

Linné Library

A place for the physical book in a digital world



Chalmers School of Architecture
Department of Architecture and Civil Engineering

By: Mattias Jonsson
Supervisor: Mikael Ekegren
Examiner: Björn Gross



CHALMERS
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Chalmers School of Architecture
Department of Architecture and Civil Engineering
Architecture and urban design
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Abstract

In our ever changing and fast-moving society, stress is an increasing problem. One can ask the question why stress is an increasing problem and why are we living in a pace that is so fast that a lot of us cannot keep up. When we have everything that we need materialistically why can't we aim at having all that we need spiritually and in our way of living. If you can't relax and read a book and absorb that in a natural way, you might be too stressed. If you can't relax when you read, paint, talk with your friends, walk in the forest, or perform any hobby for that matter you might be too stressed. We create our society for us humans yet somehow, we live in a pace that's not suited for humans.

This thesis is an investigation, a discussion about reading and the role of the physical book in a digital world, but also and maybe more about how to live and how to live in a pace that's suitable for us. The result is a proposal for a new library in Linnéstaden in Gothenburg.

A library that's a barrier from the high pace city living. When you enter this library, you should feel relaxed and be align with your pace of living. Forgetting about schedules and time so you can open your mind and absorb knowledge from all the great authors that's been living before us.

It's a sustainable building in the manner that it's a robust building. It has the intent of standing here for a long time so it will use common and proven building materials to their full extent such as brick, wood, and concrete.

The human brain will probably not change fundamentally over some decades, neither should this library.

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Student background



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Master: Architecture and Urban Design, Chalmers 2021-2022

Studios taken:

Future visions for healthcare 1: Housing for seniors, autumn 2019

Future visions for healthcare 2: Housing inventions, spring 2020

Future visions for healthcare 3: Healthcare architecture, autumn 2021

Introduction

Aim

The aim of this thesis is to question and investigate if there is a role for the physical book in a digital world. To create a realistic proposal for a library in Linnéstaden in line with these investigations and then delve into this topic further.

It also aims at creating a modern building that fits well into its surroundings, today and maybe forever.

Thesis question

"Can architecture make us slow down, stop, reflect and stay?"

Method

This thesis and project will be approached as a research-by-design project.

Interviews with library employees in Gothenburg will be conducted and existing libraries will be analyzed to create a realistic and well-functioning building.

Each design choice will be thoroughly investigated and discussed with tutors, family, friends, fellow studio members and architecture students. An iterative process so each design choice can be challenged multiple times and therefore make the best decision and create a well worked thru building.

Delimitations

The plot nearby Hagabion was chosen briefly and quickly in a discussion with the tutors. Why? It's well known by me and my tutors so no complex and taxing site analyses are needed to be done before the design work can begin, it's close so site visits can be done within the day, and it has clear boundaries. The building and architectural qualities is in focus.

This thesis and project deals with environmental impact in the manner that it's a robust building which means that it will be able to stand the test of time. A robust building that stands for a long time addresses sustainability in the way that the building materials gets fully used and utilized and production and maintenance of these materials is minimized.

The subject of stress is very large and spans over many fields, this project can in no manner solve or give answers to stress related problems, but it can be a foundation for further investigation and discussions.

Background

Information overload

Today around 6,6 billion people use a smartphone, this equals to around 83% of the world's population (Statista, 2022). In the United States people on average spend around 4,5 hours a day on a phone (Statista, 2022). The exact number is not what's important to discuss in this thesis, what's important and interesting is that we all can agree that these numbers are huge. Looking back some 30 years ago most people didn't even have a mobile phone. Now in developed countries "everyone" has a smartphone and use them daily. We get our news on them, we watch movies, short clips, we send emails and so on.

30 years, this is just one generation. This has huge effects on us in a lot of manners, culturally, mentally, socially etcetera and is debated daily. For example, just the presence of one's smartphone distracts the user and lower the user's working memory and fluid intelligence. (Ward et al., 2017)

Does the written word in the form of a physical book have a place in our modern world? Why? We have access to almost all the world's knowledge in our smartphones. Why ever take the time to read? This is some questions one might ask him- or herself. And this leads to the thesis main question:

"Can architecture make us slow down, stop, reflect and stay?"

Stress and concentration

Manageable short-term stress can in many cases be useful. We are biologically the same as we were when we lived out in the savannah. Stress was a useful response when we needed to get away from predatory animals as it increases adrenaline, makes us more alert and focused. The same stress reaction activates in us today when we have too much to do in our work, if we have relational issues, social issues, economic issues and so on. Being exposed to stress for a long time can have detrimental effects on us and it might lead to fatigue or even a myocardial infarction.

Some among many symptoms of stress is lack of concentration, bad memory, your body gets tense and hurts, you have a hard time winding down and you sleep worse. (Vårdguiden, 2022)

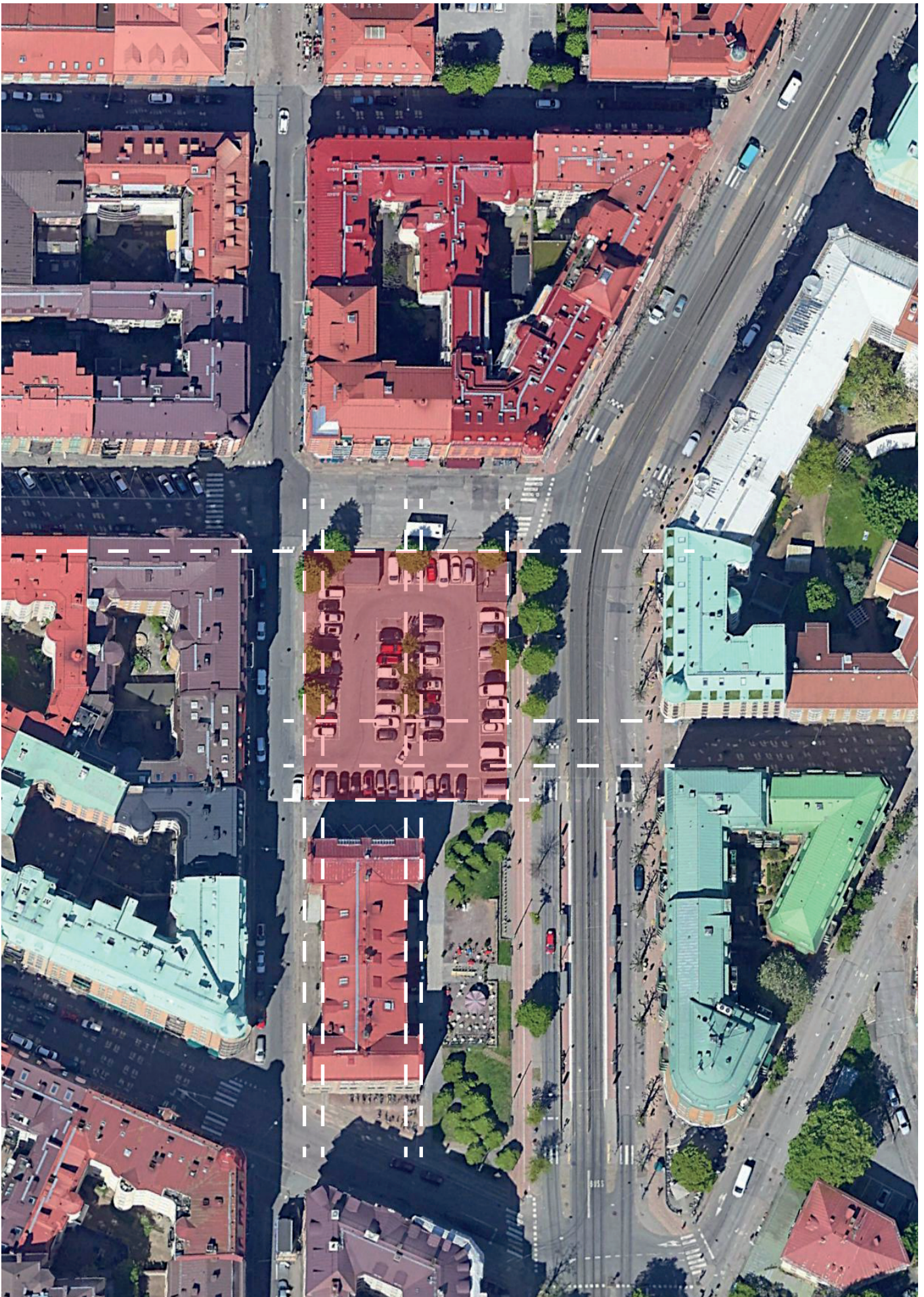
If you have enjoyed reading before and now you can't, reading can in a manner be seen as litmus test of how stressed you are. If you are too stressed, then you can't absorb and remember what you have read. In this manner we can make a comparison between somebody that trains to be a professional athlete or somebody that aims at having an academic profession. If the academic is so stressed that he or she can't remember what he or she has read for one month, that's the same as the athlete being injured and away from training for one month. Therefore, being relaxed and reading in a relaxed environment is crucial for us.

Process

Site analysis



The site, Linné (Google Earth, 2022)



The plots boundary marked with relevant sightlines (Google Earth, 2022)

Linnégatan



Linnégatan from Järntorget



Linnégatan from Linnéplatsen



View of plot



View of plot



View of plot

Nordhemsgatan

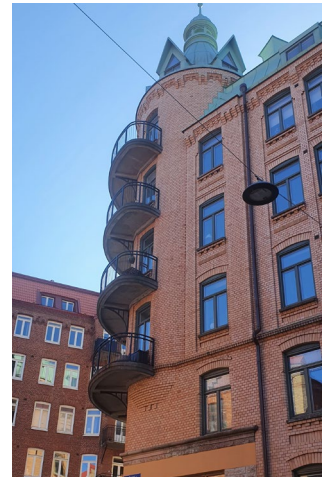


Neighbouring buildings

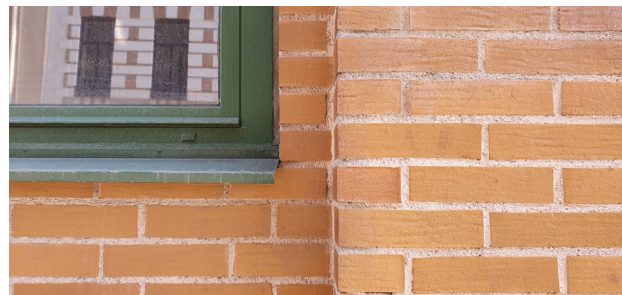
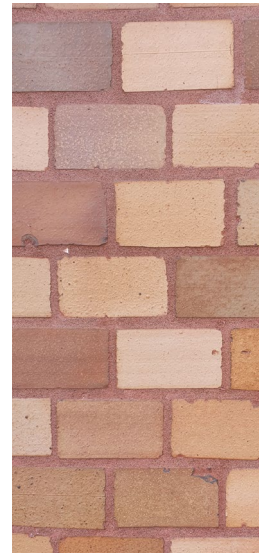
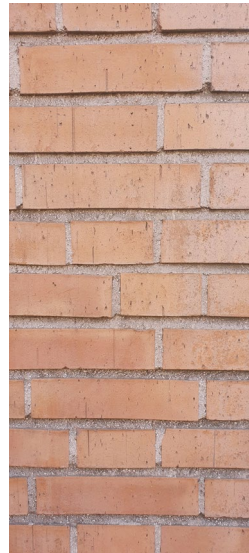
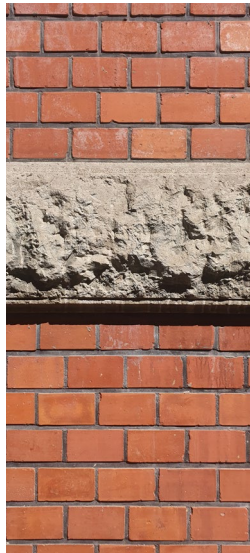
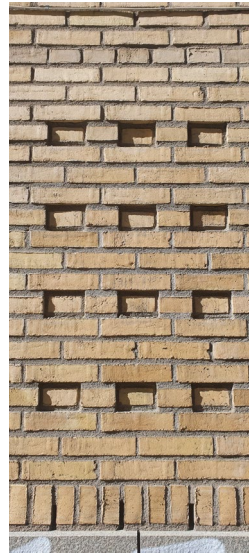
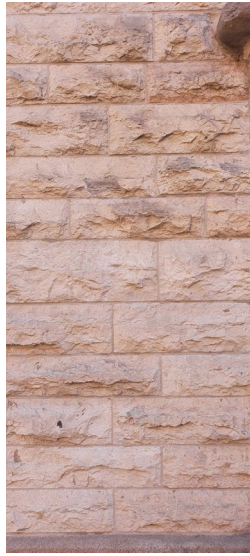


Viktoriahuset

Surrounding buildings



Material and details



Hagabion/Viktoriahuset

Slottskogen were constructed 1875 and by that time Linnégatan was a stream (Djupedalsbäck-en) which were culverted in 1879. The stone buildings along Linnégatan were erected during the 1800s last two decades and Viktoriahuset were the first building erected along this road and the first stone house in the area. It is drawn by architect Bror Viktor Adler who took his education at Chalmers handicraft school between September 1863-1868.

Viktoriahuset was first used as a school with intended use for 744 school children in various ages. Due to the industrialization, there was a large population increase towards the cities, they expanded and went thru huge changes. This created a big need for more school buildings. Viktoriahuset ceased being a school in 1975 and in 1981 it was rebuilt into association premises and into a cinema - Hagabion (Haga Cinema). Today it houses around twenty-five ideal associations which all work with questions around culture, environment peace and solidarity. (Viktoriahuset, 2022)



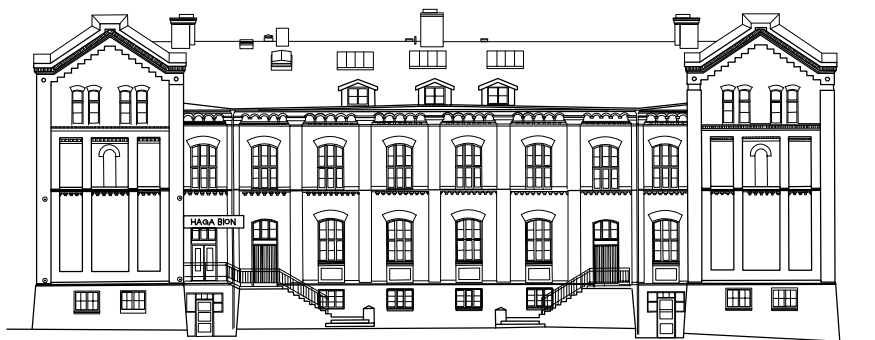




Future connection to Linné Library

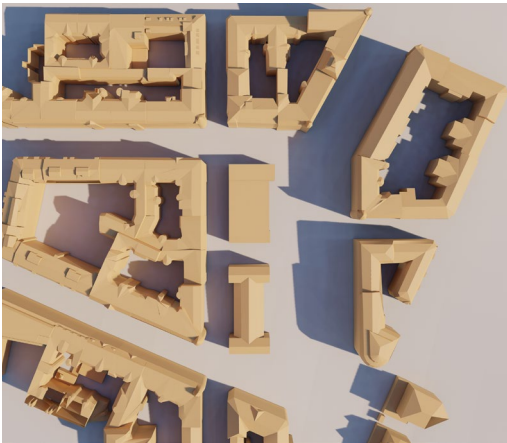


Gable towards Linné Library

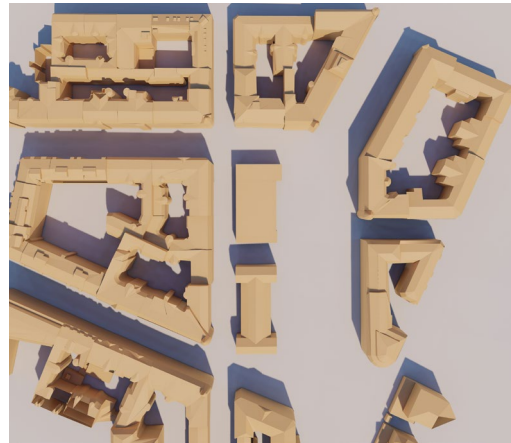


Viktoriahuset is a symmetric building in plan and façade. It is a two story building not counting basement and attic. The walls are made out of red bricks built upon a foundation of gray stone. Repetitive and symmetrically placed pilasters create a strong horizontal expression of the building. The brick walls resting on the foundation in combination with the symmetry and horizontal expression all together creates a very heavy and sturdy expression of the building. Viktoriahuset is listed in a conservation program for culturally and historically valuable buildings in Gothenburg. (Wikipedia, 2022)

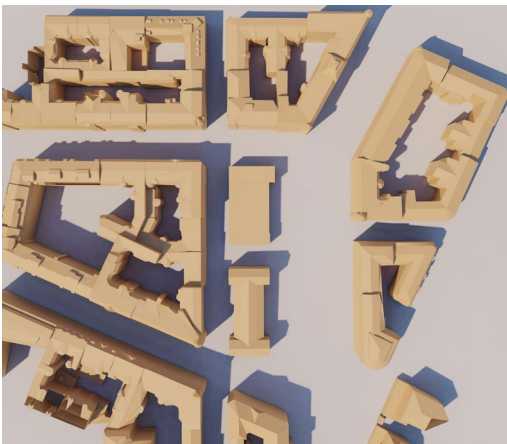
Daylight analysis



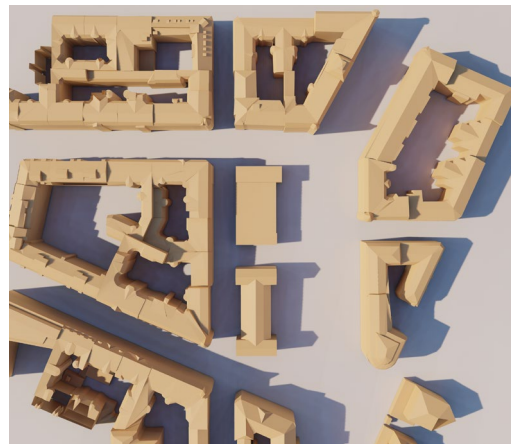
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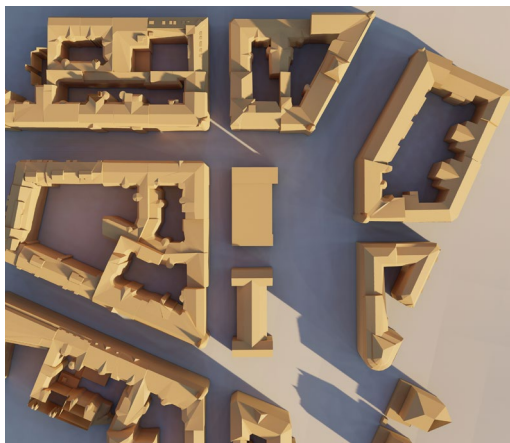
Summer solstice 12:00



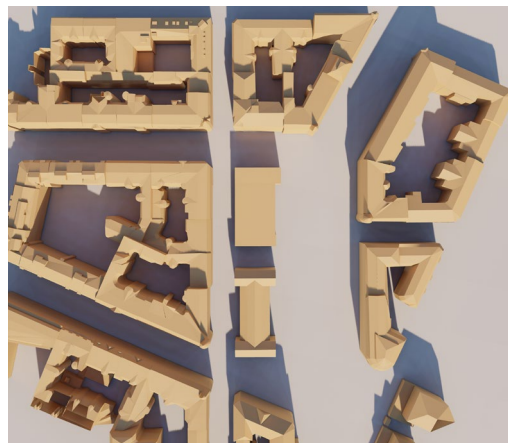
Summer solstice 15:00



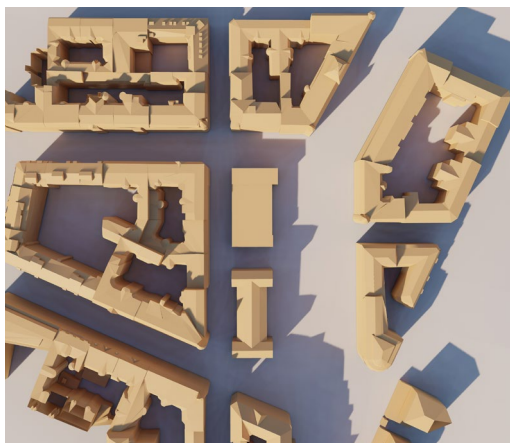
Summer solstice 17:00



Autumnal equinox 09:00



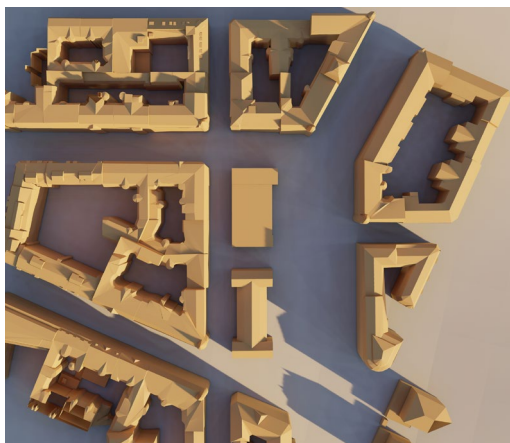
Autumnal equinox 12:00



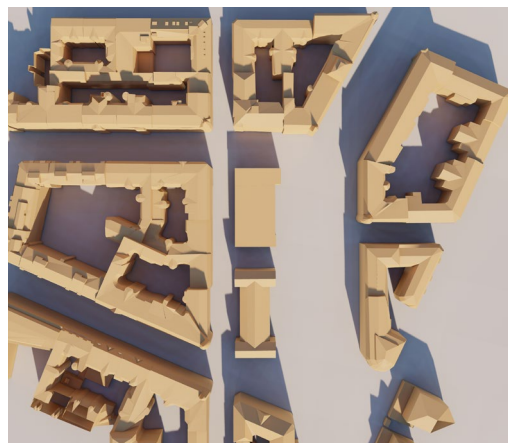
Autumnal equinox 15:00



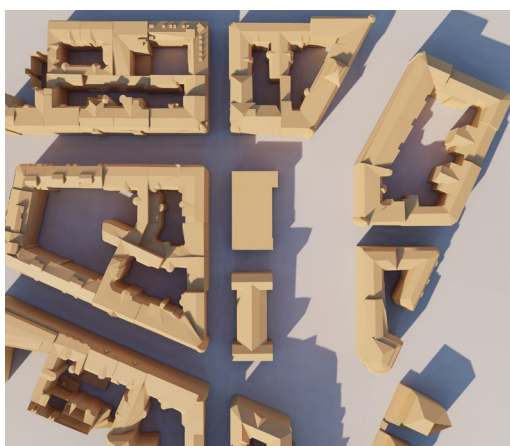
Autumnal equinox 17:00



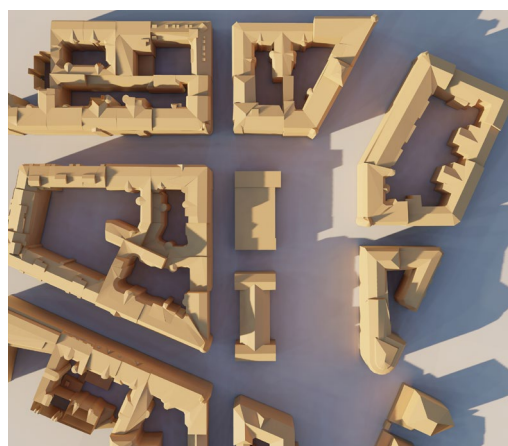
Spring equinox 09:00



Spring equinox 12:00

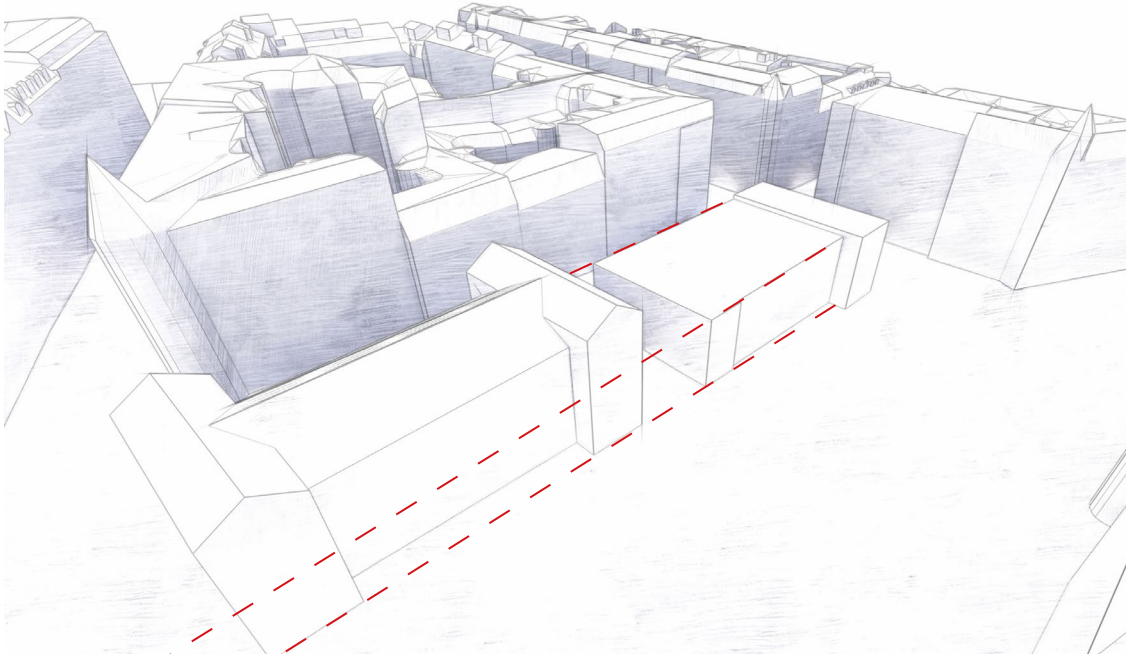


Spring equinox 15:00

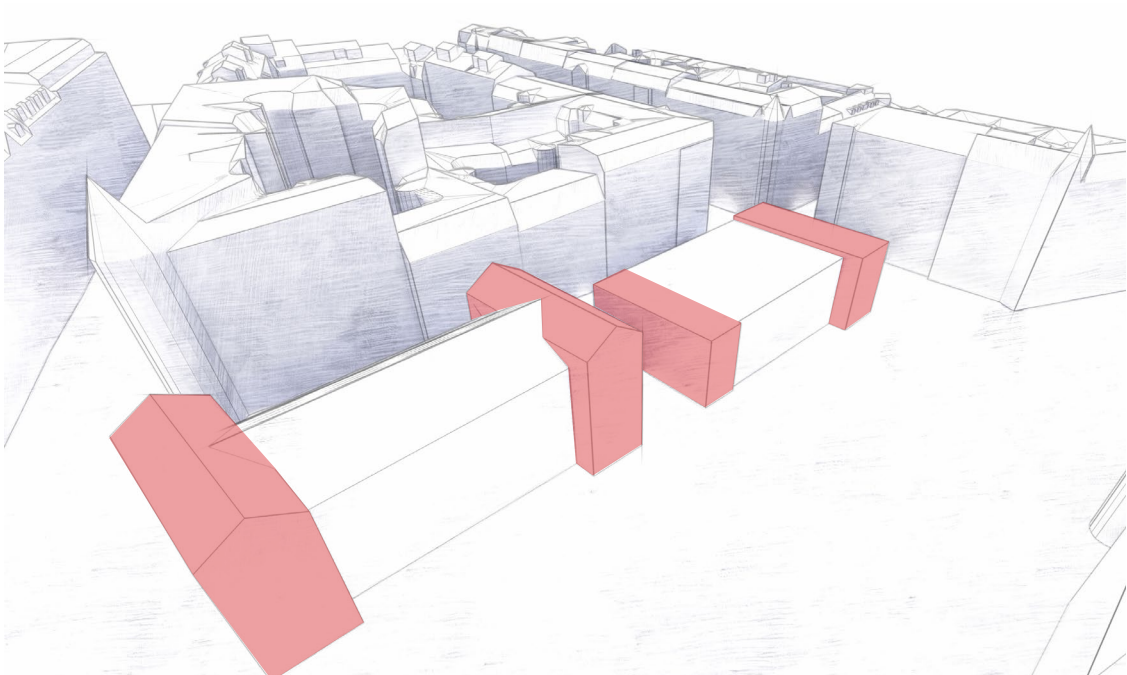


Spring equinox 17:00

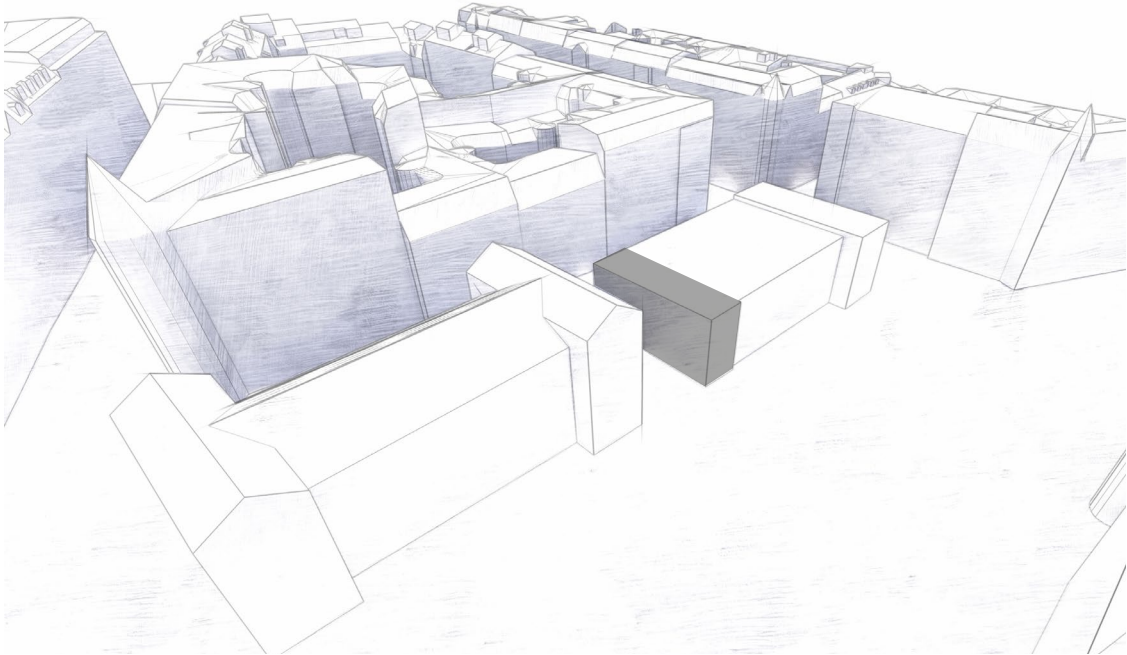
Design principle - shape



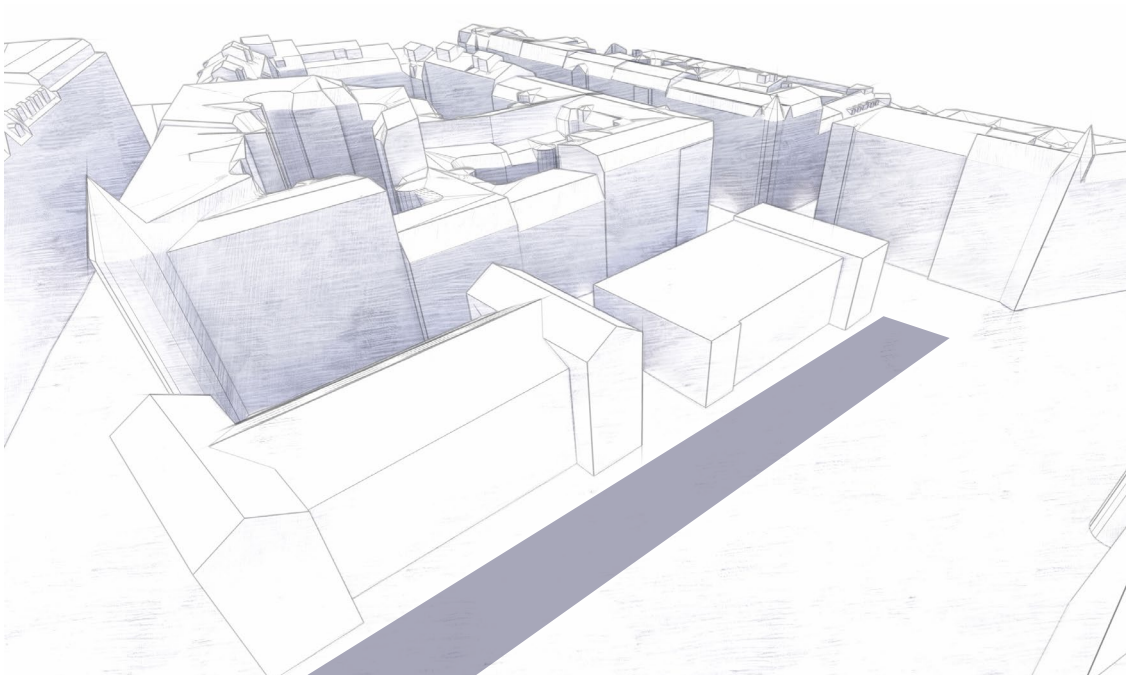
Same facade level



Similar geometry

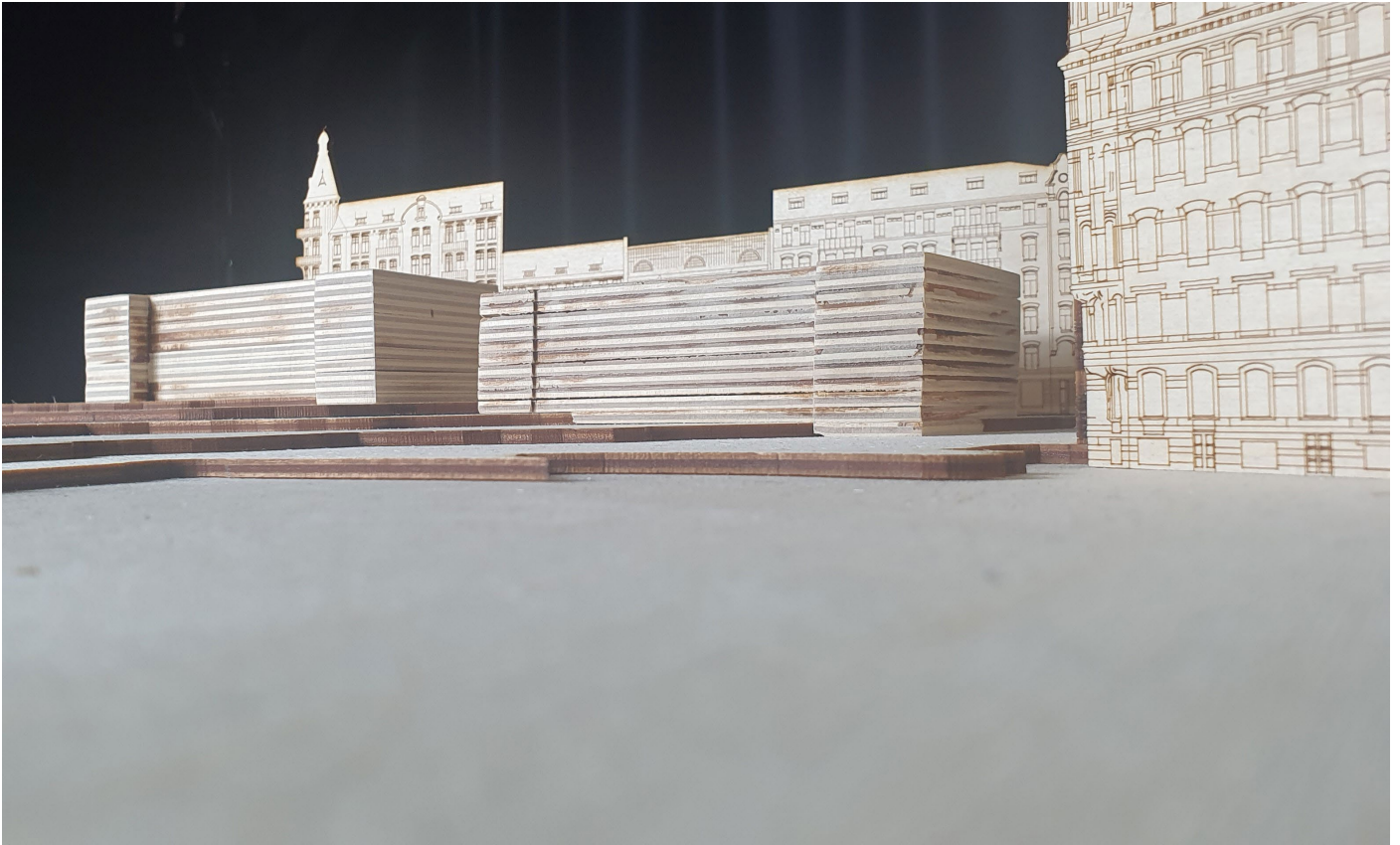


Functional rooms in the buildings darkest area



Common square for Viktoriahuset and Linné Library

Model studies



View from Linnégatan



View from Linnégatan



Center reading hall



Center reading hall

References



Gothenburg City Library with its large atrium and lounge seen at the bottom
Authors own photo

Gothenburg City Library

Gothenburg's main library situated at Götaplatsen, originally in a building built in 1967, renovated and extended 2014. It is inviting, open and well involved in the urban space. It's aimed at being placed well in its context with its neighbors the city theatre, the concert hall, and the art museum. It has various departments - for example a children's area, an exhibition hall, a lounge etcetera (Erseus, 2019).

The plan is very open and light, you are surrounded by bookshelves and have various seating options well spread out over the library.

The variety of seating options, the openness of the library with great views and the atrium with the lounge have been very inspiring.



Stockholm City Library
Authors own photo

Stockholm City Library

Stockholm City Library is an iconic building which opened in 1928, drawn by Gunnar Asplund. It has an easy yet beautiful and monumental shape. The center reading hall has the shape of a cylinder and it's surrounded by smaller reading rooms and light yards (Wikipedia, 2022).

You enter the building thru a monumental center placed entrance, you see the big center hall that you reach thru the small corridor while you step up on the stairs.

The easy grammar of the building with the center hall surrounded by smaller rooms has been used as inspiration for Linné Library. This center hall might give a very monumental feel looking at images, my own observation and feel from a site visit was that it gave a more intimate feel rather than monumental thou.



(Toivanen, 2019)

Vyborg (Viipuri) City Library, Alvar Aalto

Viipuri was at the time when Aalto won the competition to design Viipuri's City library a Finnish city located near the Eastern border by the U.S.S.R. It was ceded to the Soviet Union after the Winter War of 1939-40, recaptured by Finnish troops During World War 2 and then retaken by the Soviet Union in 1944. (Britannica, 2022)

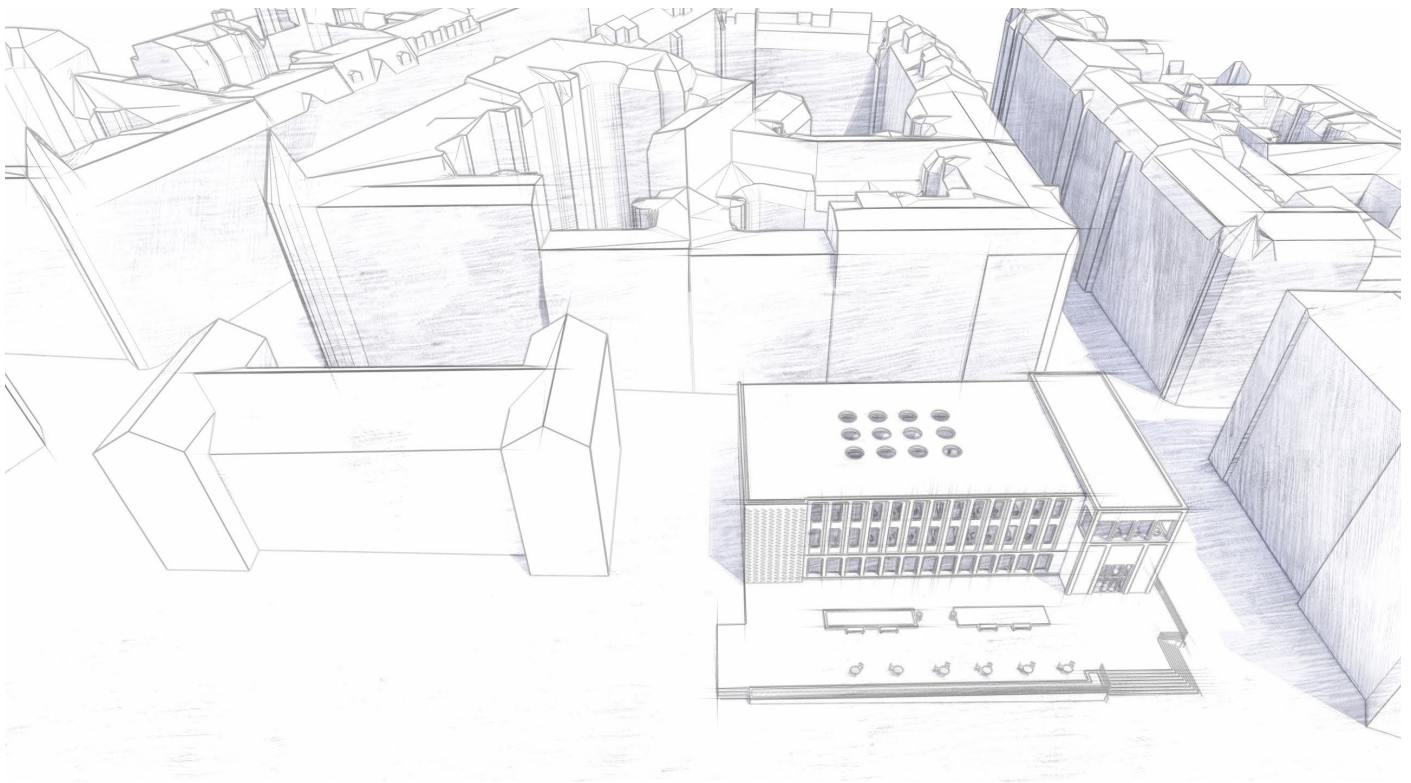
Vyborg City Library is considered a milestone in the history of modern architecture. It has some features that later became some of Aalto's characteristics of his modernist work such as a free-flowing plan, sectional spaces and undulating ceilings. The library has an inner rectangular space enclosed by pared down undecorated facades. (World Monuments Fund, 2022)

The photo illustrates a reading room with the libraries unique skylights which have been of great inspiration for Linné Library.

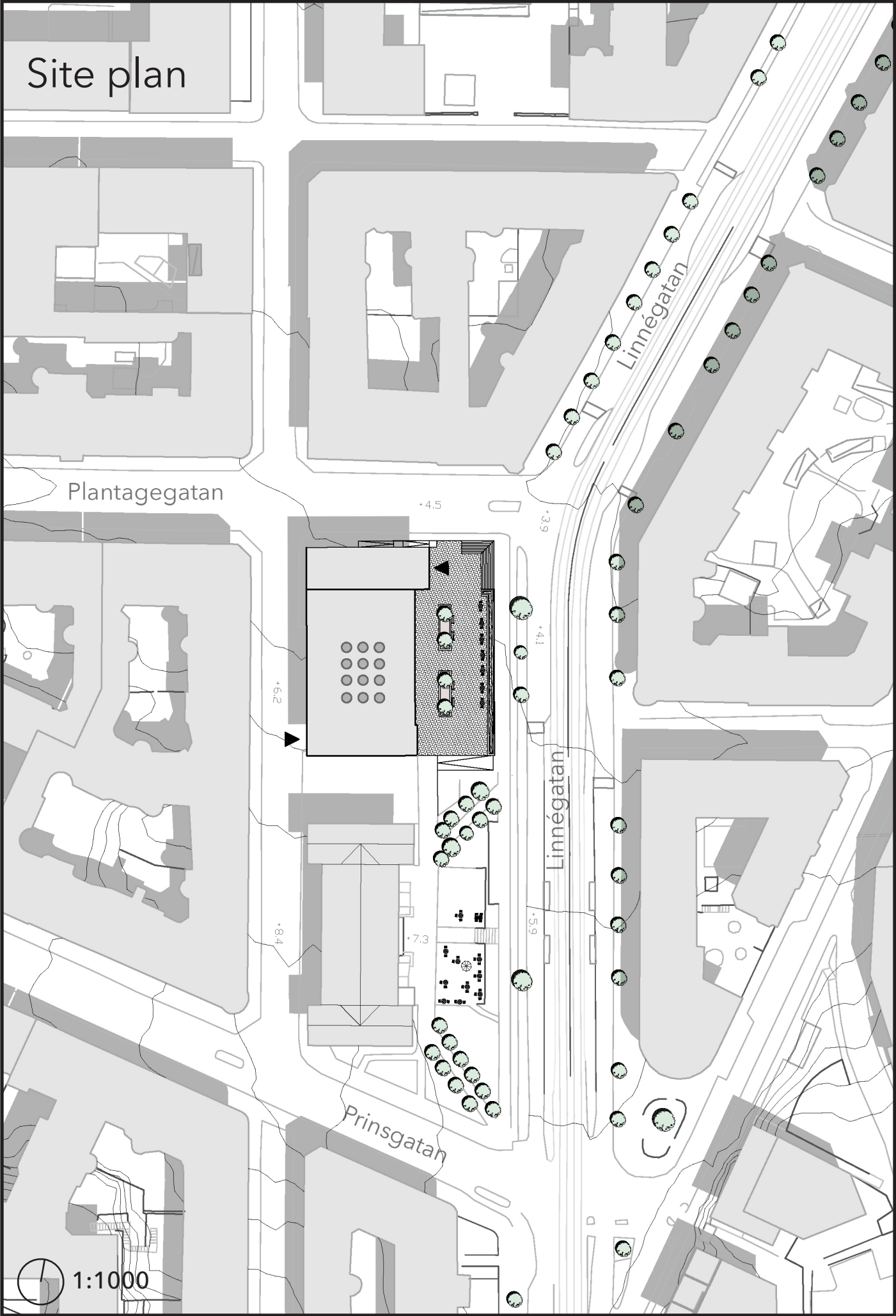
Proposal

Linné Library takes great care to its surroundings. Having a geometry that's like Viktoriahuset it naturally fills a gap in the area. Most of the surrounding buildings in the area are brick buildings so this is the natural choice for Linné Library. Viktoriahuset has a classic shape with two side ships and a strong vertical look with its many pilasters. Looking at inspiration and historical images of libraries it is common with a large reading hall that takes use of natural sunlight in combination with smaller rooms for more focused reading. This is implemented in Linné Library having an atrium in the center of the building. This serves multiple purposes as it's used to create a sense of a monumental and hence important building, it creates a beautiful room for books and a great reading experience.

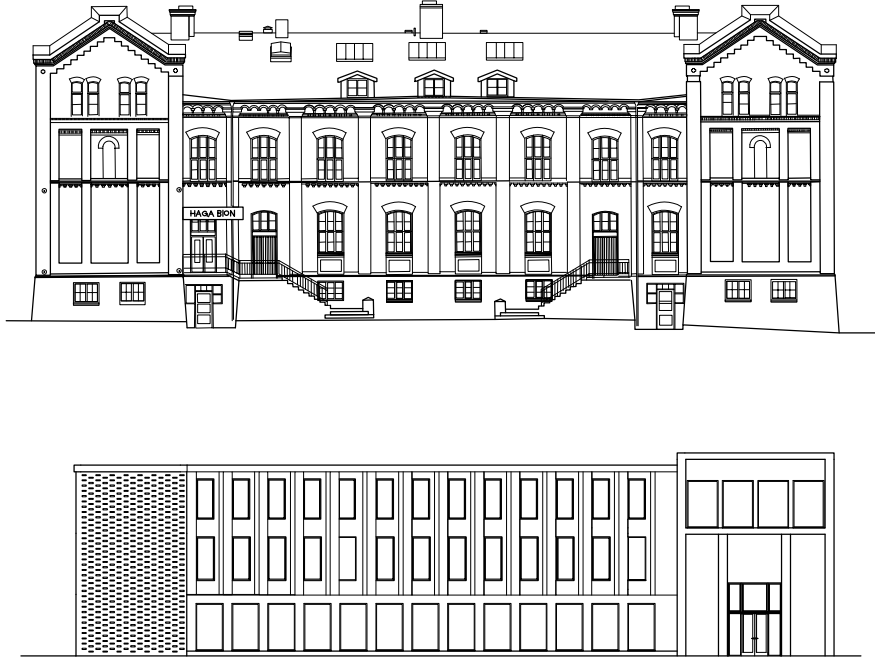
The area between Viktoriahuset and Linné Library is the only area which isn't intended to work as a road, it's obvious to fill the rooms nearest to this area with functional rooms such as delivery, staff, storage and other functional rooms.



Site plan



Design Principle - facade



A new sibling

The design of Linné Library takes most of the inspiration from the surrounding and mainly from Viktoriahuset. According to the vision this building will stand here for a long time and therefore this new building will when the years go by hopefully become a great sibling for Viktoriahuset. In this manner they shouldn't compete. There is no need for unnecessary sibling rivalry in this area when as stated this building aims at reducing stress. They don't have to be twins, but we can see similarities with strong vertical elements, horizontal elements and two wings.

Space program

Ground floor

Delivery	40 sqm
Recycling	15 sqm
Cleaning storage	5 sqm
Light yard total	317 sqm
- Reading area	44 sqm
Book lending	72 sqm
Café and light reading	72 sqm
RWC	2x 4,8 sqm
WC 1x	4,3 sqm
WC staff	3,7 sqm
Entrance hall	51 sqm
Book return.	
Book return machine room	23,5 sqm
Staff area	28,8 sqm
Staff storage	13 sqm
Reception	17 sqm
Connection hall	88 sqm

First floor

Connection hall	92 sqm
Self service	15 sqm
Youth	90 sqm
Light yard total	317 sqm
- Light yard active area	210 sqm
Reading area	81 sqm
Book lending	81,5 sqm
Staff office	28 sqm
Staff rest room	6,3 sqm
6x 1,5 sqm public toilets	9 sqm
1x public RWC	6,2 sqm
Connection hall/emergency exit	32,4 sqm
Copy room	6,4 sqm

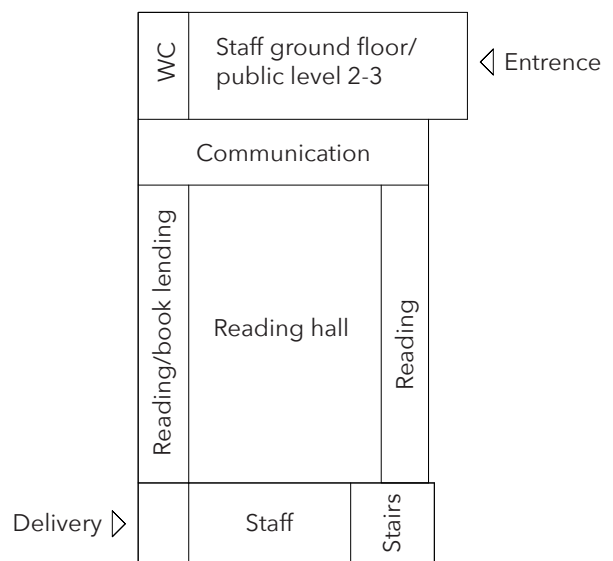
Second floor

2x staff office	8,2 sqm
Connection hall/emergency exit	32,4 sqm
Copy room	6,4 sqm
Staff storage	7,4 sqm
6x 1,5 sqm public toilets	9 sqm
Reading area	81 sqm
Book lending	81,5 sqm
Light yard total	317 sqm
- Light yard active area	174 sqm
Auditorium	71,5 sqm
Conference/reading room	71,5 sqm

Basement

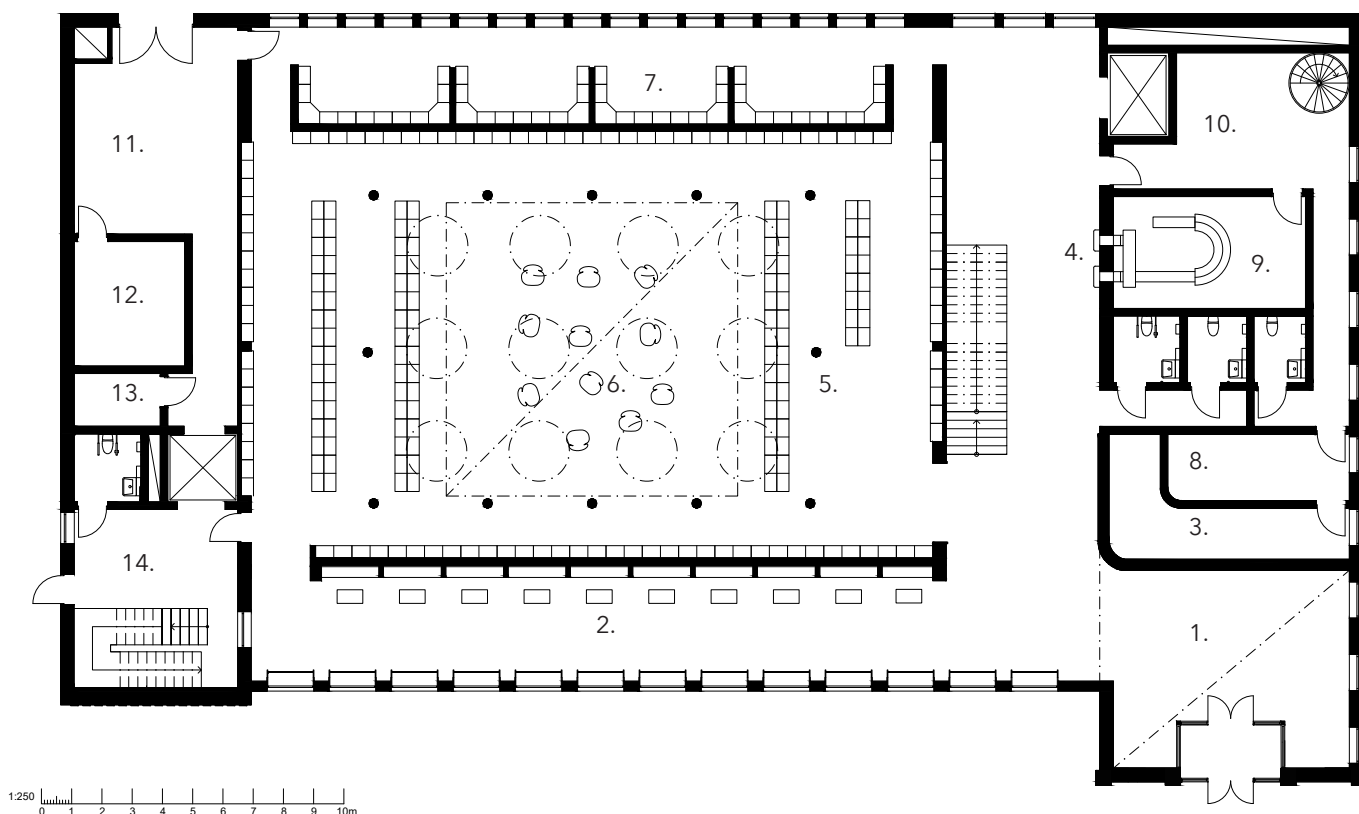
Unpacking	72,1 sqm
Furniture storage	150,7 sqm
2x Dressing rooms	82 sqm
Book archive	173 sqm
Ventilation	18,9 sqm
Technical	22,1 sqm
Power station	14,3 sqm
Connection hall/emergency exit	32,4 sqm

Total: 3204 sqm

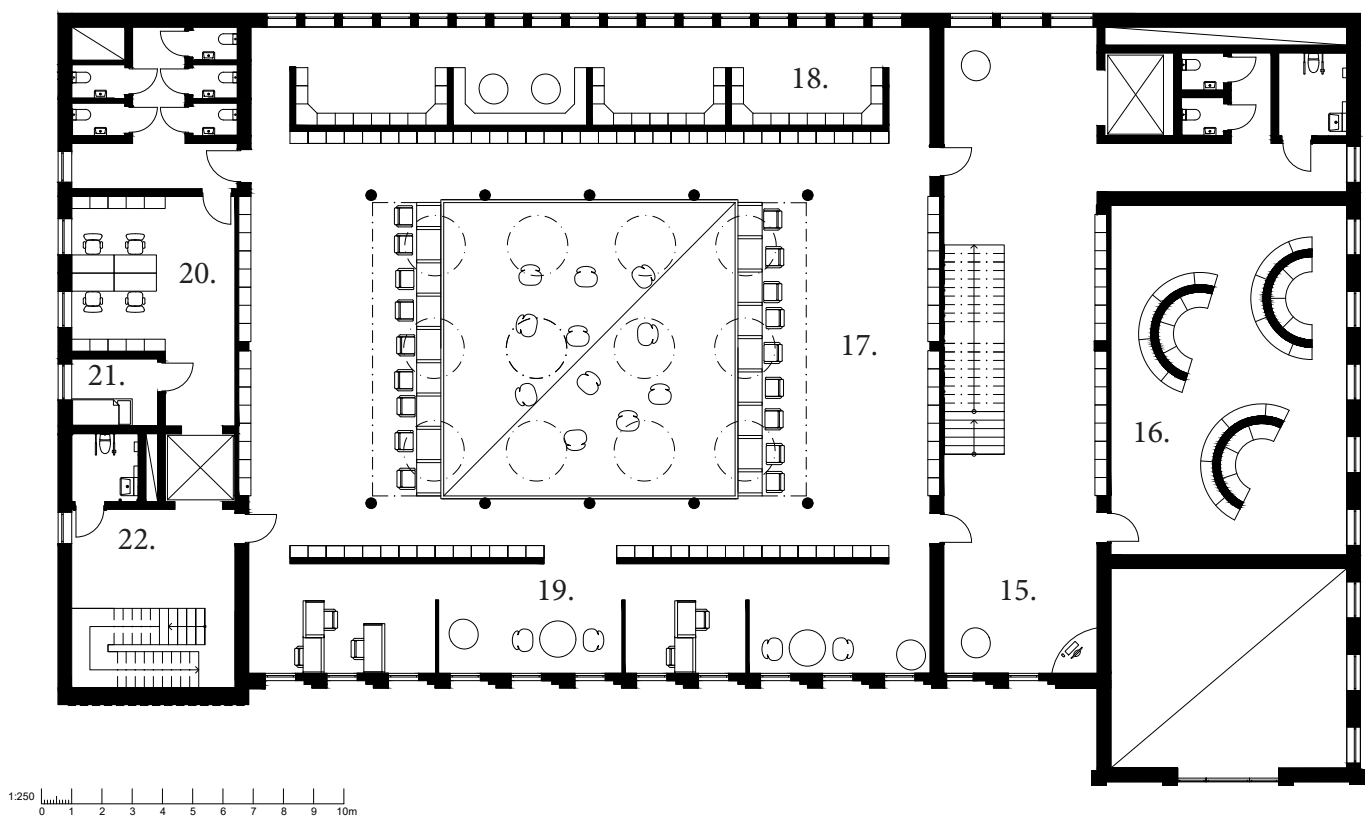


Drawings

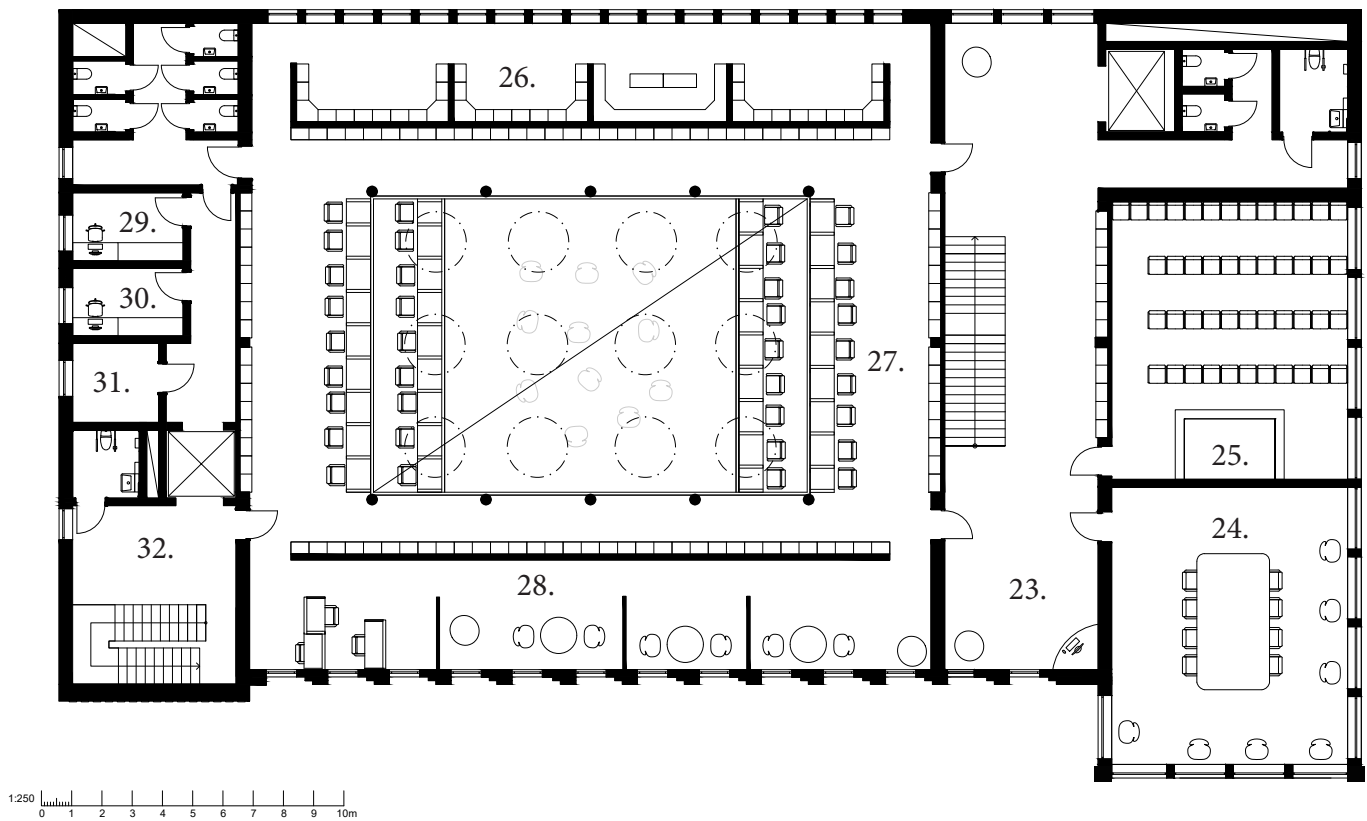
- | | |
|----------------------|-------------------------------|
| 1. Entrance | 9. Book return machine room |
| 2. Reading room/café | 10. Staff |
| 3. Reception | 11. Delivery |
| 4. Book return | 12. Recycling room |
| 5. Reading hall | 13. Cleaning room |
| 6. Lounge | 14. Connection/emergency exit |
| 7. Book loan | |
| 8. Storage | |



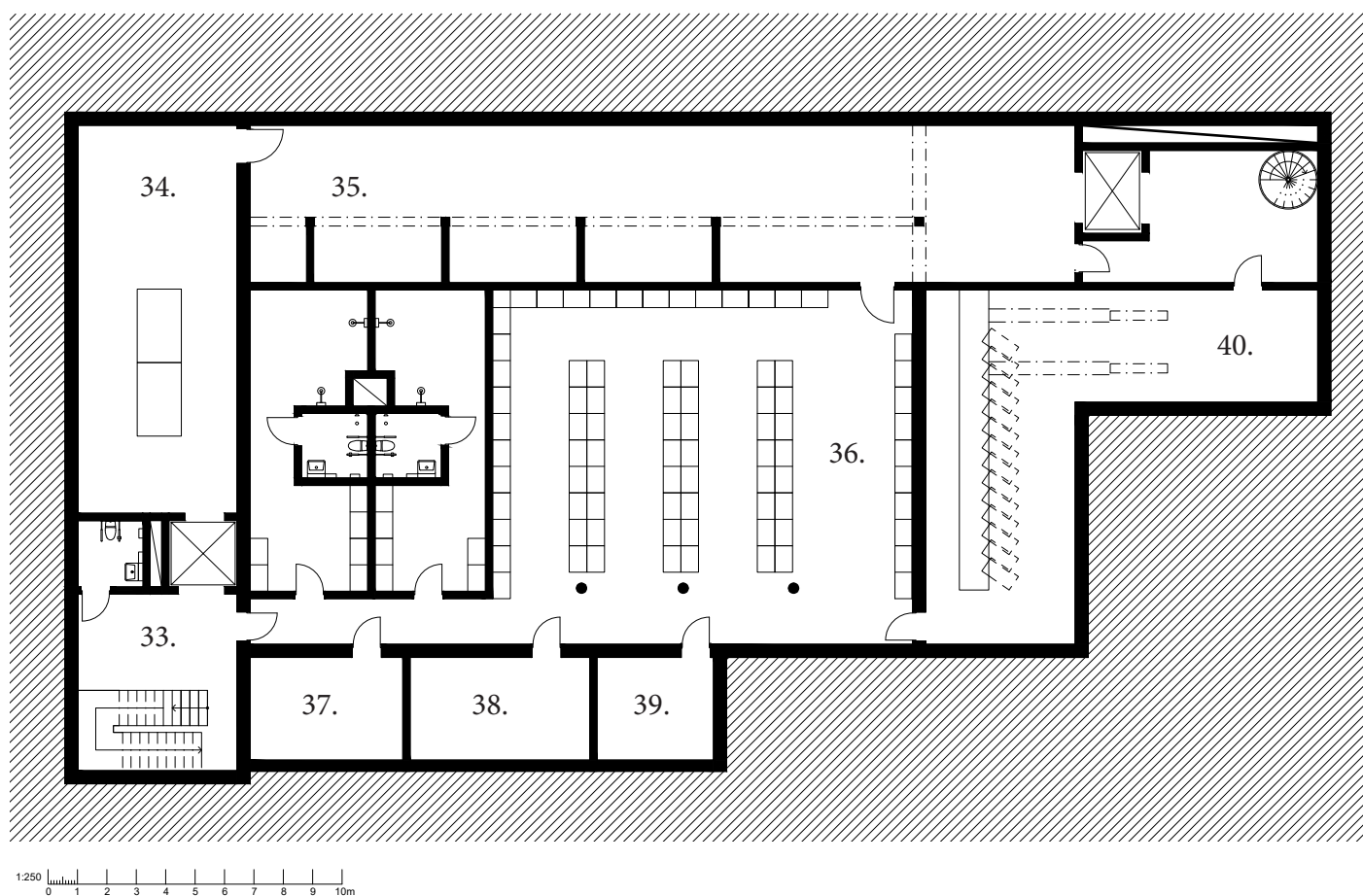
- 15. Self service
- 16. Children/youth
- 17. Reading hall
- 18. Book loan
- 19. Reading area
- 20. Office
- 21. Rest room
- 22. Connection/emergency exit

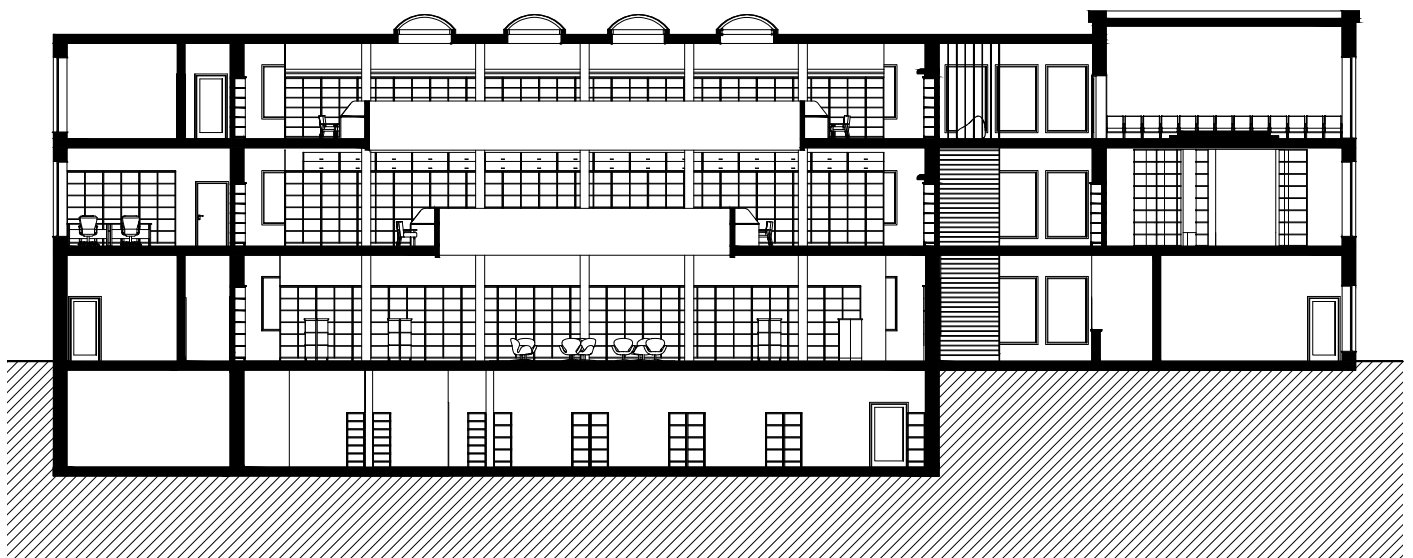


- 23. Self service
- 24. Conference/reading room
- 25. Lecture
- 26. Book loan
- 27. Reading hall
- 28. Reading area
- 29. Staff
- 30. Staff
- 31. Storage
- 32. Connection/emergency exit

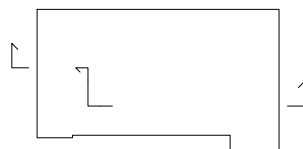


- 33. Connection/emergency exit
- 34. Unpacking
- 35. Furniture storage
- 36. Book archive
- 37. Ventilation
- 38. Technical
- 39. Power station
- 40. Sorting room





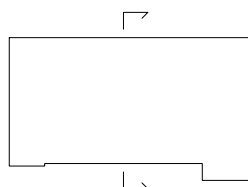
1:250
0 1 2 3 4 5 6 7 8 9 10m



Section, 1:250



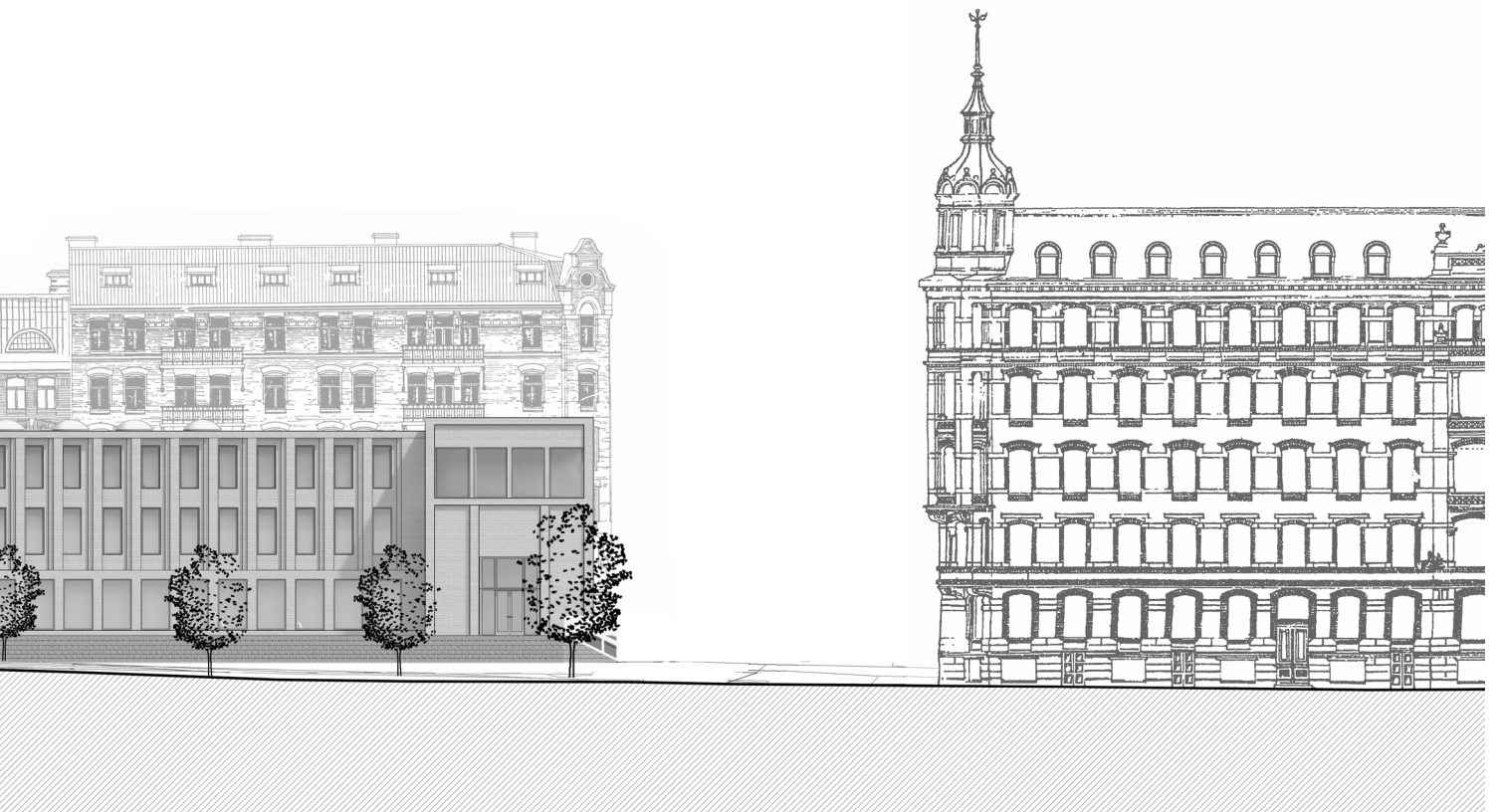
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0 1 2 3 4 5 6 7 8 9 10m

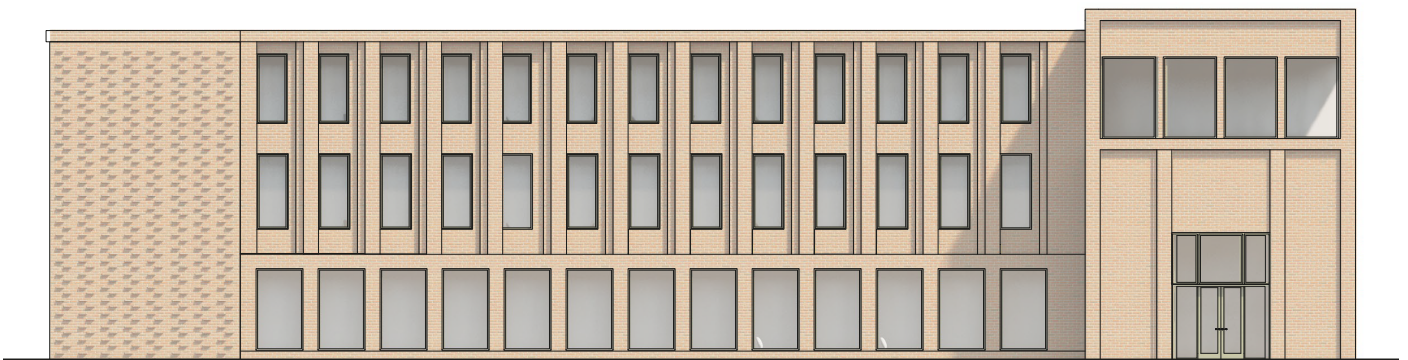


Elevations

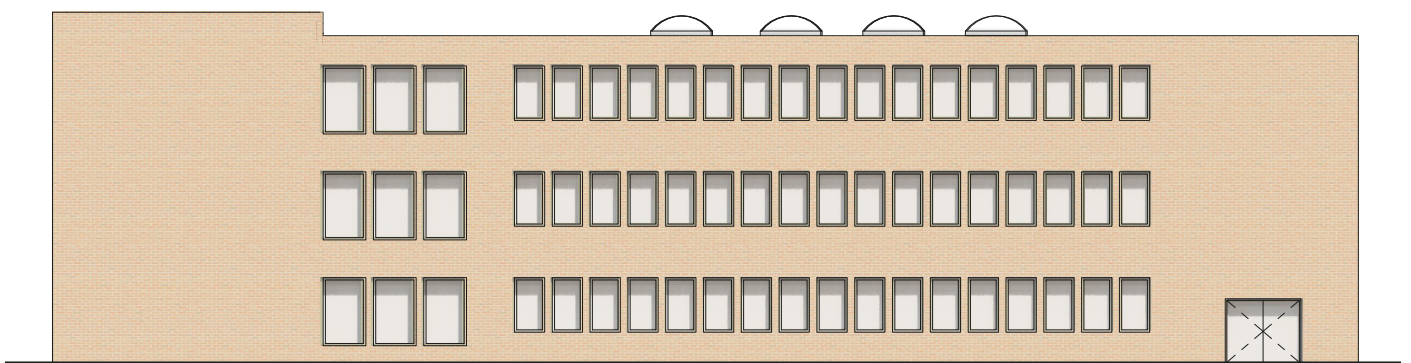


Elevation Linnégatan

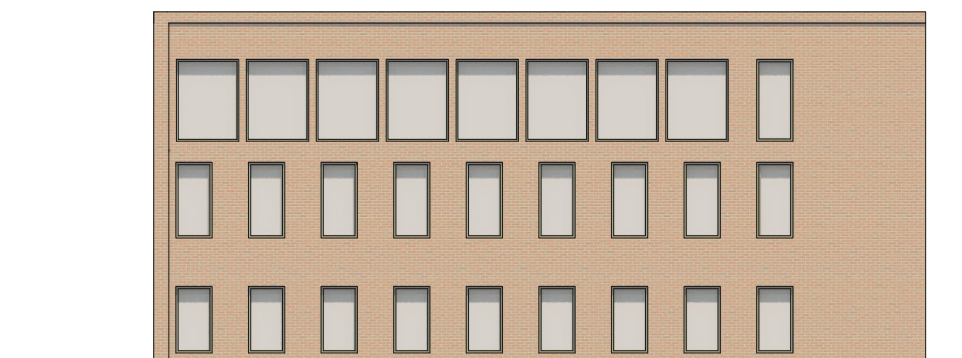




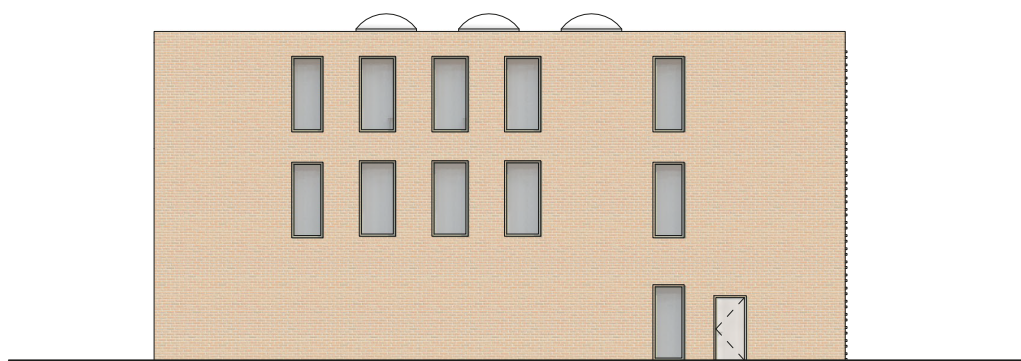
Facade towards east
1:250



Facade towards west
1:250

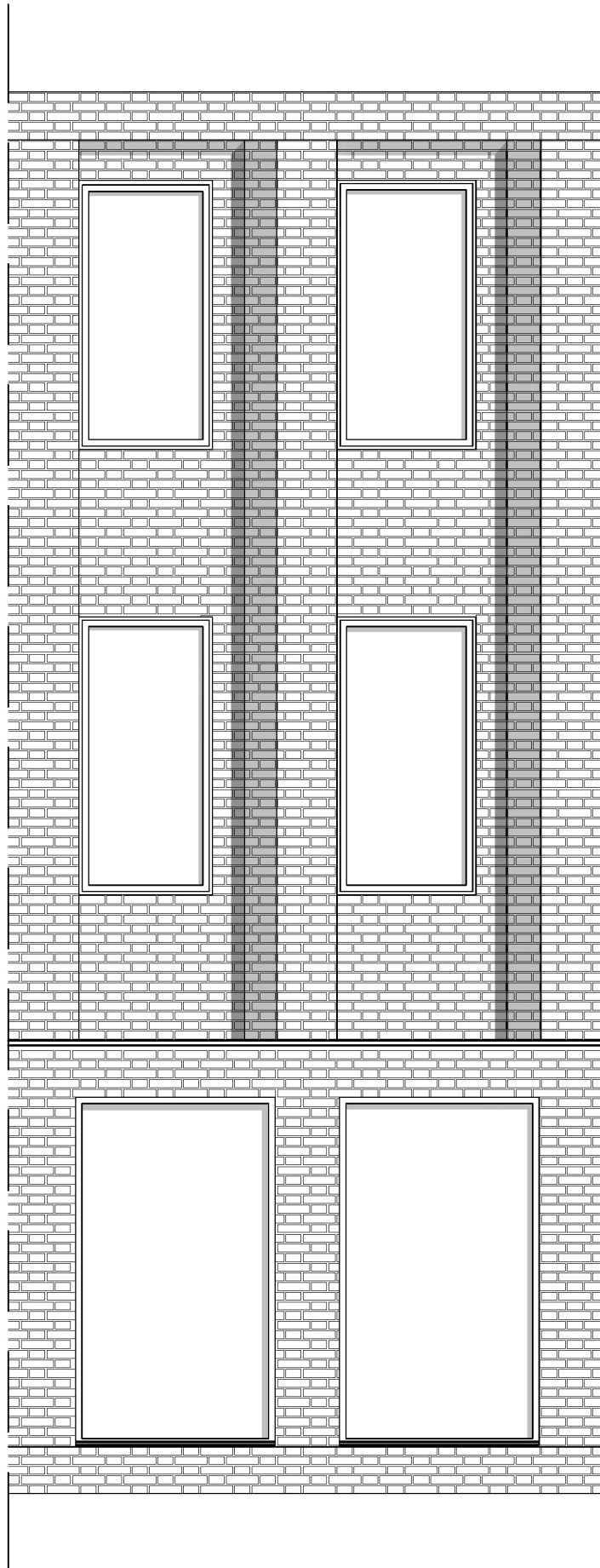


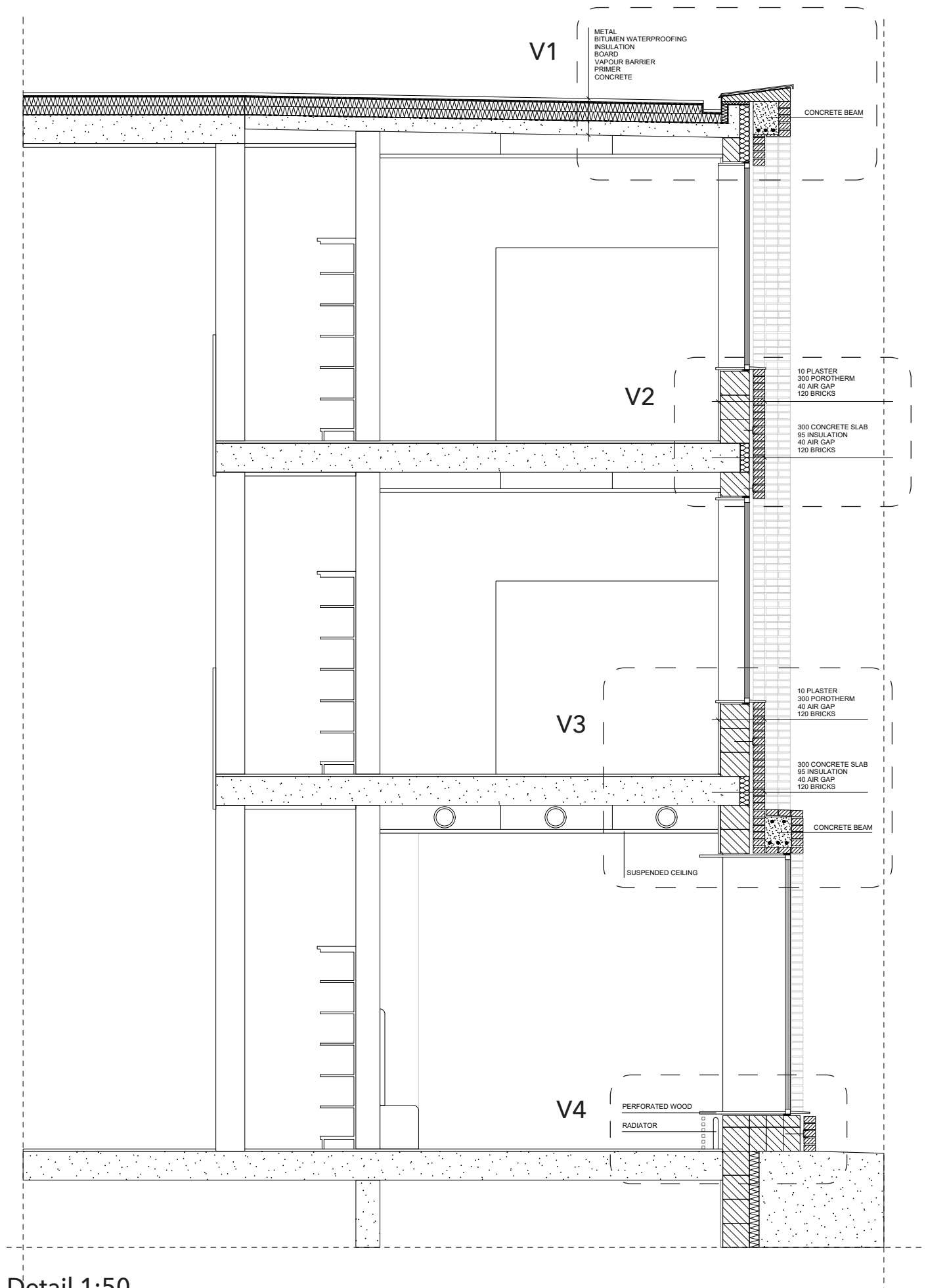
Facade towards north
1:250

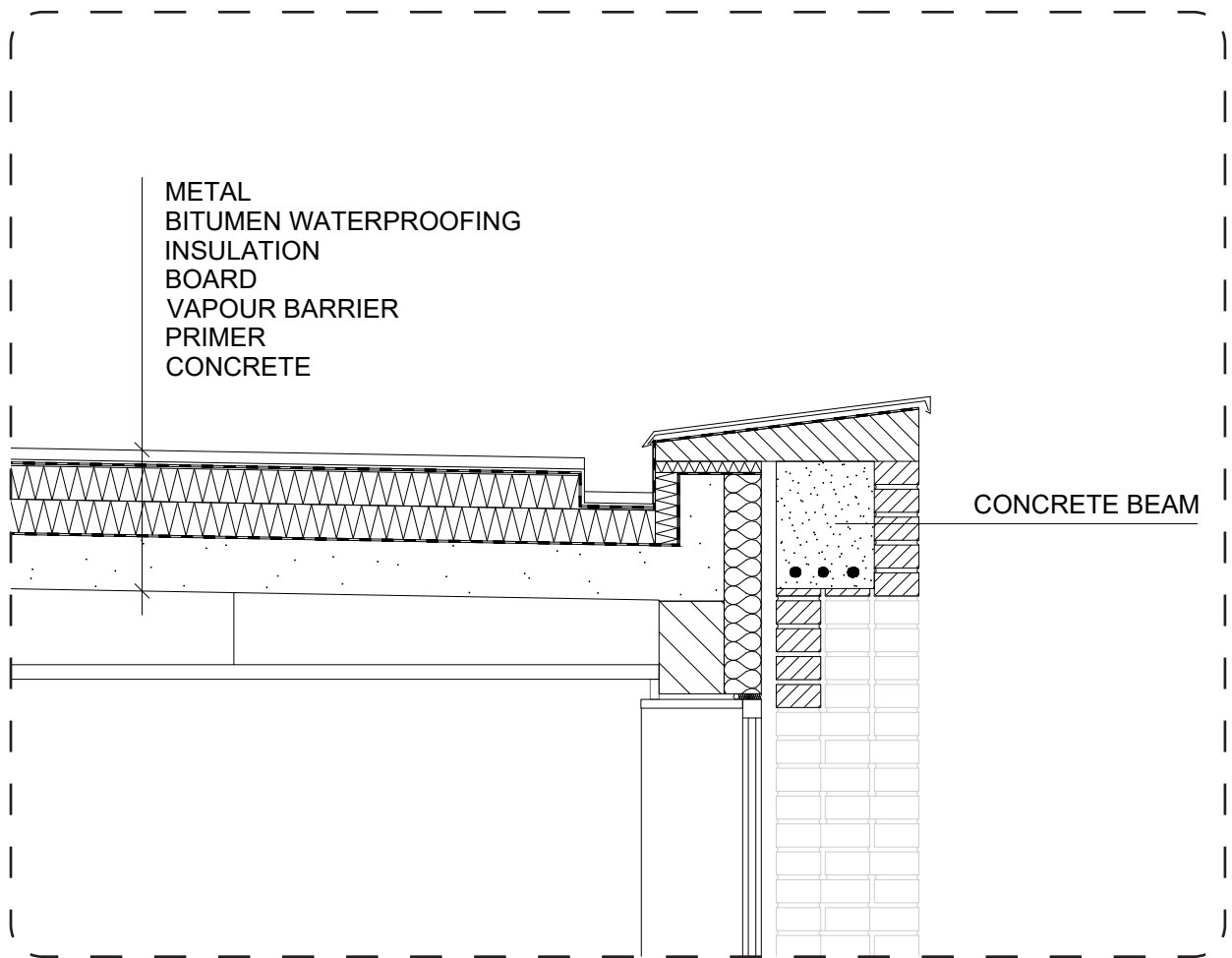


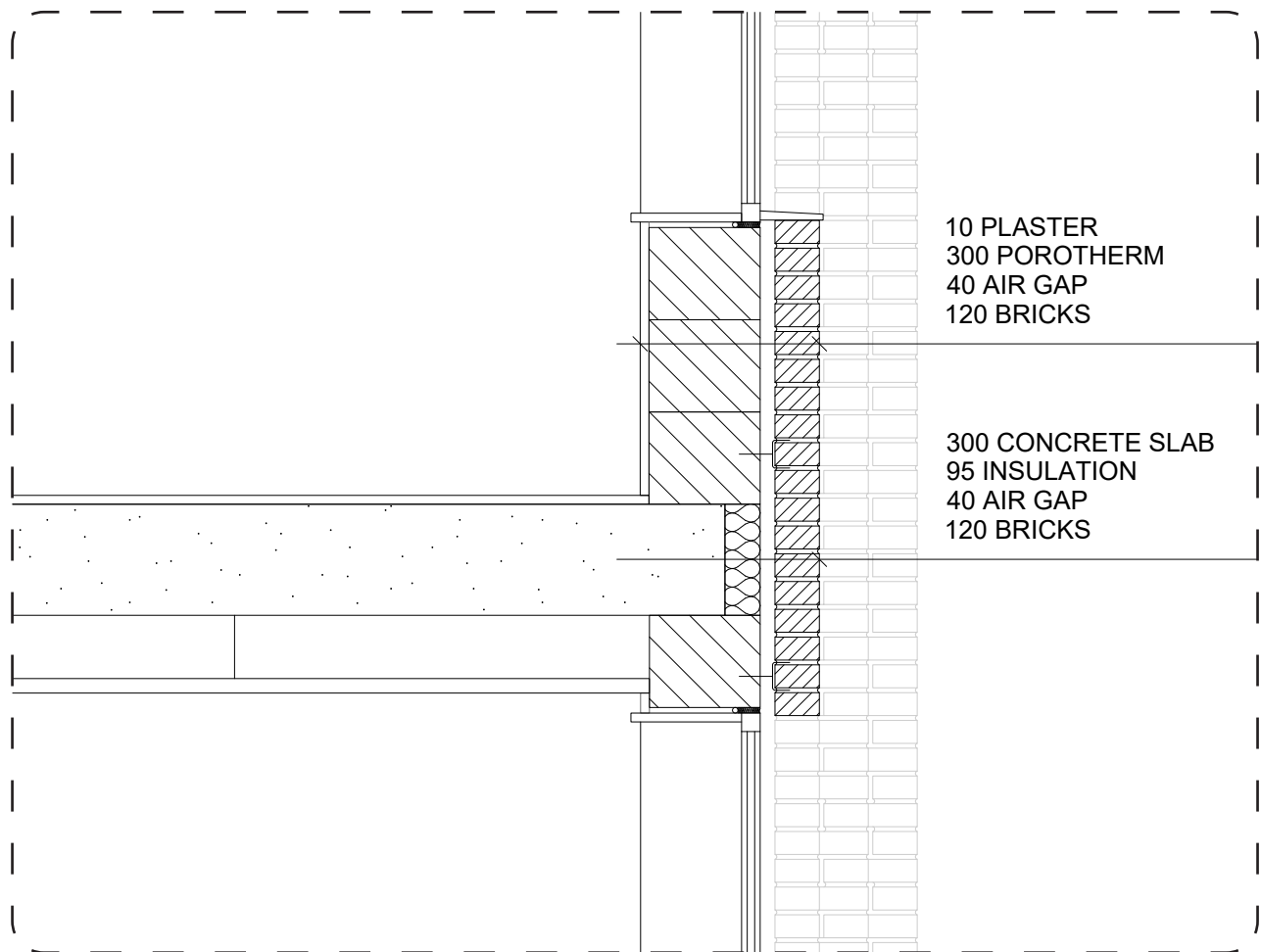
Facade towards south
1:250

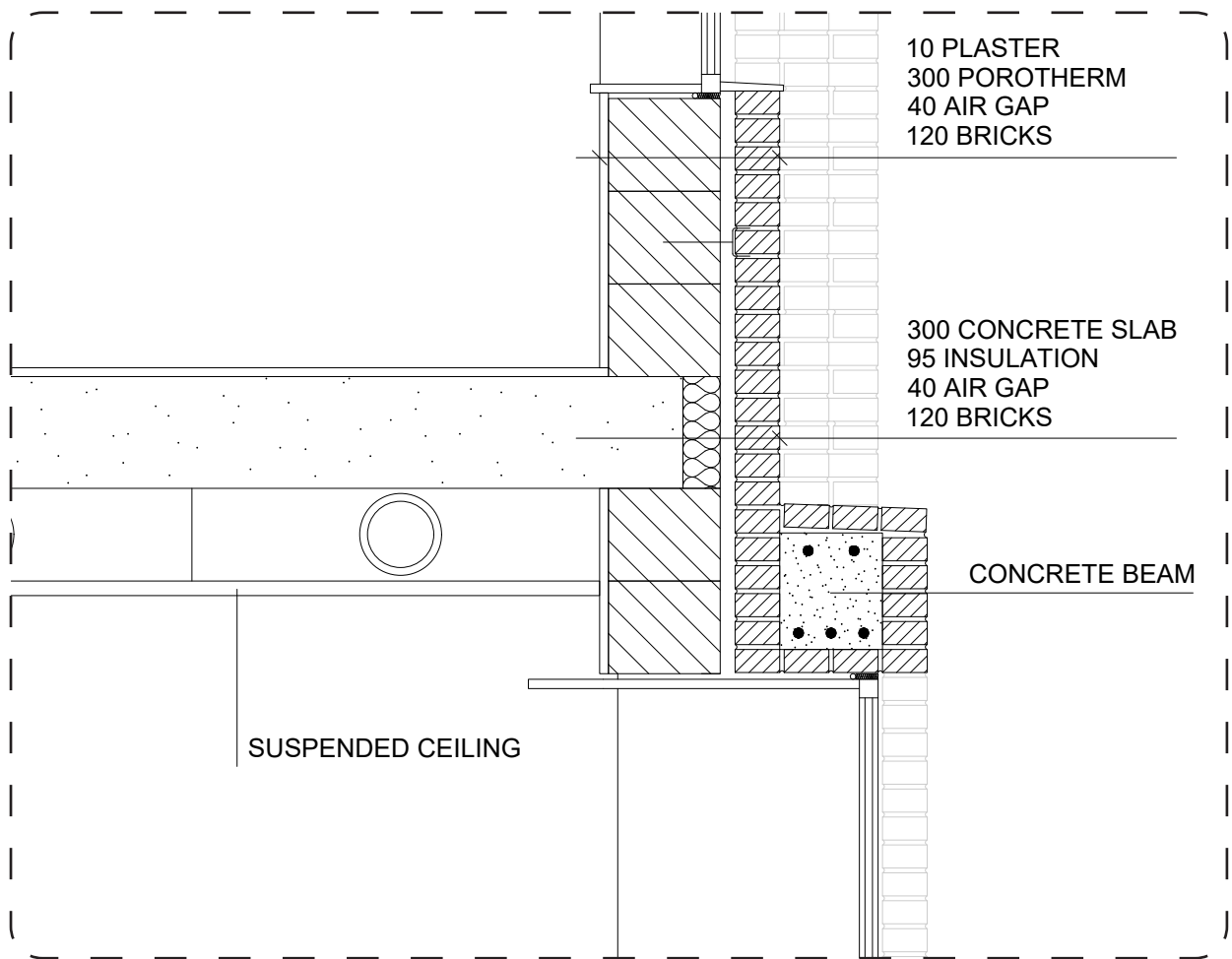
Details

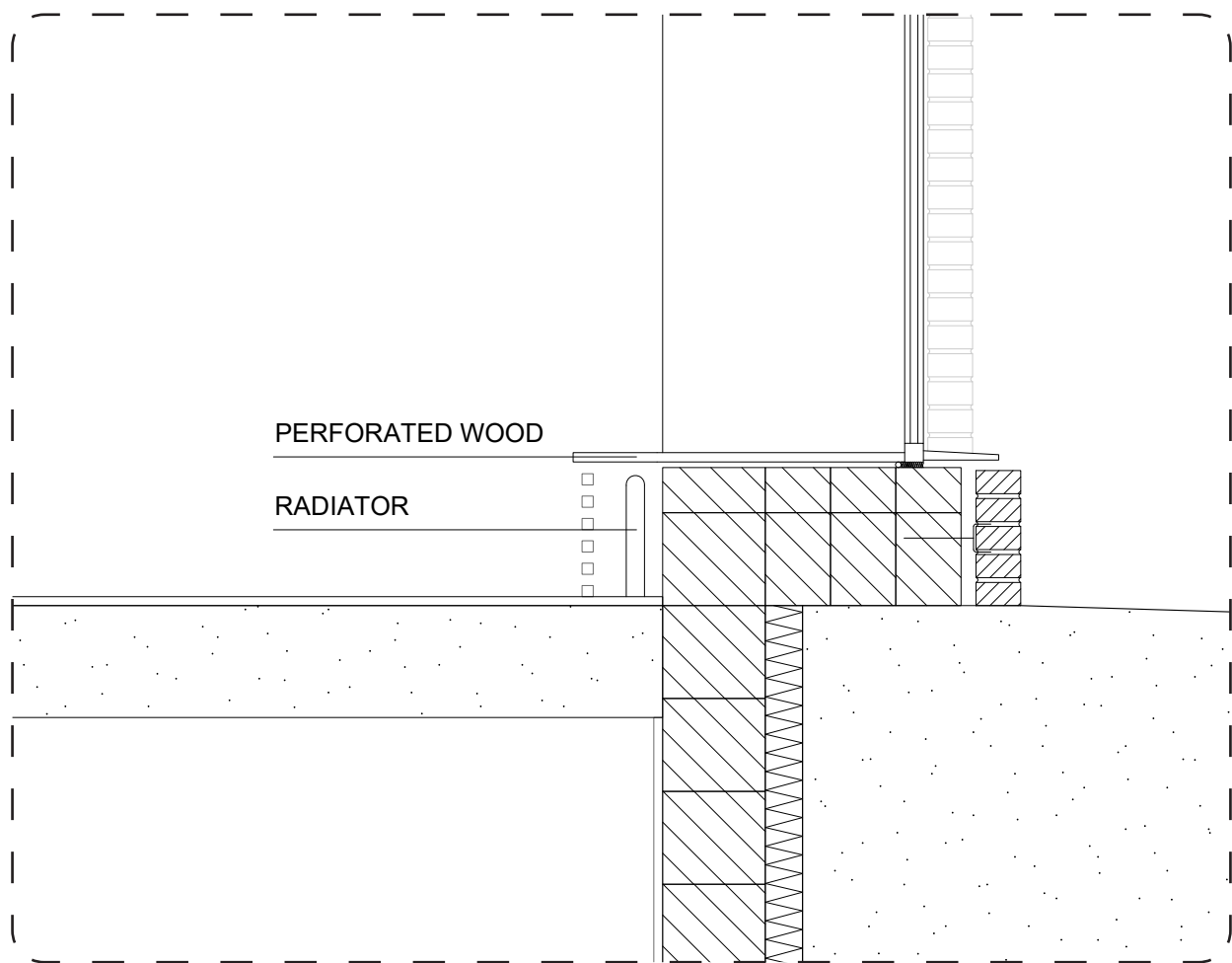












Visualizations



Welcome

The entrance square and the plaza in front of the library aims at connecting seamlessly with the surroundings and especially with Viktoriahuset. Having an entrance square in front of the library creates a barrier between the library and the lively street Linnégatan.





Café

If you want to drink a cup of coffee or read something that's more undemanding, you can enjoy sitting in the library's café that also works as a reading room. An open and very public room but still calm. It has huge windows which create a nice connection with the outside plaza.





Reading hall

The reading hall is monumental yet intimate. You walk closely by walls filled with books and you move around a center atrium. Soft light from the lanterns fills the room and creates a warm feeling together with the room's natural materials and colors.





Take a seat

Reflection

This has been a research-by-design project. An investigation around hot topics such as stress and the role of the physical book in a digital world and time. It has been an exploration around these questions with no intent of giving any easy answer. The questions have been explored, investigated, and discussed with friends, tutors, family, and librarians. Literature have also been studied to give a solid basis for making arguments and understanding relevant science.

The main research question was “can architecture make people slow down, stop, reflect and stay.” and I would strongly answer yes to this question, to which extent can’t be answered thou.

With literature studies we have seen that sound, technology and visual distractions makes us less focused, decreases our fluid intelligence and working memory. A building is in itself a sound barrier and a visual barrier.

Another question that has been explored is: “is there a role for the physical book in a digital world.”

I would again argue that yes there is. A book is free from other distractions whereas a lot of technical devices we use to read on have other functions and is as stated before therefore distractions that makes us less focused.

The aim of the thesis was as stated not to give a key answer, to provide a statement what a modern library is, but rather as an investigation to bring the topic further. I would say that this was achieved. During the final seminar and other occasions some argued for having a more open library, some for a more closed, some argue for more seating, some for less. We see a decline in reading using physical books but at the same time I have never talked with anybody that argues against the role of the physical book.

“People read less on physical books therefore we need less of them.”

Is this the same as saying:

“People eat more junk food therefore we need more of it”?

As stated in the abstract this thesis is an investigation of how we want to live, not how we live or how things just develop.

The process has been an iterative design process in dialogue with tutors and friends. I started designing very early to get a lot of material to show and discuss. There has been room for making more rigorous site analysis and various investigations which I think could add value to the project or at least create strong arguments for this final proposal.

Bibliography & Figures

Göteborgs Stadsbibliotek. Erseus. (2019, January 15). Retrieved May 3, 2022, from <https://www.erseus.se/projekt/kulturbbyggnader/goteborgs-stadsbibliotek/>

Mobile phone daily usage time in U.S. 2023. Statista. (2021, July 8). Retrieved 22 April, 2022, from <https://www.statista.com/statistics/1045353/mobile-device-daily-usage-time-in-the-us/>

Smartphone users 2026. Statista. (2022, February 23). Retrieved April 22, 2022, from <https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/>

Toivanen, J. (2019). Vyborg City Library [Image]. Retrieved from <https://www.flickr.com/photos/144252506@N07/48545629427>

Viipuri Library. World Monuments Fund. (2021, July). Retrieved May 10, 2022, from <https://www.wmf.org/project/viipuri-library>

Encyclopædia Britannica, inc. (n.d.). Vyborg. Encyclopædia Britannica. Retrieved May 10, 2022, from <https://www.britannica.com/place/Vyborg>

Vårdguiden. (2018, January 25). Stress. 1177. Retrieved April 22, 2022, from <https://www.1177.se/liv--halsa/stresshantering-och-somn/stress/>

Ward, A., Duke, K., Gneezy, A., & Bos, M. (2017). Brain Drain: The Mere Presence of One's Own Smartphone Reduces Available Cognitive Capacity. *Journal Of The Association For Consumer Research*, 2(2), 140-154. doi: 10.1086/691462

Wikimedia Foundation. (2021, April 26). Hagabion. Wikipedia. Retrieved May 5, 2022, from <https://sv.wikipedia.org/wiki/Hagabion>

Wikimedia Foundation. (2022, April 3). Viktoriahuset. Wikipedia. Retrieved May 5, 2022, from <https://sv.wikipedia.org/wiki/Viktoriahuset>

Wikimedia Foundation. (2022, February 19). Stockholms Stadsbibliotek. Wikipedia. Retrieved April 3, 2022, from https://sv.wikipedia.org/wiki/Stockholms_stadsbibliotek