

Built to Last

Investigating how robust and adaptable architecture can host and endure programmatic changes in a complex urban setting.

“Taking not the changeable but the permanent as departure point opens up new perspectives. The permanent, or durable component of the house constitutes the frame in which change can take place.”

Leupen, Bernard (2006) *Frame and Generic Space*



CHALMERS

Built to Last

Master Thesis

Fredrik Söderstedt

Chalmers University of Technology

School of Architecture

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Examiner: Sten Gromark

Supervisor: Mikael Ekegren

Opponents: Catarina Canas, Anna Braide Eriksson

Key Words: robustness, adaptability, generality, flexibility, long-term planning

Abstract

There seems to be a general consensus that an urban mix in function is something to strive for. However, transformation of one function into another has more than often showed difficult, costly or even impossible. In a society where short-term planning, maximum economic outcome and a sustainable approach are confronting and contradicting each other, this thesis suggests architecture has been too focused on the program and short-term use instead of the long term-quality and feasibility of the physical spaces.

The purpose of this Master Thesis is to propose a way of planning for the unknown, investigating and showcasing how robust and generic architecture can be adaptable enough to host and endure programmatic changes at different levels. The program mainly contains different kinds of dwellings and offices but also through its flexibility other functions suitable for the urban location and decided by the future.

Methodically, a prototype is developed and tested to endure different criterias of what a robust and adaptable urban building should be. By doing scenarios, the system is evaluated and changed to fit the requirements.

The result is the prototype implemented and transformed into a design proposal on a site in central Gothenburg.

By showcasing the advantages with robust and adaptable structures, this thesis suggests what the term “built to last” could mean and therefore discusses different aspects of sustainability. It is a comment; and could hopefully inspire or provoke to future debate; on how we plan and build our cities of today and for tomorrow.

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Introduction - Me and my subject

Growing up in a house built in 1820, I early on found an interest in the general and qualitative spaces often designed through the history of Architecture. This interest is not only dwellings but the point is that these rooms could be also an office or even a small shop. What's important is the quality of the spaces. Functions and social behaviour changes through history but to be truly sustainable, why don't we build more general and qualitative; robust.

While studying architecture and also while doing internships at offices I came across the rather common belief that the development of the program and a "trendy" concept were the most crucial aspects of architecture. I sometimes found the materiality and spacial quality left behind. This might have to do with the way the market is structured in Sweden and what is asked for. But could it also be a focus, or an ego, among us architects? While studying Architecture and living in Vienna, but also through study trips and school-projects in Switzerland and Vorarlberg, I experienced that the quality of many new buildings in these regions were much higher than in Sweden.

Both as a living and working space, I very much appreciated the robustness and generality of the rooms. The buildings were simple, yet cultivated and rich in quality. These experiences and insights have shaped my personal view on what architecture should be about and inspired me to investigate how a building in central Gothenburg could be planned in order to live with its time and endure changes of attitudes and needs not only programmatically but also structurally and aesthetically. This is also a comment on how I think the central parts of Gothenburg could be developed to meet the needs of today and tomorrow with respect to the city of today and its inhabitants.

Background/Discourse

Today, the focus on the rapid process and maximum economical outcome has more than often resulted in a lack of architectural quality and sustainability. There seems to be a general consensus that the cities of the future needs to be denser and to a greater extent, mixed in function.

Over the last hundred years, the amount of heated square meter area per person in the western world has doubled many times. We know this can't continue and it's not only a political issue but also an architectural one. We therefore, I think, need to start to talk more about quality rather than of quantity.

I also think that we, to a greater extent, need to take future user's needs into consideration and ask ourselves what is truly essential and sustainable. Technology, furnishings and equipment do change, but the human remains.

Gothenburg is considered one of the greenest and least dense cities in Europe. This indicates that new buildings within the urban fabric could seek central locations in order to shorten distances, complete the figure ground map of the city and add value to neighborhoods or areas.

In order to be truly sustainable, endure changes, add to a cultural context and through its inherited robustness create architectural and economical value in a long-term perspective, this thesis aims at planning and designing an urban house located in central Gothenburg, using fundamental architectural means in order to reach far in terms of architectural quality, robustness, generality, value and feasibility.

Thesis Questions

How could the interaction zone of generality and robustness be interpreted in a building in Gothenburg today?

Is there a contradiction between flexibility and material quality?

How do we; on a systematical and structural level; plan for future changes in the way we live, work and shape our families and lives but still address the robustness and quality of the materials and details?

Aim

The Aim of this Master Thesis is to propose a way of planning for the unknown. By investigating and showcasing how robust and generic architecture can be adaptable enough to host and endure programmatic changes at different levels, this thesis suggests what the term "Built to Last" could mean.

Method

By studying relevant literature and reference projects, a good foundation and understanding of the topic is procured and enables the creation of a design check-list to narrow down the investigations to its core.

Based on the check-list and reference projects, a prototype is developed and tested to endure different criterias of what a robust and adaptable urban building should be. Here, sketches and drawings are the main tools of investigation. By doing scenarios, the system is evaluated and changed to fit the requirements.

The prototype is then implemented on a site in central Gothenburg and interacts and adapts to fit the requirements of the site and the city. This step constitutes the design project which develops into a specific architectural solution showcased by drawings, pictures and models.

Result

The Design Project is the result of the initial questions, system development and adoption to the site. The showcased material visualizes how the system enables generic and flexible solutions both in a short and long-term perspective. It also shows how the building can be built in a rational and cost-efficient way and still offer fine detailing and dignity to both its inhabitants, users and visitors aswell as the bypasser on the street.

Discussion

This Thesis raises questions about and discusses different aspects of permanence and adaptability.

Flexibility is a very broad field and there are many reasons to build flexible. Through the life-length of a building, attitudes and social habits constantly change. We don't know and can hardly predict how they will change but they will change. Generic spaces open up possibilities to handle changes over time and also invites to a user-participation in designing and organizing living and working space.

As an argument against building flexible one might say that it costs more money and doesn't perfectly fit the specific needs of our time or the client.

On the other hand, if we shouldn't build flexible, people would have to move to other apartments as soon as their lives change (which they are most likely to do). And who could guaranty there is a suitable apartment available? Another option is to build specific but short-term. However, the economical and ecological costs and impacts of this would be doubtful.

As an interesting paradox, the way the market works in Sweden, there is a great interest in maintaining a solid chain of movement between apartments. This enables profits for builders, estate-developers, brokers banks etc. This is to say, even if there is a good opportunity to build flexible and sustainable, it might not fit the way our short-term focused market and economical systems works.

To sum this up, and could hopefully inspire and provoke to debate on how we design and build our cities of today and for tomorrow.

Process

By early on starting up the different steps, I let them interact and affect each other throughout the process. This method helps me to reach further and uses both research for; aswell as research by; design.

Jan

Feb

March

April

May

June

Theory/Literature/References

Prototype/Concept

Site Investigation/Analysis

Design Project

Theory

As stated in the discussion, flexibility is a very broad field with both advantages and disadvantages.

A brief first overview of important ideas and literature is followed by a closer study on a few key aspects and focus points described below.

Dutch theorist and professor Bernard Leupen categorizes flexibility in three parts; alteration, extendability and polyvalence. Alteration means for instance to tear down a wall and replace by a new one creating new spaces. Polyvalence has to do with multiple use of space without architectural or structural changes.

The generic; or polyvalent; room invites to a certain user participation in the way that the choice of where to locate the kitchen, the living, the office or the bedrooms.

Leupen is not alone. To mention a few also Andrew Rabeneck speaks of “tight fit functionalism” as “a room that can only be used for its preconceived purpose” and Tatjana Schneider and Jeremy Till has a similar way as Leupen to categorize flexibility.

I decide to pay extra attention to the ideas of Leupen. His book “Frame and Generic Space” takes the permanent as its departure point. With the permanent, he writes:

“the more durable component of the house or building, constitutes the frame within which change can take place” The frame defines the generic space. Based on information by writings of Laugier, Semper, Loos, Duffy and Brand, he makes a distinction into five layers that could serve as frame: structure, skin, scenery, services and access.

In my work, I have used Leupen’s ideas as inspiration on how to create a prototype that can create different so called frames for the rooms at different levels and with a time-perspective.

That is to say, I work along a time-axis where I say that a generic space can host most changes but also be torn down, for instance letting the outer walls or the shafts form new spaces.

Before moving on to create a prototype, I summarize a strategy and check-list for my aim with the design:

- Defining a polyvalent space for dwellings and offices and connecting these to shape apartments, offices or other functions.

- Enable these polyvalent spaces to change into being alterable and extendable if needed.

-Through construction, shaft position and staircases strengthen the possibilities for a robust polyvalent space but also for alterable options.

Sustainable Aspects

In a BAU-interview, Austrian ETH-professor Dietmar Eberle repeatedly argues that one of the most important; but sometimes forgotten; aspects of sustainability is the cultural one. That is to say, publicly, a buildings needs to position itself in the surroundings and be appreciated by its bypasses and contribute to the context not only today but also in the long-term concept of time. Functionally, the spaces must be able to change and respond to the wishes of its inhabitants and users.

Furthermore, he describes how the greatest contribution a building can do the sustainability is to last for a long time. So what makes a building durable and what makes it last more than a hundred years?

First and foremost, he, not unlike Leupen, describes that a building consists of different elements with different life-spans. According to him, the loadbearing structure lasts more than a hundred years, the skin or facade 50-70 years, the program or function about one generation and the interiors usually not more than 10-15 years.

While planning an office, he continues, the structure of a company sometimes changes already after 5 years and the office has to be rebuilt or re-furnished to meet new ideas and new organizational and functional needs.

He continues by arguing that the architecture built roughly between 1960-1990 in most western European countries make up more than 60% of the buildings, and the reason that many of them today face problems of maintenance and appreciation is that the architects, society and builders were too focused on the short-term quantity and the program (function) of the building. Instead, they should have focused more on the long-term quality and the basic components of the buildings, such as adaption and contribution to context and the quality of the loadbearing systems and spaces created.

By listening to the interview and analyzing the arguments about focusing more on the structure and less on the program, I'm able to further define what needs to taken into account to make the prototype sustainable and increase the flexibility on a structural and public level.

I add some points to the list of criterias for the prototype. The design implemented on a specific site should:

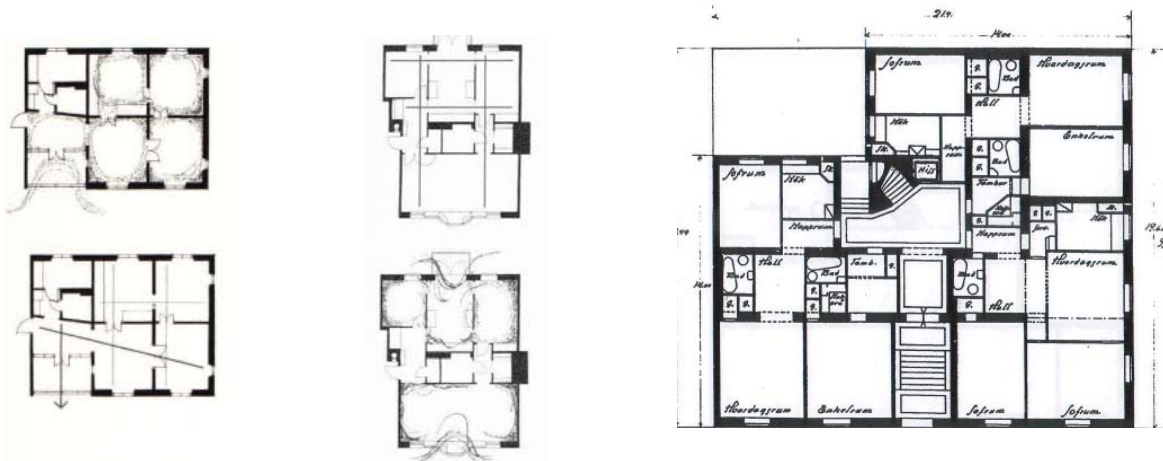
Be able to adapt to the surroundings, contribute to the local context and be appreciated, also externally and publicly, both today and in a hundred years. This would make it a culturally sustainable building. Other aspects of sustainability, such as the economical, ecological and social, are also adressed in this project but won't be the main focus.

Modern References & Learning from History

I also studied examples of generic spaces in apartments, especially those built between 1880 and 1930 since these have proved durable, qualitative and appreciated over time.

My conclusion of this study is that the robustness has a lot to do not only with the quality and strength of the structure but also the room proportions, measurements, finishes of materials, detail solutions etc. Here the book "Stenhusen 1880-1920 varsam ombyggnad" has been of help to understand also this scale.

Some projects that have worked as inspiration regarding polyvalent spaces, proportions and fine detailing. Among the floor plans below you see from the left: Brunnberg & Forshed, Stumholmen. In the middle Bengt Lindroos, Norrköping and to the right the block "Postsäcken" on Östermalm in Stockholm, built in the 1920ies. These examples are described by Professor Ola Nylander and Kjell Forshed in their book "Bostadens Omätbara värden" (2003)



Prototype Development

This is a research by design part that ranged from early sketches to a prototype. Here, in sketches and drawings, the layout of the floor plan as well as the facade is tested and evaluated.

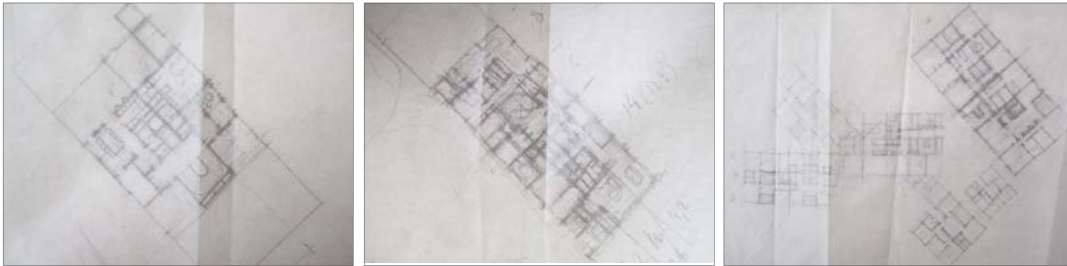
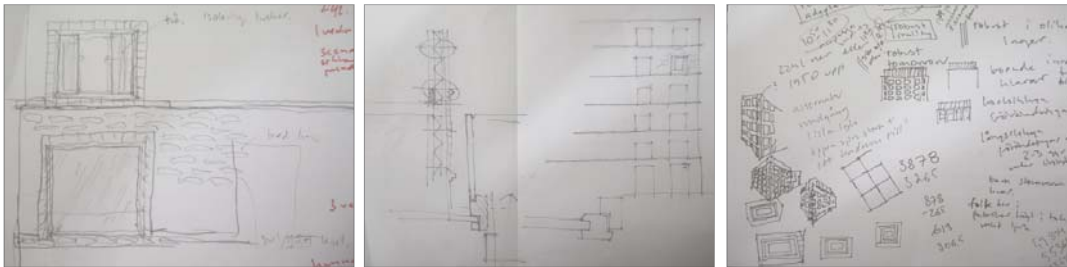
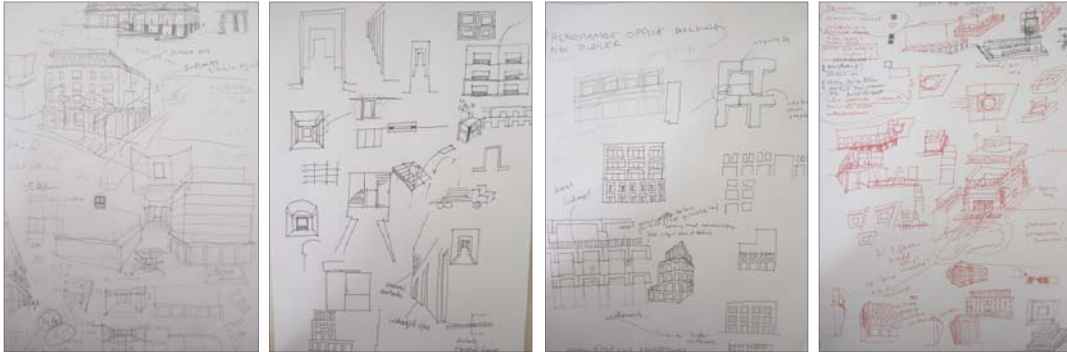
By finding the proper layout of the floor plans, I tried to work with different measurements on rectangular and quadrant spaces. Although the rectangular shape might sometimes be easier to furnish and divide into proper rooms, it created issues when combining the corner piece of the prototype with the rectangular four side body. It would have worked but forced me to exceptions in the system, which I wished to avoid at this early stage.

Since I wanted the prototype to easily connect at the corners while keeping the system, I decided to go back to the quadrant room and work with the extension and division with this unit instead.

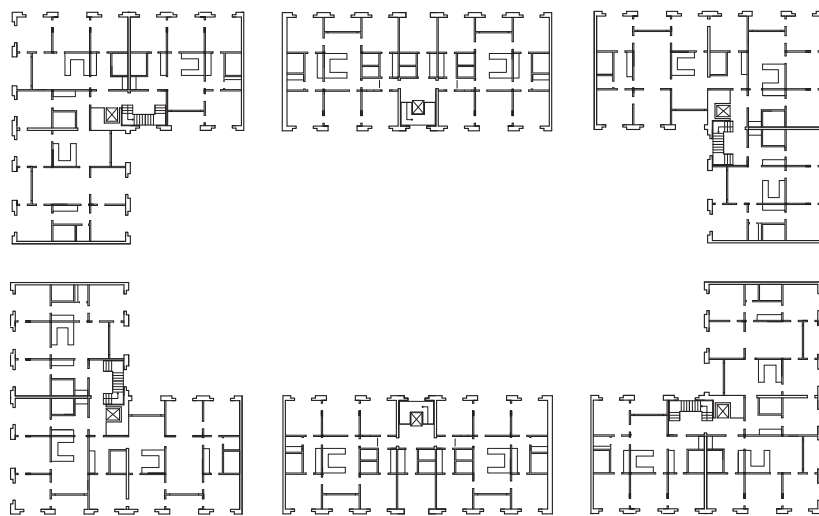
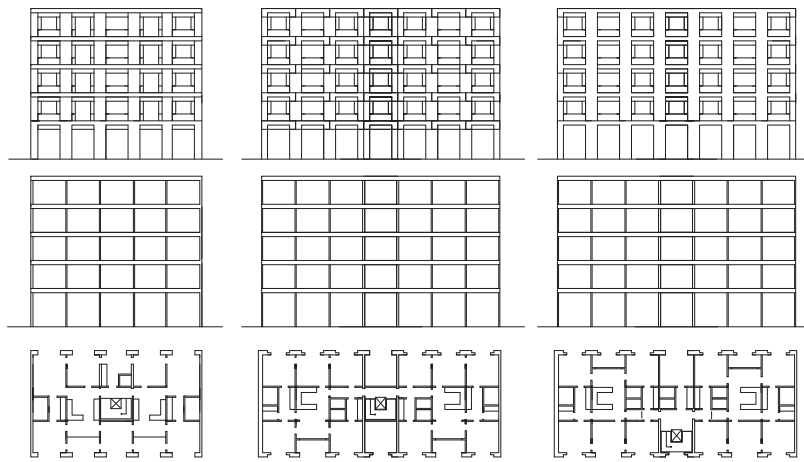
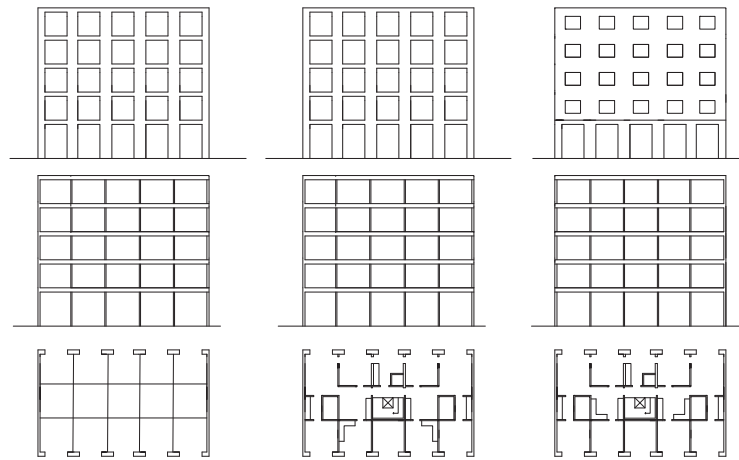
By evaluating the spaces, I found a grid size of 4,2 m to fit the requirements of the space. This is repeatedly concluded (in literature) as a suitable measurement for generic rooms suitable for dwelling and give a bit more option than the frequently used 3,6 m for instance used by Engstrand Speek in many projects.

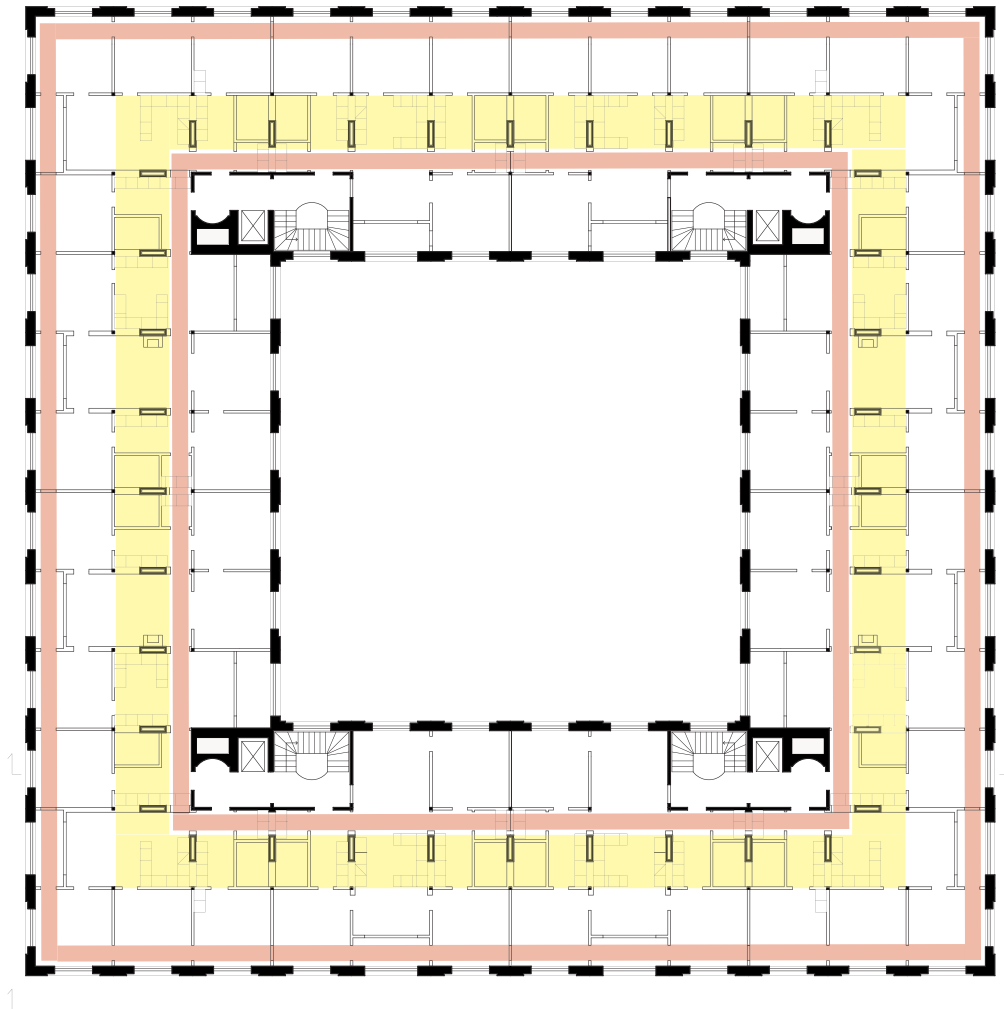
In order to have reached full accessibility while dividing these units, I would rather have used a 4,4 or 4,6 m grid. However, the depth of the house got, I think, too deep and the rooms unnecessary big. I therefore kept the 4,2 size and stated that a division of the unit should be possible, but doesn't have to meet all the standards of an accessible bedroom. However, the advantages and disadvantages of different proportions and measurements could be further investigated. I decided to continue in order to have time for the design project as well.

Sketches



Drawings





- Installation Zone
- Communication Zones

Site

By implementing the developed prototype on a site in central Gothenburg, I evaluate its ability to correspond and adapt to the surroundings. My aim is to prove that the prototype could work both as a city building approach and as an adaptable structure. By showcasing here that the system would function and contribute to this place, I aim at proving the model's worth also on this level. The result is later showcased as a design project.

I choose to work with Lorensberg 706:32 located in the eastern corner of Lorensbergsparken right next to the Lorensberg Theatre. Today, here lies a parking garage.



Strategy

By analyzing the surrounding buildings to the site chosen for implementation of the prototype, I can identify the characteristics of the site and position the new building in relation to the existing.

The concept; or prototype; can now adapt to the surrounding with its specific character, requirements and materiality. In order to do this properly, I analyze the public spaces, the facades and the floor plans of the surrounding buildings. By doing this, I can position the design project well established within the context.

Furthermore, the analysis of the surrounding buildings built between 1920 and 1950 prove to influence also the prototype itself. That is to say, the initial concept now merges with the site and form the specific design project.

By doing this, I recall a quote from my former professor András Pálffy at TU Wien:

“As a discipline, to each time and context, architecture has to position and define itself new. The tensions, cracks and contradictions will determine the life and action of the building”

Thinking about this quote and what it could mean, I start to think about how the design project culturally, spaciouly and materialistically could position itself as a hybrid between the prototype, the context, the surroundings, the today and the tomorrow.

Analysis, History & Character

This site has a rather clear orthogonal set-up but could be said to be complex in its surroundings situated between the housing blocks and the Lorensbergsparken with its mixture of a theatre from 1916 and a functionalist hotel from the 40ies.

I analyse the site, its surroundings, its characteristics and its materiality.

For instance, major developments are taking place at Korsvägen highlighting the role of this spot in the city. The city of Gothenburg has wished for a certain development of the Avenue and Lorensbergsparken area which could be summarised by the quotes listed: (Swedish)

“En blandning av verksamheter och bostäder kan göra att området lever under större del av dygnet. Rena, omsorgsfullt gestaltade och välsköta platser upplevs som trivsammare och tryggare”

“Heden och Avenyn är en del av Göteborgs identitet. Det är viktigt för attraktivitet och konkurrenskraft att ta till vara och utveckla det unika i området.”

“Den fysiska miljön är i sig unik och rätt använd ett konkurrensmedel för handel och verksamheter.”

However, the expansion of the GU faculty Artisten, makes this place also interesting for cultural purposes. Maybe a gallery, concert space, studios etc could be relevant occupations of this building. Also this is taken into consideration before the start of the design project.

As a start, I'm convinced that a yellow brick building would be the ultimate response to the site. This, I feel, is the safe way out. However, since this is a thesis project, and since I aim at working with a qualitative, yet rational system that aims at being easily produced, built and assembled to a reasonable cost, I feel that it is interesting to investigate how concrete could be cast and colored in order to reflect upon the detailing and quality of the surrounding facades. Both the geometry and the texture are taken into account.

Externally, The adjacent Lorensberg Theatre (Karl. M. Bengtsson, 1916) with its yellow cladding facade is probably the largest source of inspiration for the design but also the buildings around Götaplatsen with the characteristic mixture of Swedish 1920-classicism, art-deco and early functionalism have been important for the design as references.

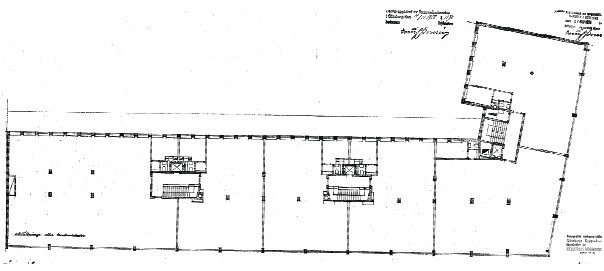
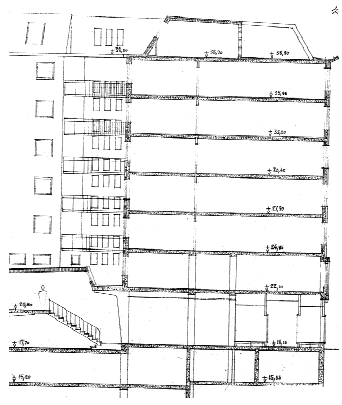
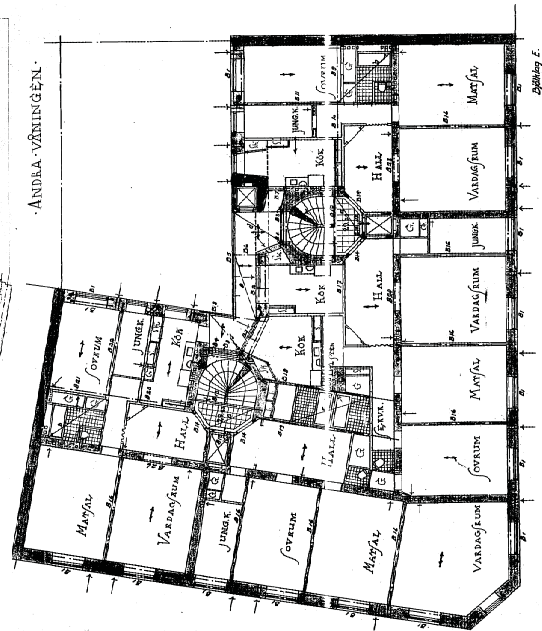
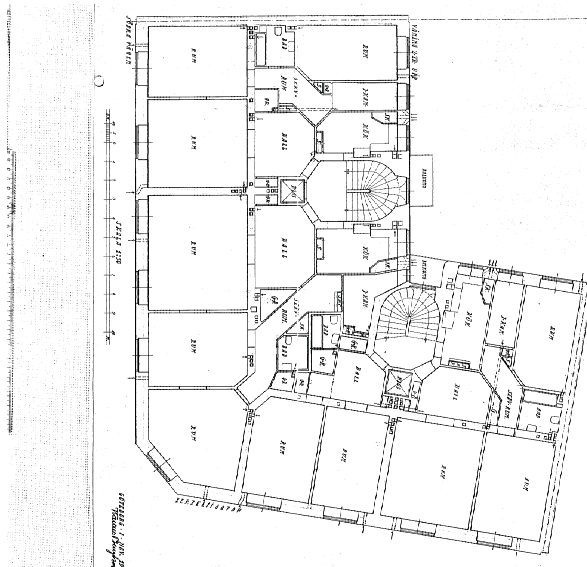
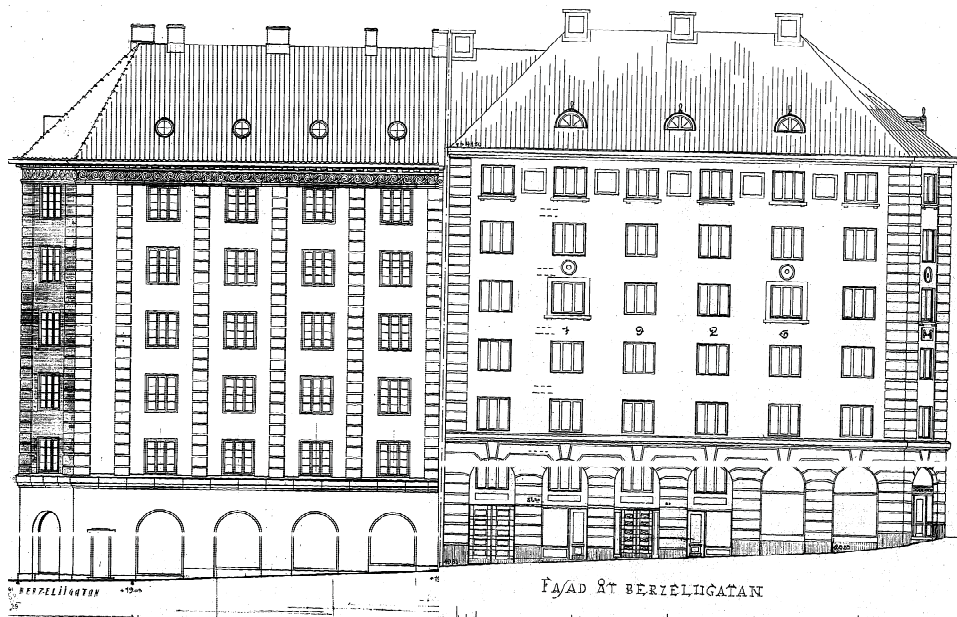
As an appearance, the design should reflect upon these buildings but still show that the design characteristics are newly interpreted. For instance, the brick and cladding, often yellow or beige, the limestone and different versions of rectangles, arcs and circles are to be found almost everywhere in the surroundings. Also the entréssole level and the elevated yard are present in order to deal with the height-differences and expand the public spaces on the ground floor.



Lorensbergsparken as it appears today.



Lorensbergsparken 1947. The circus-building (circular) was built 1884 and demolished 1969 and later replaced by a parking garage still present on the ground.



Some of the surrounding buildings



Photos from the site as it appears today. The Theatre is surrounded by the city library (built by Lund &Valentin Architects 1967 and later extended by Erséus Architects). On the other (eastern) side of the theatre, the two floors high parking garage occupies the entire site.

Conclusion

Today the park lacks definition. While approaching the design the aim is to define and highlight the park and let the new building volume correspond with the neighbouring streets as well as the park. By studying Lilienbergs original ideas and plan for the area, I find inspiration and historic references. Lilienberg was inspired by Camillo Sitte and I hope to relate to some of these ideas when it comes to creating and defining also the public spaces.

I will take the development projects at Avenyn and Korsvägen into account while planning the public spaces and possible use of the building in the future.

I would like the bottom level to have a public function and access. Cultural and Commercial activities would be suitable for the development in the surrounding area and also related back to the history of the park.

In typology, materials and aura, I want the design to be informed by the mixture of classicism and functionalism present on the site while still adding features of our time to the design.

Design Criteria

Before moving on to the design project, I once again summarize a strategy and check-list for my aim with the design:

- Defining a polyvalent space for dwellings and offices and connecting these to shape apartments, offices or other functions.

- Enable these polyvalent spaces to be, in a long-term perspective, extendable and alterable.

- Through Construction, shaft positions and access strengthen the possibilities for a robust, polyvalent space but also for alterable and extendable options.

- Adapt to the surroundings, contribute to the local context and be appreciated, not only internally by its users but also externally and publicly, both today and in a long-term perspective.

Design Project

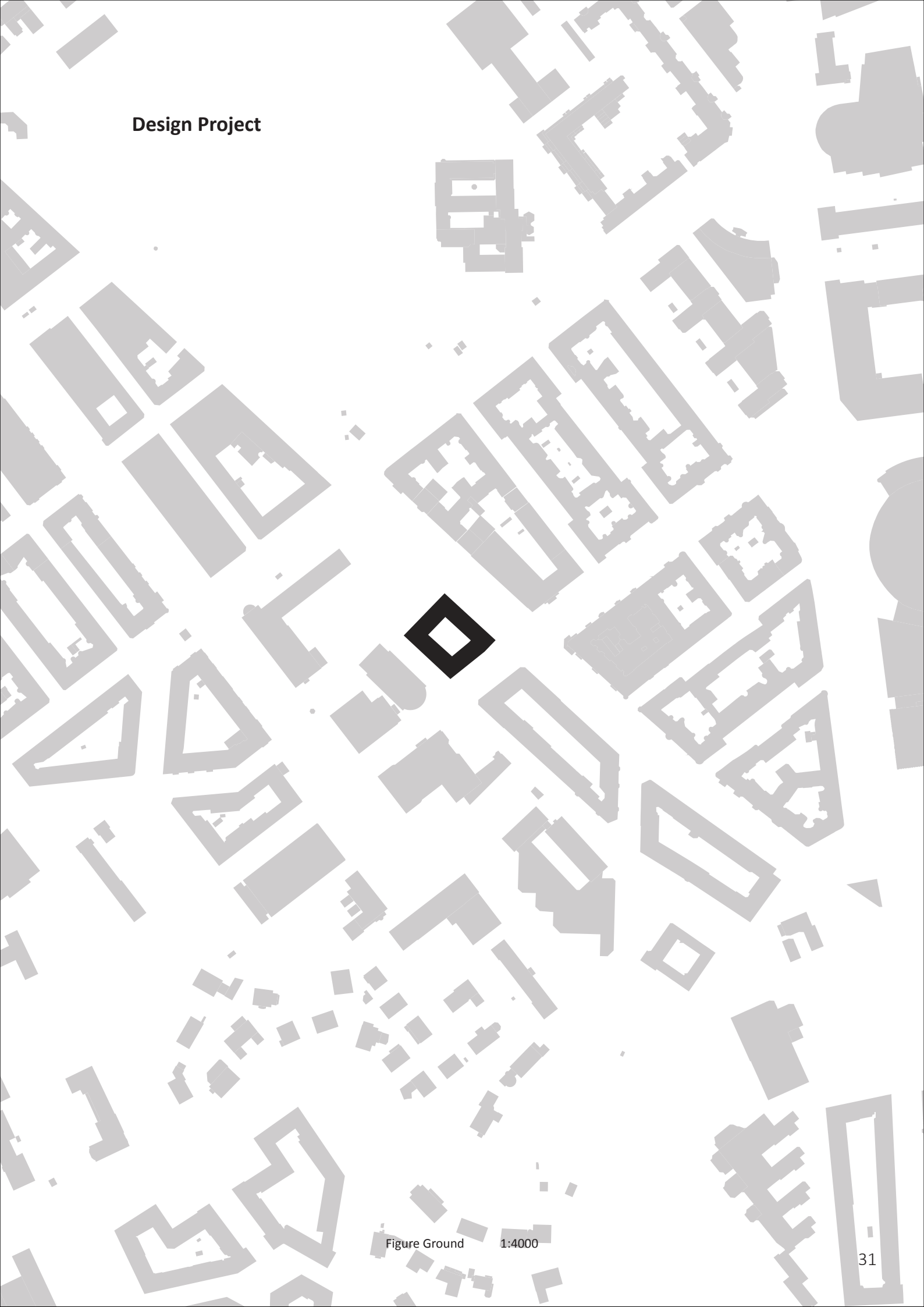
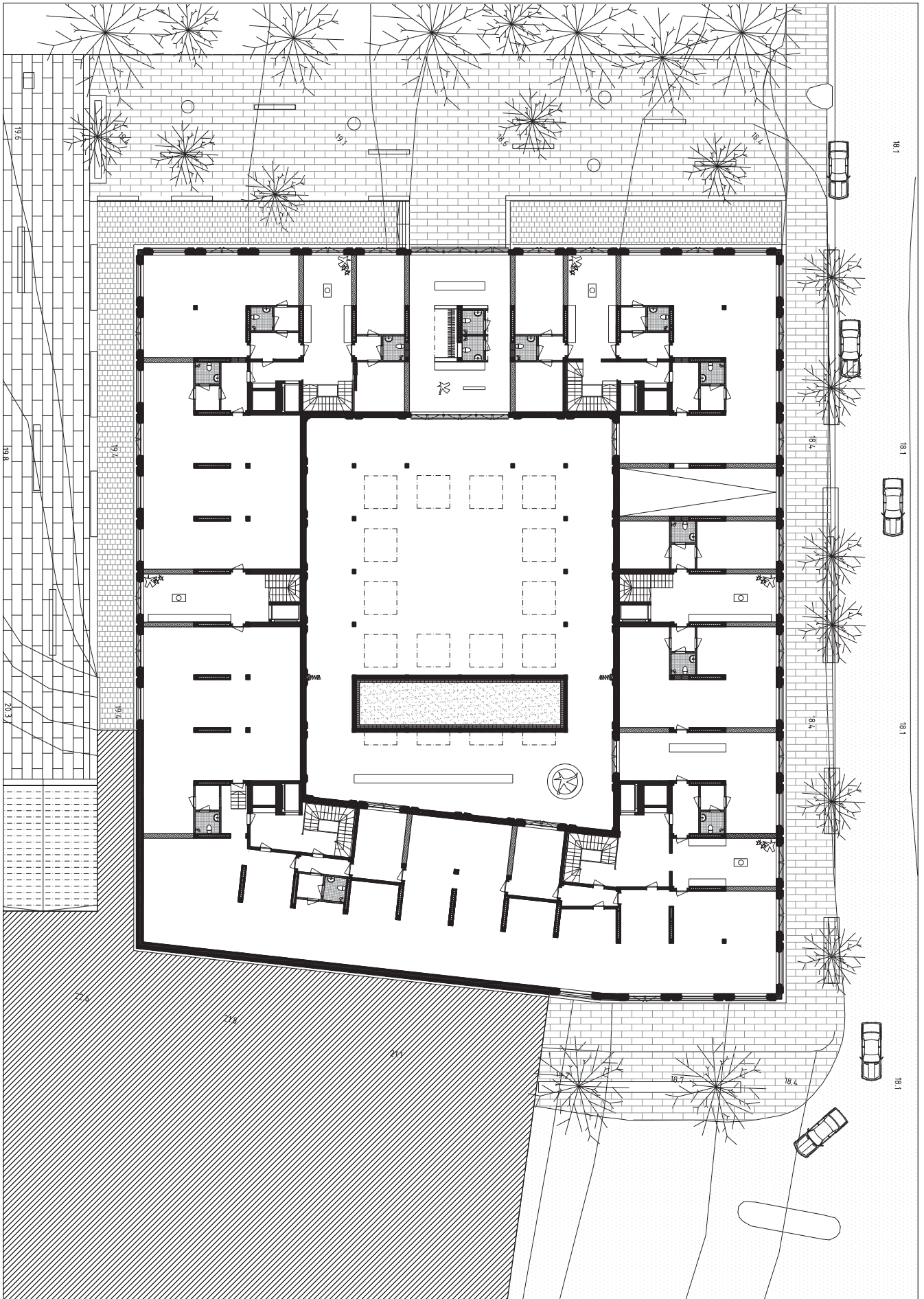
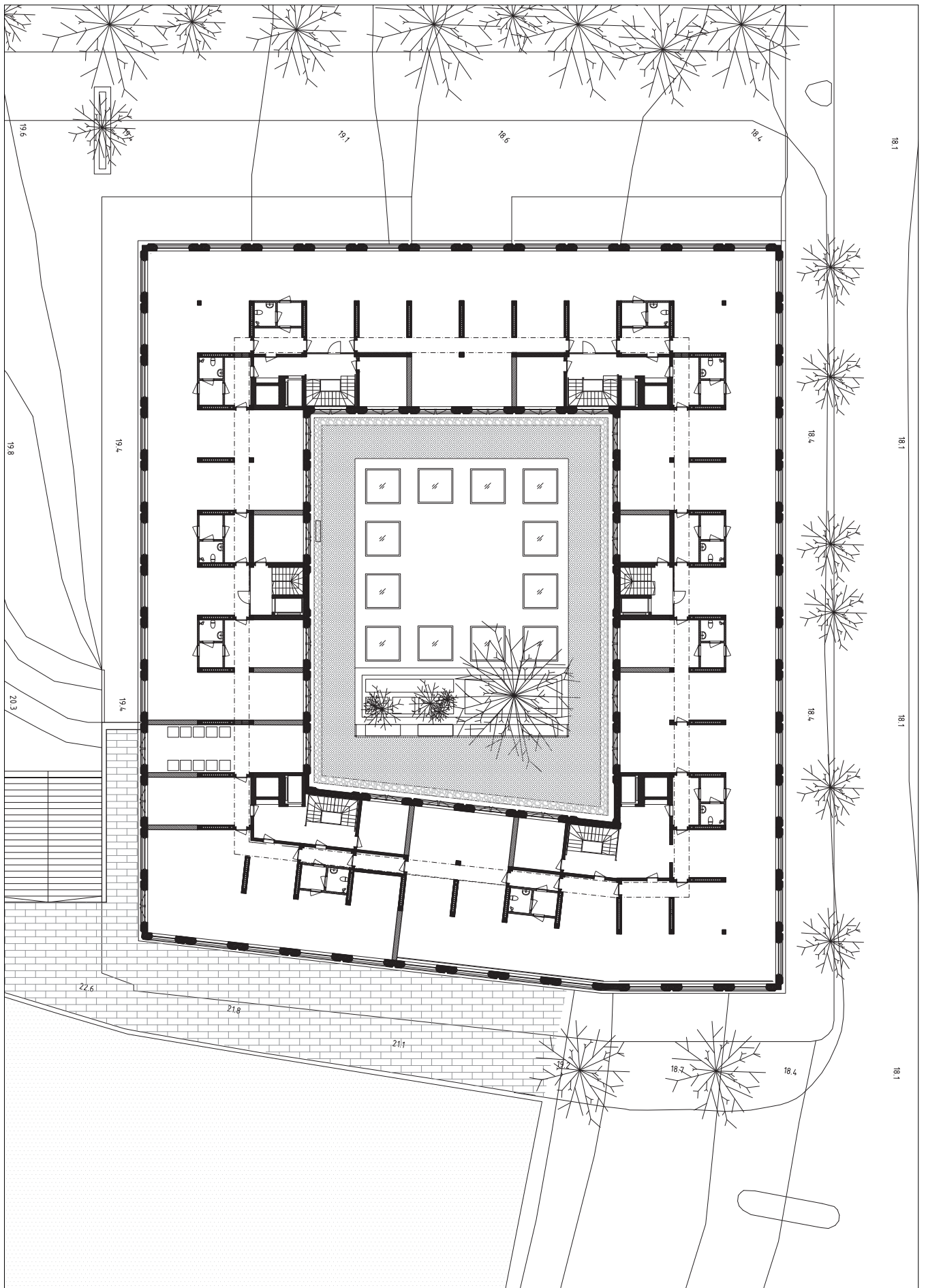


Figure Ground

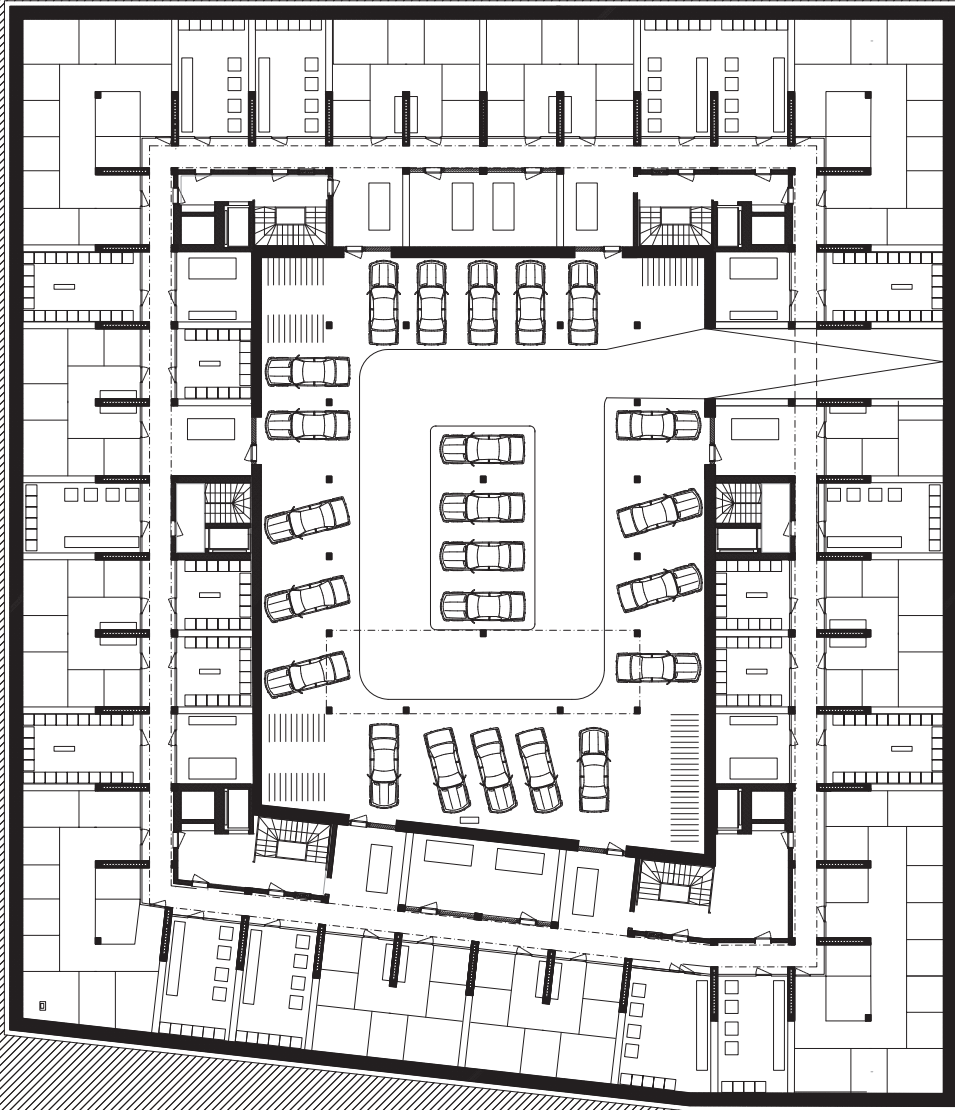
1:4000



Level 0 Södra Vägen 1:400



Level 1 Johannebergsgatan 1:400





Young couple, 27 & 29
48 m² + 24 m²
Journalist and Architect

By sharing an office with their neighbour, this couple can keep their costs down, get a representative small office close to their apartment and use the office as guest apartment or put in a small kitchen and rent out to a student.



Family with three kids
120 m²

This is a family that loves inviting many people over for cocktail parties. This requires big living, dining and cooking space. By dividing one child-room into two, all children get their own room while still having a big living and dining room and a big kitchen with a bar. The central axis in the apartment becomes the public and the bedrooms with bathroom and wardrobes get more private.



Older couple
88 m²
Pensioners.

This corner apartment belongs to an older couple who frequently gets guests over the weekend. Either their grandchildren or long-distance friends. They use one of the rooms as a combined guest-room and small study.



Collective Living Arrangement
120 m²
4 people

All occupants get one room each. All rooms lead to neutral spaces and the big kitchen with bar and balcony works a common, social area.



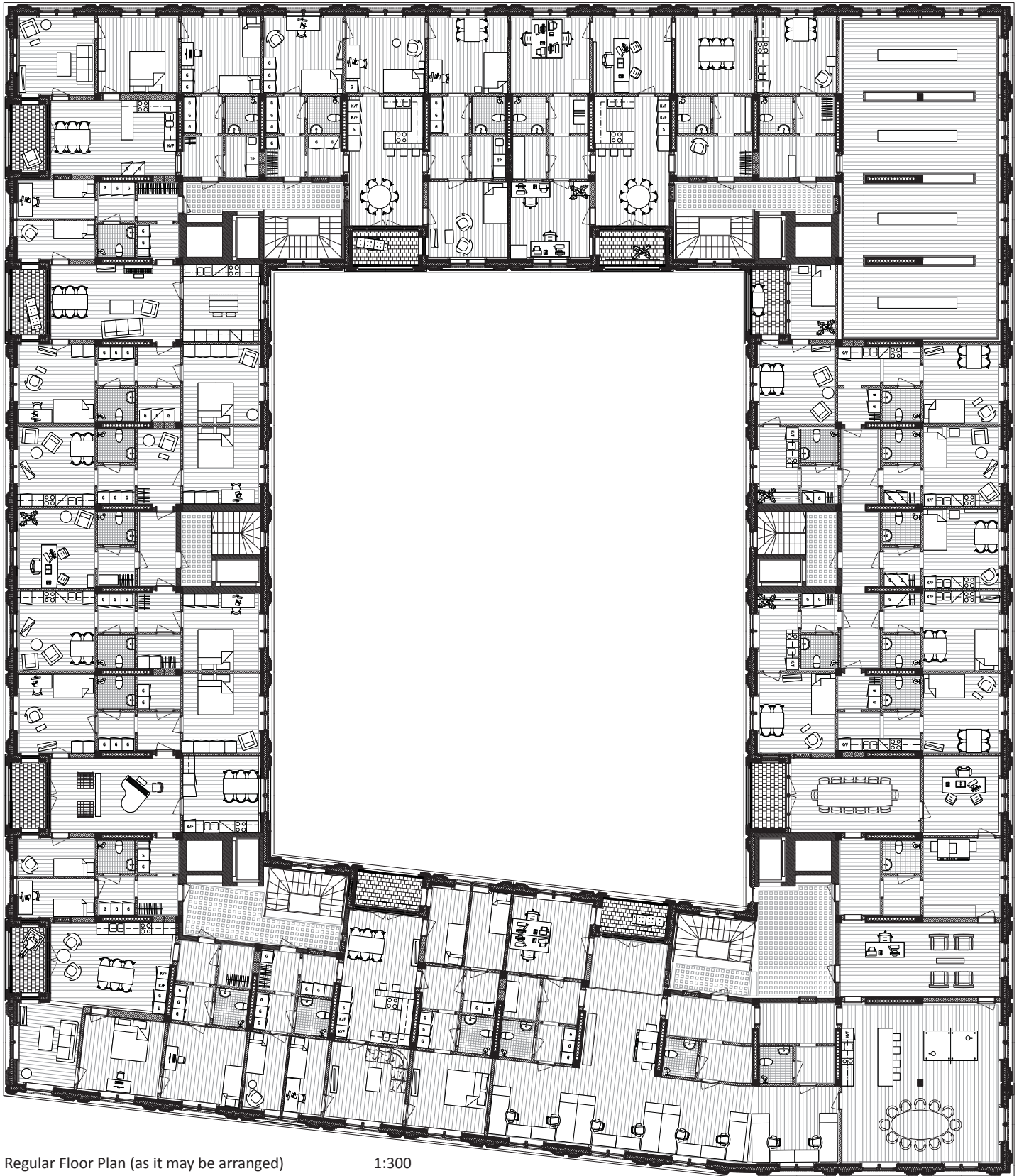
Small Office
120 m²

This apartment is used as a small office. Each room can host 2 proper or 3 smaller work stations. By the entrance, a small meeting room is arranged. The heart of the office is the break room with kitchen and place also for informal meetings and work activities. Copy machines, printer, archive and storage can be arranged in the smaller supportive areas by the bathrooms.



Gallery
128 + 32 m²

By tearing down all walls and bathrooms only the loadbearing shafts remain. New spaces are then defined with new interior walls. In this case, the northern corner of the building is turned into a small gallery for a private gallery. An entrance with small reception, office and bathroom is provided and the other 128 m² function as exhibition area. It's also possible to make a workshop area with balcony in the south-eastern part of the gallery. However, in this case, it's incorporated in another apartment. This can be done due to the possibility of closing and opening doors with a short or long-term perspective.



Regular Floor Plan (as it may be arranged)

1:300



Man 40
48 m² + 24 m²
Divorced, no kids
Entrepreneur

By sharing a semi-private entrance hall with his neighbours, this man got new friends. Now they share an office together. Before, this room used to be rented out to a student but sharing the rent with his neighbours, it works perfect as a small, yet representative office.



Woman 55
120 m²
Professional Piano Player with in-home education
Distance Relationship
18 year old son who lives here every other week

The two smaller rooms are used for long-distance students who come here for lessons and courses. The bigger bedroom is used by the son when he lives here every other week. When he's not around, it's also used as a private living room and study.



Family with one child
88 m²

The angled corner apartment gets a special character with nice living and dining areas and two generic rooms that get involved in the circular and axial movements created.



Big office with internal corridor and conference area.
120 m²

By tearing down some interior walls and open up the internal corridor along the loadbearing shafts, this big office gets a layout as a mixture of the cell-office and the open landscape-office. The reception desk is located next to the big conference room with balcony and the administrative areas of the office. Here, the CEO can have important private meetings and access to the archive and reception without disturbance from the vibrant staff break room in the corner. An office landscape is opened up along the whole southern facade with a library and copy area ending in a glazed break/meeting room with balcony towards the calm garden. At the far corner of the office, a more private office area is provided towards the garden. This is one of many possible layouts for the big office that could also expand both directions or shrink down to a minimum due to the shaft positioning and internal corridor possibility.



6 people in a collective living
120 m²

By dividing two of the generic rooms into 4 smaller ones, 5 bedrooms are created to host a collective living arrangement with 4 singles living with a young couple. All bedrooms get access from neutral spaces and a big kitchen with bar and a living room works as the common spaces.



Student Apartments
3x24 m²,
3x32 m²,
1x32 (+8) m²

An internal corridor reaches out to 7 student apartments of 2 different sizes. One of the apartments is temporarily expanded with a balcony and extra room as the neighbouring apartment changes into a gallery. This change implies that the pentry has to be expanded to a proper small kitchen since the apartment grows from 32 to 40 m². This action is possible.

The risk of functions could lead to interesting social activities and unplanned meetings can take place in the hallway, common entrances, laundry, staircases and gardens. For instance, interesting social interactions are forced when a student collective share staircase, garbage room and garden with an office and a family.

The roof is covered with sedum to promote biodiversity and work as a buffer zone for rain water. Here, photovoltaic and solar panels can be arranged on top of each other to provide electricity for electric cars in the garage. The solar panels can provide warm tap water.

There are several options on how to treat the roof and the rain water. If wished for, the rain-water can be taken care of on the roof as well as on the courtyard and brought into the shafts in the corners and used for flushing the toilets and watering the plants. The rain water can also be led down pipes along the facades (in the gap between some of the facades) and collected in a tank. This has to be decided while planning the project because of the roof angle.

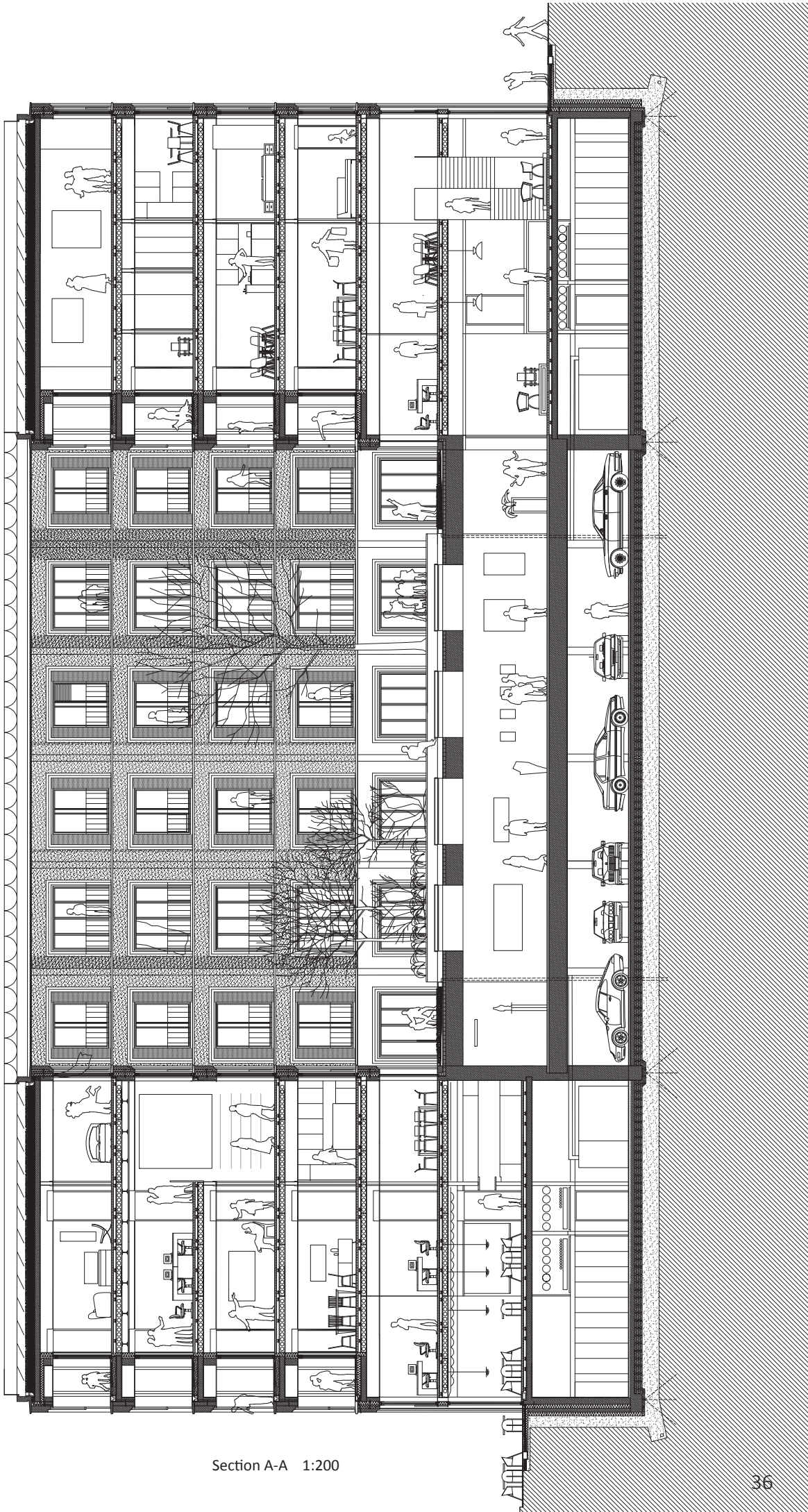
The entresol level will most likely be used as office or for commerce. The HOF floor units provide the possibility to open up parts and create vertical connections between the levels. In this way, the commerce on the public ground floor can spread up to the next level.

On level 1 in connection to the garden and also on the roof or in the basement, common activity areas could be planned to further strengthen the social aspect of the multi-function house. This could be further investigated but is not the focus of this project.

The "hivell" floor (distance between the HOF and the floor) provide installations from the central shafts out along the walls all the way to the facade. Along the interior walls, the floor boards can be removed and the wires for pipes or wires can be brought up and connected. The east slab above the distances ensure sufficient acoustical quality.

The semi-private elevated garden is reached from all staircases and a place to meet and relax for the inhabitants. The open area in the north (see level 1) contrasts the court to be used for performances, exhibitions, showrooms etc. The area is lit from above and can be separated into different smaller parts. (see floor plan of level 0)

On the ground floor a parking garage is provided for some of the inhabitants. On this level there are also storages, bike garage, laundry rooms and technical rooms.



Section A-A 1:200

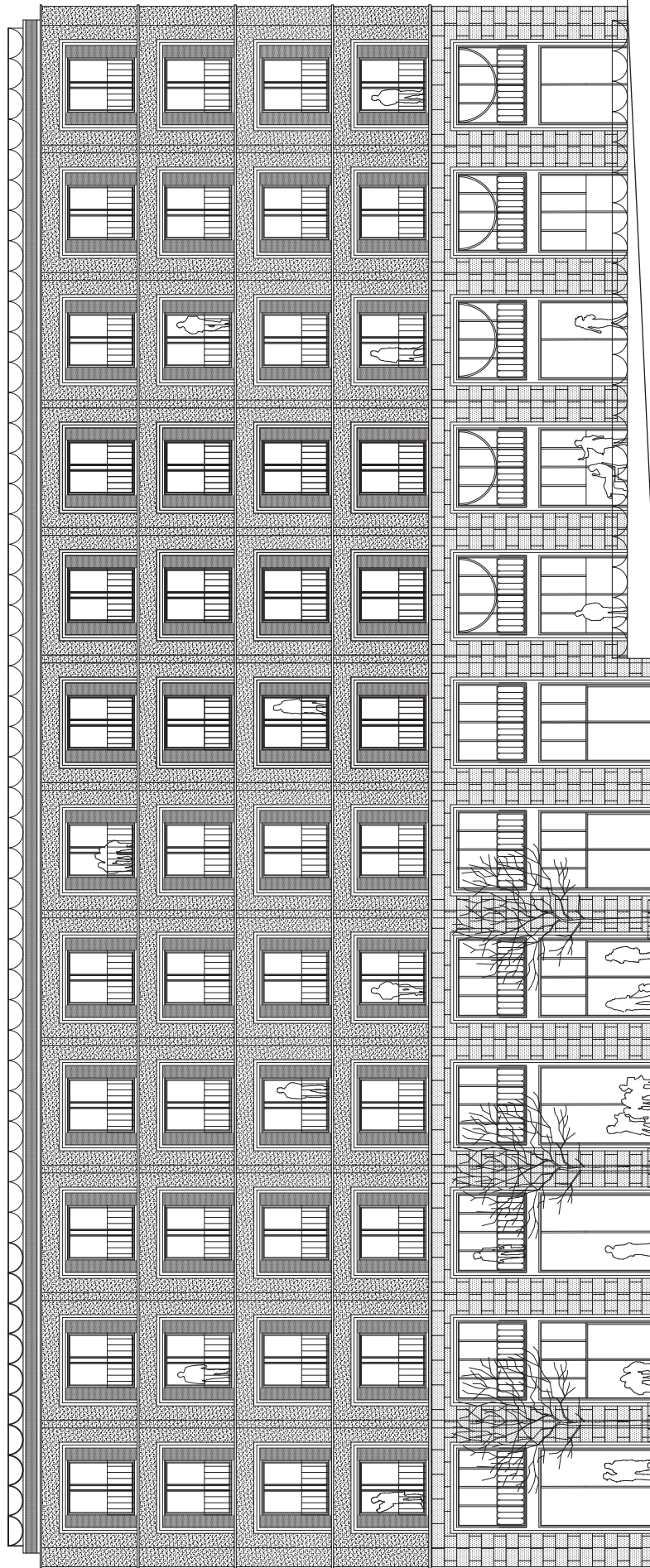
The facade is largely inspired by the classicism present on the site. However, instead of brick and/or stucco, I investigate the possibilities of using concrete elements but still reach a fine and rich detailing and materiality by working with depth, shading, geometry and pigments.

Combining industrial production and rational and economical advantages of concrete with a nice and lively (some might say friendly) surface character is indeed, I think, an interesting but challenging task which I (to some extent) investigated in the project.

By creating a niche where the concrete elements meet I have the chance to hide the connection points, (except if you know where to look and stand close to the facade)

By using two pigments with different surface treatment (beige-yellow stucco-ish surface) and grey polished (more like stone) surface, the face gets a play and character at close distance and create nice shadows and reflections. At a distance, I wanted to give the building something that related even more to the art-deco, and 1920-classicism but also to the contemporary postmodern tendencies of today.

Inspired by the geometry in the surrounding buildings (especially the art-museum and the city theatre at Gøttrupsgade) as well as architects such as Olgia and Thom Videgård, I investigated different geometries and in the end, an interpretation of the arc and the decorative wreath found in 1920s architecture get cast for the public floors to differ them from the private floors. (yellow). Furthermore, the ground floor and first floor facades (grey) are polished and use limestone particles in the concrete to mimic natural stone. It would also be possible to cover the public levels with light grey limestone.



Elevation North-West 1:200

TIME SPACE MODEL

By showcasing some of the possible actions and changes within one apartment over a 50 year period and with one person in focus, the adaptability of the generic rooms is highlighted and evaluated.

The system, except the room size and proportion, largely depends on the shaft positioning, elevated floor, possibility for an internal communication zone and different stages of opening or blocking door openings.

On the regular floor plan, further options such as student corridors, even bigger offices and small galleries are showcased.

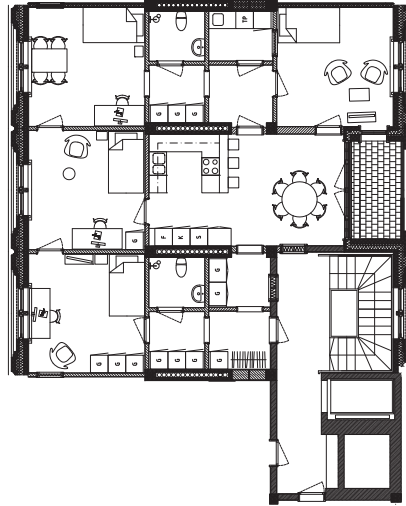
The door openings can be sealed using different methods depending on the time perspective and level of permanence wished to plan for:

- two doors (to lock separately from either side)
- two locked doors with insulation and boards inbetween them.

- removal of door blade and boards with stud and insulation between. Nice wooden board (like door frame) as surface.

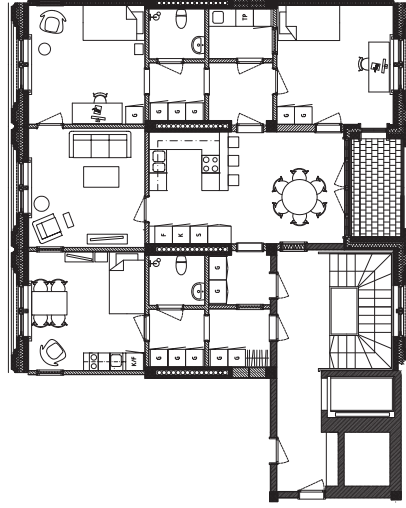
- removal of whole doorframe and insertion of studs, boards and insulation. Fiber-cement boards with stucco as surface. repainted. No visual interruption.

- removal of door frame and a built up (using leca) new division which is then surfaced with stucco. Repainted room. No visual interruption.



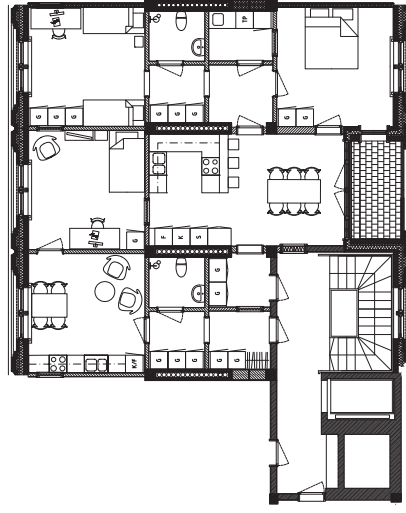
1. Year 1 Collective Living 120 m²

Katja is seven years old and lives with her father Lars and his two friends. They all have one room each and share the big kitchen and balcony as social space.



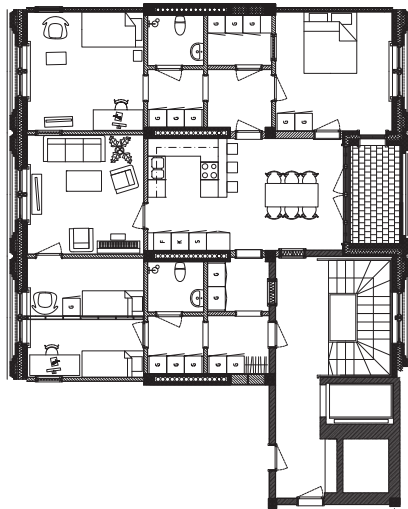
2. Year 12 Collective Living/Student Apartment
92 m² + 28 m²

Katja wants to move to her own apartment and by installing a small kitchen and arrange new door openings it's possible to turn the big apartment into a smaller one and a mid size one. One of Lars's friends move out.



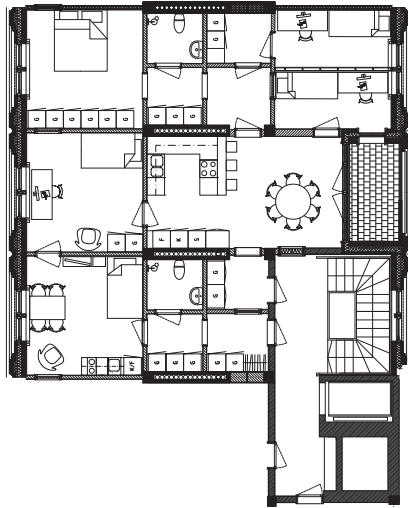
3. Year 20 Cross Generation Two apartments
76 m² + 44 m²

Katja meets Glenn and they soon get twins. They have difficulties finding an apartment. Katja's father already lives alone in the big apartment so they decide to switch but expanding the smaller one aswell. The children share a bedroom and the kitchen is used as social space.



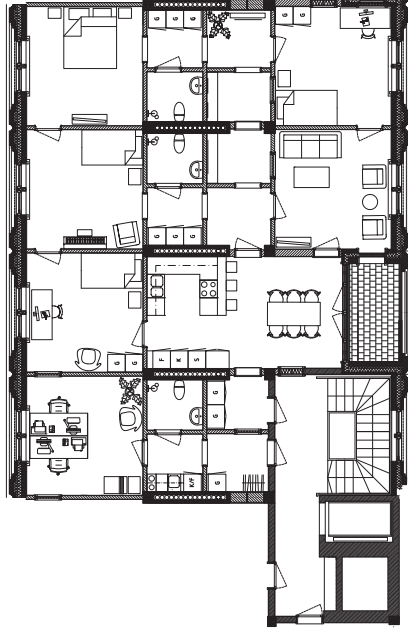
4. Year 25 Family with kids. 120 m²

After a few years, Lars gets the possibility to move and Katja and Glenn get one more child. By dividing one room into two small ones all children can get their own bedroom while still having a living room for everyone to share.



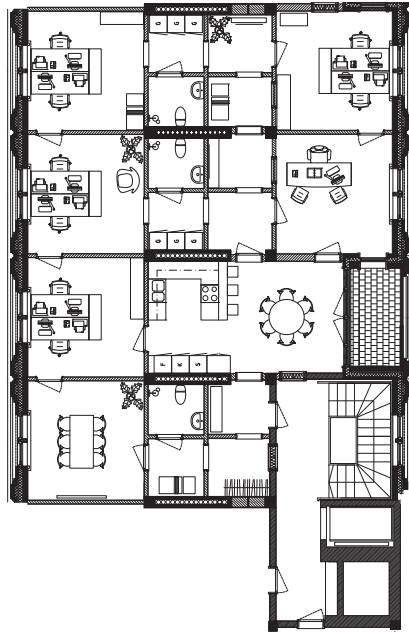
5. Year 35 Parents living separately. 28m² + 16 m² + 76 m²

Katja and Glenn decide to divorce. The two older children have moved out but the youngest remains and wishes to spend time with both mother and father, who have maintained a good relationship. By using new door openings and blocking old ones two apartments are created with a child's room inbetween. By using two doors that can be locked from both ends the privacy level is sufficient for all parts. In a while, Katja meets Roger who brings his two sons and moves into the apartment. Again, a room is divided into two small ones that both lead to neutral spaces.



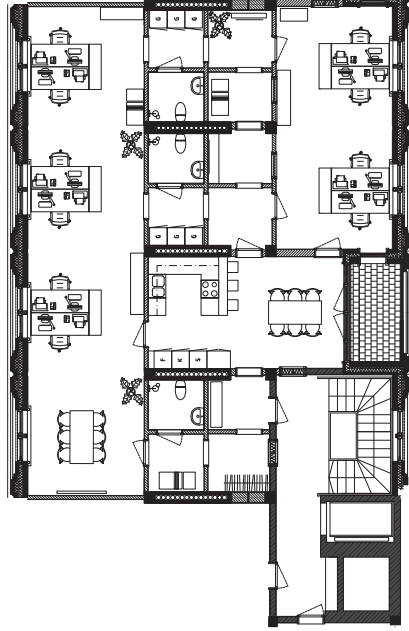
6. Year 40 Small office and big apartment 28m² + 136 m²

Glenn meets a new wife and moves abroad. At the same time, Katja and Roger get the possibility to expand their apartment by incorporating a part of the neighbouring one. They don't hesitate. Since they already started a small company together, they decide to make a small office out of Glenn's former apartment. They also open up the axiality and enfilades between the rooms and get a very big and light apartment for themselves and their three kids.



7. Year 50 Big office 164 m²

When their kids have moved out, Katja and Glenn decide to leave the city and move to the countryside. At the same time, their company has expanded and now has 7 employees. They therefore decide to move the company into the former apartment of theirs. They barely have to make any changes at all. Just change the furnishings and minor electrical adjustments. Close to the entrance, a meeting room is situated in a bit more laid back setting. The kitchen and balcony area works as room for informal meeting and lunch/coffee breaks. Next to the break area, an administrative room is situated and the other rooms host 2 big or 3 small workstations each with supportive functions such as shelves and printers.



8. Year 60 Big office 164 m²

After another 10 years, the organization of the office changes and the floor plan layout adapts to it. In this case, several walls are torn down, creating more of an office landscape.



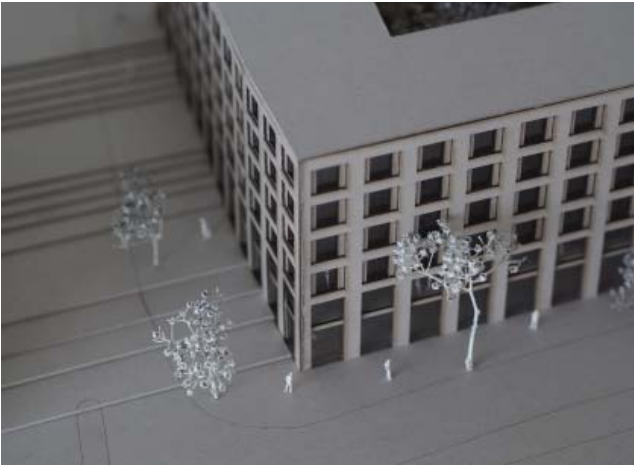
Detail Section / Facade 1:100



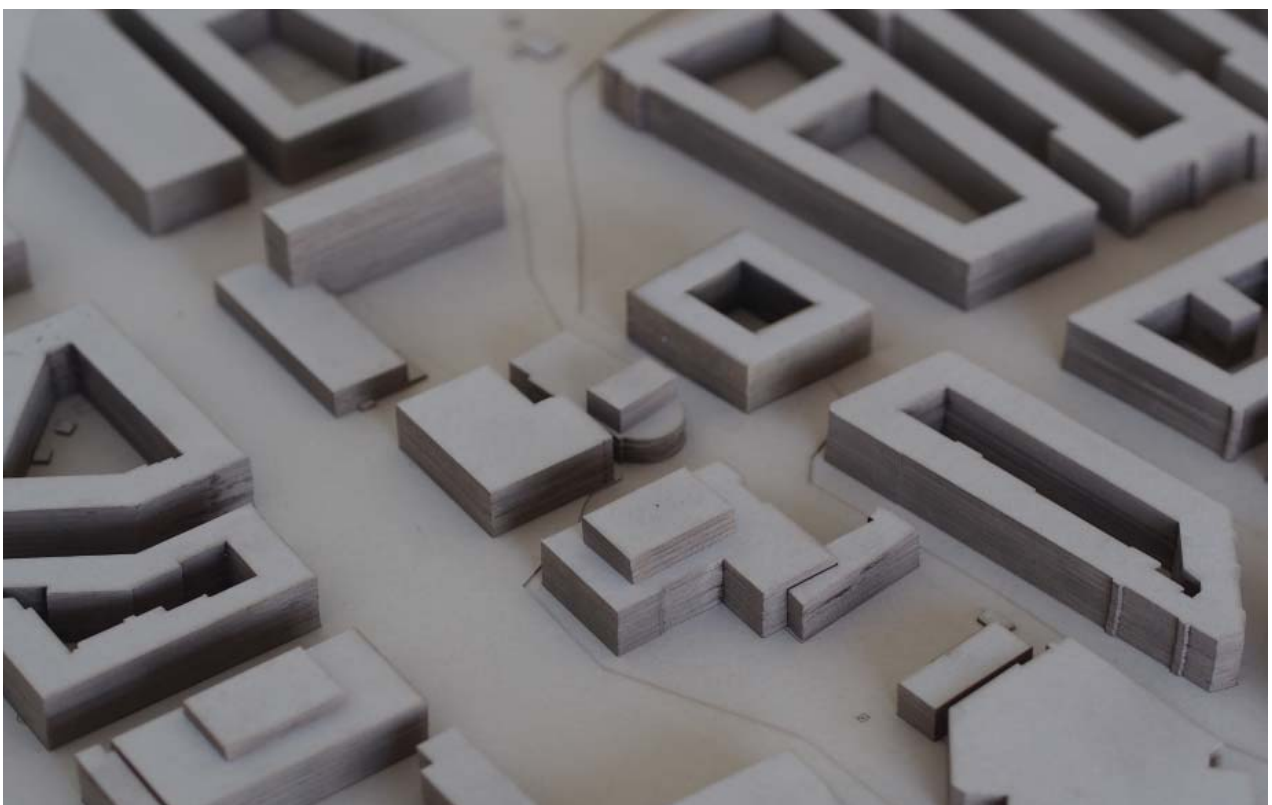
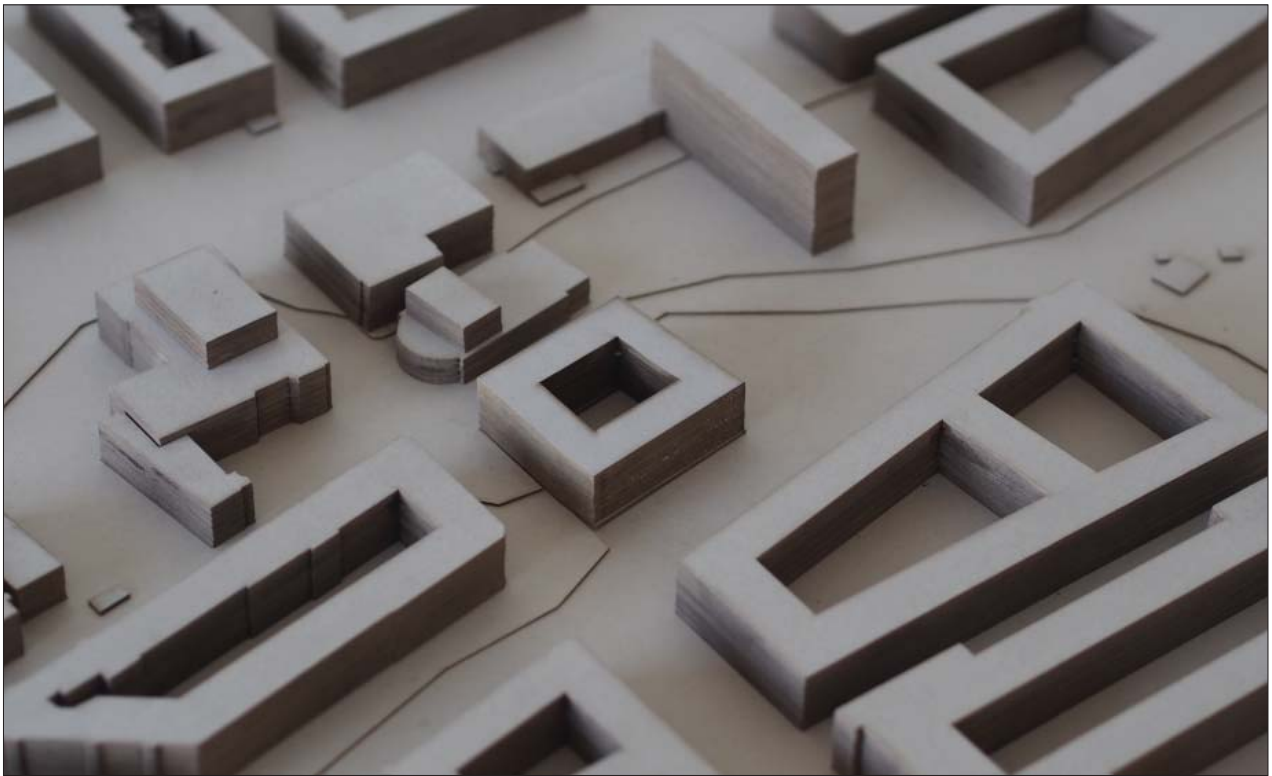


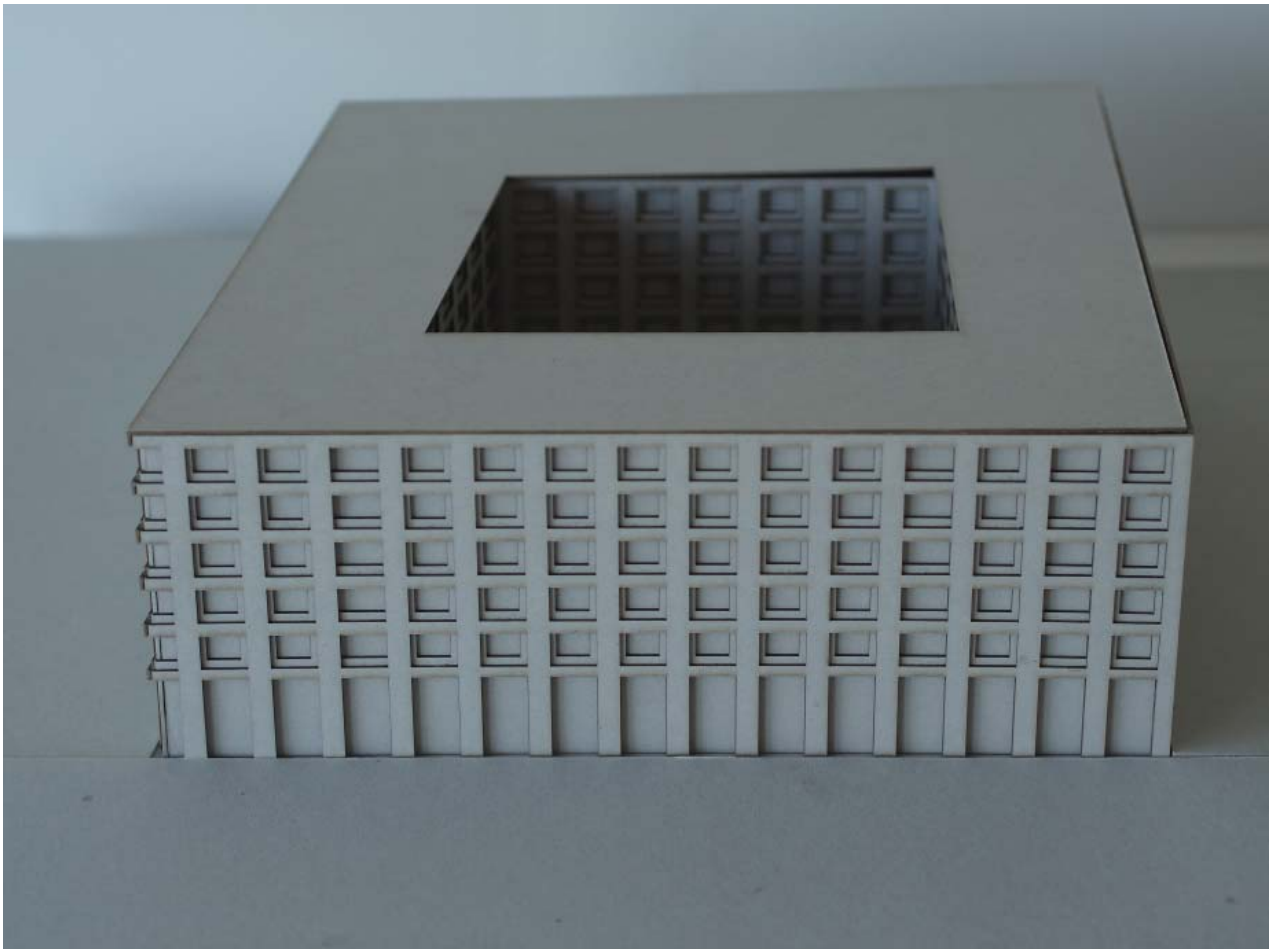
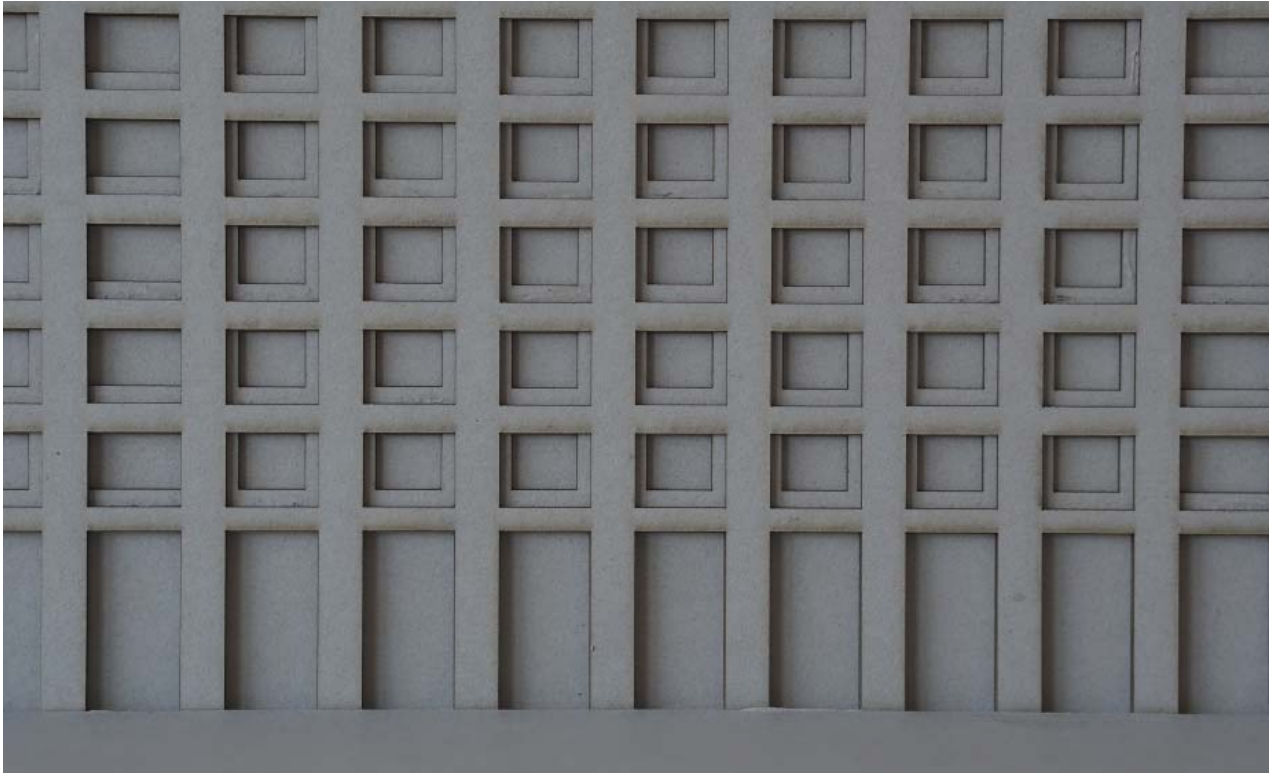


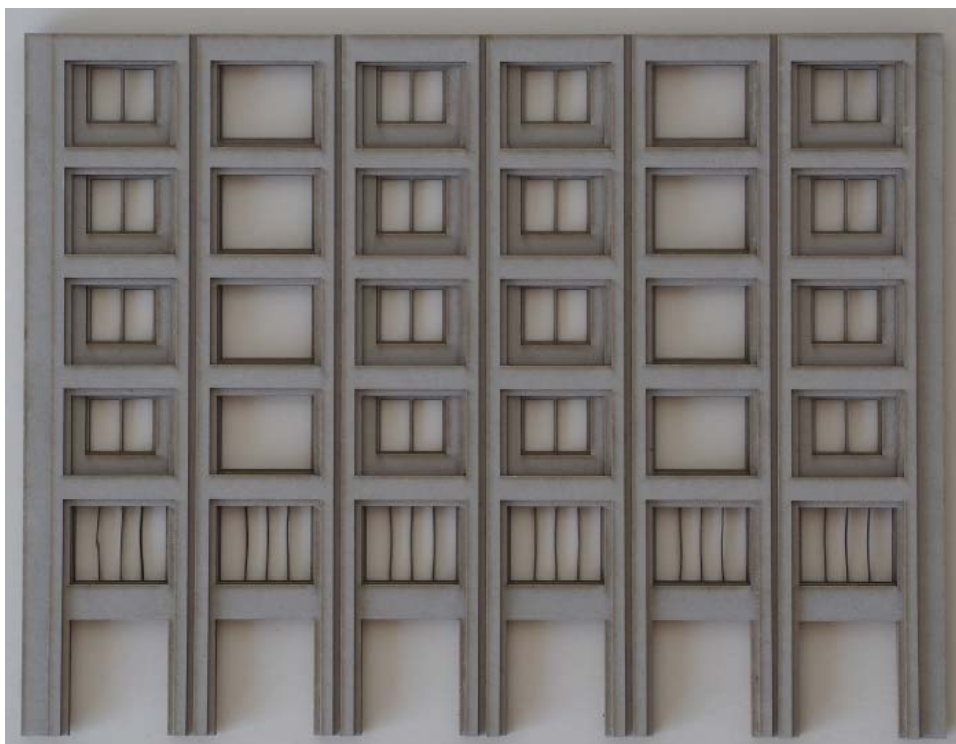
Model Photos

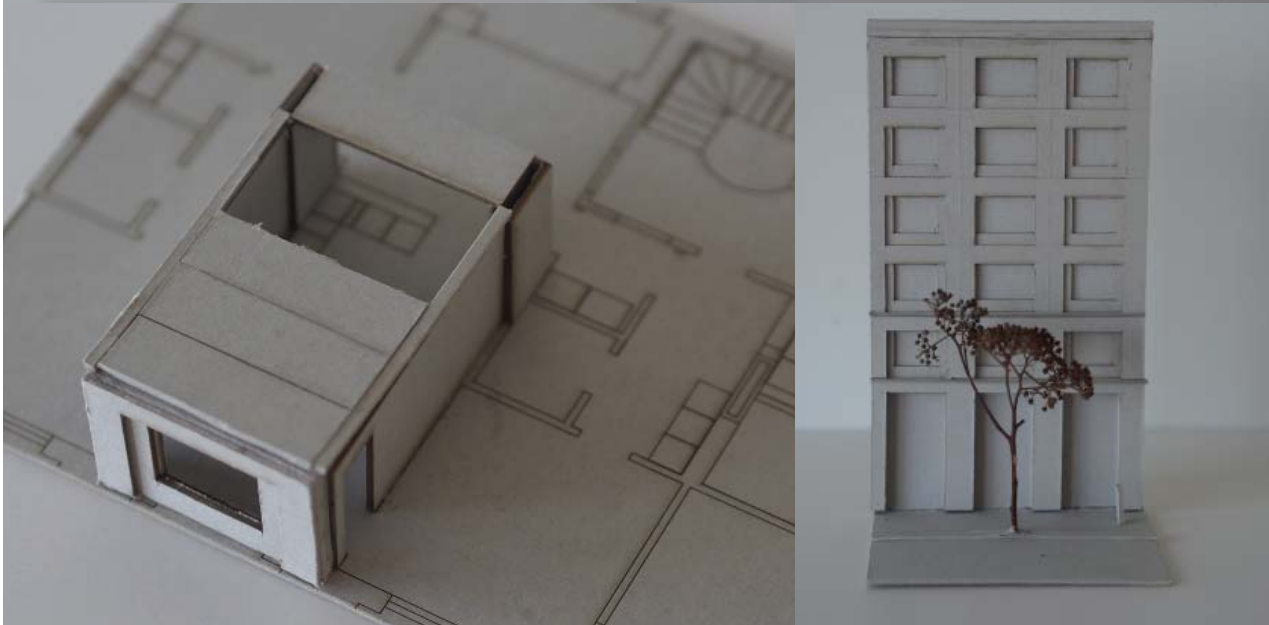
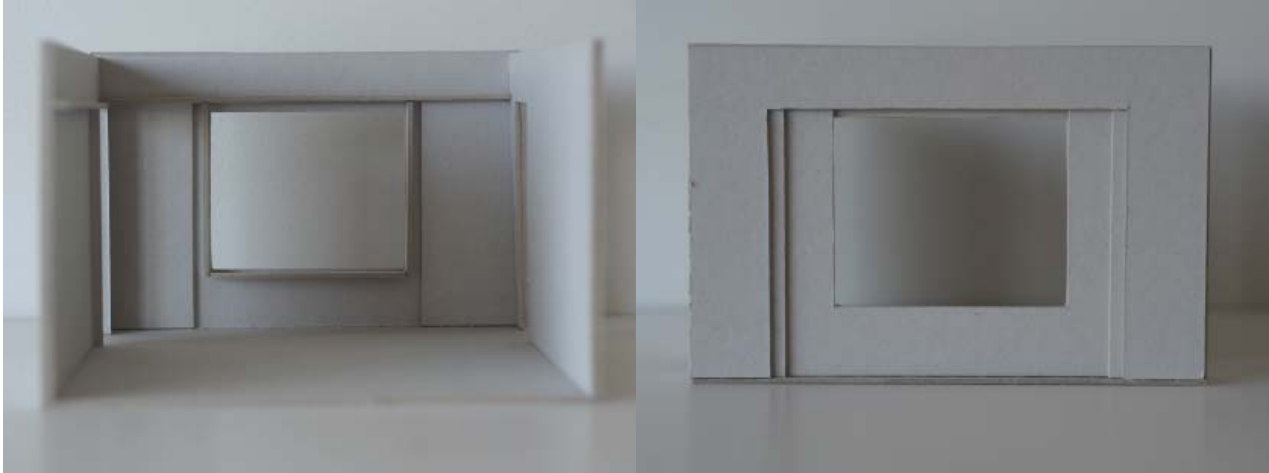












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Final Words

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Gothenburg, Sweden, June 14th 2016

Fredrik Söderstedt

