that people could discuss.

Who: The tenants and citizens of Hammarkullen

knock on doors

When: Tuesday 8/11

How: We had prepared questions and together with Haliima we started to knock on doors at Bredfjällsgatan 36-46.

Who: The tenants

household study

When: Thursday 10/11

How: We went to visit one of the tenants in the persons apartment

Who: One tenant

design workshop

When: Thursday 17/11

How: Dialogue about the design proposals. We showed models, drawings and inspiration pictures.

Who: The users of the building.

interviews

When: week 44-45

How: We prepared questions and then interviewed different actors with knowledge about our project.

Who: Bostadsbolaget, Local union of tenants, Chalmers

tour in the building

When: Tuesday 8/11

How: Visiting the building with the janitor. Common spaces, empty apartments, basement and attic with technical installations.

Who: The janitor and us

facebook questionnaire

When: Wednesday 9/11

How: We sent a questionnaire to our friends on Facebook.

Who: People we know on Facebook that lives in Göteborg.

visits

When: Monday 14/11

How: We visited the organisations on the groundfloor.

Who: Resursenheten, La Familia, the preparatory pre-school, Sjöhästen, the open pre-school.

...in summertime everyone is outside until late...

...I would like our building to show that we belong to Bostadsbolaget...

inspire the participants to define the solutions themselves instead of only discussing pros and cons with the building we also got many interesting suggestions to the design proposal.

Another intention with this tool was to give the tenants an opportunity to recognize us so that they would know who were when we used our next tool *knocking on doors* a couple of days later. We decided to try this tool on the autumn break so that there would be a better chance of people being home.

This tool turned out to be a good way of creating a first contact with the tenants. Even though it was a quite cold day we got to talk to many different

persons with different relationships to the area which gave us a lot of new knowledge. At this occasion we also had the opportunity to invite ourselves to one tenant so that we could make a *household study*, our fourth tool.

In retrospect it could have been a good idea to put up the "*fika*" table several times during different times of the day so that we would have reached out to even more people.

After analysing our material we went back to the building to *knock on doors* and talk to more tenants. This time we went in the afternoon and started at 17 o'clock. To prepare we had made a few questions that we could ask quickly if the person was

busy and some questions we could ask if we had a good conversation. To our help we had a representative from the local union of tenants who already has a relationship to several of the tenants. This method also turned out to be very interesting and resulted in many new conversations.

Before we went *knocking on doors* we also had had a *guided tour* in the building by the staff at Bostadsbolaget. This tool gave us the opportunity to get even a better understanding of the building and its functions.

After collecting this material we wanted to know more about what the other citizens of Göteborg thinks of Hammarkullen and what would make

...I would recycle if it is easy, using the garbage chutes is so comfortable...

...everything gets so grey in the winter...

them visit the area. To figure this out we used our next tool and went to *Nordstan* and stopped people in order to ask them some quick questions. This turned out to take a lot of time because many persons would not stop since they are used to be approached by people trying to sell things.

Instead we developed the tool and sent out a *Facebook questionnaire* where we asked the same questions. This turned out to be a quite effective way of collecting many people's opinions in a short amount of time. Even though we knew the persons that got the questionnaire we got a good variety of answers and suggestions to what could make them visit Hammarkullen.

The next tool was to visit the organisations on the ground floor to get their opinion of the house and ideas for a design solution.

Thereafter we made an analysis of all our material in order to come up with design proposals to the issues that had been raised by the participants as well as the issues we had identified and then relating these to the plus plus concept. After coming up with some different solutions we used our last tool and arranged a *design workshop* where we invited all the tenants of the building by putting up posters in the staircases. We had already invited the ones we talked to when we were knocking on doors. We also invited the organisations and Bostadsbolaget.

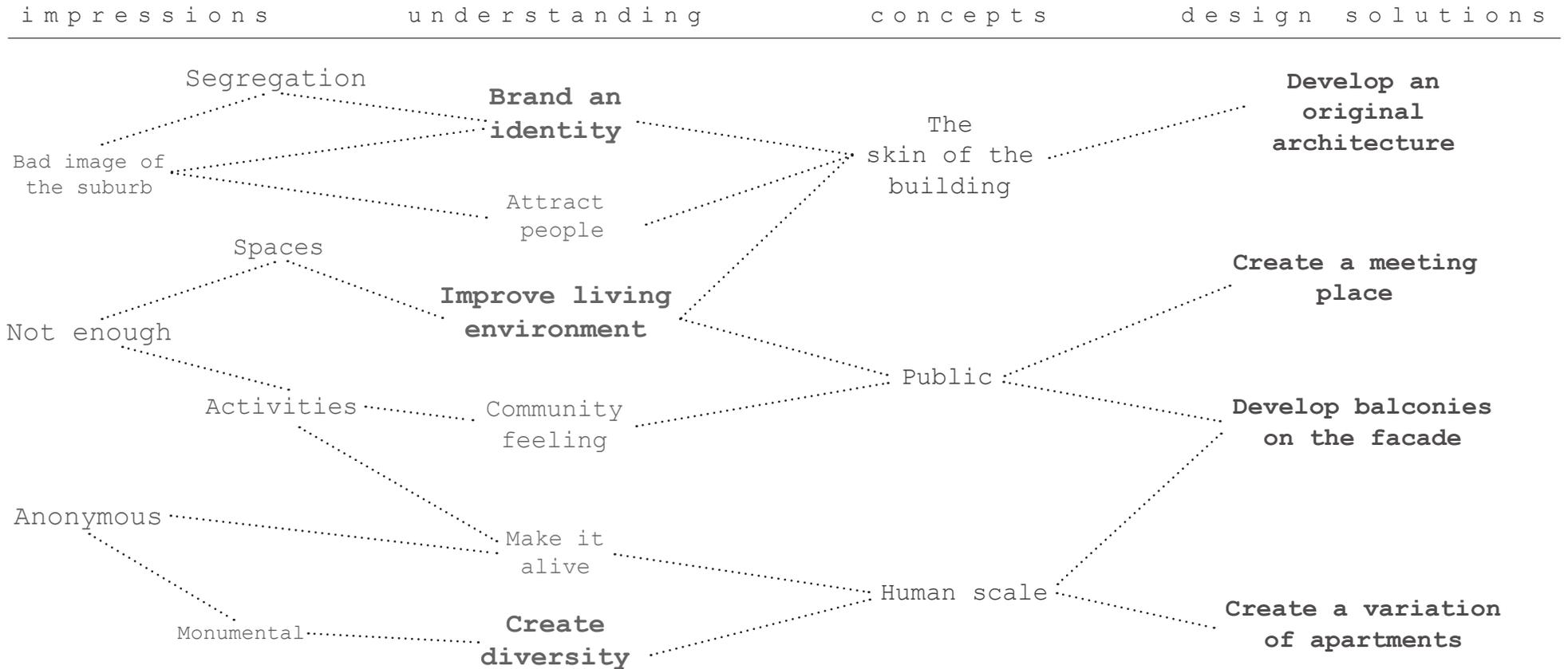
Unfortunately the turn-up was not very good and only three persons came. Even though the participants were not many we had a good conversation and got good feed-back on our proposals and several new ideas came up.

The set of tools that we developed during the process have all been quite effective especially when combining them. Together they have given us a good understanding of the issues related to the building and the design solutions. If there would have been more time we would have continued these processes and had even more meetings to increase our understanding. A matrix of the synthesis of all the collected material is presented on page 28-29.

	Information	Proposals		
			tenants	local union of tenants
hammarkullen building	Bad mix of ethnicities Segregation Garbage problem	<i>More social space</i> <i>Grocery store</i> <i>Would use recycling if easy</i>		
entrance staircase	Narrow elevator Dirty staircases Bad smell Have to clean themselves	<i>More daylight</i> <i>Better cleaning</i> <i>Fine littering</i>	No more drug problems inside since the renovations Bad smell	
laundry-room	Dirty Too few laundry-machines Basement unsafe	<i>Laundry-room on the courtyard</i>	Keeping the storages locked is a nuisance	
apartment	Can see the children outside Narrow kitchens Old, bad plan No individuality	<i>More individual and bigger apartments</i> <i>More insulation</i>	Too cold	<i>More space for their activities</i>
facade balconies	Blinds broken Old, dirty and boring facade Grey Looks terrible	<i>Glassed balconies</i> <i>More colors</i> <i>Keep privacy</i>		<i>Glassed balconies</i>
pre-school				
outdoor environment	Surrounding nature Moped problems No activities	<i>Many uses the «courtyard»</i> <i>More allotments</i>	Moped problems Snow badly swept in winter-time	<i>Many uses the «courtyard»</i>

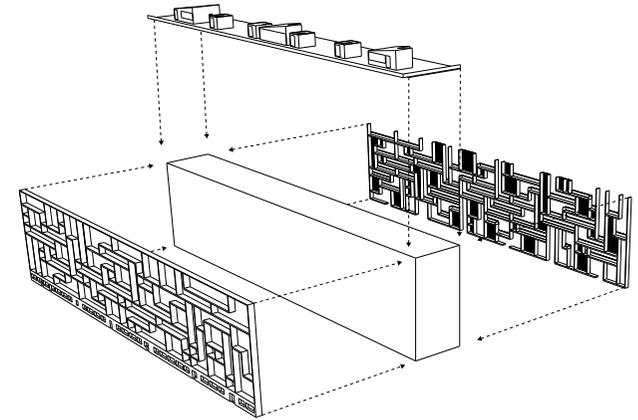
bostadsbolaget		organisations		citizens in göteborg		student projects		our impressions		conclusion	
Large renovation in 2003 No recycling system		Better location than before Bad visual contact	<i>Waste-management system</i> <i>Larger windows</i>	The carnival Area not very attractive	« Suburban and multi-cultural area » <i>Make a more mixed area</i>	Lack of lighting No signs Lack of meeting places Everyone is greeting		Positive energy Monumental Physical and mental barriers Gap among tenants	Create human scale Connect to surroundings Get to know your neighbors	- change the image of the area - develop a recycling system - create more meeting places	hammarkullen building
<i>Littering</i>		Must walk through all the building to get to pause room No chat rooms	<i>Entrances from two sides</i> <i>New passageway room</i>	« Smell of pee »				Abrupt transition private/public Storage in entrances No visual contact	Add semi-public spaces Self-maintenance Visual contact	- make it more safe and clean - create bigger spaces with natural light - add semi-public spaces - self-maintenance	entrance staircase
Locked the storage in the basement due to fire-regulations	<i>Laundryroom on the courtyard</i>		<i>Outdoor storage</i>					Isolated - unsafe Pee in basement People living in storage room Littering	Move laundry-room Make tenants care	- move the laundry-rooms to the roof - develop «meeting places» making it more comfortable and safe	laundry-room
Kitchen + WC fixed Small flats - big families - wear and tear Too warm						Crowded apartments Lack of storage Affordable apartments		Nice view Space-waste No variations Don't know your neighbors	Vary sizes etc Create community within the house - make tenants care	- more diversity in the plans - more varied apartments - make it more insulated from each other and from the outdoor environment - use the view	apartment
Thermal bridges on balconies	<i>Glassed balconies - quite expensive</i>			« Grey and concrete big buildings »		Monotonous facade		Individualisation of balconies Grey, monotonous, anonymous	Increase individualisation Add color	- create a more liveable facade with personalisations - keep privacy from outside - make it more colorful	facade balconies
«The roof is not a good idea» Garbage thrown from windows		Floor too cold Dark inside <i>Better recycling systems</i>	<i>Need more space</i> <i>Connect to other pre-schools</i> <i>Child-perspective</i>			No signs		Only asphalt on the courtyard No space adapted to children Bad lighting		- solve the roof problem - create a recycling system - create more spaces and connections between each other	pre-school
Tried to solve the moped problem	«Transform the exterior environment»	Littering Youths smoking in the evenings	<i>Solve the roof</i> <i>More grass and playgrounds</i>	« A criminal area »	<i>More public programme</i> <i>Make it safer</i>	Lack of lighting Lack of meeting places Too big scale	Feeling insecure	Lots of nature Not enough activities No semi-public spaces		- make it more safe (moped...) - develop activities and meeting places - make it more green - create visual contact house/street	outdoor environment

Our conclusions in relation to the
synthesis matrix.





r e s u l t s



Concept; add functions to the roof and a new skin

design proposal

One of our main goals when we started the design process was to create a connection between the two pluses in the plus_plus concept so that the technical solutions should generate a benefit for the social and vice versa.

Our proposal should be regarded as a way of solving the issues that has been indicated for us throughout the process by the local actors, our own impressions and technical issues related to the building. After identifying these issues we came up with an idea and our proposal is basically to add an extra skin to the existing building.

Except for giving the tenants some extra space in conjunction with

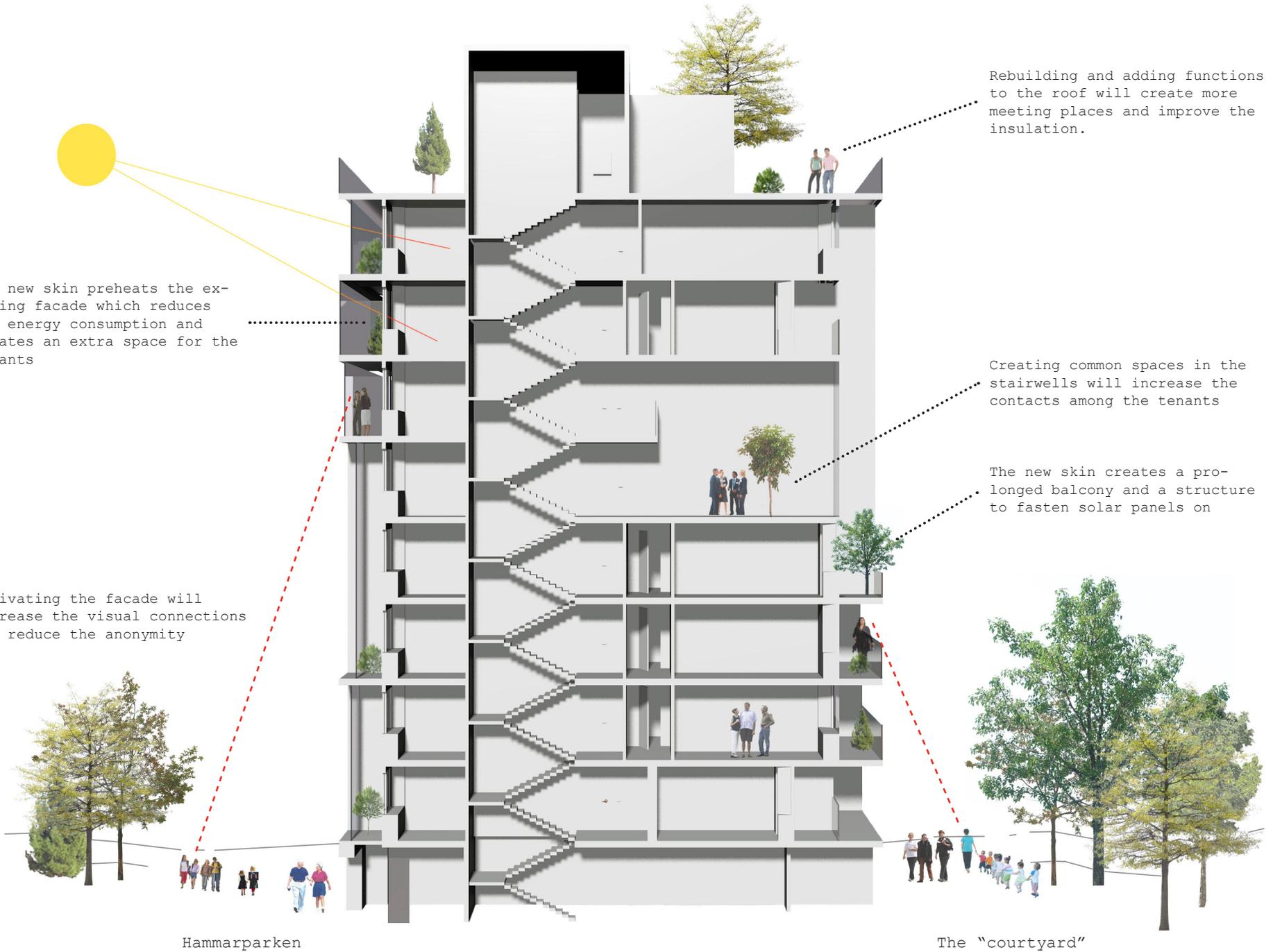
their apartments it will also function as a buffer zone which preheats the facade and thereby reduces the energy consumption.

On the eastern side this space will function as a non-heated semi zone which the tenants can use in any way they want for example as a prolonged living room in summertime or for growing plants.

On the western facade the extra skin will instead function as a pro-longed balcony for some apartments but also as a structure for fastening solar panels and green walls. In addition to collecting solar energy the panels works as a sunscreen and prevents people from seeing inside.

Except for creating a more dynamic, colourfull and living facade than the existing this solution will give a better visual contact from the building to the surroundings. This will make you feel more secure and less anonymous and thereby contribute to an increased sense of safety. It will also personalize the exterior and create a new identity for the building as well as for Hammarkullen.

When starting the design process we decided not to consider the cultural historical values of the building and instead create a new aesthetic expression.



The new skin preheats the existing facade which reduces the energy consumption and creates an extra space for the tenants

Activating the facade will increase the visual connections and reduce the anonymity

Rebuilding and adding functions to the roof will create more meeting places and improve the insulation.

Creating common spaces in the stairwells will increase the contacts among the tenants

The new skin creates a prolonged balcony and a structure to fasten solar panels on

Hammarparken

The "courtyard"

ground floor

By improving the premises of the existing organisations in the building and create a new common space for the tenants on the ground floor we want to improve the conditions for them as well as to generate new social structures that will benefit the tenants as well as Hammarkullen. The new design will encourage the existing organisations in their work and attract new visitors. The new plan also makes it possible to establish a "nattis". This proposal makes it possible for parents working night-shift to leave their children attended.

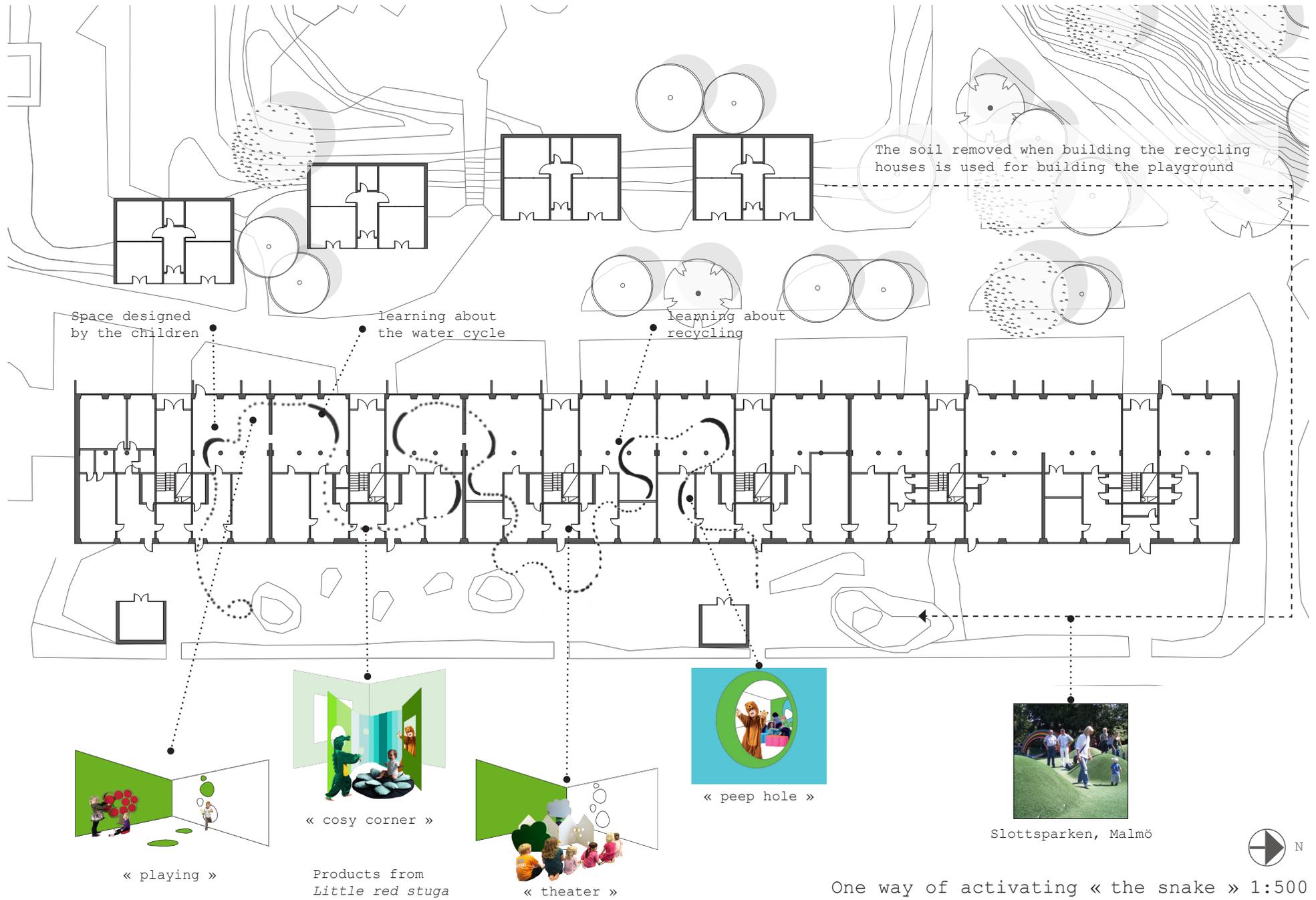
The disposition of the premises has been changed so that Sjöhästen is directly connected to their kitchen, in order to minimize unnecessary passage

through the open pre-school. All services are provided with separate chat room, larger restrooms with changing facilities, rooms where the children can rest, separated office unit for Sjöhästen, waste disposal and storage on the outside. The preparatory pre-school and La Familia have a common entrance since they often collaborate.

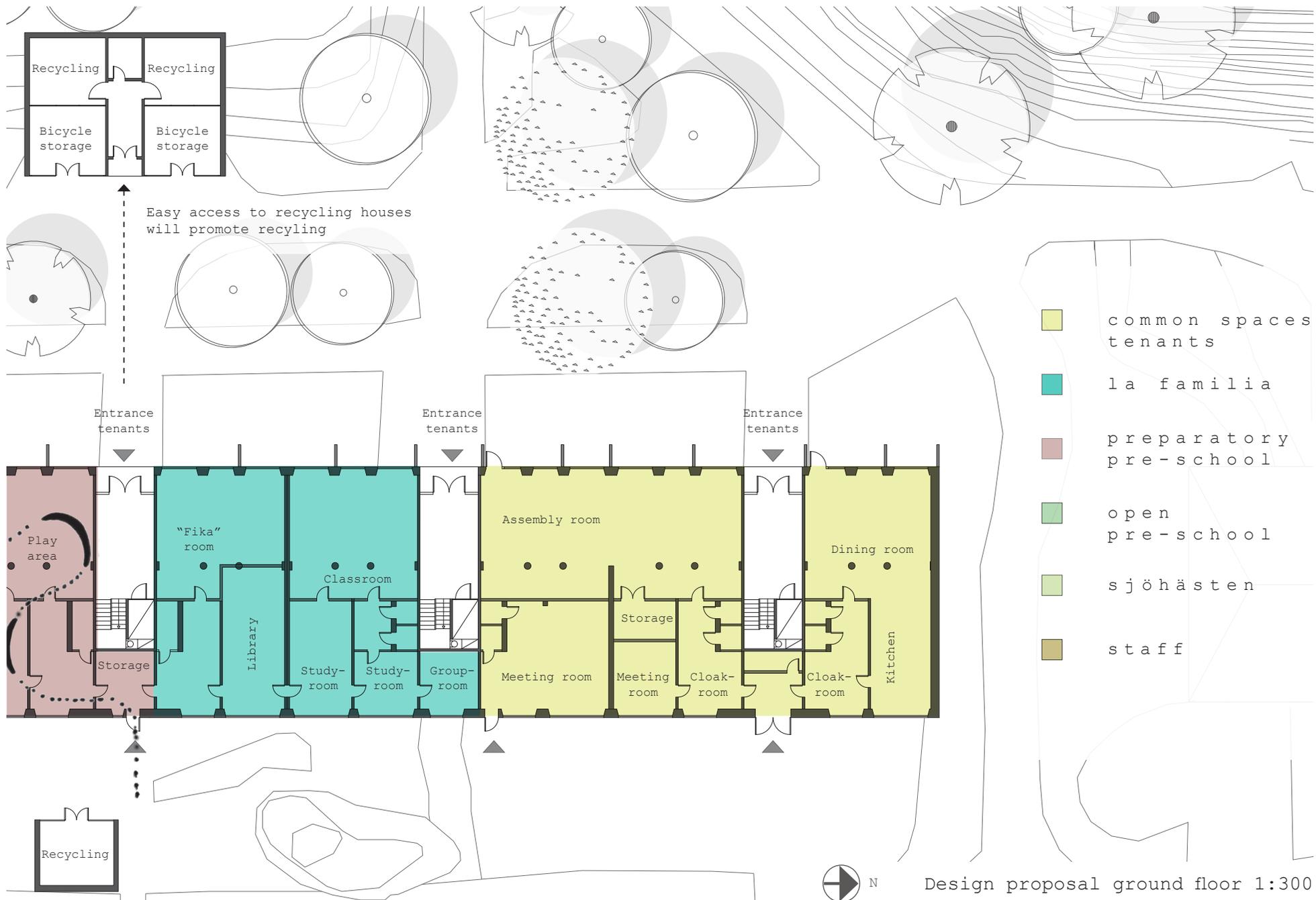
The three preschools have been linked visually by an educational and playful snake. The snake winds its way between the departments and vary in shape, sometimes visible only through a sliding color shade on the floor or walls, sometimes it pops up like a little hill in the room and sometimes it rises to the room, forming a small room within the room with a variety

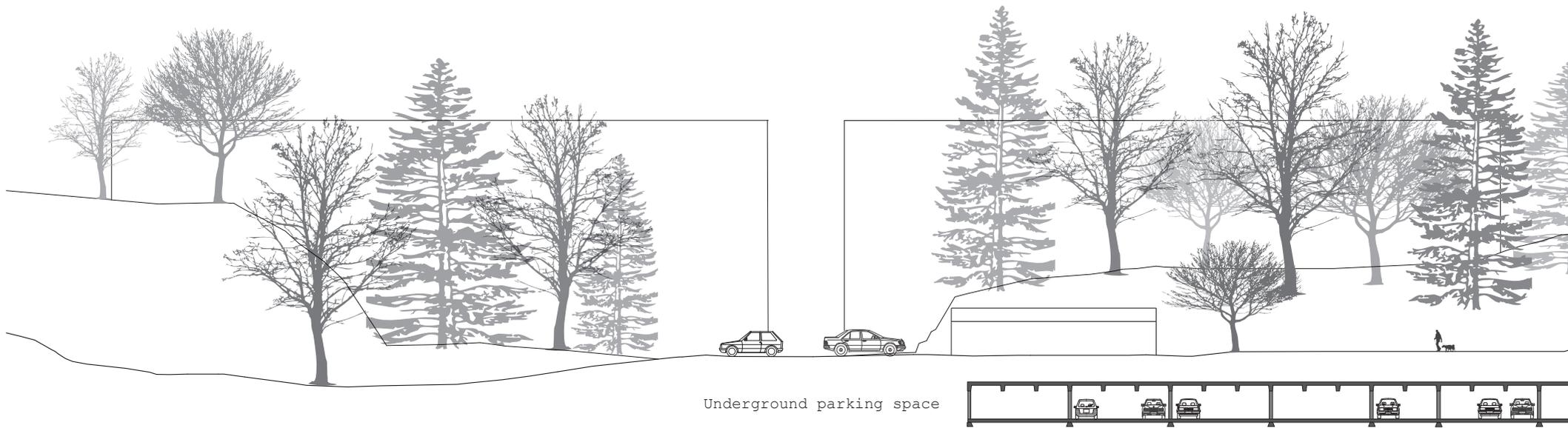
of purposes. It also happens that the snake makes a trip out to the new courtyard and integrates with the playground. The contents of the snake can be changed so it adapts to the current event or the theme chosen by the pre-schools. The intention with the snake is to attract people from Hammarkullen and thereby facilitate the work of the pre-schools.

The premises Resursenheten leaves have a central location, close to the tram, which makes it suitable as an active space. The primary function of these premises is to act as a meeting place for the tenants under the management of the union of tenants. The space can be used for parties, meetings, workshops and as an extended living room.

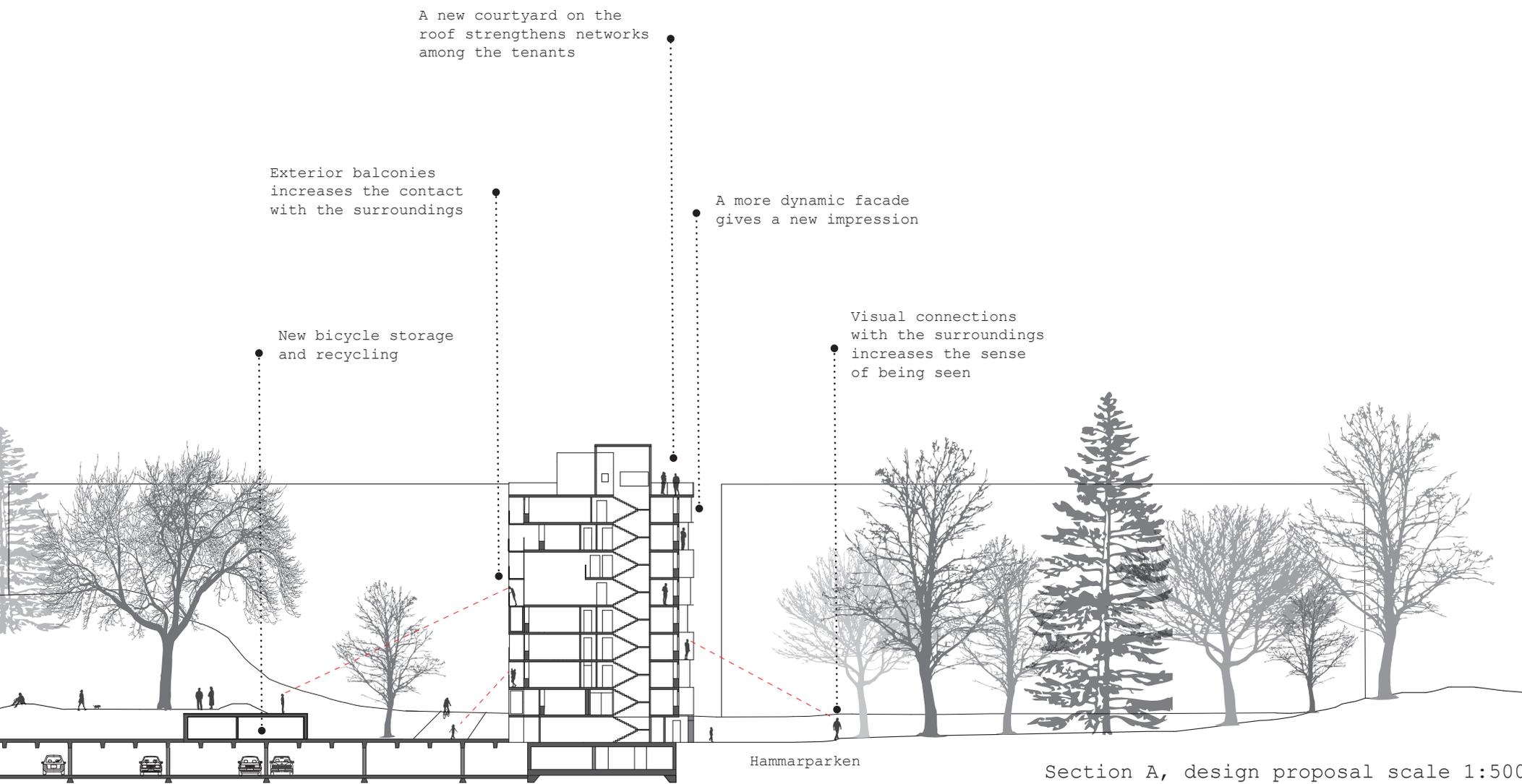








Underground parking space



A new courtyard on the roof strengthens networks among the tenants

Exterior balconies increases the contact with the surroundings

New bicycle storage and recycling

A more dynamic facade gives a new impression

Visual connections with the surroundings increases the sense of being seen

Hammarparken

Section A, design proposal scale 1:500

apartments

The repetitive construction of the buildings from the million homes programme creates a monotonous and anonymous impression and all the apartments are basically the same. Deficiencies in the floor plan was a issue that came up repeatedly during our discussions with the tenants. They want diversity and variations of apartment sizes since there are too few suitable apartments for the type of families that are currently living in the building.

Since most of the current tenants are large families with many children we suggest that in some cases combine the apartments to create larger ones. As we have previously mentioned, Bostadsbolaget has today

solved this issue by renting two apartments to one family in several cases. In the proposed floor plan we have kept some apartments the way they are now but also made some changes to create a variation of apartments.

Another issue that was brought to our attention in our discussions with the tenants was that the apartments are very narrow. Therefore we have in some cases taken down parts of a wall or removed doors in order to create more open and airy spaces in the apartments.

Instead of the current 3 types of apartments in each staircase we have developed 17 different types. The

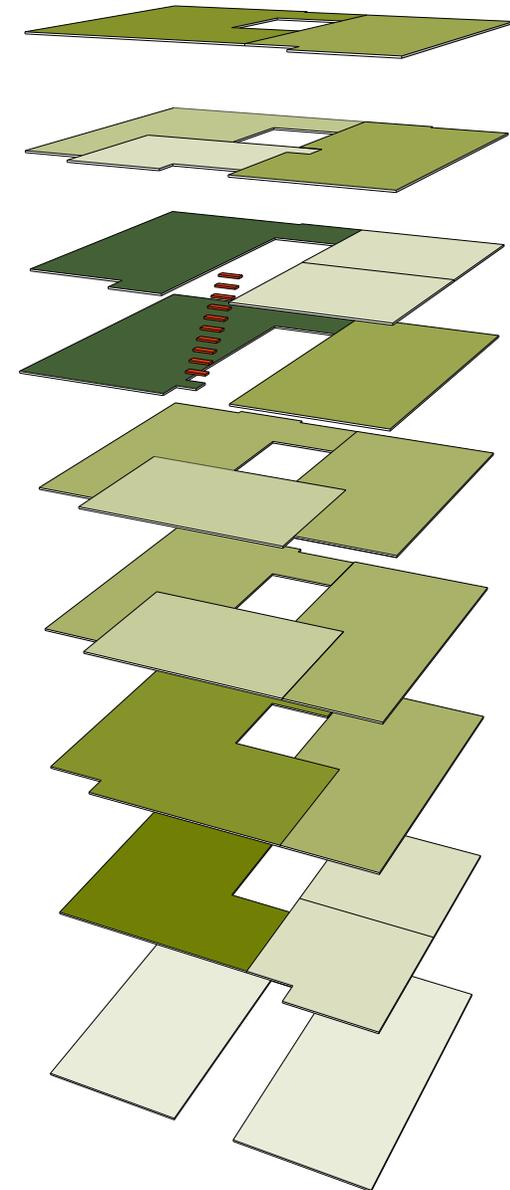
sizes range from one room apartments up to nine rooms' apartments with sizes from 50 up to 224 sqm.

The large variation of apartments will attract tenants from different focus groups, from students living alone to families with many children or people living in collectives. In that way there will also be a variety among the tenants and the building will be more suitable for future demographic changes. It would also benefit all of Hammarkullen since it would complement the area with a larger variety of dwellings more suitable for the present population.

In order to enhance the diversity

and variety of the apartments we have added a Tetris shaped facade on the existing one. This creates extra room in different sizes that can be used as balconies and in some cases as storages. The facade is also added due to environmental reasons and one of its functions is as sun-screening to create better indoor environment during summertime.

-  9 room apartment
- connected by staircase
-  6 room apartments
-  5 room apartments
-  4 room apartments
-  3 room apartments
-  2 room apartments
-  1 room apartments
-  Common spaces

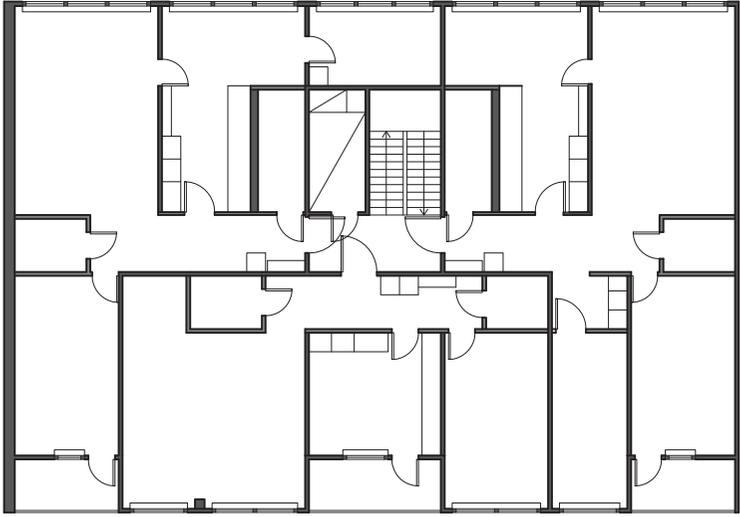


Principals for new apartment combinations in one staircase

Our proposal floor 5 1:200



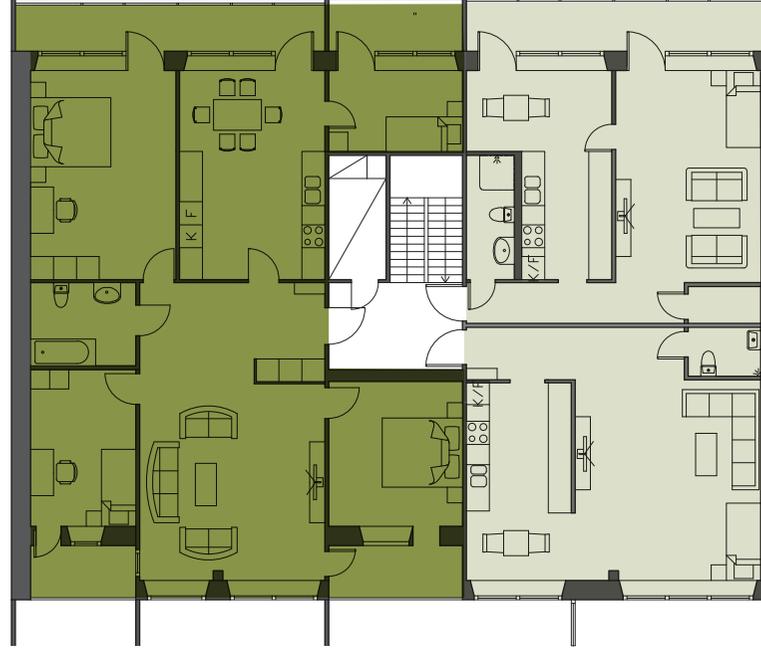
Original floor plan 1:200



Our proposal floor 6 1:200



Our proposal floor 2 1:200



Our proposal floor 7 1:200



Our proposal floor 3 1:200



Our proposal floor 8 1:200



Our proposal floor 4 1:200



s t a i r c a s e s

During our discussions with the tenants the need for more meeting places came up. Currently there is only the local union of tenants premises that can be used for meetings. Since the staircases are an important link in the house and are usually the place where you meet your neighbors for the first time we consider this space as an important part of creating spontaneous meetings.

More meeting places in the building would also strengthen existing social networks as well as contribute to create a better community among the tenants. Knowing your neighbors increases the sense of wellbeing and safety. When changing the apartment types there is also the possibility

to create a room in the stairwell. There you will be able to play table tennis, chess or have other activities. It should be a place where neighbors meet, socialize and have fun. Such a place could also contribute to make people take the stairs instead of the elevator, to see what is going on.

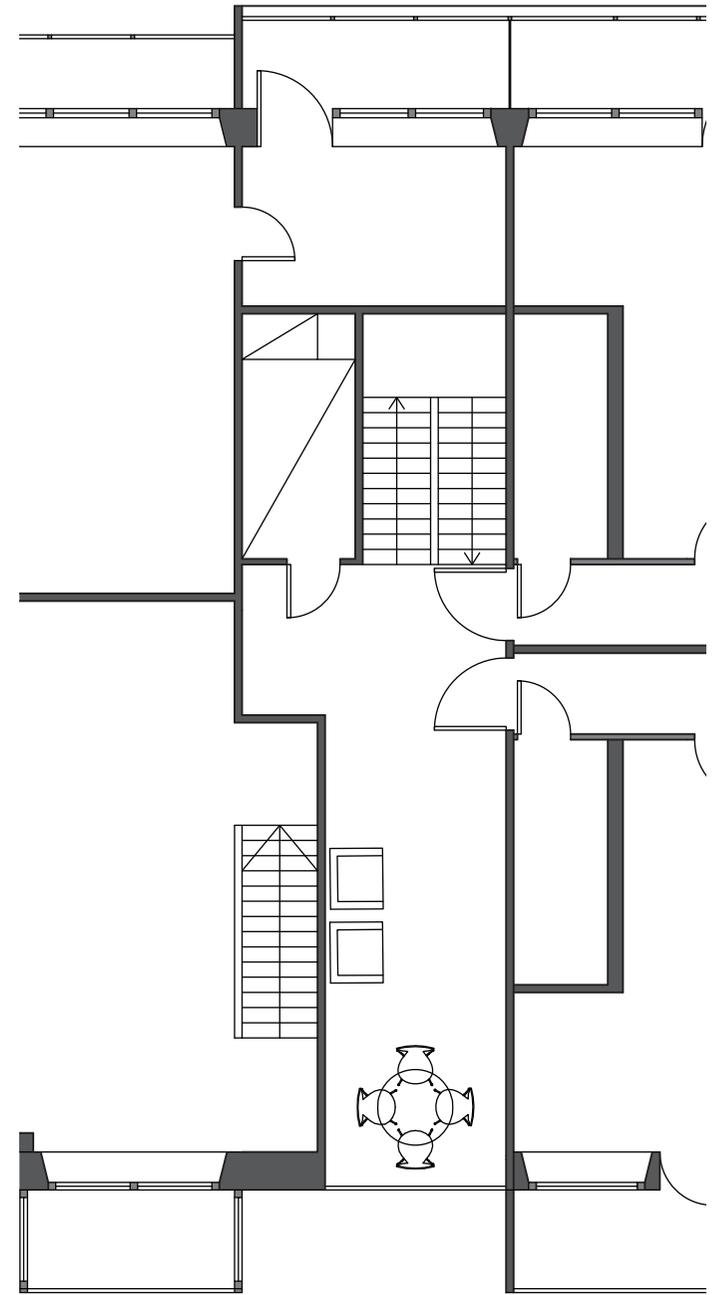
Opening up the facade and bring in daylight into these spaces will also contribute to make the facade more lively. Therefore, these meeting places have a large windowsection facing the courtyard giving both views and transparency. Even though this solution will not be energy efficient it will benefit the house by creating a social addition. To create diversity the space in two of

the staircases could also be used as laundry rooms. Here the tenants can have the view of the courtyard while doing their laundry, and no longer feel any discomfort when laundering.

On the top floor of the stairwell, we placed windows to bring in natural light into the stairwell which will reduce the use of artificial light. To improve the acoustics the space will be decorated with soft sound absorbing materials. To make the entrances more welcoming the bicycle storage is removed to an exterior building and will be replaced by mailboxes. The new bicycle storage will also contain a recycling system to facilitate recycling.



Vizualisation the common space in the staircase



Staircase 1:100

r o o f

Another issue brought to our attention was moving the laundry room from the basement since many of the tenants feels discomfort when using them. Since all space around the building is public there is no possibility of re-locating them in the exterior surroundings. Meanwhile the building is located in a beautiful nature and it would be a good idea to take advantage of the nice view from the roof.

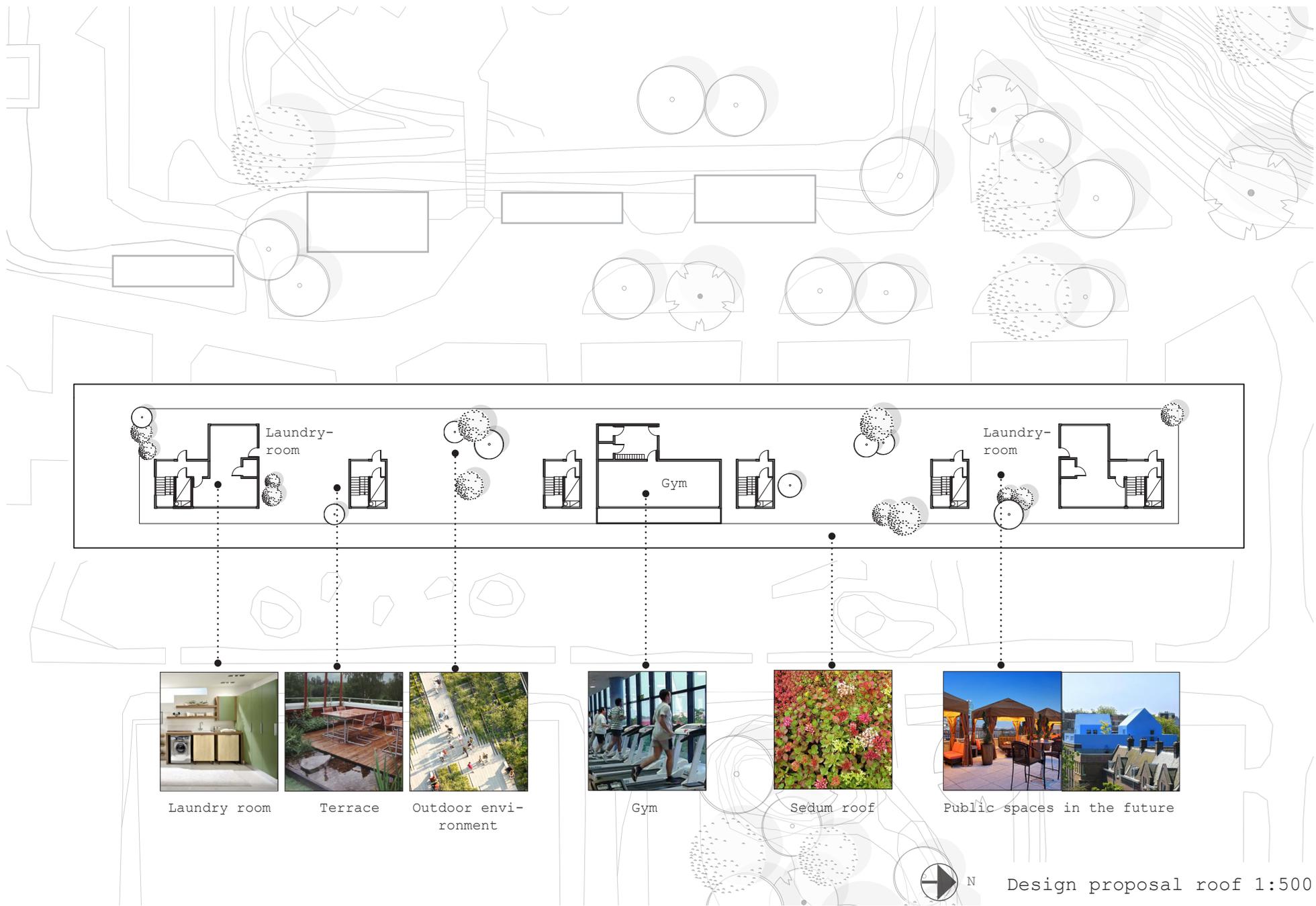
Our proposal is to rebuild the roof and move the laundry rooms there. By adding a space where the children can play while the parents makes the laundry or where you can sit and talk to a friend the space can also be used as a meetingplace.

Re-designing the roof would also create an opportunity to add more functions and meeting places such as a gym which was suggested by some tenants. The local union of tenants already have a small gym which is highly used and there is a need for a more suitable and larger space.

The gym could also be a part of generating electricity in a pedagogical purpose in a so called dynamo, where the tentans generate an amount of electricity when exercising which is showed in a display. This will not solve any energy problems but will hopefully contribute to an awareness about energy consumption among the tenants in a playful way.

Rebuilding the roof would also create a good opportunity to further improve the insulation and adding partly green roofs in herb sedum which would reduce the carbon footprint as well as create a nice outdoor environment similar to a courtyard.

The planning of the roof makes it possible to build more buildings in the future. Some of which can be used as restaurants or cafés, an idea was highly appreciated by the tenants. If adding public premises on the roof it would also be necessary to add an exterior staircase on the facade for visitors.



Laundry room



Terrace



Outdoor environment



Gym



Sedum roof



Public spaces in the future



Design proposal roof 1:500

facade

Most people describe the facades of Hammarkullen as grey and monotonous. When first visiting Bredfjällsgatan 36-46 this impressions seems accurate but when you look closer you can see that some of the tenants have tried to personalize their balconies in different ways or have tried to cover them up or use them as storage.

Most tenants also keeps their blinds closed all day. When discussing this with the tenants they explained that it is a matter of taste. Some like to keep them closed because they like it dark and cosy inside while others feel uncomfortable since they feel that people living in the opposite building can see into their apartments. Previous problems with birds

nesting on the balconies has contributed to blocking the balconies.

Our design proposal is to add a tetris shape built in therma-wood on the eastern and western facades. These volumetric shapes will function as balconies where the tenants can have lunch in summertime and the parents see their children playing in the playground. Spending time in these new spaces will increase the contact between the building and the surrounding. When the tenants personalizes the balconies the facade will become even more diversified and alive.

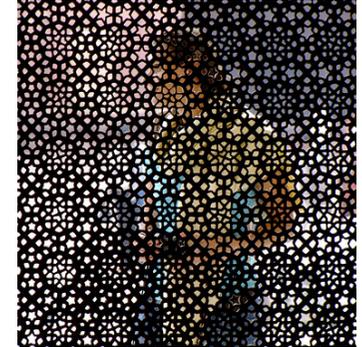
The western facade will partly be covered by photovoltaic panels and green walls which will improve the

integration of the building into the landscape and be a part of the buildings identity.

The photovoltaic panels will also contribute to produce sustainable electricity to the building. By settling them like a moucharabiehs the daylight can still enter the flat, and in this way the blinds wouldn't have to be closed. To reduce heat loss the walls will be extra insulated.

To further reduce the energy consumption the balconies on the eastern facade are enclosed which makes them function as a kind of "greenhouses" which will pre-heat the existing facades.

Moucharabiehs





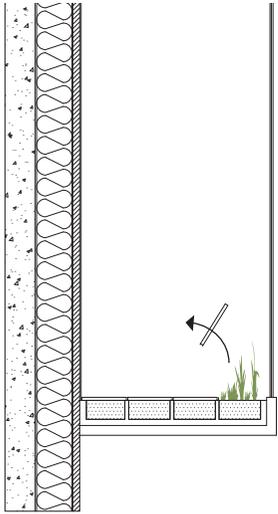
*Photovoltaic panels
Kunstakdemiets
arkitektskole*



Green wall



The western facade 1:500



Section wall and extended balcony, scale 1:50

The tiling is possible to remove if you want to use the balcony as a garden

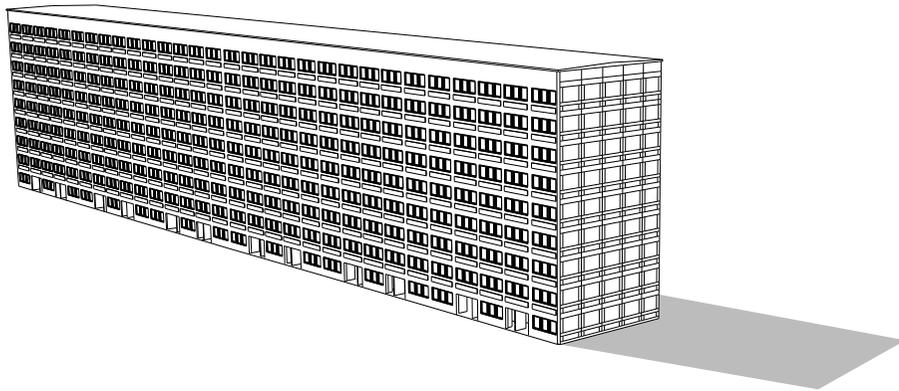


*Green balcony
Dockyard Road home*



The glazed eastern facade 1:500

today

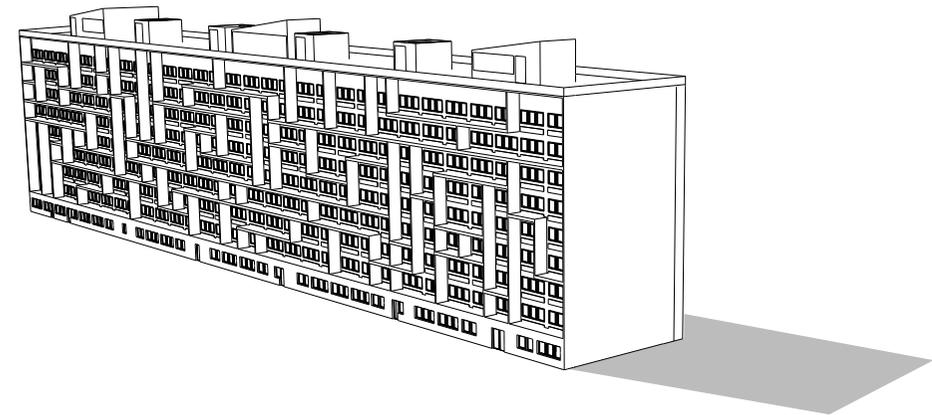


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- Ftx-system - use the preheated air inside the building to heat the new fresh air
- Energy efficient equipments in bathrooms and kitchens
- Presence controlled lighting in staircases
- New windows
- Thermo bridges
- Energy leakage in the joints of the pre-fabricated elements
- No common spaces
- Sense of unsafety in basement

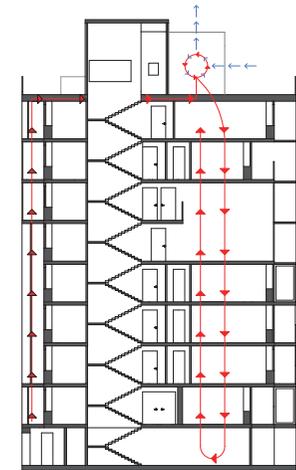
tomorrow



+

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- Increased insulation
- Photo voltaic panels
- Green roofing
- Diversity of apartments
- Extra space in apartments
- Courtyard on the roof
- Common spaces
- Growing
- Less energy leakage
- Reduced thermo bridges
- Improvement for the existing organisations
- Don't produce energy to the grid (only a zero energy building)



The FTX system

technical solutions

Since Bostadsbolaget took over the premises at Bredfjällsgatan 36-46 they have made several technical and environmentally-friendly improvements such as installing a FTX-system (supply and exhaust air ventilation system), changing almost all windows, extra insulated the attic, installing low flush nozzles in the apartments and presence lighting control in the stairwells.

The task to make Bredfjällsgatan to a plus-energy housing would be very expensive so instead we have tried to minimize the buildings energy consumption and if possible to a zero-energy building instead. A zero-energy building consumes as much energy as it produce.

A zero-energy building have to have passive house standard and in order to reach these requirements the exterior walls needs extra insulation which will reduce thermo-bridges. In addition the walls needs to be airtightened to minimize air-leakage and provide a better thermic indoor climate.

On the east facade an extra skin is connected to the building, this will create a gap between the old facade and the new. The air in this gap is preheated by the sun before it reaches the existing facade.

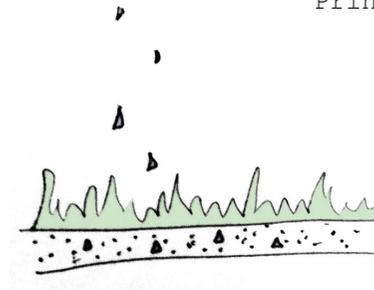
During the winter the air in the gap is warmer than the outdoor air and can thereby be used as a part of

the supply-air for the FTX-system. This will make the FTX more efficient since the temperature difference between the supply and the exhaust air are lower. During the summer the extra skin will also function as a sun screen and prevent heating.

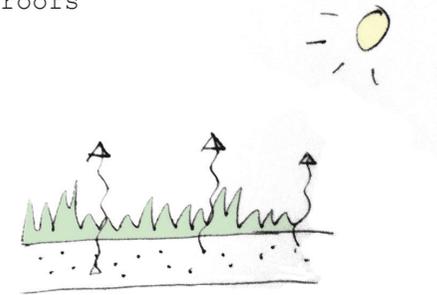
The roof and facade is partly covered with vegetation. The green roof functions as a thermal insulation that keeps the indoor climate more stable during the year which reduce the energy consumption.

Both the green roof and the facade vegetation capture harmful particles, cleans the air from pollutants and will gain the biodiversity in the area. The vegetation will also pro-

Principles for green roofs



When it rains the rainwater is stored in the roof which also improves the area's storm water system



When the sun shines the water evaporates instead of heating the indoor climate.

vide a better environment for the tenants and makes it possible to create a roof-garden.

Integrated systems of photovoltaic and solar panels on the roof and the facade capture the sunlight and convert it into electricity and heat the water. The electricity primarily supplies the required amount of energy for the building in itself, the laundry machines and the lighting in the common spaces. The surplus is added to the municipal grid which registers the amount of energy supplied and returns it to the tenants in the building.

The hot water accumulated in the accumulator can be used for dHW (domestic

hot water) and as a supplement to the purchased hot water.

All energy-consuming appliances in the building are exchanged to more environmentally-friendly ones as vacuum elevators powered by one of the most abundant resources in the world - air. The energy consumption of these elevators are minimal and has therefore small impact on the environment.

Lighting control using natural light or motion detection sensors with high efficiency light fixtures in all common spaces, energy-efficient eco-labelled refrigerators, freezers, dishwashers and washing machines, connected to hot water.

A monitor displaying the individual energy, heat and water consumption levels and costs inside each apartment will make the tenants more aware of their energy consumption and help them reduce it which will save both money and the environment.

After calculating the profitability of connecting the rainwater to the water sewage system in order to provide the toilets with water we came to the conclusion that it in our case would not be profitable.

Discussing the energy issues with the tenants was difficult since many were not familiar with this concept but there was an interest among many for the suggestions that we made.



View from the tram station today



View from the tram station with the new design



View from the "courtyard" today



View from the "courtyard" with the new design



implementation

In order to realize our design proposal we have developed a strategic tool which uses the renovation of the ground floor as a catalyst for the whole renovation process. By doing this the existing organisations will be able to appeal more visitors which would contribute to other positive effects for the building as well as for Hammarkullen through their work.

In order to realise the supplementary refurbishment the strategy starts with a big party on the rebuilt ground floor. The party is primarily intended for the tenants but is open for all the citizens of Hammarkullen. The event will be an introduction of the snake connecting the pre-schools and everyone will be invited to "walk the

snake". For this occasion the snake can consist of ideas and inspiration of how to rebuild the rest of the house and an open workshop for the tenants to put their ideas or needs on paper or in models or just chit-chat with a neighbour or a representative from Bostadsbolaget.

At this occasion the keys to the new common spaces are handed over to the local union of tenants. The idea of the party is to raise the interest for environmental and social issues and start networks among the neighbors. The next step is to engage the tenants and make them aware of sustainability issues and how they can influence them. Having a dialogue about how to decrease the energy consumption and

increase the social interaction and how this would benefit the tenants in different ways could be a very interesting set off for the meeting. By including the tenants in such a brainstorm workshop their sense of being heard and that their opinions matter would hopefully increase as well as their sense of belonging.

For interested tenants, self-management of the common spaces will be implemented with the economical incitement that the money saved can be used by the tenants to develop the building or other common interests. The self-management can be organised through different focus groups. For example one group could focus on managing the exterior environment while another



could be cleaning the staircases and so forth.

The change to a more sustainable life with recycling as a daily activity requires new recycling houses where the tenants can sort their waste. The biological waste can be composted for future use as manure on the existing allotments, which will supply tenants growing their own vegetables with fertile soil and remind them of the natural cycles.

It is important that all of the money saved by the self-management should be used by the tenants in order to develop the building so that all the hard work pays back. Except for generating trust between the tenants

and Bostadsbolaget it will also increase the tenants will to keep the premises clean. This kind of work could also have an impact in a bigger scale when other neighbourhoods, cities and countries mimic the system. Such a mimic would give the tenants a feeling of proud and strengthen their work or come up with new ideas to implement.

When the result of the tenants design proposals is done they should together find sponsors or fundings willing to invest money in such a large scale project i.e. from EU fundings. If the strategy turn out well it could lead to positive attention in media that provides a good advertisement. This will hopefully

lead to more sponsors and make it easier to find a building company that will realise the design proposal.

When the rebuilding is done the tenants and Bostadsbolaget invite all interested to an open house party to celebrate the hard work and show everyone in Göteborg the result. This happening makes more people from outside Hammarkullen visit and learn about the area. For this occasion the snake can be used again by showing the journey the tenants have made during this project time.

After the refurbishment is done, the collaboration continues and the tenants decides together how they will carry on with the work.



tool for implementing the ++ concept

party

« walk the snake »

Who: all tenants and citizens of Hammarkullen

Where: The groundfloor of Bredfjällsgatan 36-46

Why: hand over keys to the new common spaces and show the re-built pre-schools

Generate: interest, networks, collaboration, trust

engage

Who: all tenants and Bostadsbolaget

Where: The new common spaces on the groundfloor

Why: how do we - the tenants - want to save energy and how can it benefit us? Find solutions together.

Generate: networks, empowerment, interest

self-management

Who: interested tenants

What: Cleaning and management of the common spaces and staircases by the tenants

Why: reduce costs

Generate: care for the building, networks, collaborations

energy saving

Who: all tenants and Bostadsbolaget

Why: start to produce economic surplus which should be used for gaining the tenants

Generate: empowerment, environmental interest

waste management

Who: all tenants and Bostadsbolaget

Why: start to produce economic surplus which should be used for gaining the tenants

Generate: empowerment, environmental interest

benefit

Who: all tenants and Bostadsbolaget
How: the tenants decide how the saved money should be used
Why: seeing the result of all hard work
Generate: trust

funding

Who: all tenants and Bostadsbolaget
What: find sponsors or scholarships willing to give money to large scale project
Why: extend the project
Generate: empowerment, networks

construction

Who: construction company
Why: realize the design proposal
Generate: empowerment, networks, pride, icon

party

« open house »

Who: everyone
Why: celebrating together after all the hard work and showing everyone in Göteborg how good it became.
Generate: networks, pride, social spaces

continuation

Who: all tenants and Bostadsbolaget
Why: decide together how the project can continue
Generate: networks, empowerment



reflections

When working with this project we had many new experiences and had to deal with several issues new to us which led to many long discussions within the group. One of the first topics we had to deal with was how to establish a connection to the people living in the building so that we could understand their perceptions of Hammarkullen and Bredfjällsgatan?

We decided to use a straight forward technique which resulted in the "fika - workshop" and the "knock on doors" tools described earlier. These methods were simple but turned out to be very effective and gave us a lot of new inputs, interesting conversations and most of all an increased un-

derstanding of the everyday life at Bredfjällsgatan and the issues the tenants and other local actors have to deal with.

When meeting and discussing with the tenants we quickly realised that there was a huge gap between the issues defined by the tenants and the issues defined by the plus_plus concept. Most of the tenants had a low interest of environmental issues because they felt that there were other more pressing needs concerning their building that had to be dealt with first. So which issues should we focus on - the ones defined by the tenants or the ones defined by the plus_plus concept - or could they be combined?

We came to the conclusion that we should try to find a concept which could combine them in our final design proposal. We have therefore put a lot of effort on trying to specify all the different issues and to understand what causes them in order to create a long-term solution that solves as many issues as possible in a sustainable way.

But how do you create a sustainable building without imposing it on the tenants and how do you create an interest for environmental issues? In our opinion you can not force people to live in a sustainable way, only facilitate it. By making it easy to live environmentally-friendly and create a general consciousness about

the link between consumption, its global effects and how the individual can benefit on living sustainable you can achieve a huge difference.

Our calculations has shown that our design proposal will not make the premises into a plus-energy building in that sense that the building actually produces energy to the national grid. Instead we managed to significantly reduce the energy-consumption so that the premises becomes a zero-energy building which also is an important step for creating a sustainable future.

Even though realizing these kind of projects might be more expensive and spans over a longer period of

time than ordinary projects it is in the best interest for all involved actors in a long-term perspective. It will also most likely be less expensive than short-term quick fixes that does not solve the real issues defined by the tenants.

A project like the one we propose will demand a long-term commitment from the tenants as well as from the owner and the municipality in order to generate confidence and a mutual trust. Having a dialogue among all the actors as well as with the tenants and listen to their suggestions and finding solutions together are fundamental to make this proposal realistic. It is hard work but the benefits could be many.

So the remaining question to be answered is; *is there a will to make these changes and can all the actors work together in order to achieve a long-term goal?*

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