

No more wasting **'WASTE'**



PROJECT PORTFOLIO

Design and Planning for Social Inclusion 2014
CHALMERS Architecture

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CHALMERS Architecture



About the project

The aim of the project is to look into the waste management system of Bredfjällsgatan.

In order to study the system intensively, our specific case was the staircase of Bredfjällsgatan 40, which comprises of 23 households. As, rest of the staircases in Bredfjällsgatan shares the similar attributes to this one, we believed that it was possible to generate solutions for other staircases and for the area in total from this study we undertook.

Sweden is one of the leading countries, where waste management is an integral part of urban infrastructure. It takes pride for recycling the household wastes in one way or other. However, in the site for our project, the waste is losing all its potential to be recycled and ending up in incineration sites without being sorted at all.

As soon as we started the study we understood that the maintenance, management and administration of the waste management system and actors' (tenants, landlord, energy company) behavior to it is not solely limited to the waste disposal only. The quality and facility of common spaces, spaces inside the apartments and people's sense of ownership and respect of their private/common spaces has huge connection to their responsibility towards the system they use, in this case, the waste management system of the area.

CONTENT



1
About the project

03

2
Background

The Million Program 08
Hammarkullen 08
Bredfjälls 09

3
Process overview

Goals 12
Time line 13

4

Participatory process

5

Analysis

6

Proposal

7

Reflection

8

Appendix

Meetings
16

Interview
16

Questionnaire
17

Workshop
17

Demography
20

Movement
21

Physical state of staircase
22

Current waste management system
24

Waste behaviour
25

Communication method
26

Conclusion
27

Strategy development
30

Maintenance through participation
31

Common space
32

Waste collection house
34

37

40

2 Background



The Million Program

Hammarkullen

Bredfjälls

The Million Program

The Million program is the result from Swedish government's (social democratic) decision of having 100 000 new housing units in cities, within 1965 to 1975. Today, it is associated with large apartment building blocks in the suburbs of big cities and images of social unrest portrayed by media.

The project was conceptualized because of the industrialization. Industrialization-that makes it possible, not only by the mass-producing of the housing units, but also by producing food, clothes for the people, who will be living in it. On the other hand, industrialization also needed people to have jobs and live in proximity. But, in the case of Sweden and possibly many other countries, the authority measured it all wrong about how much the industries will be spreaded or how many jobs will be there and how many housing units are needed in coming years.

Around the world, the concept of modernist architecture and urban planning was being developed, with having housing in suburban area which is neither away from nature, nor from jobs. All the modern facilities should be in near proximity. In case of Sweden, functionality was very important in this concept. From 1930s of suffering from poverty, unemployment and shortage of housing to the time of million housing program, Sweden had inclined more towards the idea of living and co-living in the cities. As a result, all the million program neighborhood developed with set of general characteristics: 3-8 storeys of appartment buildings that densify the population in order to have more open space/parks/playgrounds for children, facilities to support urban life (cultural center, educational center, shops, malls)

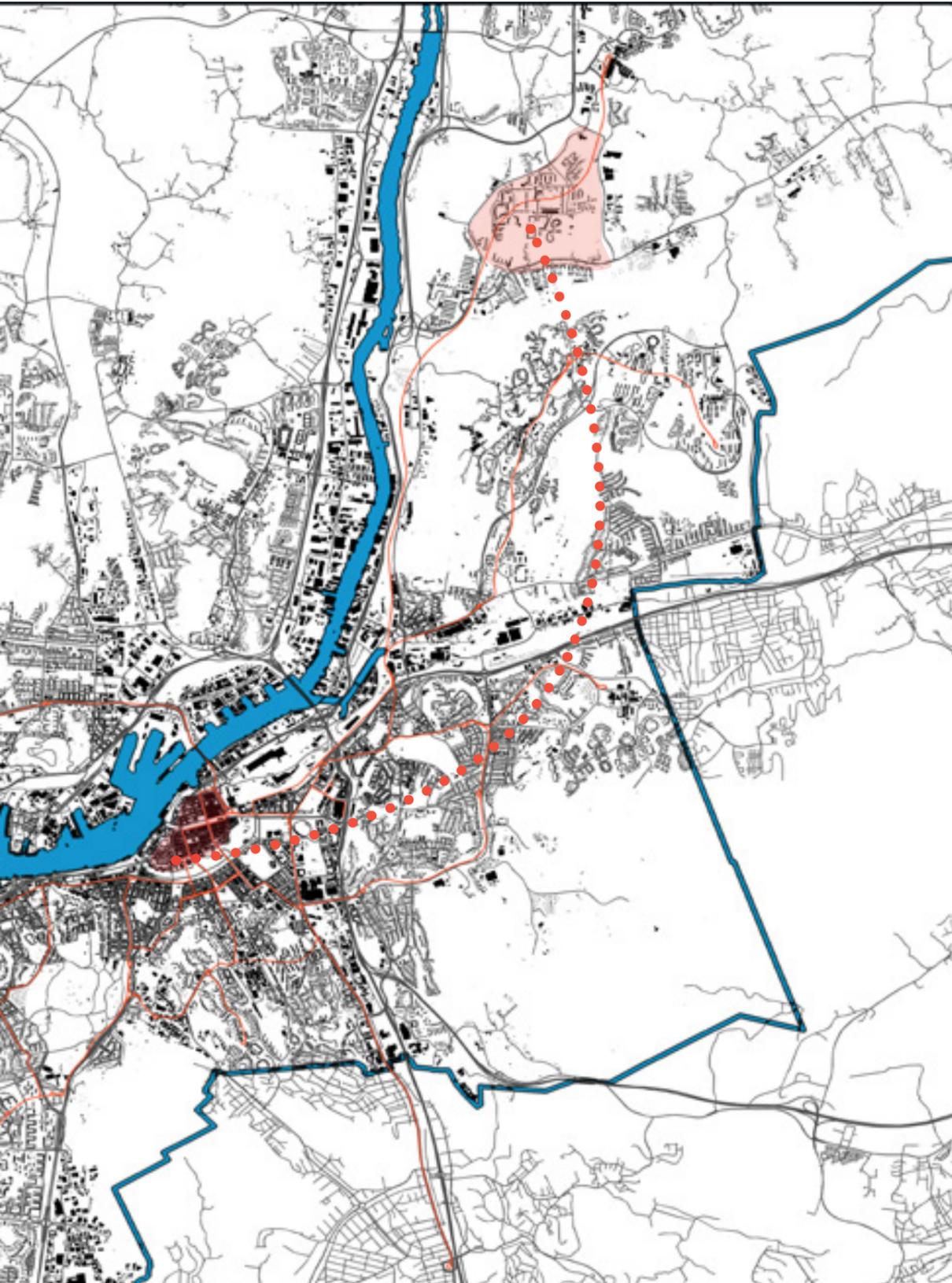
Hammarkullen

Hammarkullen, developed as a part of Million programme, is a suburban area situated in the city district of Angered, approximately 10 kilometers northeast of central Gothenburg. The transport connections to this area are good, it takes approximately 14 minutes from city center to Hammarkullen by tram.

It can be said that there are people with varied culture background living in Hammarkullen. There is an continuous in-flow and out-flow of people and groups from different cultures over time. Hammarkullen has been the first step to live in Sweden for immigrants in the recent years. When they find a job and have higher income they move out. This in-flow and out-flow over time create different layers of culture in Hammarkullen which could be seen as a great asset and a resource.

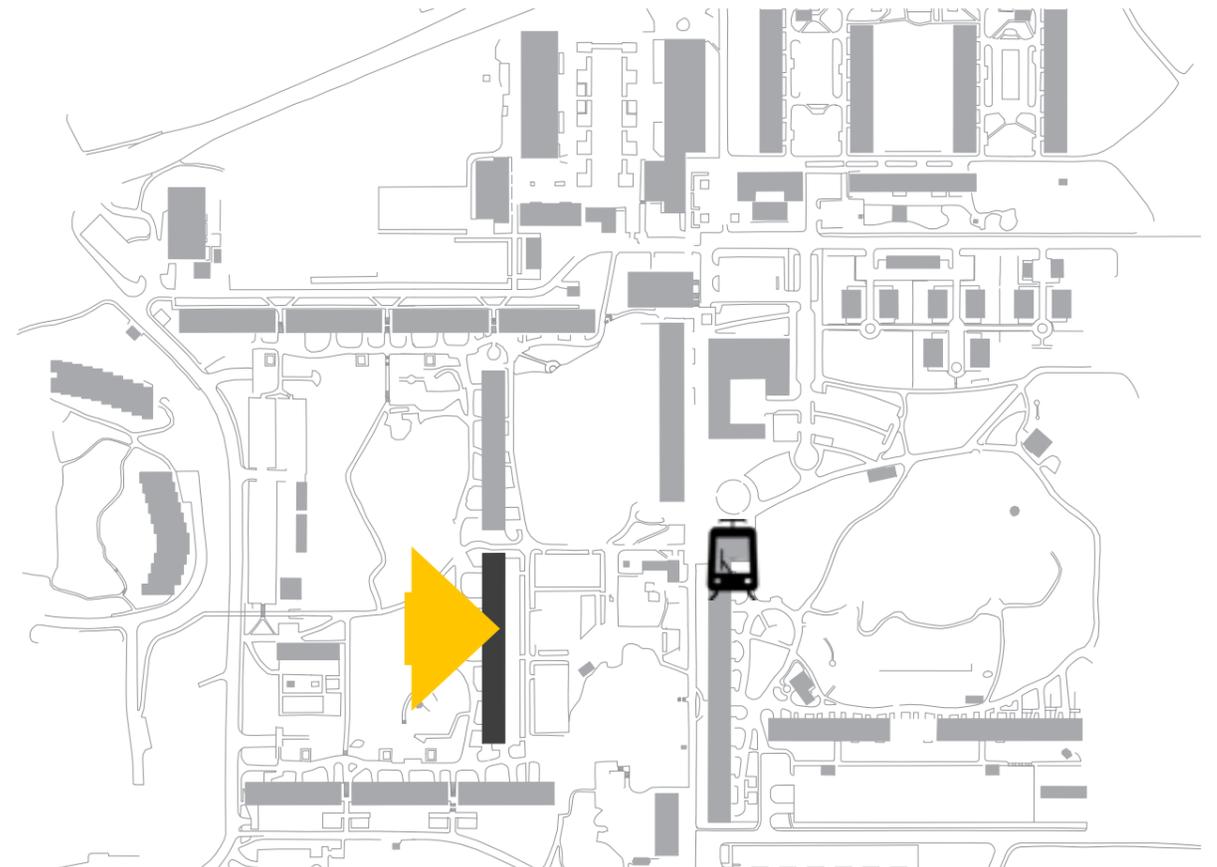


Bredfjälls



The neighborhood of Bredfjälls is located on the west side of Hammarkullen square, nearly 120 meter from Hammarkullen tramstop. This neighborhood consists of nine buildings, out of which, eight belongs to Graflunds (a private housing company in Sweden). The other one, which owned and managed by bostad bolaget (municipality owned housing company) since 2001, is our project area. Graflunds is responsible for managing and maintaining these eight buildings and it also shares responsibility to maintain the common space and common facilities (such as, waste management system) together with bostad bolaget.

Number of apartment : 810 (690 graflunds, 120 bostadbolaget)
Official number of inhabitants (born before 1998): 1629
Average income: 137.200 kr (half of Gbg as a whole)



Project site: Bredfjällsgatan 40 (Not in scale)

3

Process overview

Our approach to the project has four overlapping stages: Analysis, Participatory process, Strategy and Design. In this report, we plan to explain each stage in detail. The analysis and participation part were continued almost for the whole period (even before we knew what our final project would be!) and it was not a smooth journey. The newly found analysis had brought changes in the strategies and design decisions time to time.

Goals

Time line

Goals

In this project we have worked towards reaching three main goals. The general goals can be split up into more concrete parts.

Make the waste management more accessible.

Reduce misuse through design.

Increase recycling and reuse.

Lower the cost of the waste management.

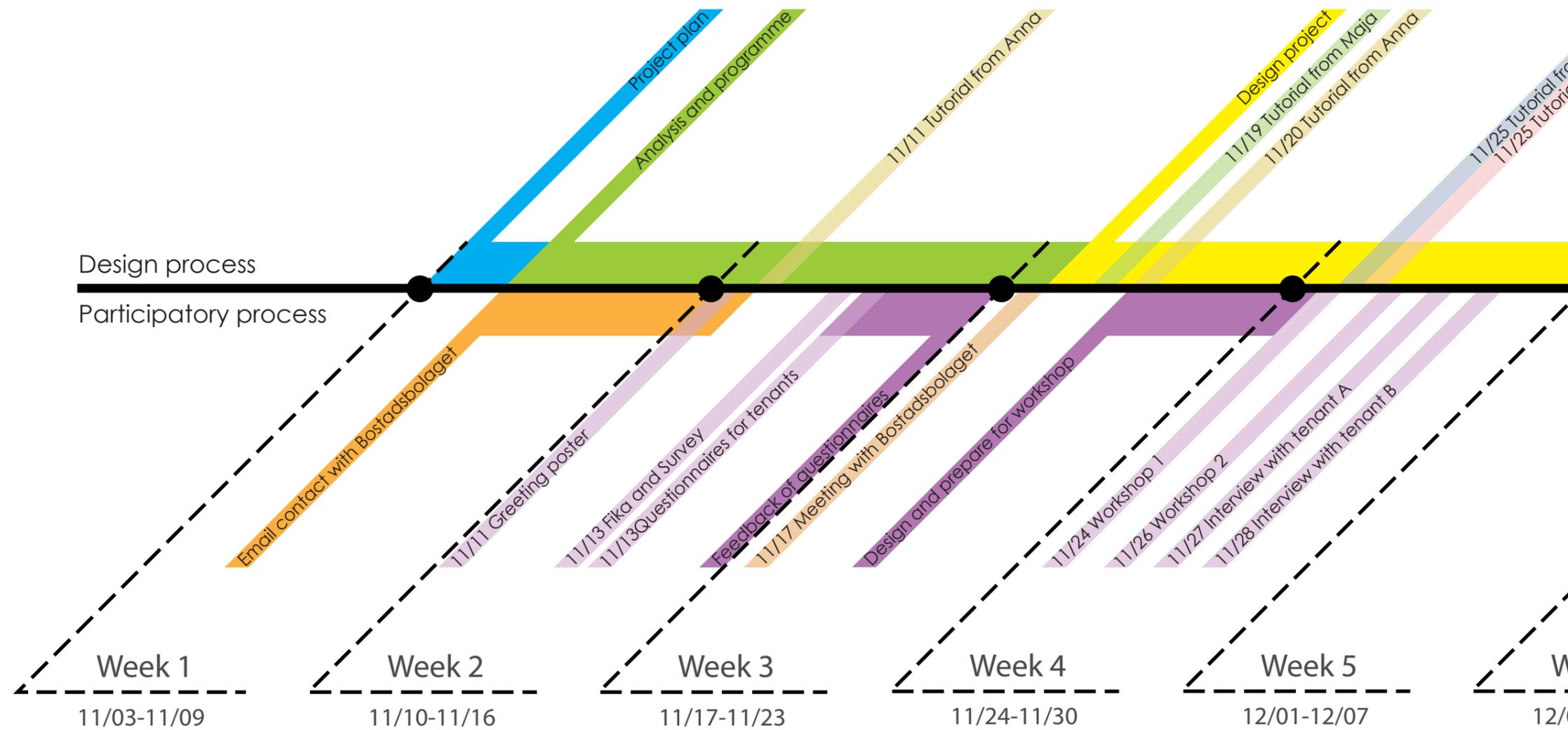
Close the garbage chutes.

Increase respect of the common spaces.

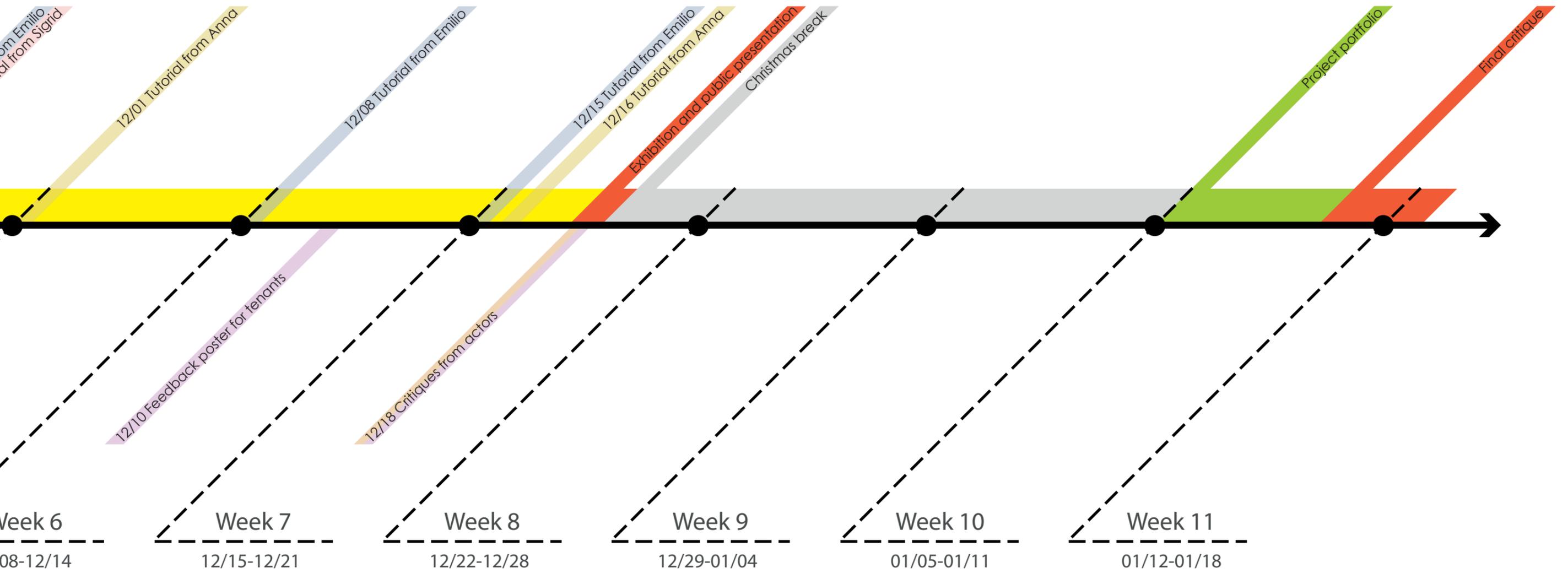
Eradicate littering and vandalism.

Increase tenants sense of belonging to the common spaces.

Create a long term mutual cooperation between tenants and landlord.



Timeline



4 Participatory Process



Meetings

Interview

Questionnaire

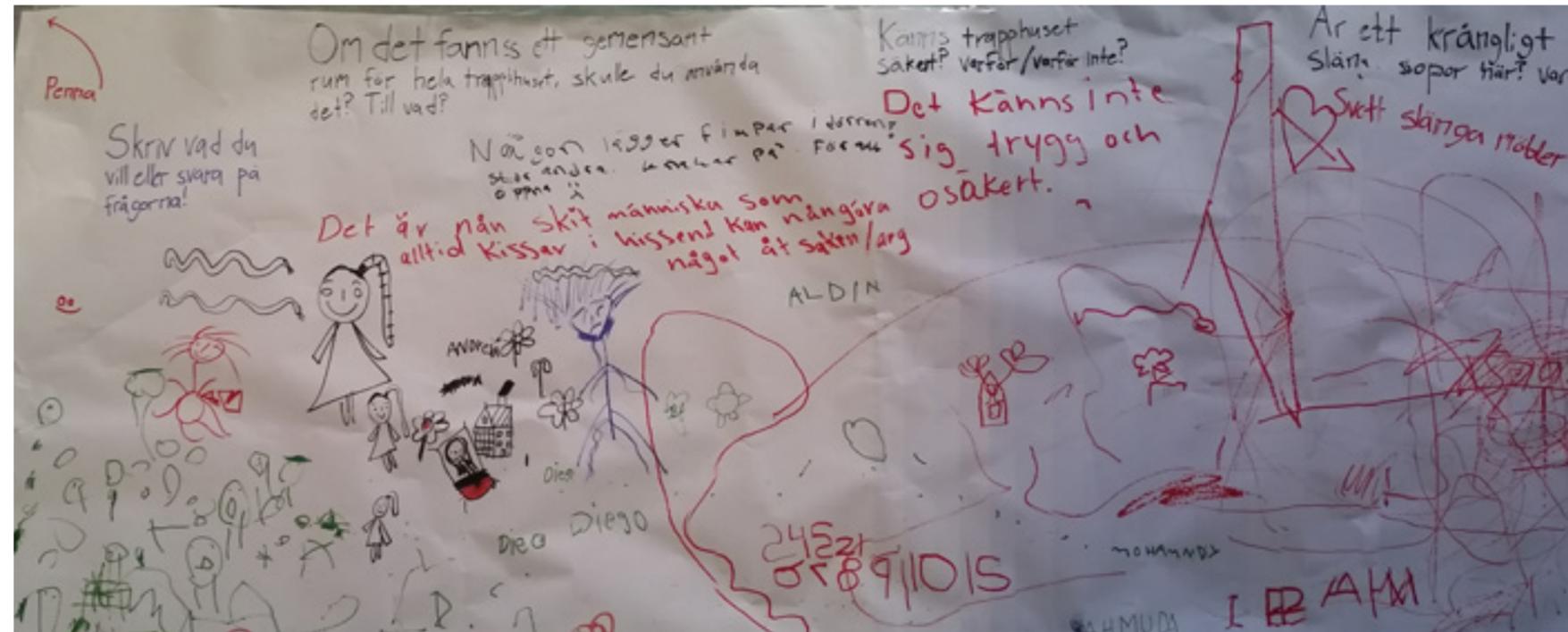
Workshop

Participation process

Participation from the actors were very important for the whole project. While deciding about our goal about what we would like to achieve from people's participation, we came to this conclusion that from participation we do not only gain in-depth knowledge about the problem and its possible solution, but also, it is important that the participants feel empowered, they feel that their voice were heard. To ensure participation of both inhabitants and the landlord, we attempted various methods (interviews, workshop etc.) as the figure on the right suggests. Not all the attempts were as successful as we would want them to be. So, we had to improvise our approaches many times during the process.



Picture of workshop 2



Formal and informal interviews

Our investigations and proposals for the project mostly depends on the information we got from many formal and informal meetings/interviews with the landlord, tenants and academics/experts in the field. We had several meeting with the representative of Bostad bolaget. We also had regular e-mail exchange with them, where we could ask as many questions as we wanted

and they replied to us very frequently. With the tenants, we had interviews on the street, in front of the staircase. We had a questionnaire prepared and asked questions according to that. We also had two more formal meeting with two tenants, where we could discuss the issue in more detail.

Workshop

In the beginning, we planned to conduct two workshops during the whole period, if possible. For the first workshop, we thought we should get inputs from the tenants about the problems of the area and the building in general in terms of cleanliness/waste management. We also wanted to know what are their thoughts or aspirations about communal spaces, if there is a chance of improvement. For the second workshop, we wanted to get back with few of our design solutions to get feedbacks from them, to see if they think their

ideas were reflected in the design solutions. However, in the first workshop we ended up with no participants other than our colleagues. So, we had to come up with a plan b immediately and arranged a walk in workshop in the staircase with the help of our interaction board. During this event, we tried to engage the children on the interaction board to draw anything as they like. In this way, we got time to talk with their parents about our inquiries.

Interaction board

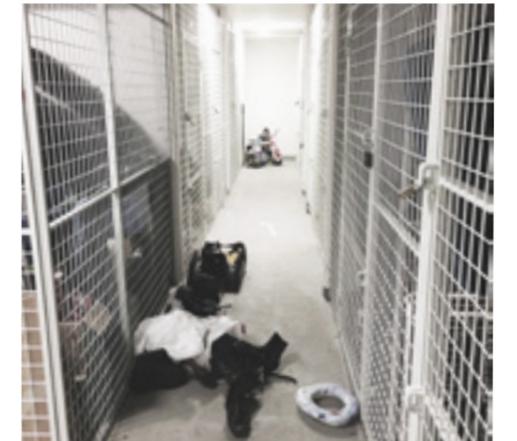
We planned to use one of the walls of the staircase as an 'interaction board', where we would put our questions, proposals for the people living in the staircase to have comments on it. We have had few feedbacks from this interaction board. Also, after we realized that we cannot gather people for a workshop in such a short period, we took

help of the interaction for to get our input that we expected to get from both the workshops. We had suggests/comments on cleanliness/waste management in general on this board. However, We did not really have much feedback after we put our proposals on the board.



Picture of workshop 1

5 Analysis



Demography

Movement

Physical state of staircase

Current waste management system

Waste behaviour

Communication method

Conclusion

Demography

Hammarkullen is a highly culturally diverse area, consisting of immigrants from all over the world, their children and grandchildren. More than half of the population is born abroad. This creates a community of people with many different skills and experiences.

The population in Hammarkullen is also younger than the average of Göteborg with a big group of children and youth

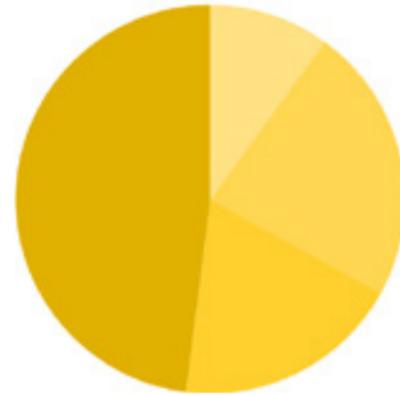
From our experience the composition of the groups of tenants occupying Bredfjällsgatan 40 is similar to the composition of Hammarkullen as a whole.

The fact that so many people of Bredfjällsgatan are not native to Sweden also means that there are quite a few that do not speak Swedish, but often Arabic or Somali. This requires more effort from the landlord Bostadsbolaget in order to reach out with information.

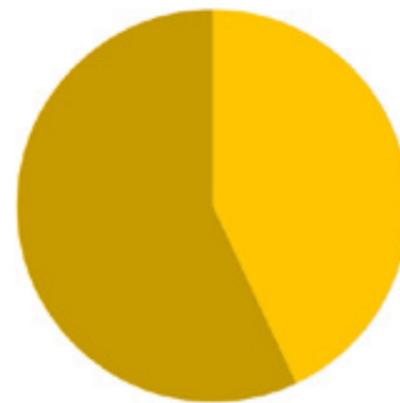
Originating from many different countries people have very different experiences of property and waste management, as the infrastructure surrounding this varies from country to country and may in some places be more or less completely absent.

With these differences in culture and language the system of waste management needs to be easy to understand and use if there is going to be a chance for it to work.

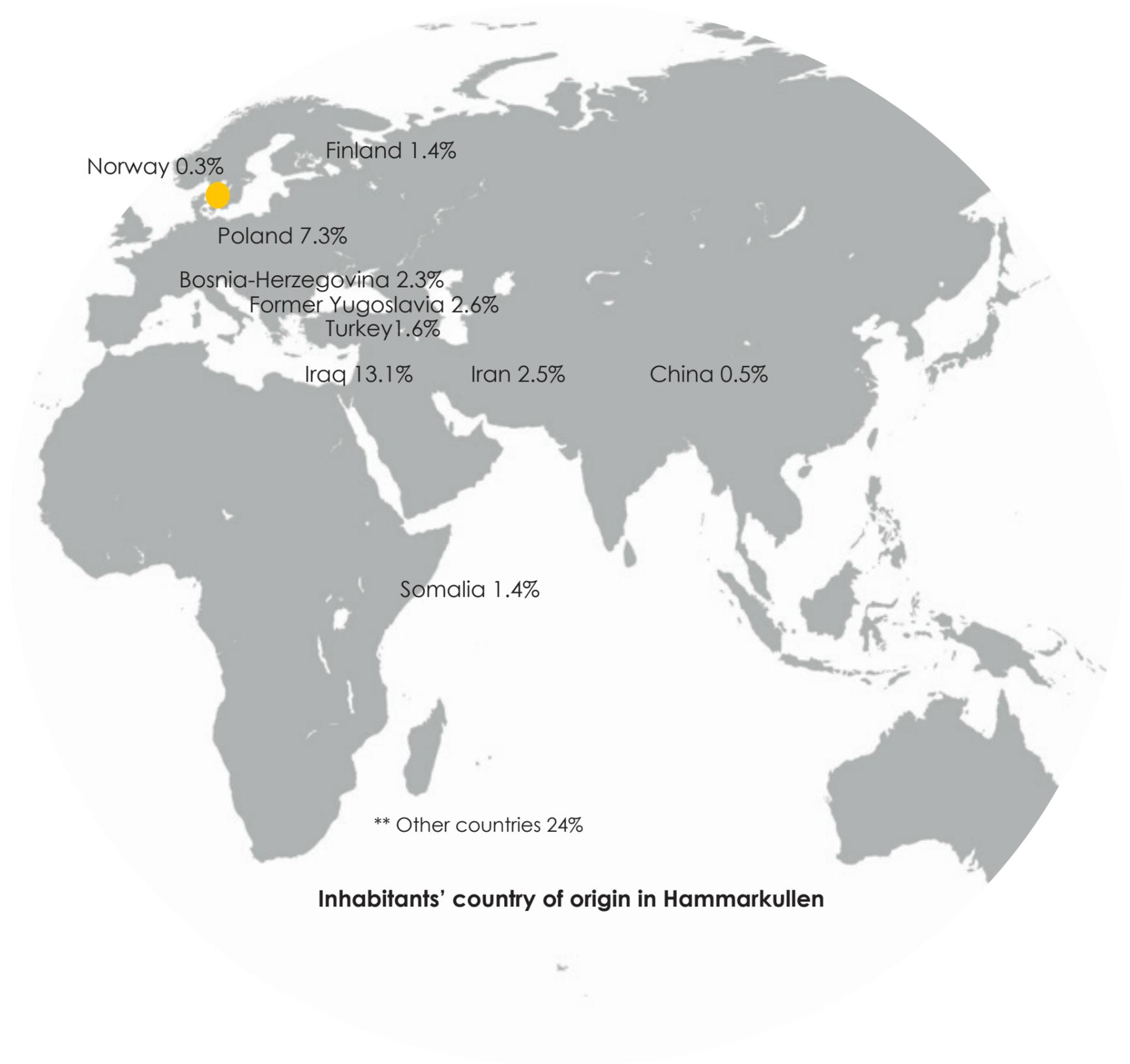
The community of the staircase is also highly affected by the different cultures of tenants. Some of them are unable to speak to each other while their common experience of being new to the country may have positive effects on unity.



- Senior, (64+), 10%
- Children, (0-12), 23%
- Youth group, (13-24), 19%
- Adult (25-64), 48%



- Born inside of Sweden, 43%
- Born outside of Sweden, 57%

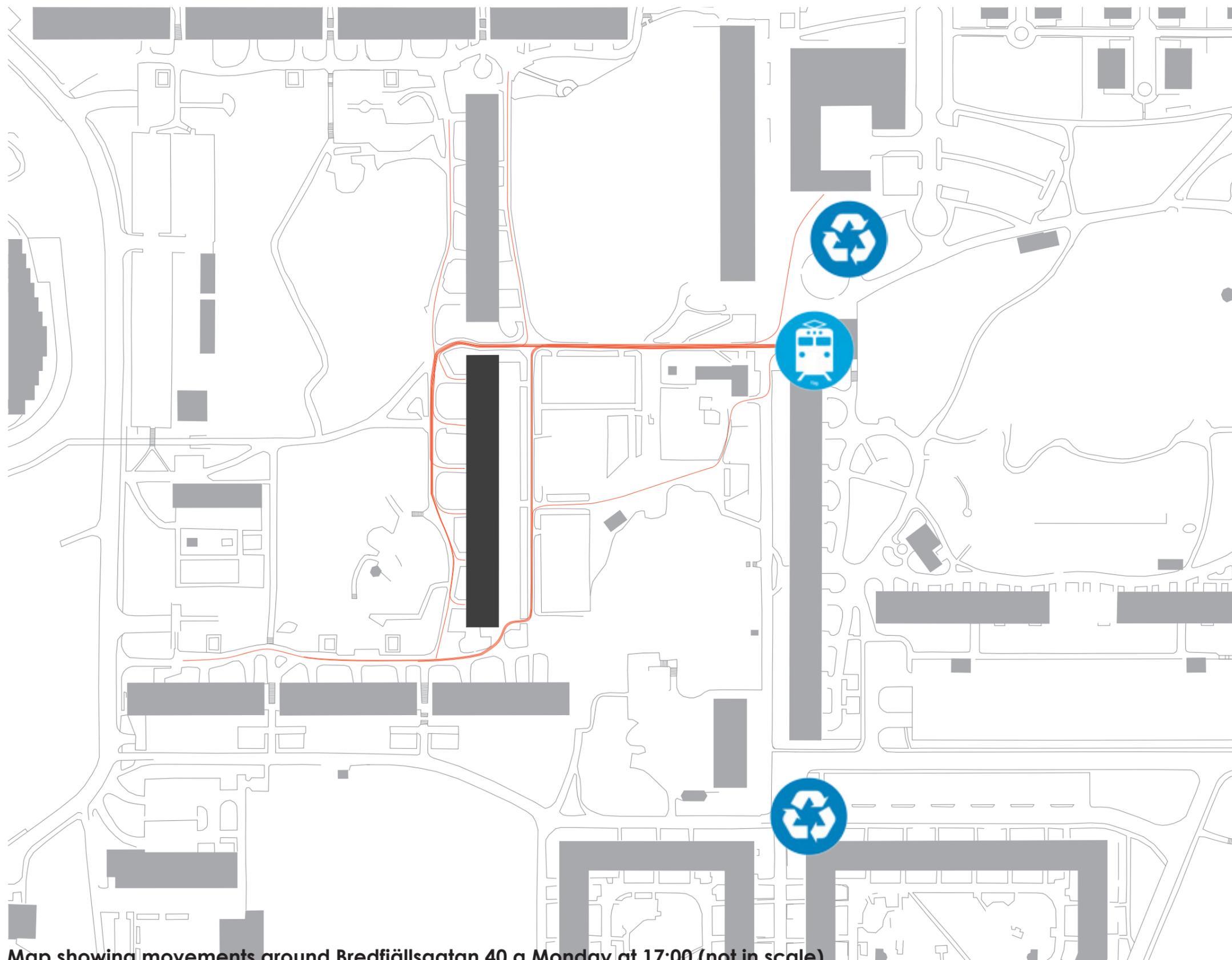


Movement

The movement to and from Bredfjällsgatan 40 mainly consist of people going to and from the tram stop and the square, while few people are going south or west. Apart from the tram stop, all major points of attraction in the area are to the north, including shops, community centre, school and restaurants.

Besides people moving to specific destinations there are also people moving in the close vicinity of their entrances, and between entrances, these people being mainly children and youth, but also adults smoking outside.

The two recycling stations in the area are neither on the natural path of movement to any considerable point of attraction, and may even be hard to find.



Map showing movements around Bredfjällsgatan 40 a Monday at 17:00 (not in scale)

Physical state of staircase

Although this 9-floor building was the outcome of the Million Program, several renovation have been done since last few years, including the bathrooms in every apartment (5-7 years ago), repainted staircases (3 years ago) and so on.

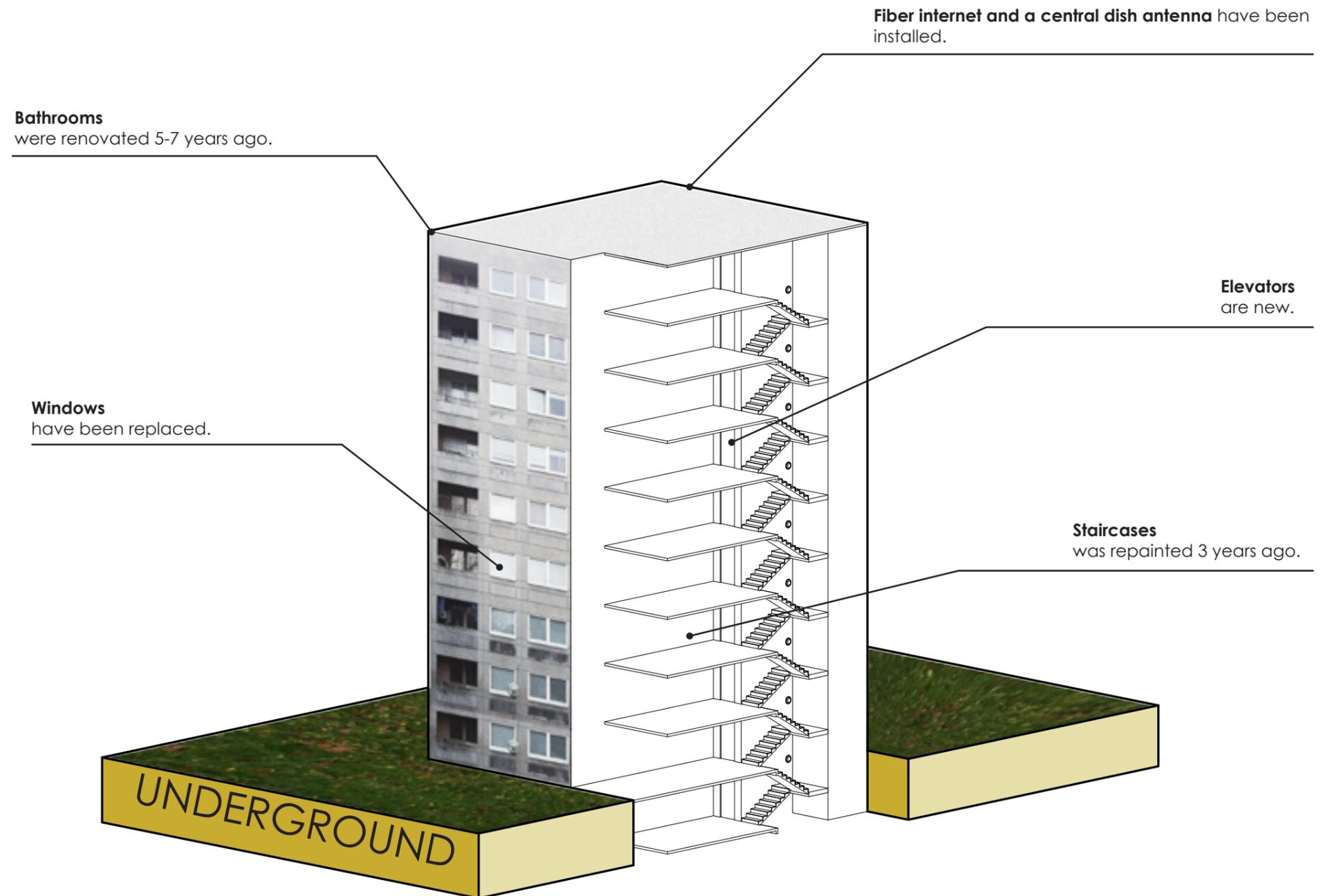
The windows have been replaced and no more renovation on the facade has been taken since then. So it remains the duplicated and boring outlooking.

The space of the entrance is divided into two part: the corider and the bicycle parking room. The corider is quite narrow that it only allows 2 persons passing by in the mean time. The bicycle parking room is not fully used.

The elevator is new and the stairs are next to it. The stairs were probably designed based on the lowest limit to the width of stairs. So there is few portential to renovate or transformate this space. The round hatches of the pipe system which is supposed to be used for the mixed waste are on the walls of each rest platform and are not accessible to the disabled. The pipe is hided behind the elevators and goes down to a room in the basement.

The basement is narrow and dark. Besides the common laundry serving all the tenants living in this building block, there is a long corider with cell rooms for storage. The corider and the laundry room connects the basement of this staircase to the neighbor basements.

Littering can be found everywhere in the staircase. Some bulky items stand in the common space, especially in the basement and on the ground floor. The storage space in the basement is quite messy and stuff is thrown in the corider. The pipe room is rather dark, dirty and smelly. The system is old and needs maintenance.





Façade



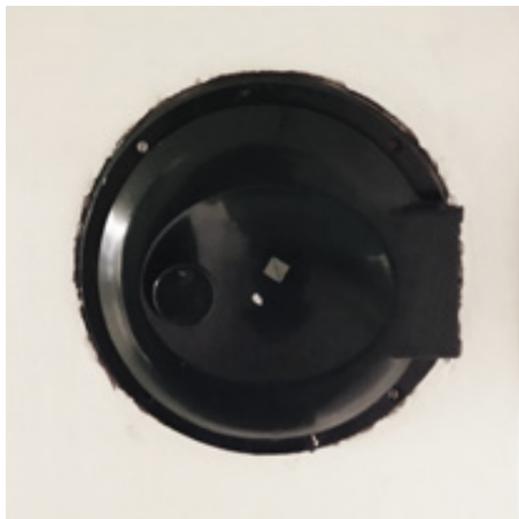
Entrance



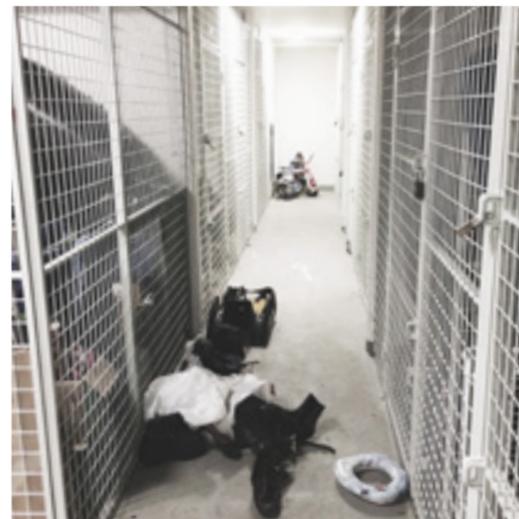
Littering



Staircase



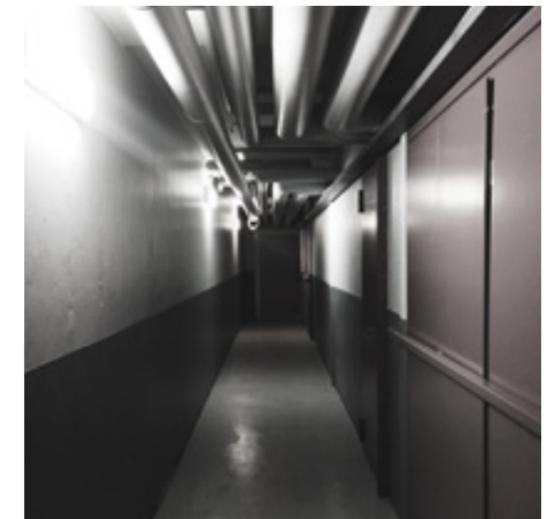
Shaft



Storage



Pipe Room



Basement

Current waste management system

The current waste management system consists of a vacuum system with garbage chutes in the staircase for mixed and organic waste, two containers outside for bulky waste and two recycling stations for packaging and newspapers. All other waste is supposed to be disposed at a municipal recycling centre, the closest one being Alelyckan 5 km south of Hammarkullen.

All parts of the system has its weaknesses connected to both their design and usage. The garbage chutes in the staircases does not encourage recycling, and are littered and clogged because of misuse. Containers are only in place two days a week and can only be used for smaller bulky waste, excluding larger furniture, resulting in other fractions being left elsewhere in the area or put in the container anyway. The recycling stations are not on the natural movement path of the residents and are because of this quite inaccessible. The recycling centre Alelyckan is quite far away and more or less require a car to be reachable, especially for people carrying bulky items.

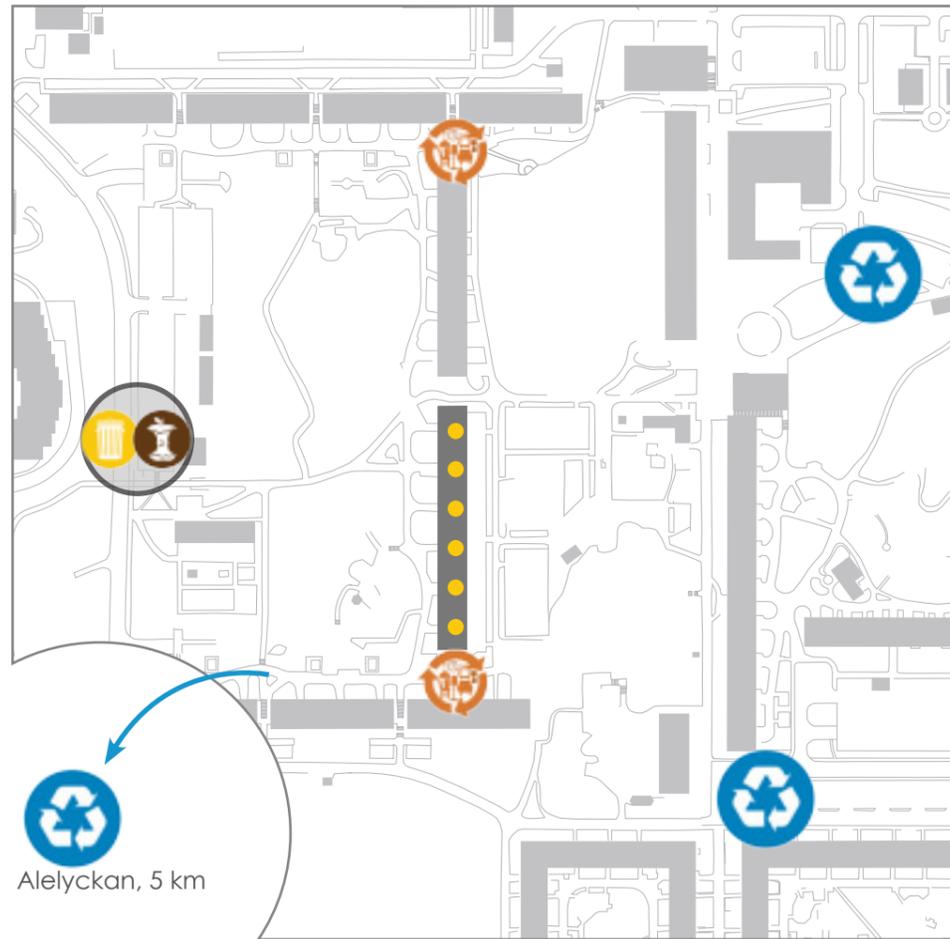


The container by Bredfjällsgatan 46 is quickly stuffed during Monday and Tuesday. Unintended fractions, e.g. electronics, cardboard, intact clothes, packaging and refuse is put in the container besides the intended waste.

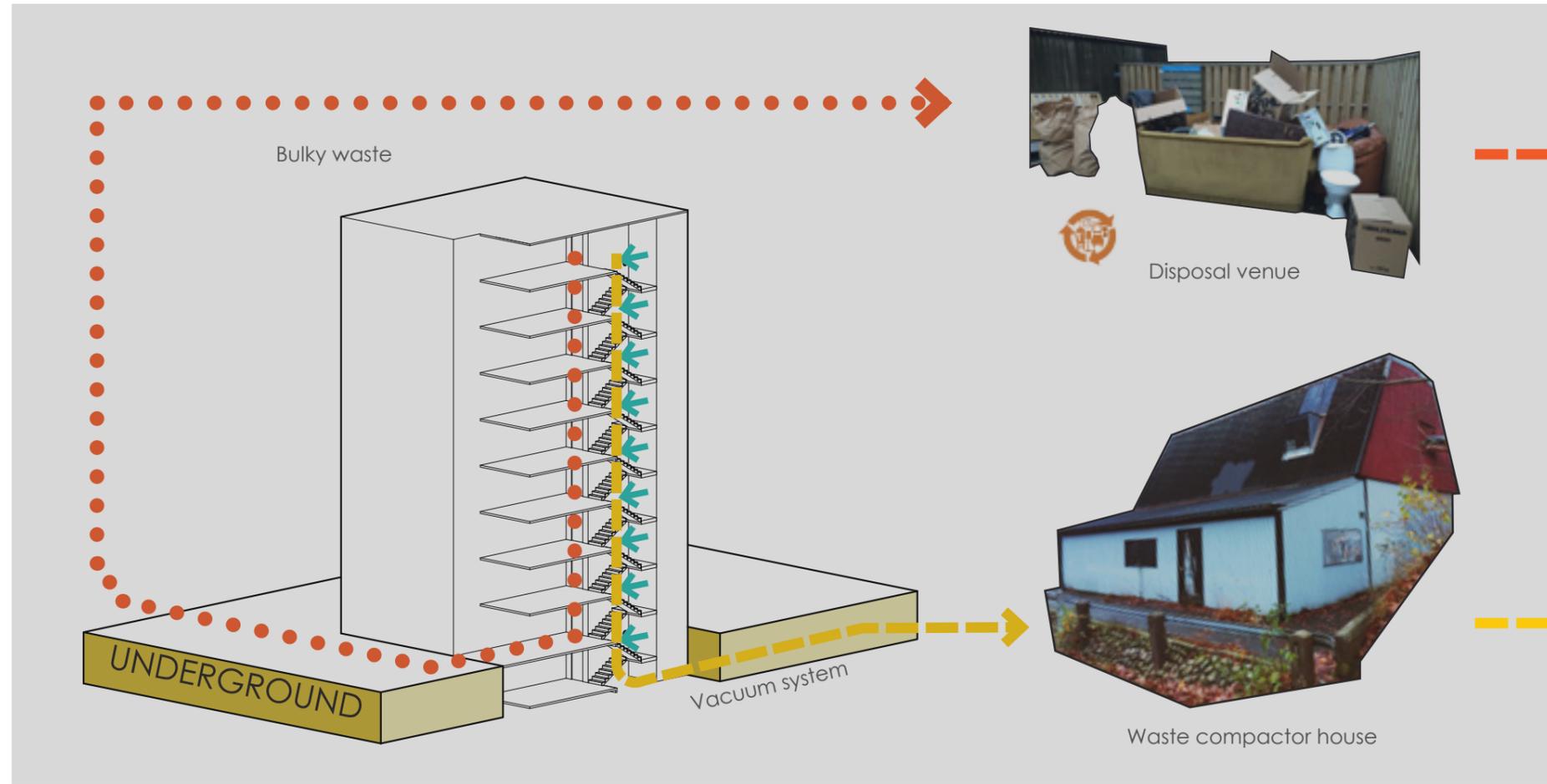
Furniture and other bulky waste is dumped next to the container when it is full or not on site. People search the waste for salvageable items.



The closest recycling station is often littered with refuse and organic waste. The connection to the tenants of Bredfjällsgatan is hard to determine.

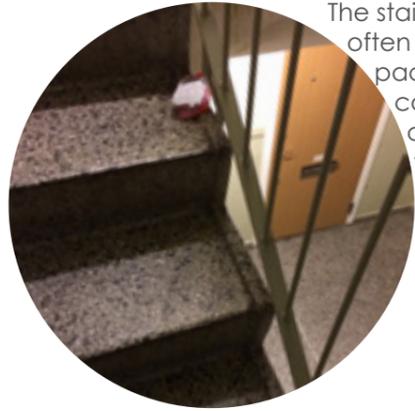


Map showing waste disposal locations (not in scale)



Intended path of mixed and bulky waste

Waste behaviour



The staircase is often littered with packaging from candy and other similar waste.



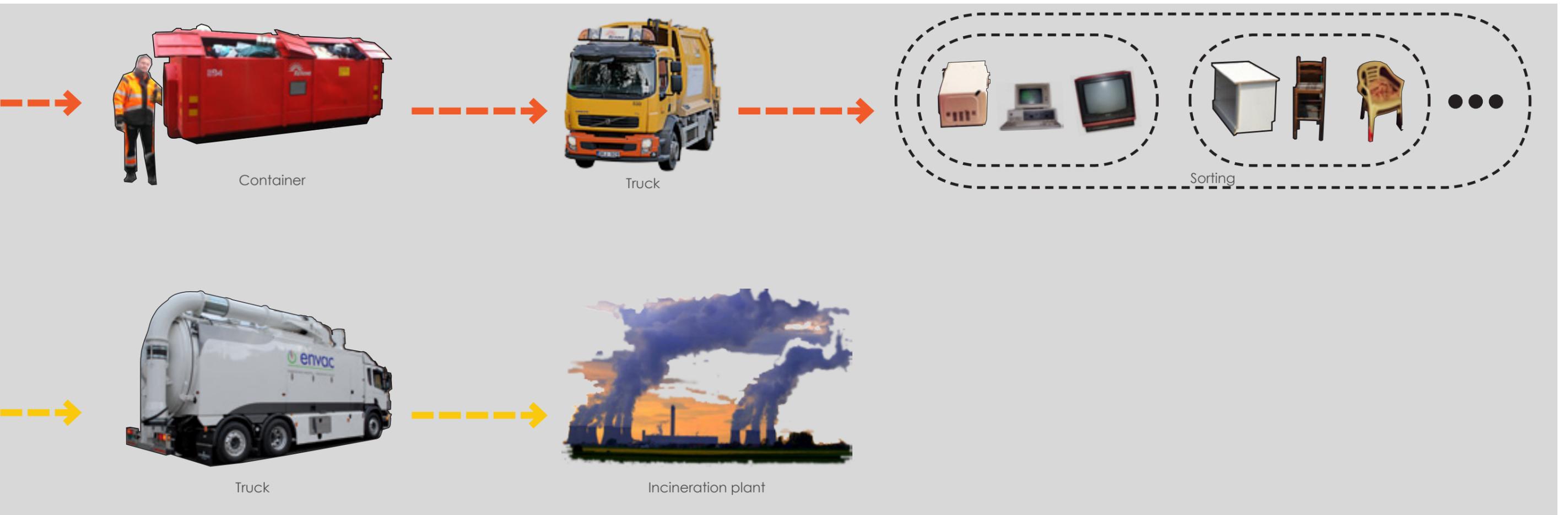
All kinds of waste is left on the ground outside in the area. Some places act as unofficial dumps.



Furniture, electronics and other bulky waste is dumped in the basement and staircase.



There is no collection of electronic waste in the area. This waste is dumped either by the container or on the ground out in the area, from where they are removed by the staff of the house owners.



	Tenants	Bostadsbolaget	Ourselves
Common Spaces	<p>The staircase is littered and people pee on the floor.</p> <p>People don't clean after themselves in the laundry room.</p>	<p>The tenants are not allowed in basement.</p> <p>It is expensive to empty the staircases of bulky waste.</p> <p>Façade needs renovation, the rest of the building is in good condition.</p>	<p>Litter of all kinds and sizes both outside and inside staircases.</p> <p>The basement is for the most part unused.</p>
Waste Management	<p>"Bulky waste management is sufficient but people are not using it right."</p> <p>Some people sort some waste.</p>	<p>Vacuum system is too costly and is not used correctly.</p> <p>Want to have collection of electronic waste.</p> <p>Important to sort out organic waste to reduce costs.</p> <p>Want a long term economical solution and more recycling.</p>	<p>The bulky waste management is not sufficient, but is also misused by the tenants.</p> <p>Seemingly functional clothes are thrown away.</p> <p>People search the bulky waste for useful things to take home.</p> <p>A lot of electronic waste is produced in the area, but no proper collection.</p>
Communication	<p>People contact the neighbourhood host with complaints.</p> <p>Some tenants do not speak Swedish.</p>	<p>Do not think they have the resources to produce information in other languages.</p>	<p>Many notes in the staircase that doesn't seem to make any impact.</p>
Apartments	<p>There is enough space inside for waste separation.</p> <p>The apartments are cold.</p> <p>Most people like living in the building.</p>	<p>Voluntary renovations can be provided with increased rent.</p>	

6 Proposal



Strategy development

Maintenance through participation

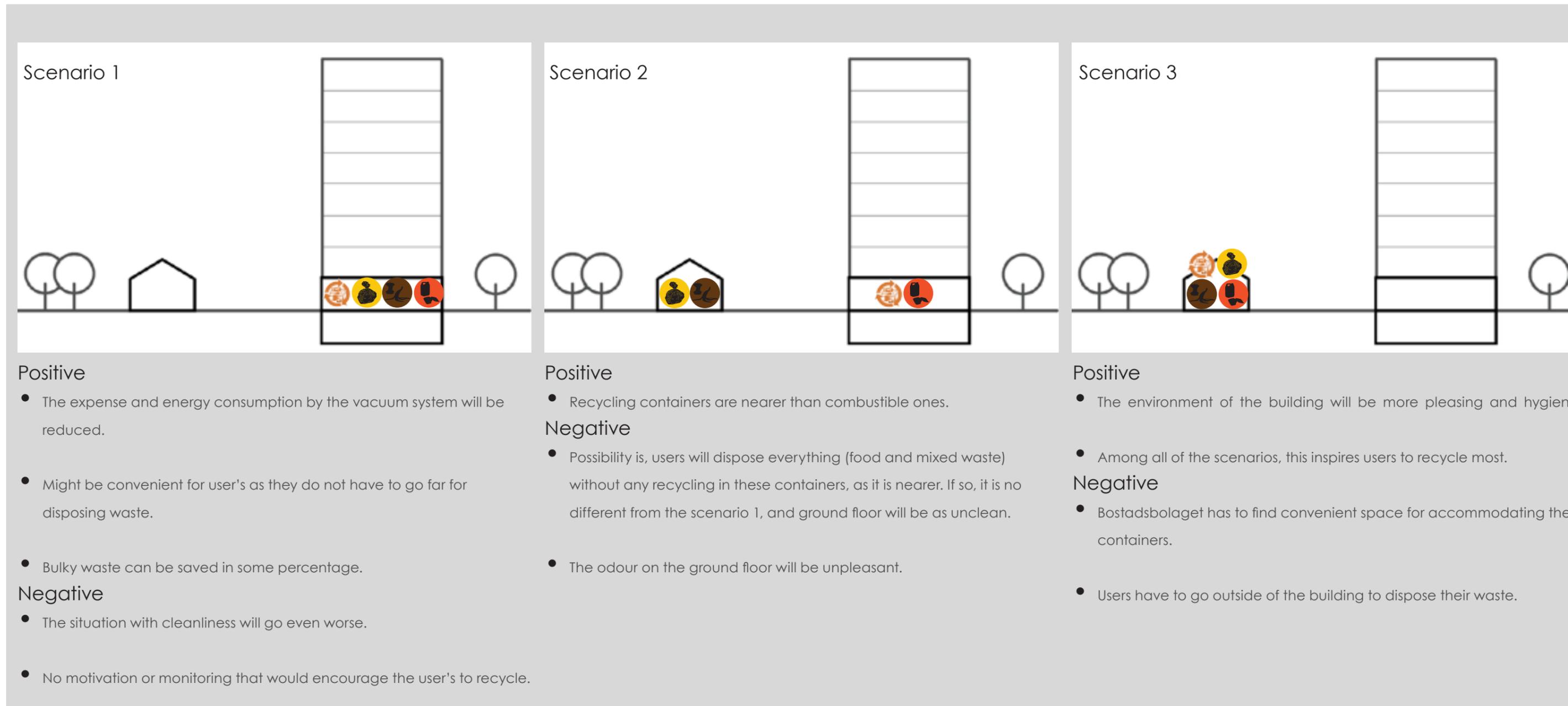
Common space

Waste collection house

Strategy development

In this section, we aim to explore how different scenarios can influence user's behaviour towards the waste management system. Common assumption for all the scenarios are:

- Outdoor facility will be on the natural movement of the users.
- Garbage chute will be closed due to its inefficiency.



Scenario 1

Scenario 2

Scenario 3

Positive

- The expense and energy consumption by the vacuum system will be reduced.
- Might be convenient for user's as they do not have to go far for disposing waste.
- Bulky waste can be saved in some percentage.

Negative

- The situation with cleanliness will go even worse.
- No motivation or monitoring that would encourage the user's to recycle.

Positive

- Recycling containers are nearer than combustible ones.

Negative

- Possibility is, users will dispose everything (food and mixed waste) without any recycling in these containers, as it is nearer. If so, it is no different from the scenario 1, and ground floor will be as unclean.
- The odour on the ground floor will be unpleasant.

Positive

- The environment of the building will be more pleasing and hygienic.

- Among all of the scenarios, this inspires users to recycle most.

Negative

- Bostadsbolaget has to find convenient space for accommodating the containers.
- Users have to go outside of the building to dispose their waste.

Maintenance through participation

Through our investigation, we have come to the conclusion that only physical changes of the current system may not work, as is expected to. It is very important to change how the area is maintained and managed today. As of now, the users are not given any responsibility to manage the system that they use. Delegating some responsibility will help to increase the sense

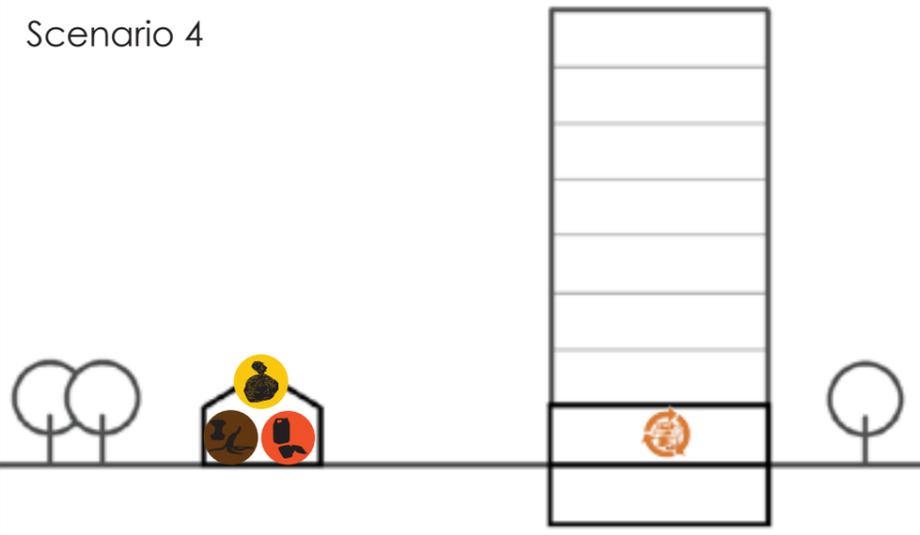
of belonging in this particular community. For example, if the youth group of the staircase is responsible for keeping the common area clean, the other members in their families will keep noticing the change and try to make it better.

Also, Bostadsbolaget is not equipped with all the resources that they need.

For example, circulating information in different languages. However, this skill is available within the community. There should be a platform where these different actors can seek for each other's help like this, without making it too complicated.



Scenario 4



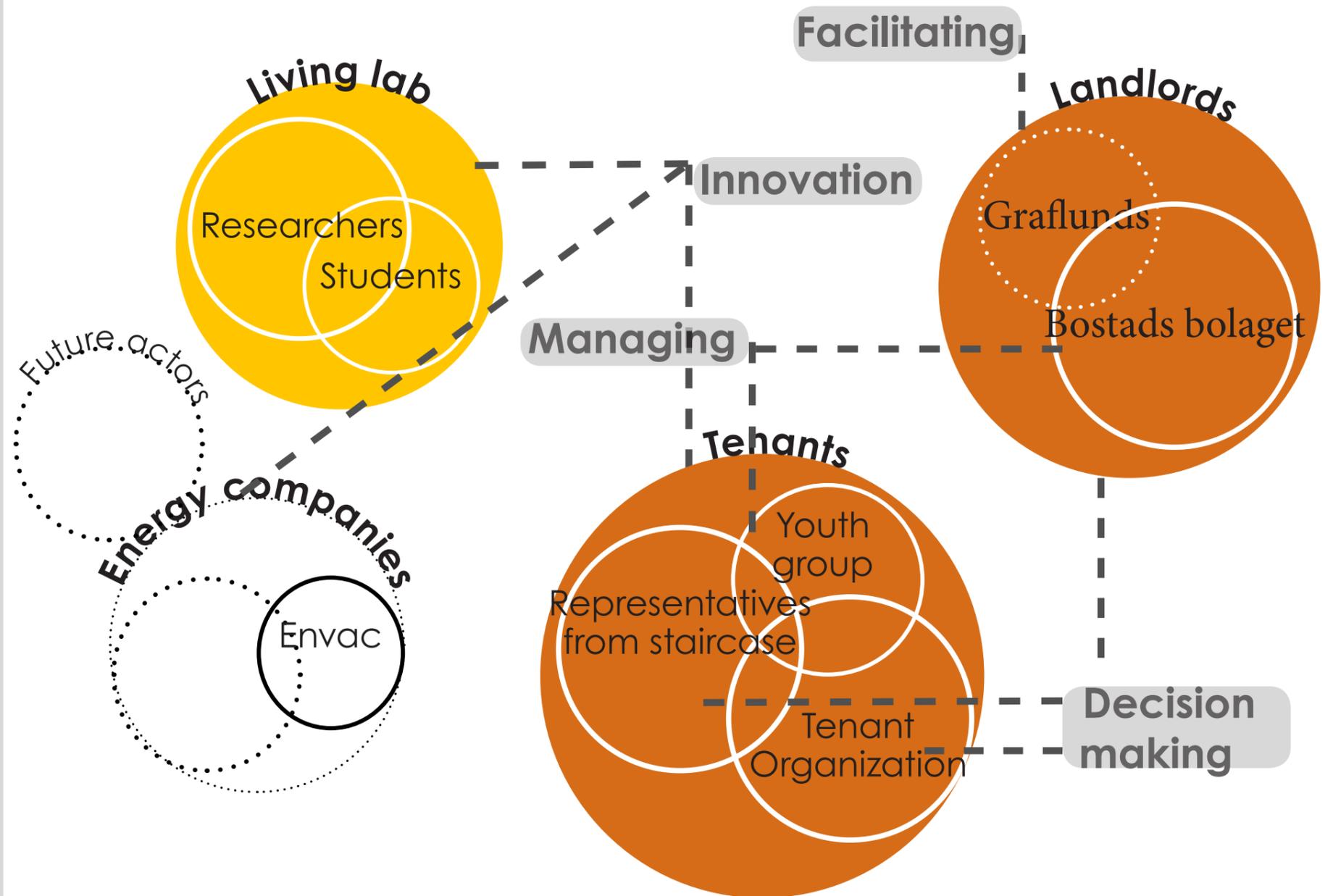
Positive

- A communal space can be created with the idea of 'swapping' or 'second-hand market' from the current practice of the community.

Negative

- Can be messy if it is not maintained properly.

From the comparison, we can see that moving all the fractions of the waste outside of the building, on the natural movement of the tenants, should have maximum effect on people's behaviour about how they will be using the system. However, moving the bulking reusable waste inside the building opens up the possibility of having a lively, interactive common space within the building that will encourage the people to use all the common spaces of the building properly with more respect.



Common space

Perspective from the staircase

Intro - Before

Before designing, tenants living here could hardly find common space in their staircase for their bulky waste and to meet their needs for social life.

The entrance of the staircase is quite narrow as half of the space is occupied by a bike parking room, which is not used much. For no designated space for bulky waste in the area, there are always some bulky items lying on the floor occupying the scarce space in the entrance and the basement, which makes the staircase more crowded and messy. Also this could cause sanitation and health problems as these bulky waste may be a warm nest of bedbugs, rats or other injurious insects.

What's more, the laundry is now located in the dark and dirty basement. The tenants feel unsafe to do their laundry in the basement.

Design concept

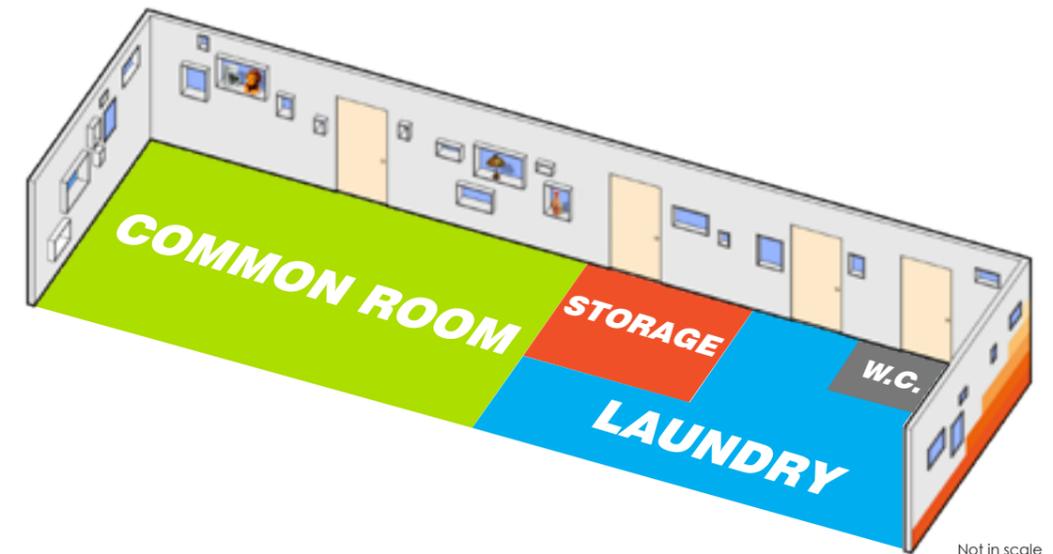
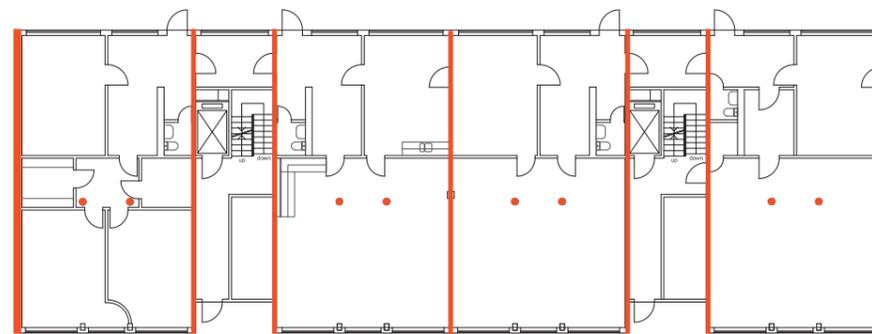
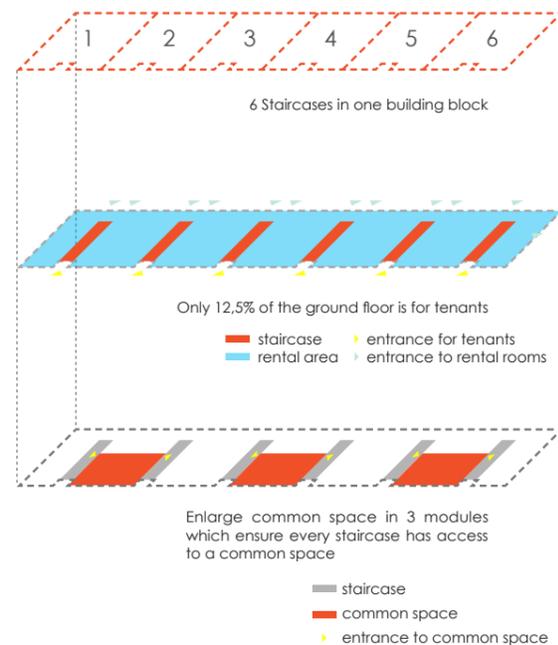
As for a sustainable way to maintenance bulky waste, we decide to create value to the communal activities and bulky wastes by establishing a connection between an adaptable communal space and a storage room for bulky items. Meanwhile, by using second-hand items in the form of 'swapping', our design is to recognize sustainable practice of the community. Social visibility of this communal space is also essential in our design.



Structural system

The structural system of this building block consists of load-bearing walls and load-bearing pillars (the illustration below).

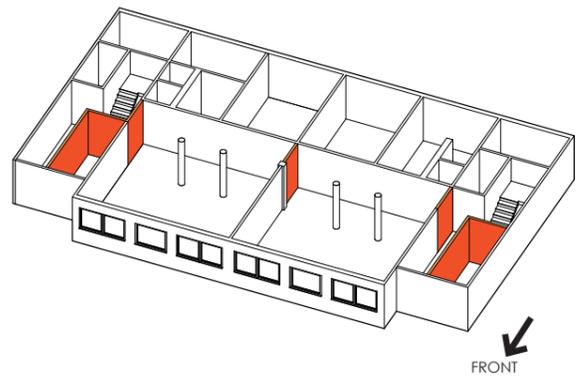
According to the plan of the basement, it should be possible to tear down a small part of the load-bearing walls in order to make a common corridor for the circulation.



Showcases and Windows

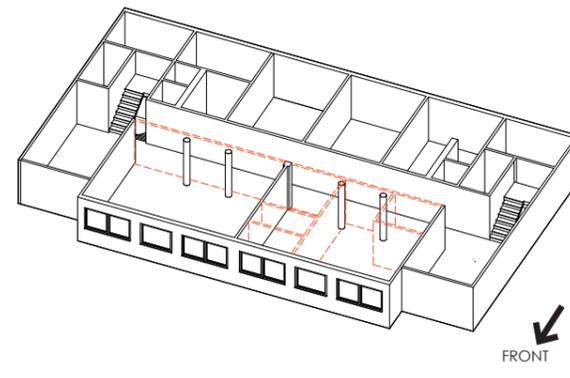
The showcases and windows indicate the relationship between the common space and circulation spaces in the staircase.

Renovation process



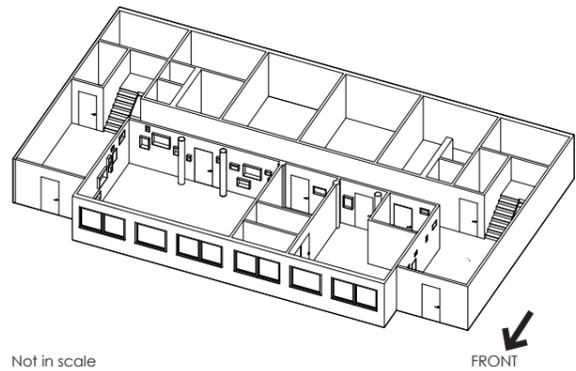
Step 1

Remove the marked interior walls in the entrance and small parts of other interior walls. Move the bike parking to the outside.



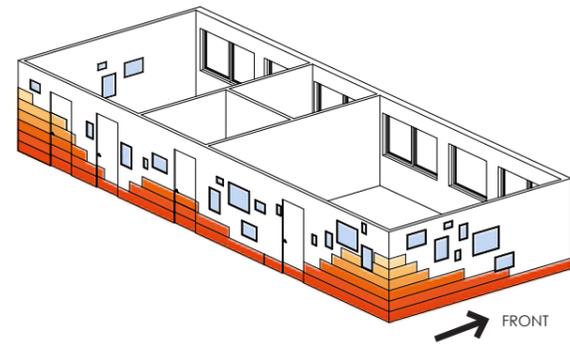
Step 2

Add new walls to separate functions.



Step 3

Add showcases and windows, where tenants can display their second-hand stuff, in the interior walls that face entrances and the corridor.



Step 4

To identify the renovation and transformation of the common space on the ground floor, we use bright colours and lights.

Not in scale



Intro - After

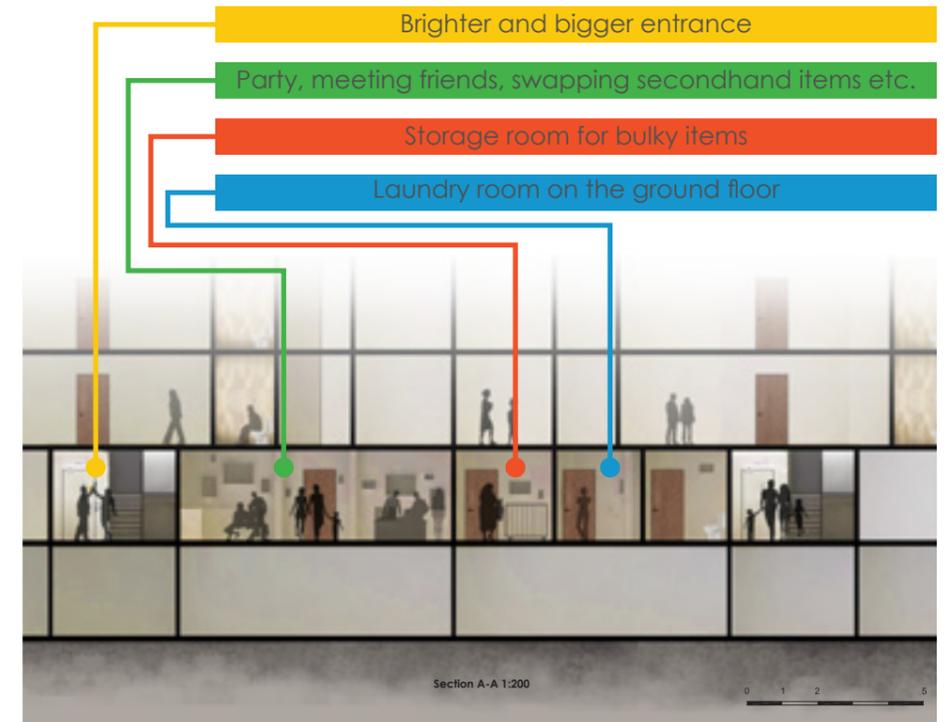
In our proposal for the common space, we try to optimize the function plan for the common space and cut down the cost of renovation and transformation.

One common module consists of a common room, a storage room, a laundry room and a toilet. All the rooms are connected by the corridor and accessible design is considered. The common room and the laundry room are next to the two neighbour entrances with visual bonds (through showcases). People passing by could know what happens in the rooms and therefore a possible communication between people in and out of the room is established. The storage room inbetween the laundry room and common room is a desinated space where tenants could dispose their bulky waste instead of throwing them anywhere. Hopefully this could lead to a neat and clean environment in the staircase.

Tenants could decide on how to administrate and use the common room themselves. The nearby storage room makes it possible and easy to use the common room as a secondhand swapping room. While swapping and reusing, it could help people develop a sustainable attitude and behavior to the waste and create the value of 'waste'. It is also a perfect room for parties, meeting friends and tenants' meeting as well. The function of the room is adaptable and could develop itself over time.

Except for bridging the common space and the staircase, we use bright colors and the interior lights to distinguish its speciality rather than a humble and less visible way.

Approximate cost of construction:
around 1,7 to 2 million each module



Waste collection house

Two buildings are erected in front of Bredfjällsgatan 36-46. Here tenants can dispose different fractions of waste through hatches in the buildings' fronts.

Moving the waste disposal outside of the apartment building provides several benefits. Since the buildings are visible from windows and for passers by, people will hopefully be more inclined to use the system as intended. Less garbage will end up on the floors and things will go where they are supposed to.

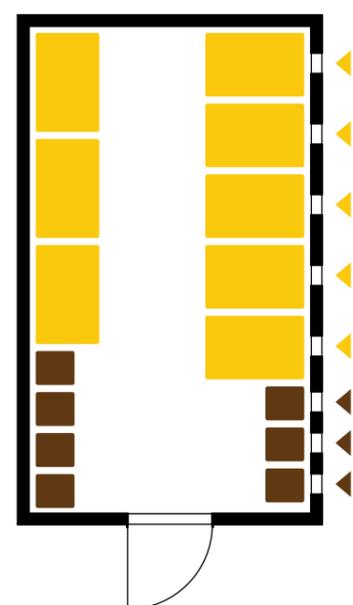
By moving the collection of combustible waste away to be collected alongside other fractions the amount of work required for separating compared to not doing so will decrease drastically. It will also bring the possibility of separation to people's attention, making them even more likely to do it, compared to the current situation where other fractions other than combustible waste are collected out of sight from where tenants usually go.

The inside of the buildings are out of bounds for tenants and are only accessed when emptying the containers. This creates a compromise between making waste visible while keeping smell and other negative effects of storing waste away from tenants. The act of erecting buildings for the purpose of waste management will also draw attention to its importance, attention that will stay along as the building does.

Implementation of the waste collection house into the system is possible in at least two different scenarios.

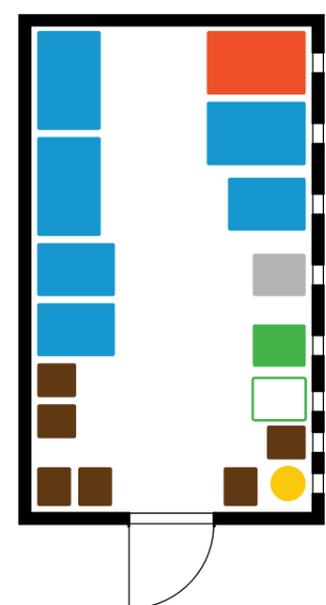
The first scenario includes fewer fractions, but is cheaper to construct and is more flexible to change. The second scenario requires considerably more investment and bigger interventions in the area, but running at its highest capacity it can handle all of the most common waste fractions.

Approximate cost of construction:
350 000 sek each house



Scenario 1

In this case two fractions of waste can be disposed and stored in containers inside the building. The waste is collected by a regular garbage truck. If the containers are shifted inside the building it has the capacity to handle waste from three staircases for one week.



Scenario 2

Here the building is connected to the existing vacuum system, or an underground storage is built under the building. The space created by storing the combustible waste elsewhere can then be used to collect more fractions in the buildings. If the building is emptied once every or every other week, depending on fraction, it can support eight different fractions. This can be all the packaging fractions, newspapers, combustible and organic waste.



Mixed



Organic



Plastic



Glass



Metal

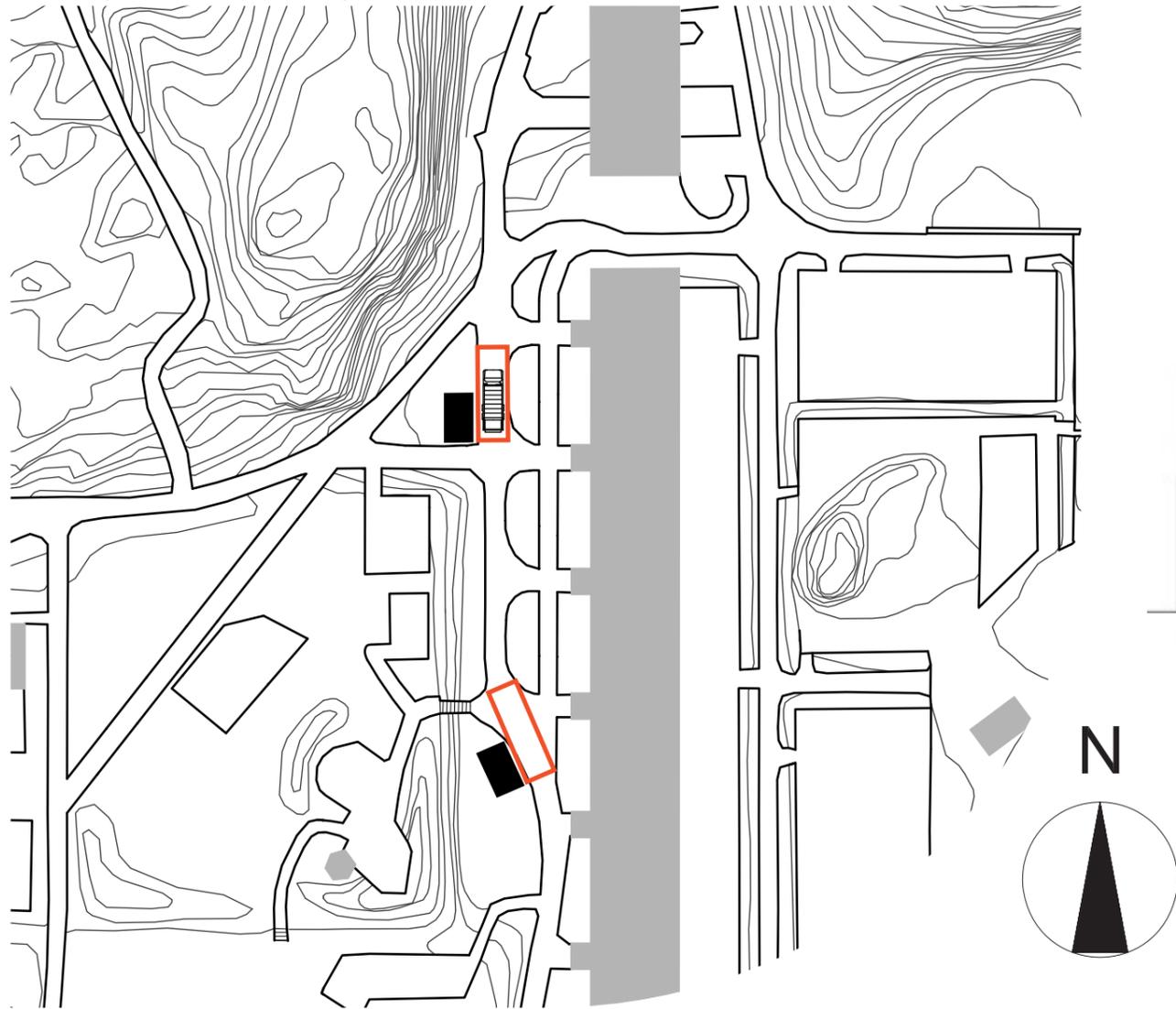


Paper

Location

The houses are placed so that they are easily accessible from every staircase. This means being both visible and nearby. Their locations are also chosen to accommodate enough space for garbage trucks to service them and people to pass them by at the same time, without having to make any major changes in the landscaping. This means placing them alongside the path that connect the buildings to Bredfjällsgatan, which is passable for trucks.

The houses are located on small green spots where they can provide shelter for e.g. parents watching their children playing.

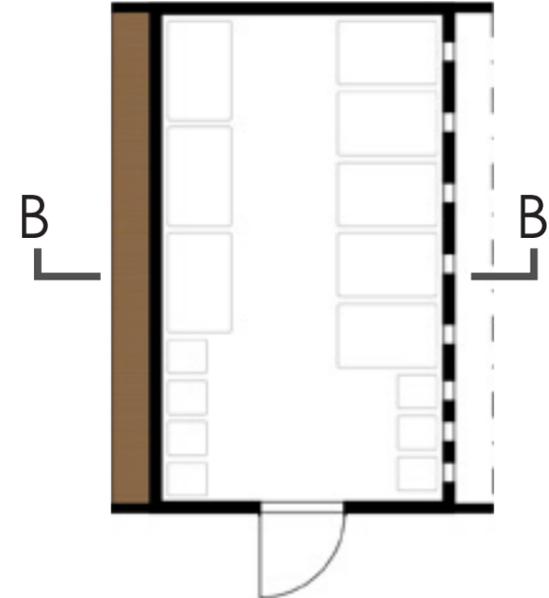


Site Plan 1:1000 ■ Required space for garbage truck

Building Design

The waste collection house is covered by tongue and groove fir panel on the long sides, to provide a warm surface where people are in close contact with it. On the short sides, it is covered with expanded metal over a fibre cement cladding. This constitutes a robust wall that allows plants to grow on it, creating a lively but cheap façade.

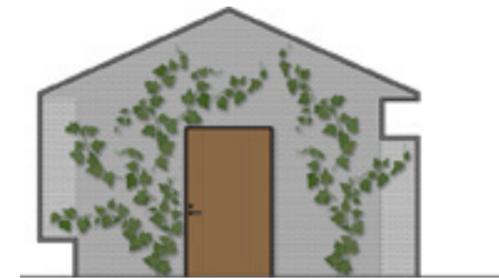
The front side of the building has eight hatches for the disposal of waste into the building. Every hatch is individually lit from the eave. The backside of the building is lined by a wooden bench facing west covered by the eave. The roof is made of standing-seam metal.



Plan 1:100



Elevation East 1:100



Elevation South 1:100



Section B-B 1:100



1:100

7 Reflection

Our involvement and work in this project that discusses the issue of waste management in a complex context of Hammarkullen is just the beginning for a continuous project, which will be undertaken by living lab. One of the primary intentions of the project was to ensure participation from all the actors involved. During the process, we stumbled many times to have enough response from all the actors. However, we realized that it happened for many different reasons, such as, expecting participation from everyone, a bit of reluctant attitude from the tenants and energy company, wrong timing or having a short time for the work etc. However, we found an interested group of people within the neighbourhood, who would participate actively, if the project continues to happen.

We also realized that this participation is also important to empower the people and give them the sense of responsibility to their own neighbourhood and facilities that they use in their daily life. Without giving them this sense of power and responsibility, any solution for the waste management, no matter how hi-tech it is, will result only into a partial success or no success at all. This is the most important element for a new/ re-organized waste management system to keep the maintenance and management cost low.

As design solution, we felt very strong about proposing something that will not only be easily understandable for the users to use, but also the beginning of the practice for recycling and invoking more thoughts about 'waste' in general. In future, this newly gained knowledge will be more helpful to have more efficient waste management system that is currently not possible due to people's ignorance about recycling. So the proposed designs are also meant to be very flexible that can be changed according to the people's or the system's need in future.

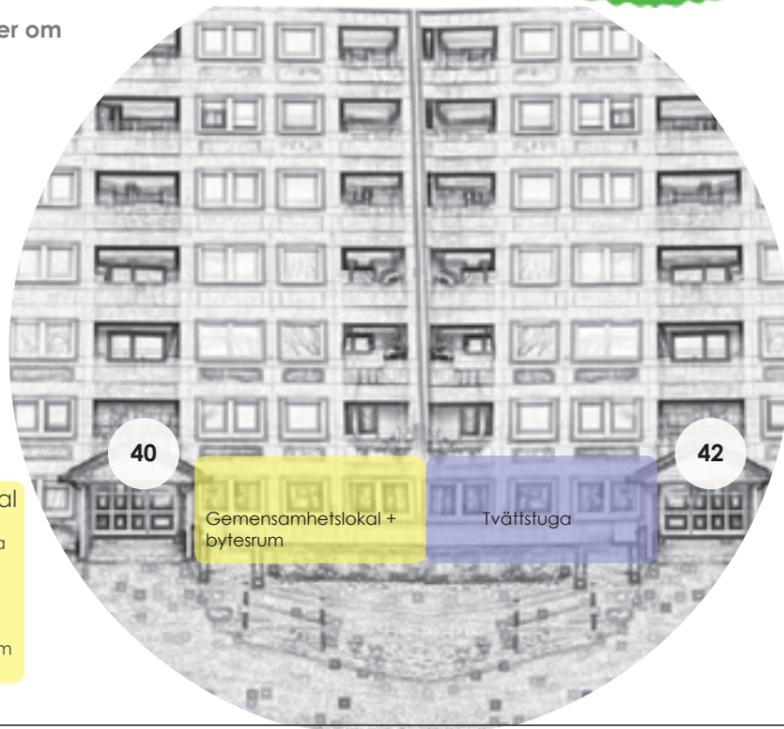
8 Appendix



Chalmers arkitekturstudenters förslag på förändringar i trapphuset.

Tror du att det här skulle fungera?

Skriv eller rita vad du tycker om förslaget.



Förslag för gemensam lokal

Rummet kan användas för att byta saker.

Andra användningsområden kan bestämmas av er som bor här. Det kan fungera som till exempel lekrum eller festlokal.

Lämna saker som kan användas av andra



Ta lämnade saker som du vill ha själv

Förslag för tvättstugan

Tvättstugan flyttas till markplan för att få bättre säkerhet.

Antalet tvättstugor och maskiner ökas i huset.

Förslag för soporna

Sopnedkastan i trapphuset stängs.

Soporna slängs istället i två hus framför huset.

Matavfall slängs för sig på samma plats.



Feedback poster put in staircase (originally A2)

Hello!

För svenska, vänd på sidan

We need your help in trying to make Bredfjällsgatan a nicer place!

We are working with a student project to improve the common spaces of Bredfjällsgatan. For this to be as good as possible we need your opinions and ideas. We are therefore inviting everyone in the staircase to come and have coffee and cake with us as we discuss possible futures of Bredfjällsgatan.

What: **Ideas, coffee and cake**

Where: **The Red House, Hammarparken**

When: **Monday 11/22 at 04:00-06:00 pm**

Hope to see you there!
/Hamlet, Kailun & Mahmuda



Workshop invitation put in mailboxes (also in Swedish, originally A5)

Hej!

Vi heter Mahmuda, Kailun och Hamlet och studerar arkitektur på Chalmers. Vi läser just nu en kurs som heter Design and Planning for Social Inclusion som bland annat handlar om att samarbeta med boende.

Under de kommande veckorna kommer vi att arbeta med ett projekt där vi ska försöka förbättra utformningen och skötseln av de gemensamma utrymmena i byggnaden med fokus på hur sophantering fungerar.

Eftersom det är ett studentprojekt är det svårt att säga hur mycket av vårt arbete som kommer att bli något i verkligheten, men vi kommer att överlämna våra resultat till Bostadsbolaget, så förhoppningsvis kommer det att kunna ge något resultat.

För att projektet ska bli så bra som möjligt skulle vi behöva hjälp från er som bor här. Vi hoppas därför att ni har överseende med att vi springer i ert trapphus ibland och att ni vill vara med och ge oss information och synpunkter på vårt projekt!

Kontakta oss gärna med frågor eller förslag.
Epost: hamletm@student.chalmers.se Telefon: 0738 27 66 68

Tack på förhand!
/Mahmuda, Kailun och Hamlet



Project brief for tenants

English version

(This information will only be used for academic purpose)

Date: Apartment no: Native language:

Age: Male Female

How many people are there in your family/apartment?

For how long are you living in this address?

Do you like it or not?

Yes, I like it here. No, I do not like it here.

Comment (If any):

What do you think about the cleanliness of common space? (Laundry/staircase/entry lobby/ lift)

Excellent Good Satisfactory Bad No comments

Comment (If any):

How do/ who do you contact in Bostadsbolaget if any problem arises about the common space?

Do you sort your garbage?

- I separate food from other wastes.
- I separate food waste and also plastic, paper, metal, cloths etc.
- I do not separate any waste.
- No comments

Comment (If any):

Do you have enough space inside your apartment to separate your waste?

Yes No No, but I separate my waste anyway.

Comment (If any):

Questionnaire for tenants

What do you think about the waste situation at Bredfjällsgatan 40 and the neighboring area?

Would you like to use more recycled/second hand product?

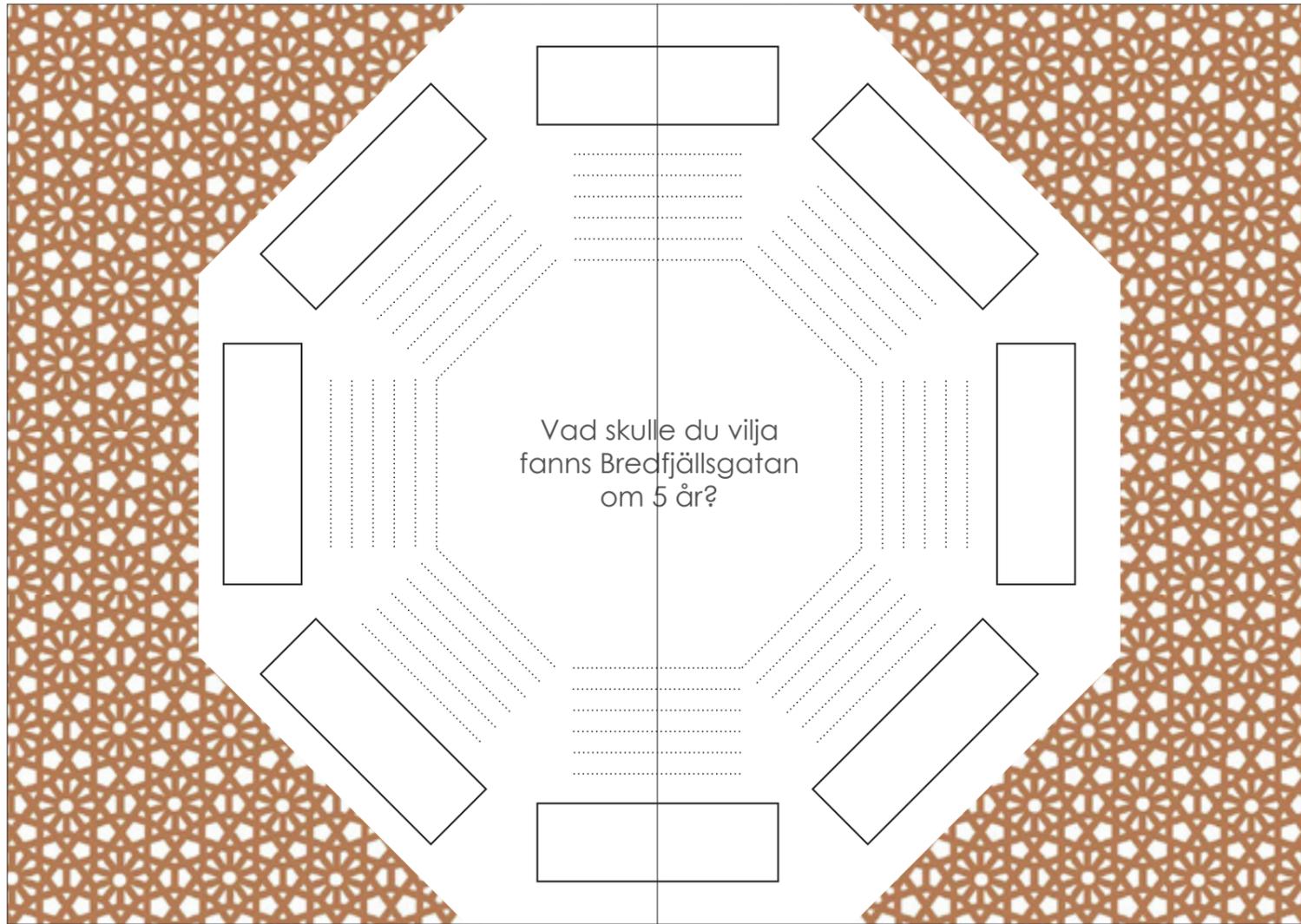
- I would use both recycled and second hand products
- I would use recycled product but not second hand products
- I would use second hand products but not recycled products
- I would use neither of them

Comment (If any):

Which outdoor spaces do you use most? (You can pick more than one options)

- Parking area
- Recycling stations (Hammarkulletorget)
- Recycling station (Sandeslätt)
- Shops(Hammarkulletorget)
- Shops (Bredfjällsgatan)
- Childrens park
- Kindergarten
- Tram station
- Others

Comment (If any):



Workshop material (originally A3)



● Du är här

2. Grovsopor utanför, annat avfall i entrén

Vad tycker du om det här förslaget och varför?

1. Dagens lösning

Vad tycker du om dagens lösning?

5. Allt avfall i källaren

Vad tycker du om det här förslaget och varför?

3. Hushållssopor och kompost i källaren, resten utanför

Vad tycker du om det här förslaget och varför?

Egen lösning

Vad tycker du om det här förslaget och varför?

4. Allt avfall utanför byggnaden

Vad tycker du om det här förslaget och varför?

Workshop material (originally A4)

No more wasting 'WASTE'

Introduction

The aim of the project is to study the waste management system of Roskilde University in order to understand the current waste management system and to propose a new system that is more sustainable and efficient. The project is part of the 'No more wasting 'WASTE'' initiative, which aims to reduce waste and improve the quality of life in the city of Roskilde.

Demography

Population: 15,000
Area: 100 km²
Population density: 150/km²

About Roskilde

Roskilde is a city in Denmark, located on the western coast of the island of Zealand. It is the capital of the Central Denmark Region. The city is known for its historical significance, particularly the Roskilde Cathedral, a UNESCO World Heritage Site. The city has a population of approximately 15,000 and covers an area of about 100 km².

Amount of waste produced in Roskilde: 10,000 tons per year
Amount of waste produced in Roskilde per person: 0.67 tons per person per year

CHALMERS Architecture 1/7

No more wasting 'WASTE'

Current waste management system

Through this diagram we can see how the waste management system works. The waste is collected from the households and taken to the waste management plant. The waste is then sorted into different categories: food and combustible, bulky waste, and other waste. The food and combustible waste is sent to the incineration plant, while the bulky waste is sent to the recycling station. The other waste is sent to the waste management plant.

CHALMERS Architecture 2/7

No more wasting 'WASTE'

Participation and process

The project involves a participatory process where residents are involved in the design and implementation of the waste management system. This includes workshops, interviews, and an interaction board. The goal is to create a system that is tailored to the needs and preferences of the community.

Findings from interviews

Residents expressed a need for a common space for waste collection and a desire for more participation in the decision-making process. They also mentioned the importance of having a recycling station and a waste management plant.

Findings from the interaction board

The interaction board provided valuable feedback from the community, highlighting the need for a common space and a recycling station. It also identified potential challenges and opportunities for the project.

CHALMERS Architecture 3/7

No more wasting 'WASTE'

Strategy development

The strategy development phase involves identifying the goals and objectives of the waste management system. This includes reducing waste, improving recycling, and increasing participation. The strategy is then implemented through various measures, such as education, infrastructure, and policy changes.

Problems in current scenario

- Lack of common space for waste collection
- Low participation in the decision-making process
- High amount of waste produced

Comparison in different scenarios

Scenario 1: Focus on recycling and waste management.
 Scenario 2: Focus on participation and common space.
 Scenario 3: Focus on recycling and participation.
 Scenario 4: Focus on participation and common space.

Elaborated illustration of Scenario 4

Scenario 4 involves creating a common space for waste collection, a recycling station, and a waste management plant. It also includes measures to increase participation and reduce waste.

CHALMERS Architecture 4/7

No more wasting 'WASTE'

Common Space

The common space is a key element of the waste management system, providing a place for residents to collect and dispose of their waste. It is designed to be bright, big, and accessible, with a storage room for bulky items and a laundry room on the ground floor.

Design Concept

- Creating value to the communal activity and ADAPTABLE COMMUNAL SPACE.
- Recognizing sustainable practice of the community, which is using SECOND-HAND items, in the form of 'swapping'.
- SOCIAL VISIBILITY of this communal space.

Structural System

The structural system is designed to support the common space and provide a stable foundation for the building. It includes a load-bearing wall and a floor slab.

CHALMERS Architecture 5/7

No more wasting 'WASTE'

Process

The process of waste management involves several steps, from collection to sorting to disposal. This includes the use of a common room, storage, and laundry. The process is designed to be efficient and sustainable, with a focus on reducing waste and improving recycling.

Step 1: Collection

Residents collect their waste in the common room and bring it to the storage area.

Step 2: Sorting

The waste is sorted into different categories: food and combustible, bulky waste, and other waste.

Step 3: Disposal

The waste is transported to the waste management plant for disposal.

Step 4: Recycling

The bulky waste is sent to the recycling station for recycling.

CHALMERS Architecture 6/7

No more wasting 'WASTE'

Waste Collection House

The Waste Collection House is a new building designed to provide a common space for waste collection and disposal. It includes a storage room, a laundry room, and a recycling station. The house is designed to be bright, big, and accessible, with a focus on sustainability and participation.

Scenario 1

Scenario 1 involves creating a common space for waste collection and a recycling station.

Scenario 2

Scenario 2 involves creating a common space for waste collection and a recycling station, with a focus on participation and common space.

Location

The Waste Collection House is located in the central part of the city, near the main square. It is designed to be easily accessible and visible to the community.

CHALMERS Architecture 7/7

Presentation posters (originally A1)