

Overlay Realities

Project booklet

This is a compilation of material from a project work within the course Architectural transformation & environmental care, 22,5 credits, part of the Master Programme Architecture and Planning Beyond Sustainability, Department of Architecture and Civil Engineering,

Chalmers University of Technology

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Studio Description

This design studio addresses questions of the transformation of the built environment through an emphasis on critical spatial practices and environmental care. It engages with critical environmental and social perspectives, considering nature and culture, the natural and the built environment, human and non-human habitats, social and environmental justice, as interconnected.

Method

Our project began with a study visit to the old court house located close to Korsvägen,in Gothenburg, Sweden. During the first month site analysis, building inventory, and damage report have been stablished by a studio effort. The following weeks, we had different type of seminars, workshops and lectures about Urban/Industrial tranformation, Adaptive reuse, Ecologies, Health, Economies which they have helped us in developing the ideas. The basis for our project has been influenced by the theories and perspectives presented in the seminars.

Abstract

This is a project exploring the possibility of transforming the old court of appeal of west Sweden, located in Gothenburg. The building has outlived its initial purpose, but it is still spatially and by association constrained by it. By transforming the building to meet environmental and societal needs, we aim to change the precieved image of the building, provide longevity while the tranformation will celebrate the previous phases the building has lived through.

The analysis of the surroundings and potential users showed that the cultural and scholar embossed area is in need of the introduction of a new function, that can bridge academia and the public.

This resulted in the introduction of the business sector, with the main function of the building being office spaces for incubators who develop software for 'Extend Reality' applications that generate new perspectives on transferring knowledge and develop techniques in relation to preservation of cultural heritage.

Acting in the intersaction between academia, business and the public - the building will provide a space for socialising, sharing of innovative technical interactions and exploration of heritage through digital tools.

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Information

Building: Court of appeal of west Sweden

Year: 1947

Location: Olof wijksgatan 6, Gothenburg, Sweden

Architect: Hakon Ahlberg

Mark: Cultural heritage

Renovation year: 1994

Architectural office of renovation: Wallinder arkitekter

Owners today: Akademiska hus

Previous functions: Court house and classrooms

function today: none



1947

Function: Court of Appeal

The Court of appeal of west Sweden was a result of the new jurisdictional procedure that was introduced in the 1940s. Hakon Ahlberg translated the jurisdictional procedure into a design language for the court of appeal. The building were to reflect the authoritarian program and in its entirety, characterized by seriousness and monumentality with an emphasis on high quality materials. The court of appeal moved their operations to Broströmshuset in 1992 due to need of more space.

Design elements used:

- + Framing the building with vegetation to emphasize the feeling of "building in park"
- + Windows used to convey hierarchy of functions of the interior as well as allow for privacy from transparency to the outside.
- + Separation between the public and the workforce is enforced by guiding staircases, material choices used as indicating public/private on doors as well as a controlled flow of movement.
- +The direction of the sun has great influence of the composition of functions in the building, providing the most used areas such as the public areas and offices with sunlight, while transition spaces are situated where direct sunlight does not occur.



Southwest facade Byggmästaren 1949, 26



Courtyard Byggmästaren 1949, 26



Public hallway Byggmästaren 1949, 26



Court room Byggmästaren 1949, 26

Roos, J. R. (2014)

1994

Function: Classroom

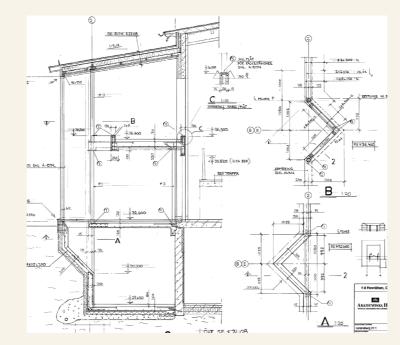
In 1994 the building was adapted to host University of Gothenburg. This came to bring some changes to the Old Court of Appeal both in the exterior and the interior. During the active academical years, the building has hosted the department of Archaeology, Philosophy, linguistics and theory of science.

The original floor plan is to a large extent preserved. The building has been vacant since 2019 when the new humanistic building was completed.

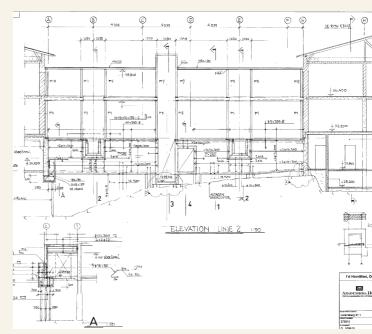
Adaptations:

- + On the southwest facade, an added evacuation staircase adjacent to the vertical the window sill.
- + In the courtyard, on the southeast facade, an extension to enable accessibility across the three floors by elevator.
- + The court yard was rearranged, the pond was demolished, the landscape was re-designed.
- + Archives was converted into a museum and the former oil and fuel rooms was converted into technical spaces with ventilation.

Roos, J. R. (2014)



Extension Akademiska hus, 1994



Extension facade Akademiska hus, 1994



Public hallway

Roos, J. R. (2014)



Remains of academic purpose

Exterior



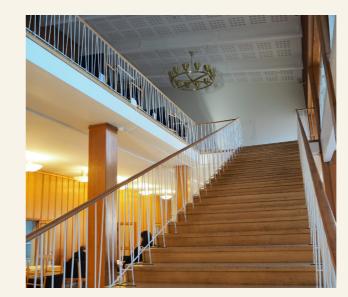














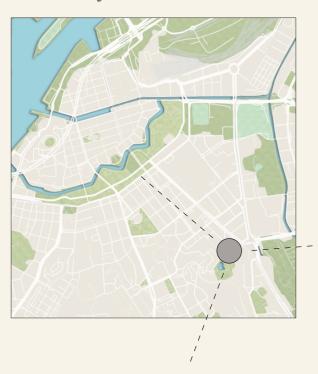








Site Analysis



Area

The building is located in Rentrömsparken, surrounded by buildings of academia, cultural experiences such as art museums, concert hall and theatre.

Vegetation

The green corridors and the pond in the area plays an important role in the urban scale of Gothenburg, it is host to many species of flora and fauna as well as acts as a urban lunge. The trees in the area is characterised as deciduous of high natural value due to their old age, and many are therefore cultural heritage protected.

- + Central location
- + Well-maintained building
- + Mixed uses within the close area
- + High historical, cultural and architectural value
- + Well documented

- + Low energy classification
- + Moisture problems
- + Noise pollution because of

Västlänken

- + Few street light around the park
- + Loss of function

Strengths

Weaknesses

Opportunities

- + Harvesting rainwater
- + Courtyard for energy storage
- + New use

Threats

- + Hypermodernisation of area
- + Extreme weather
- + Near constructions may cause some damage
- + Moisture damage
- + Loss of high natural value



Buildings

- 1. Old court of appeal
- 2. Faculty of Music, GU
- 3. Uni library, GU
- 4. Academy of Art and Design
- 5. Faculty of Humanities, GU
- 6. Västlänken
- 7. Johanneberg Landeri
- 8. Universeum
- 9. Art Museum
- 10. Museum of culture
- 11.Theater
- 12. Concert Hall
- 13. City library
- 14. Scandinavium
- 15. Gothia towers

Growing area

The area around Campus Näckrosdammen and Renströmsparken are in for new developments in the nearby future. Some of this includes the demolishon and new implentation of the University library, The Academy of Arts and handicrafts (HDK) and the infrastructure of Västlänken. In our project, we have implemented these changes to get a better understanding of the building in relation to the changes that are coming. We also assume the recent proposition of the detailplan is accepted, widening the building from only being used for academic purpose (S) to also allow for other programs (CS).



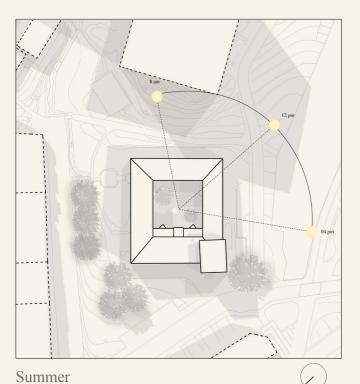
Göteborg stad (2019)

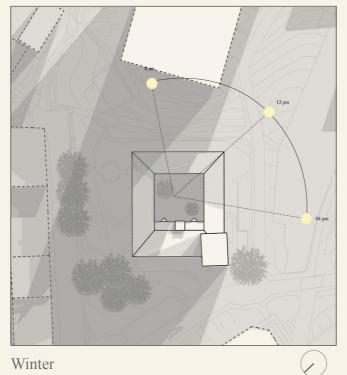
Site Analysis



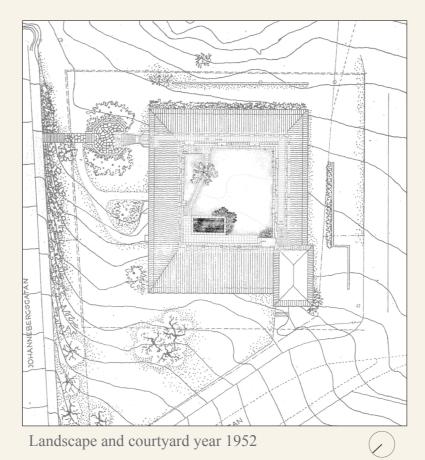
- 1 University library
- 2 Academy of Art and Design
- 3 Västlänken
- 4 Johannebergs landeri
- 5 Entrance to Västlänken







The sun anlysis show how the building will be affected by the nearby buildings. The shadow of the new library will have a greater impact on the sun exposure during the winter. The courtyard will however already be affected by the buildings own shadow.

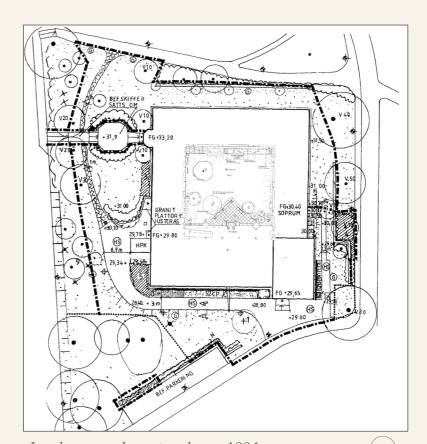


Original design intentions:

The vegetation acting as a frame around the building.

Providing a green barrier adding privacy

The courtyard providing natural light and a space of tranquility. The pond is a main feature in the design.



Landscape and courtyard year 1994

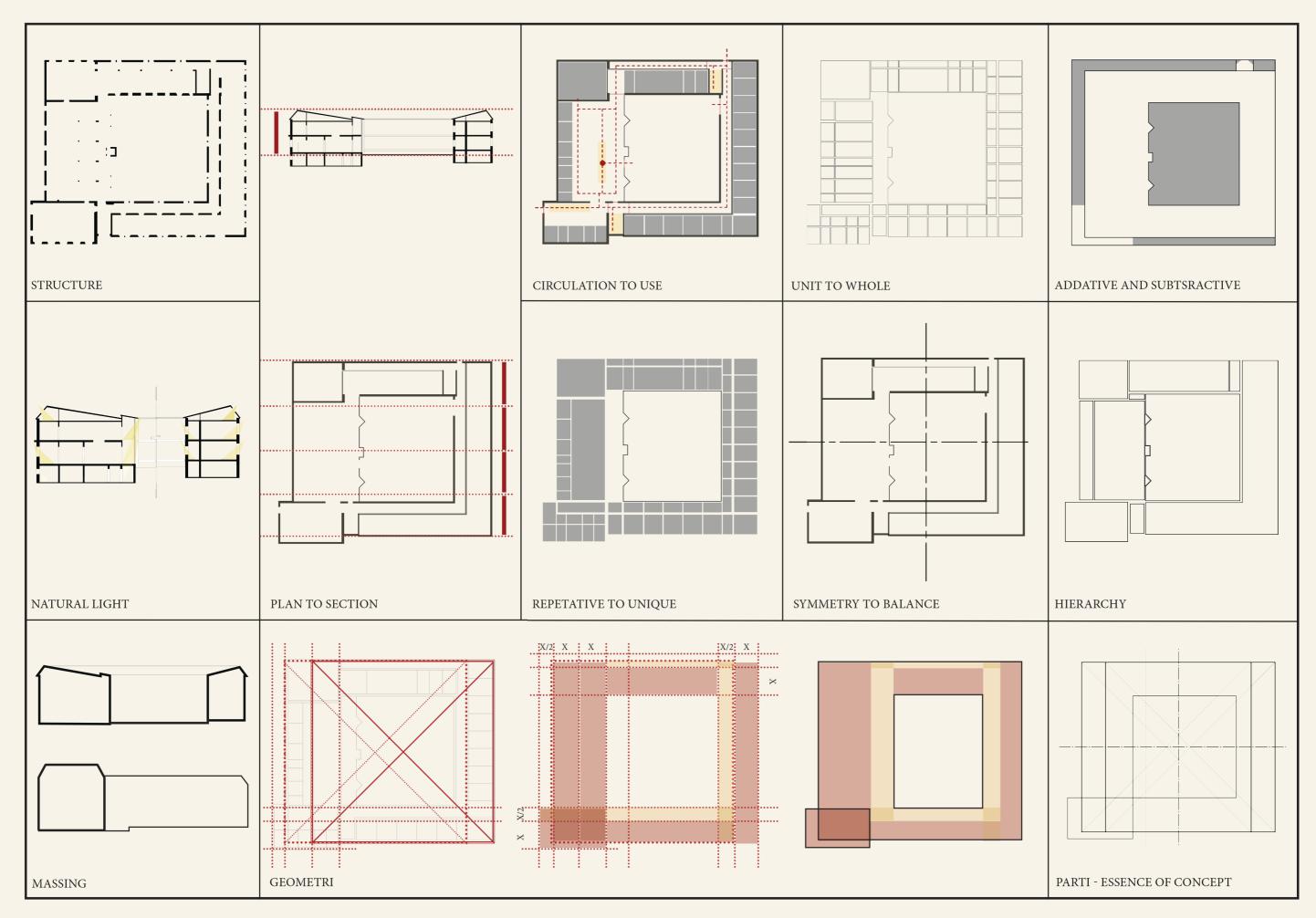
Changes in 1994:

Paths have been created due to nearby developments.

The property boundary as growned smaller.

Handicap parking have been added.

Re-design of court yard due to added extension.



Concept

Our ambitions are based on reflections enabled by the analysis of the site and building in its historical as well as contemporary context.

Therefore, our key aspects are:

Change the percieved image of the building

We see that the building has outlived its initial purpose, but it is still spatially and by association constrained by it. By tranforming building to adapt to a new function, we aim for a shift in association of it.

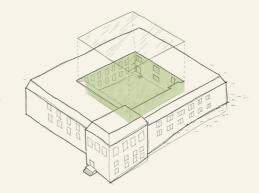
Longevity

The transformation aims to provide greater longevity to the building by spatialy adapt to make it more accessible for future uses, the usage of durable materials as well as improve the building's performance to meet environmental needs.

Design with historical articulation

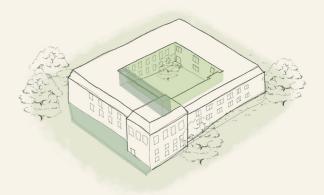
We see value in nurturing the original design intentions in the transformation of adapting the building to meet future spatial and environmental needs. The tranformation approach is selective conservation in connection onew interventions that are influenced by the exisiting design language.

Design strategies



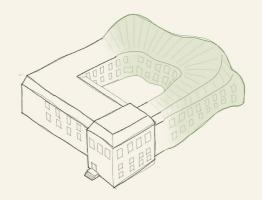


Enclosing the court yard is beneficial for regulation of heat in the building as well to create a soothing environment for its inhabitants.



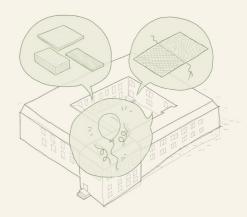
Relation between inside & outside

Creating more thresholds between inside and outside allows for a more open atmosphere.



Adaptation for future functions

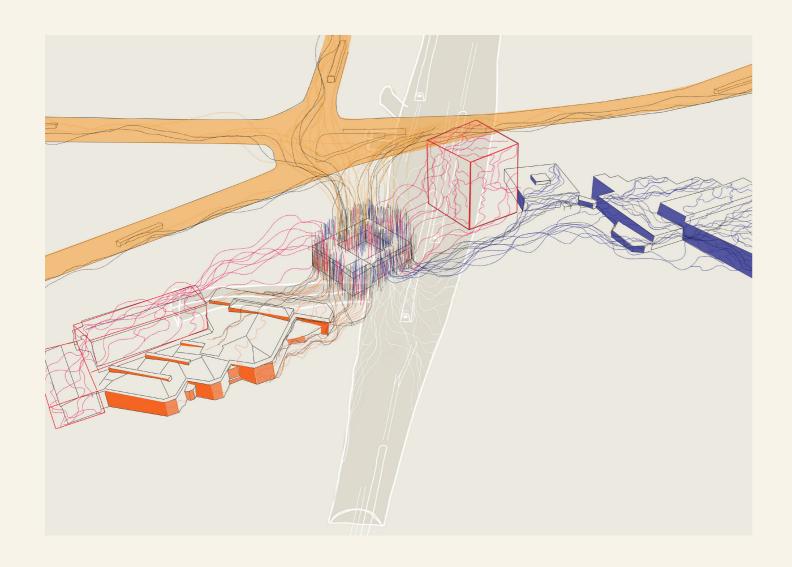
Increasing accessibility and flexibility allows for easier future adaptations of programs.



Historical articulation

Honoring the buildings life phases by continuing its architectural notion of long lasting materials and considerate meeting between old/new.

Program

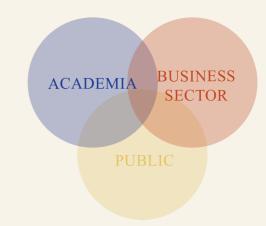


Bridging Academia, the business sector and the public in the realisation of digital humanities

Technology and digital interface already is and becoming, more and more interconnected with our society and from this we can see emerging research fields arising with interdisciplinary collaboration to computer science. This is also happening within humanities.

We see an opportunity for researchers, developers and citizens to create and develop digital tools and interfaces that can engage and evolve the way we interact with the world.

We imagine the building working as a platform that provides 'Hardware' for software use and development.



Change the percieved image of the building

flipping the perceved image of the building, the intended use of being a courthouse - rightious, in control and this is something the building embodies spatially as well.

So what if we flipped it?

Instead of generating the previous feeling that your faith was decided for you, you are now able to create/ or experience different realities?

And this brought us into the immersive technologies.

The search for program departured in the notion of Our site is coloured by culture-related activities as well as the uni campus for the field of humanities, so we wanted to utilize that.

> We aimed for a program that would be compatible to what can be found on the site and would strive to fulfill unfilled needs or future projections. This opens up new ways of interdisciplinary collaborations with for example, university-related fields as well as the artistic profession.



An example of this could realised is through city walk apps, they already exist today but what if you could through AR see different physical changes the building has gone through and the stories it has accumulated over the years in addition to being able to influence the future by proposing through a interactive platform different uses and shapes for the city scape. This can inform cities of unrealised necessities the neighbourhood might need and let people interact with their built environment.











Student

Maria studies art history at GU and has an interest in XR and how to develop digital tools for artistic expression. She often spends her time being in the archive to experience what she reads in another dimension and she attends classes in the evening being held in the building.

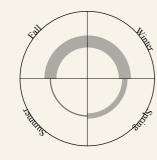
Usage of the building:

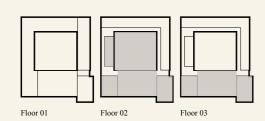


Space needed:



Seasonal use:





Enthusiast

Lisa and her friends enjoy spending their spare time sitting on the sunny outdoor patio, strolling through historical places with the usage of XR and attend workshops to explore and co-develop possibilities for the integration of XR in their everyday lifes.

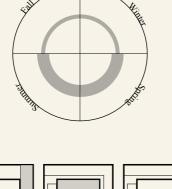
Usage of the building:

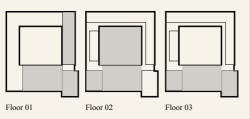


Space needed:



Seasonal use:





Staff

Peter works in the administration office for the incubator, it can include everything from creating events, exhibitions to service. He often buys food at the restaurant and spends most of his breaks taking in the greenery of the court yard.

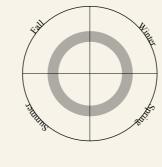
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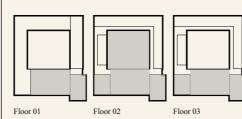


Space needed:



Seasonal use:





Researcher

Elisabeth works at the centre of digital humanities and is co-creating new ways of integrating XR in teaching with the developers in the incubator. She usually work from the spaces in the building, but since she is travelling, she accesses the digital archive and works remotely.

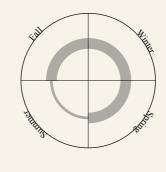
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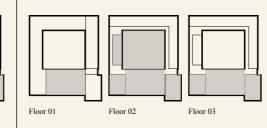


Space needed:



Seasonal use:





Developer

John works at a start-up in the building and he loves the energetic workplace environment. His workdays often involve time in the office, having workshops with citizens, meetings with researchers and every now and then AW in the court yard or in the restaurant where he often buys lunch.

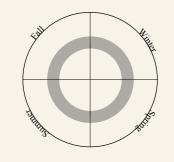
Usage of the building:

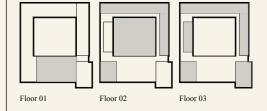


Space needed:

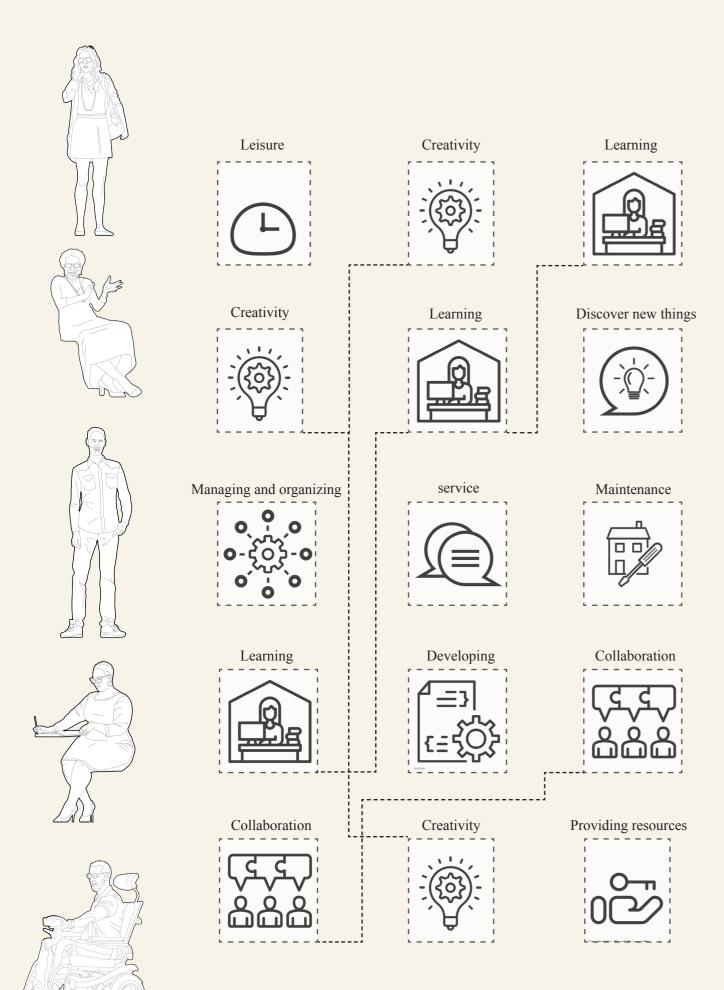


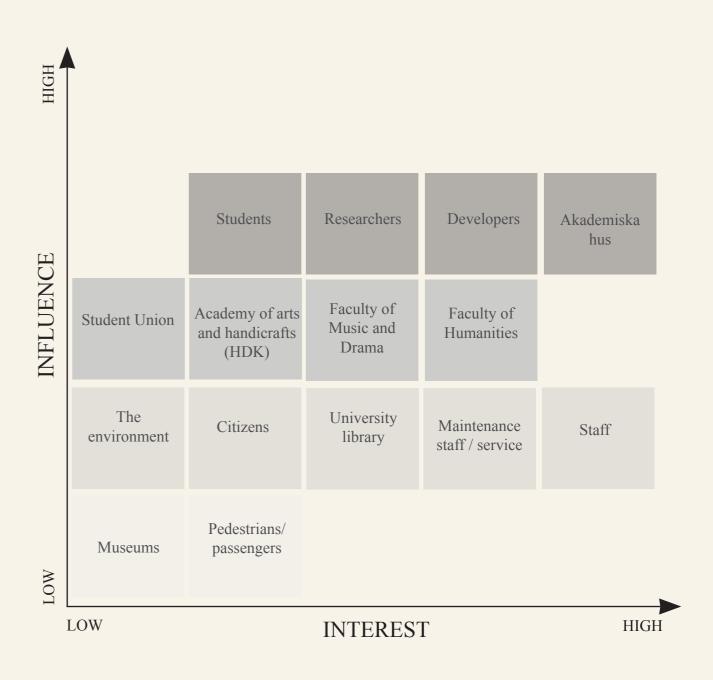
Seasonal use:





Target activities Stakeholders

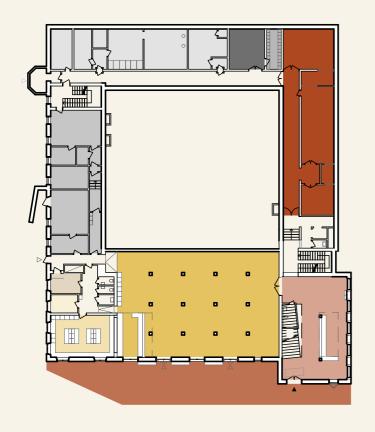


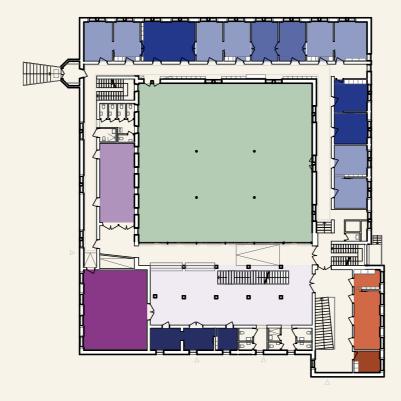


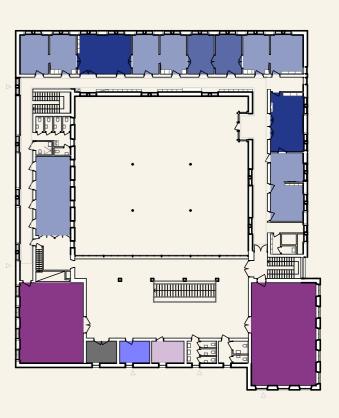
The design



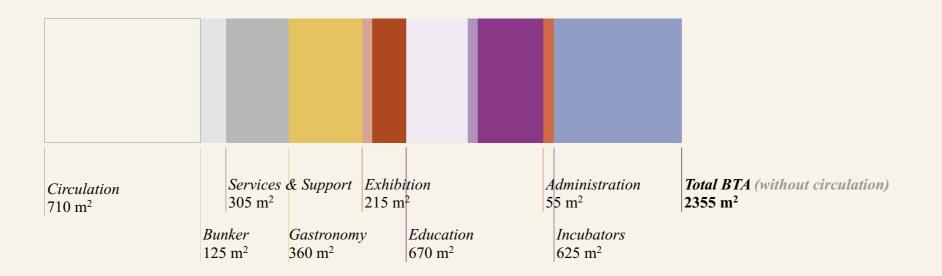
Floor 1 Floor 3



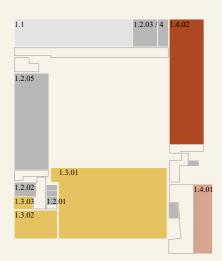




building's infrastructre public functions semi-public functions incubator's infrastructure patio garbage room offices administration office space exhibition storage staff room joker rooms seating area digital archive entrance hall, reception local servers offices common area restaurant bunker workspace digital archive short term rental offices multifunctional rooms kitchen gastronomy central building services room for resting kitchen events storage gastronomy courtyard

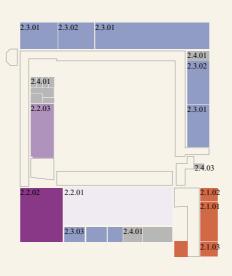


Floor 01



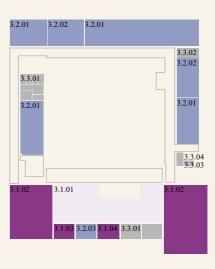
1.1 Bunker		124,50 m ²	
1.2	Services and Support	188,00 m ²	
1.2.01	Toilets	15,00 m ²	
1.2.02	Garbage Room	$10,50 \text{ m}^2$	
1.2.03	General Storage	$25,00 \text{ m}^2$	
1.2.04	Server	10,50 m ²	
1.2.05	Building's Services	127,00 m ²	
1.3	Gastronomy	358,50 m ²	
1.3.01	Restaurant	303,50 m ²	
1.3.02	Kitchen Restaurant	$46,50 \text{ m}^2$	
1.3.03	Storage Restaurant	$8,50 \text{ m}^2$	
1.4	Exhibition	214,50 m ²	
1.4.01	Main Entrance Hall	165,00 m ²	
1.4.02	Exhibition Space	49,50 m ²	
	Circulation Area	178,00 m ²	

Floor 02

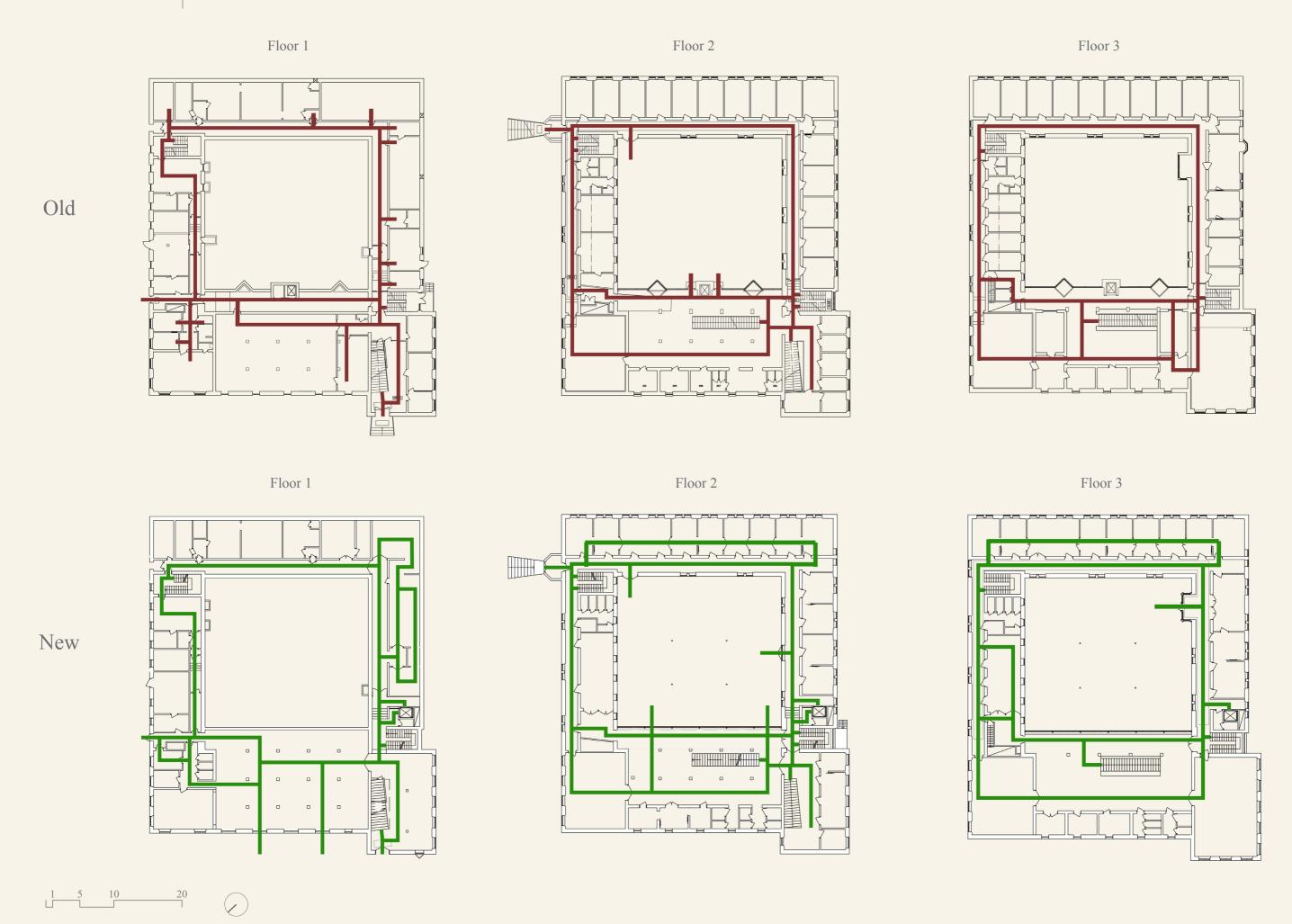


2.1	Administration	53,50 m ²
2.1.01	Office Administration	$26,50 \text{ m}^2$
2.1.02	Rental VR-Devices	$9,00 \text{ m}^2$
2.1.03	Staff Area	18,00 m ²
2.2	Education	299,00 m ²
2.2.01	Main Hall	161,00 m ²
2.2.02	Multifunctional Room	89,00 m ²
2.2.03	Access Archive	$49,00 \text{ m}^2$
2.3	Incubators	297,50 m ²
2.3.01	Offices	191,50 m ²
2.3.02	Common Area	$74,00 \text{ m}^2$
2.3.03	Short-term Rental Offices	$32,00 \text{ m}^2$
2.4	Services and Support	59,00 m ²
2.4.01	Toilets	49,00 m ²
2.4.02	Printing	$8,00 \text{ m}^2$
2.4.03	Cleaning	$2,00 \text{ m}^2$
	Circulation Area	289,00 m ²

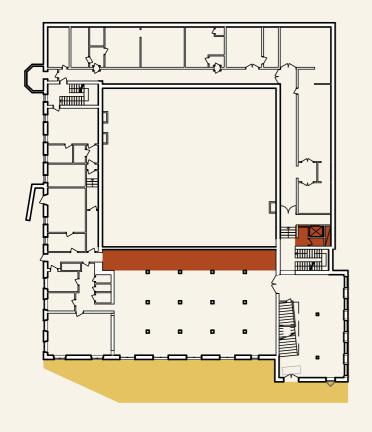
Floor 03

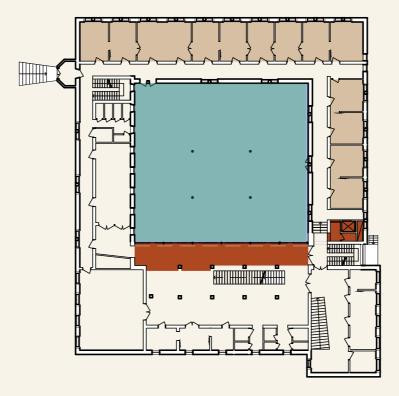


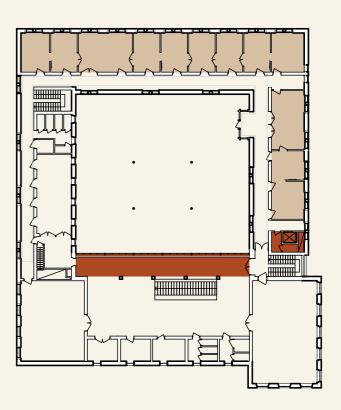
3.1	Education	368,50 m ²	
3.1.01	Main Hall	139,00 m ²	
3.1.02	Multifunctional Rooms	205,50 m ²	
3.1.03	Storage	11,50 m ²	
3.1.04	Kitchen Events	12,50 m ²	
3.2	Incubators	326,50 m ²	
3.2.01	Offices	244,00 m ²	
3.2.02	Common Area	$71,00 \text{ m}^2$	
3.2.03	Break Room	11,50 m ²	
3.3	Services and Support	57,50 m ²	
3.3.01	Toilets	44,00 m ²	
3.3.02	Printing	8,00 m ²	
3.3.03	Cleaning	$2,00 \text{ m}^2$	
3.3.04	3.3.04 Storage		
	Circulation Area	244,00 m ²	



Floor 1 Floor 3







accessibility

replacement of the extension introduction of a new elevator

outdoors

installation of a ramp for the main entrance creation of a patio for the restaurant

courtyard

enclosing the yard with a glassed roof create new pathways through the yard reintroduce a pond and extensive greenery

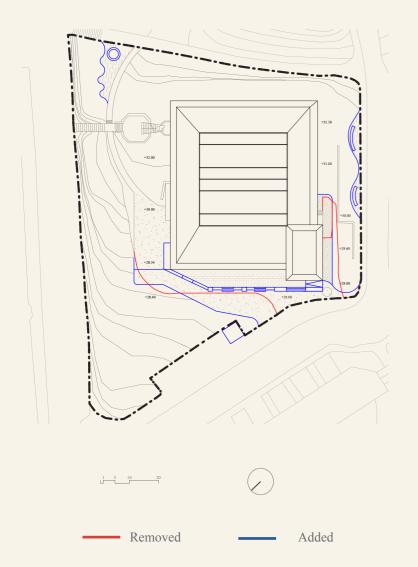
interiors

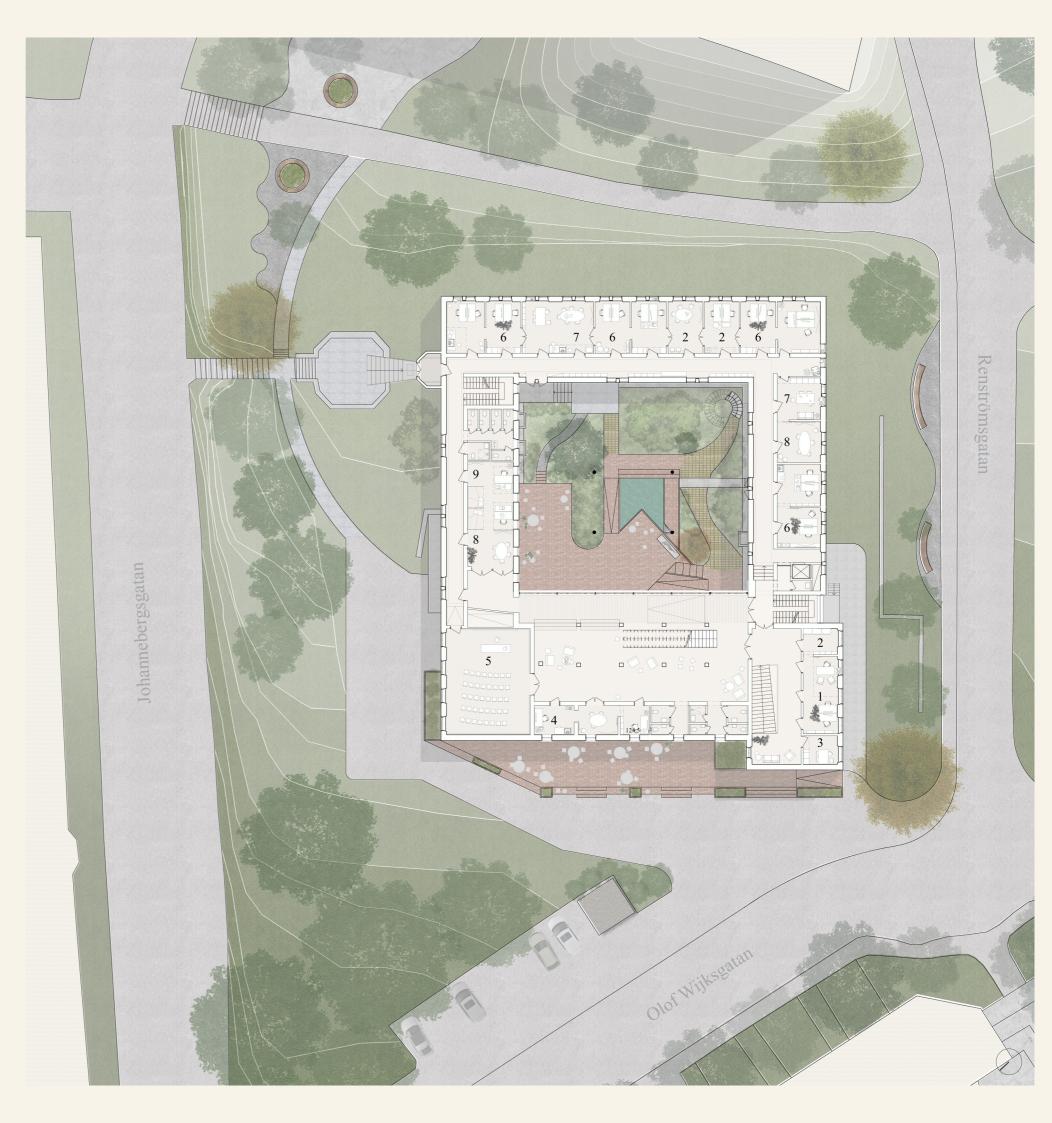
creation of openings between rooms to generate shared office spaces

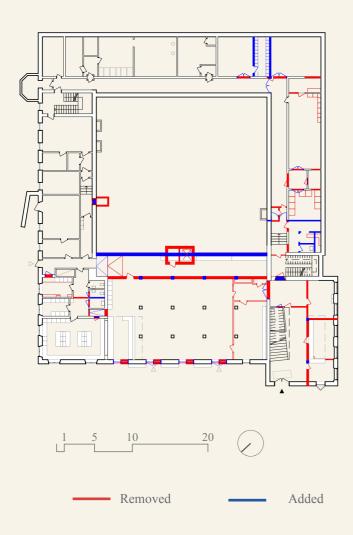


Landscape

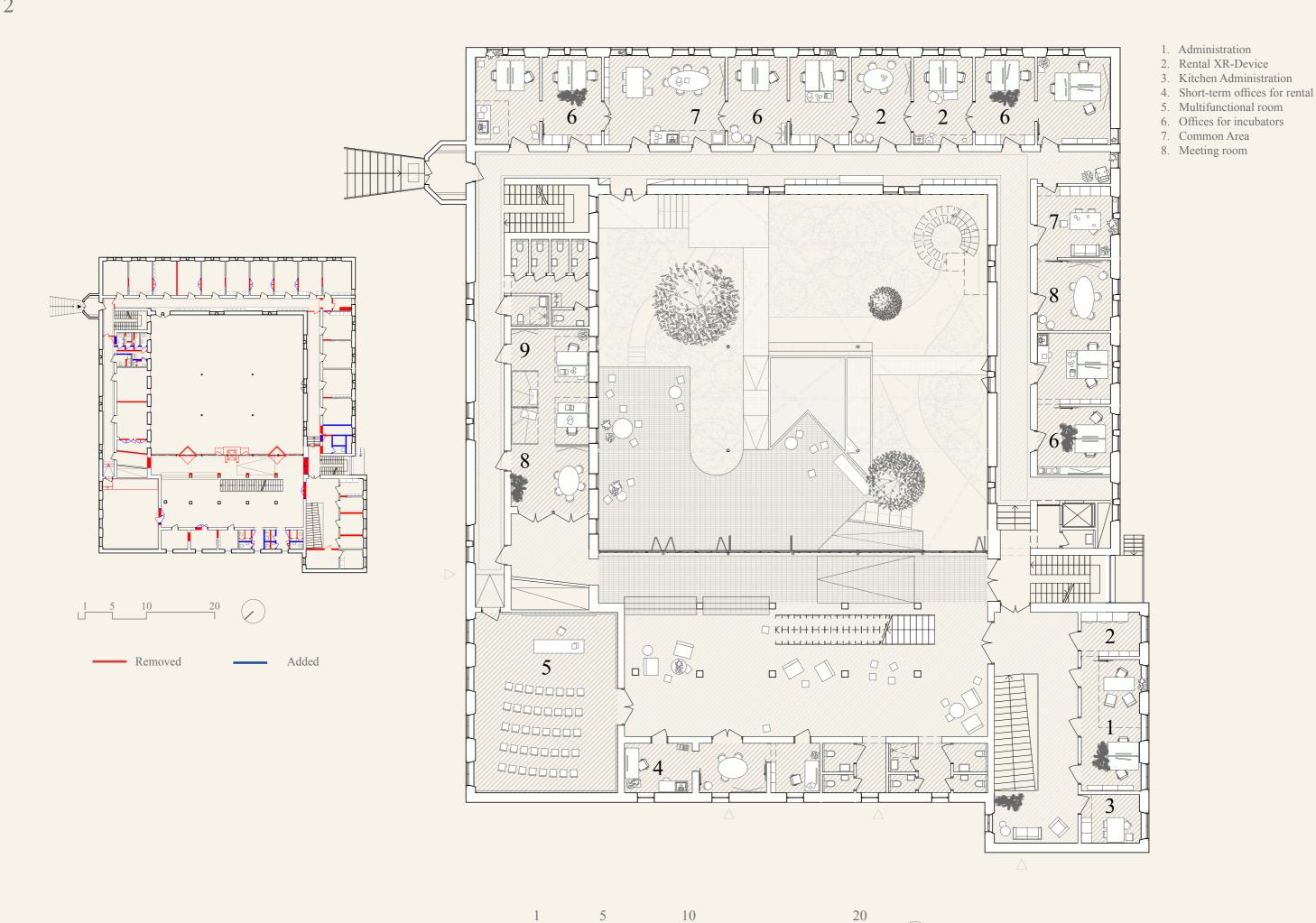
Our landscape interventions are quite subtle since we saw the value of keeping the vegetation frame, so the interventions answers the needs of desire paths existing today on site as well as allowing for pockets of relaxation in forms of benches integrated in the vegetation. The major change comes in the main entrance of the building, since extending a patio, the width of the road need to be broader for the vehicles to pass.



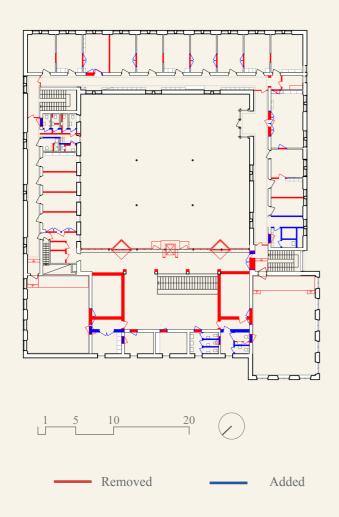


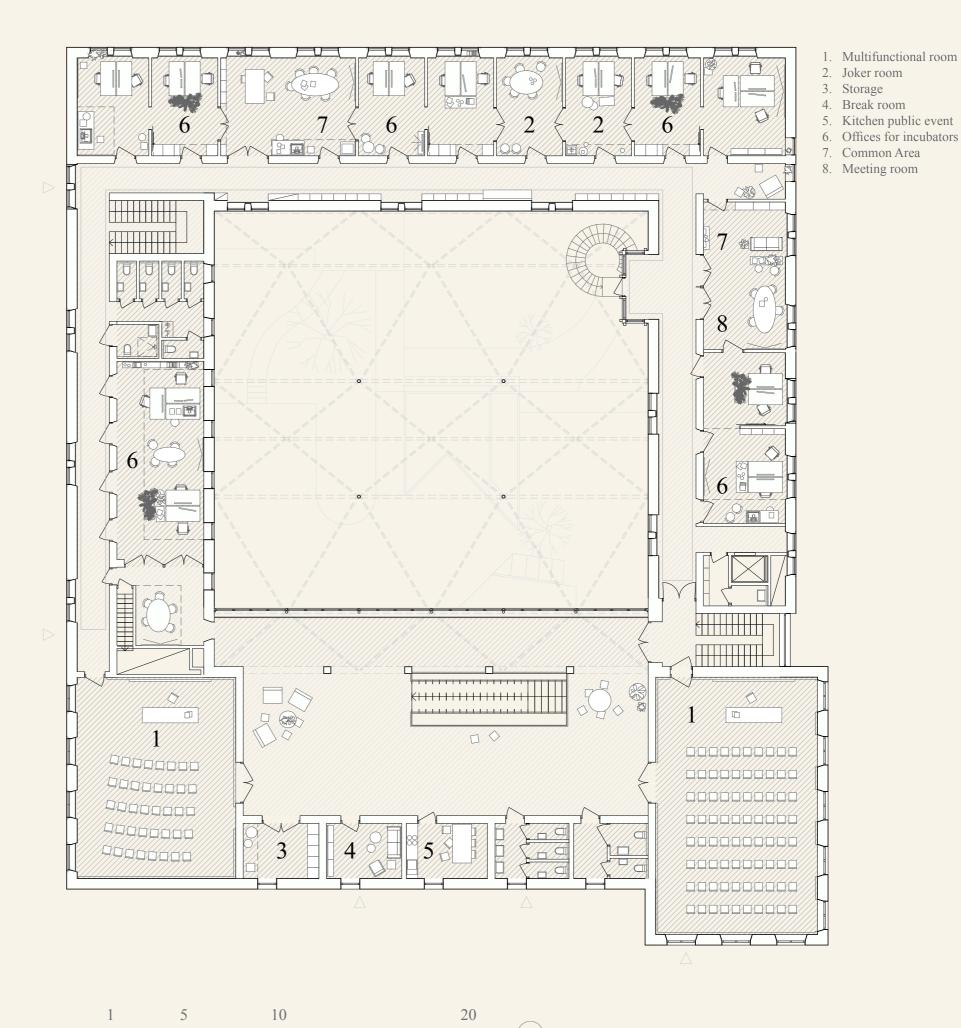






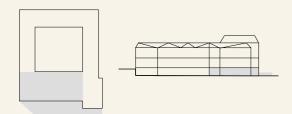
Floor 3







Patio & Restaurant





Design intention

The design is informed by the original notion of the building being integrated in the topography. The threshold creates an additional layer by bringing the brick material of the facade down to merge with the hight lines of the surrounding.

Tranformation of interior atmosphere

The room on the first floor is transformed from its former cold atmosphere with bared windows and blank walls and floors into a more welcoming space with materials reffering to the buldings public functions.

The existing secondary rooms are used for the kitchen and storage for the restaurant, a garbage room is installed next to the delivery.

Architectural concept

Opening the first floor for the public

By installing public functions in the former courthouse, we also generate a more inviting and open area in the west-facade. Besides the better accessible main entrance, the first floor and restaurant space now open to the outside so the buildings inside functions can be experienced also from the outside.

Creating a threshold to connect inside/outside

The outside seating area for the new restaurant is located next to the new entrance building to Västlänken and Korsvägen to attract more people passing by. also the location in the west invites to sit outside in the evening sun.



Reused Limestone form courtyard

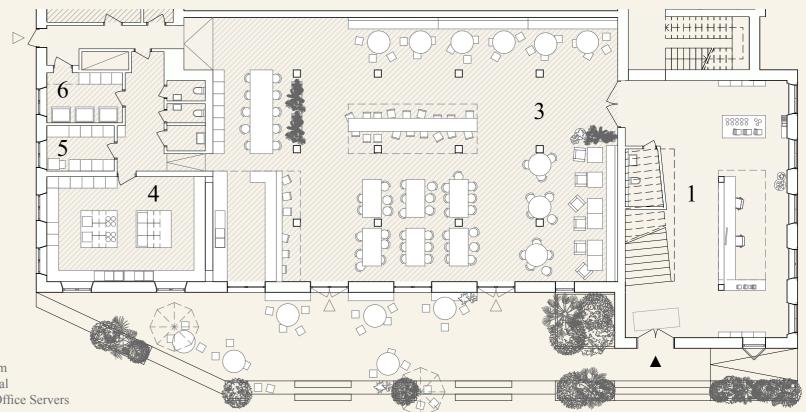


Bricks



Floor 01

- 1 Entrance Hall
- 2 Exhibition
- 3 Café
- 4 Kitchen
- 5 Storage
- 6 Garbage Room
- 7 Service Central
- 8 Storage and Office Servers



Patio & Restaurant



With the aim of creating an inviting, calm and spacious atmospehere, it is influenced by the materiality, breathing the original design intention of high quality materials.

The columns and walls orientate themselves with green and turquoise colors to associate to the identity of the old copper roof. The columns are covered in the reused copper.

The terrazzo floor is durable and add a brighter surface.

The furniture is of natural material, enriching the atmosphere with its natural patina.



Reused Copper



Terrazzo

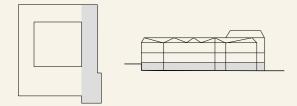


Wood



Marble

Exhibition space



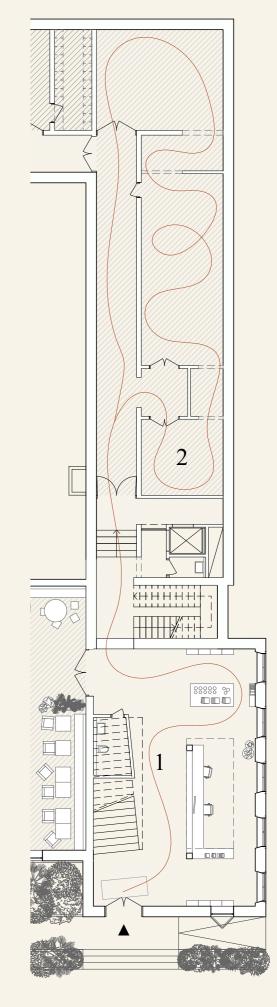


Visual, possibilities of interaction in the exhibition

The exhibition area invited the public to engeage and interact with the tools developed by the start-ups as well as exploring the digital archive of heritage.

What you might experience lost heritage with the use of XR. creating a transition of space through interplay between the tangalbe and intangable.

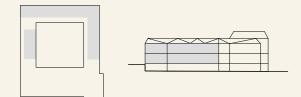
The hardware provided will enable you to explore reasearch that has been going on for decades in academia of digitalising lost heritage. You can wander around in rebuilt versions of the ancient surroundings.

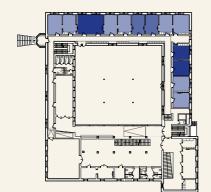


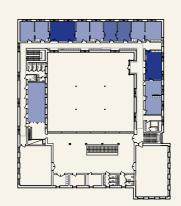
Floor 1 Exhibition

- 1 Main entrance
- 2 Exhibition

Incubators' Office Spaces







What does an incubator consist of?



Regular office spaces with a good computing infrastructure



3 to 4 employees per start-up



The possibility to grow in business as well as in space.

Space for up to 10 people should be provided



A platform to built up a network and for further education

information by Jimmy Lee Öman, Mentor and Senior Business Developer at The Game Incubator



Incubators' Office Spaces

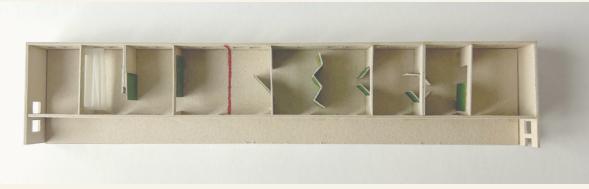
Open offices within small set rooms

To respect the old structure and reduce the impact of interventions we create openings between the small rooms of the courtbuilding instead of tearing them fully down.

Sliding doors between two rooms always generate an incubator space for 4 people, the rooms next to them are either for common use and meeting spaces or can be added to the set space of two rooms. Whereat the sliding doors ate expected to stay open most of the time, so that the two rooms can be experienced as one office space.

The additional 'joker rooms' can be added over swing doors, like this, different variations in office sizes can be generate or further meeting or screening rooms can be installed.

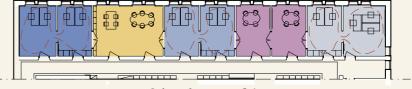
This layout gives the users the possibility to adapt the space within their needs and also grow their business by just opening the door to the next room.



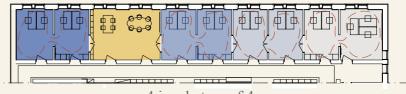




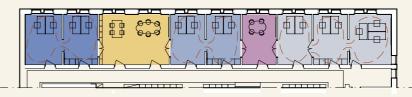
Concept model of Possibilities of openings between rooms



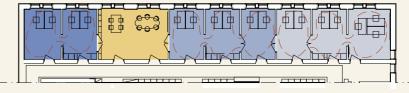
3 incubators of 4



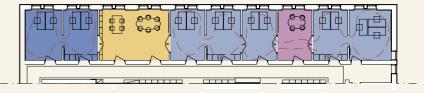
4 incubators of 4



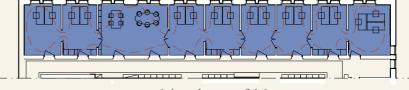
2 incubators of 4 and 1 incubator of 6



1 incubator of 4 and 2 incubators of 6



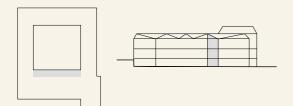
1 incubator of 4 and 1 incubator of 10



1 incubator of 16



Extension





Architectural concept

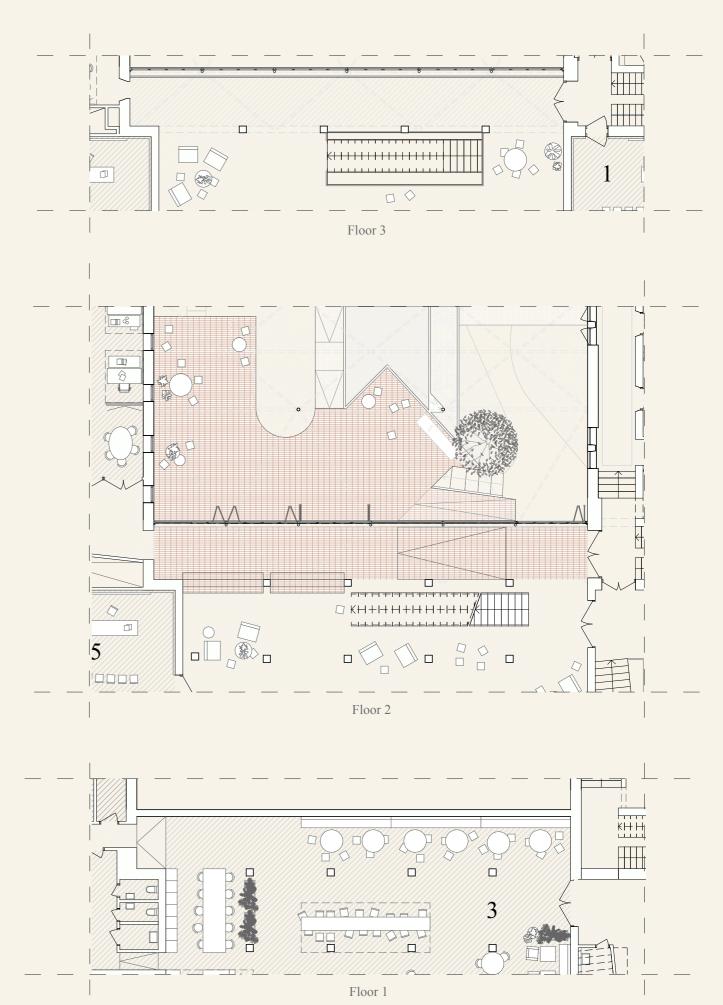
The new extension is situated in the same position as the existing extension was placed. The position enables a good flow of movement inside of the building and as a connection to the courtyard.

However, we believe the existing extension was neglecting the original design language and the intention of creating an continuation of the same room, left the space feeling uneasy and mismatched. The existing extension did not solve for the different hight differences the building includes.

Therefore, the new design extension aims to be a threshold between the interior and the courtyard.

The high differences are addressed by the ramp having a central role in the design and an elevator is proved in connection to a nearby staircase. The threshold enables an easy access to the courtyard by folding glass doors and a continuation of flooring spreading out in the wintergarden

The atmosphere is in contrast to the existing room, emphasised by materiality and form.



Extension

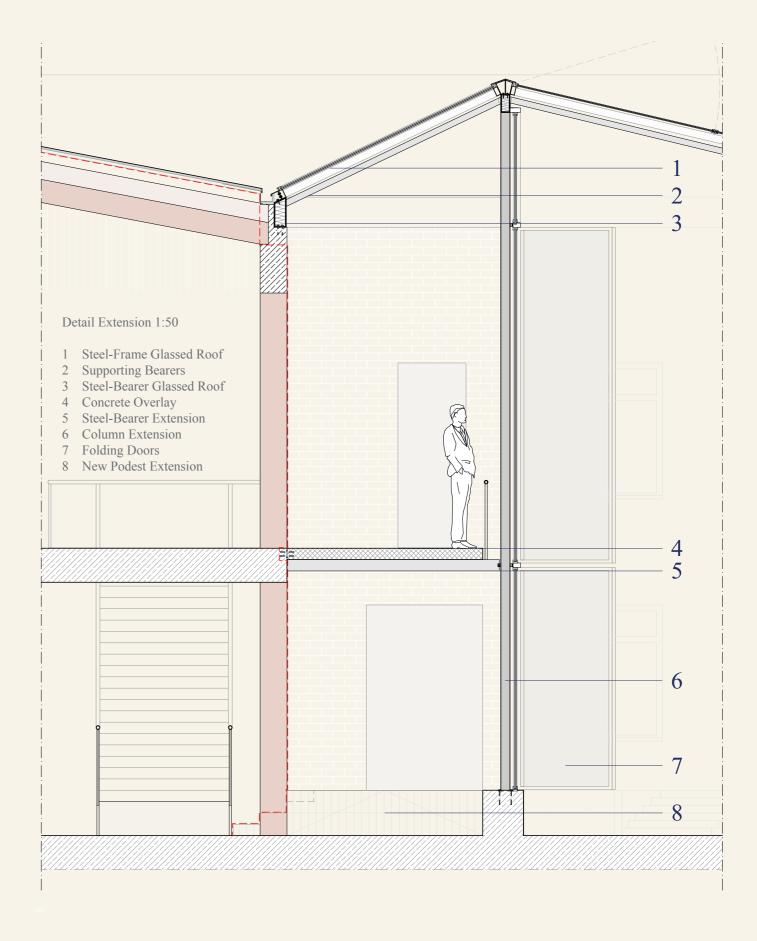


Materiality

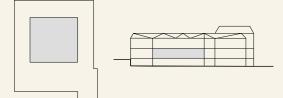
The usage of materials play a central role in the atmosphere of the extension.

The usage of brick flooring provides a instant association to the atmosphere of outdoor spaces, giving the extension and the courtyard a visual and tactile connection. The brick, which is very prominent in the heritage of the building as well as historical context, is gathered from the demollishion the neighbouring building, old univeristy library. Since it is facade bricks, they need to be layed with the strecher facing upwards and can be used for interior purposes of wintergarden, that is not exposed to too much extreme weather.

The glass surfaces from the old extension is also reused in the new.



Courtyard Landscape



Transformation of atmosphere

The courtyard as a central position in the building, providing the interior with natural light and a soothing environment for humans to interact with.

The tranformation departured from the notion of keeping the natural value of the existing trees and reintroduce the water as an element to exhibit.

Seeing the courtyard as the building's natural waterhole, the interventions were addressed around the creation of providing more accessibility to enter it.



Key aspects



Microclimate

is beneficial for regulation of heat in the building as well to create a soothing environment for its inhabitants.



Water

The notion of water is thought of through reintroducing a pond as well as manage the water distribution in the court yard.



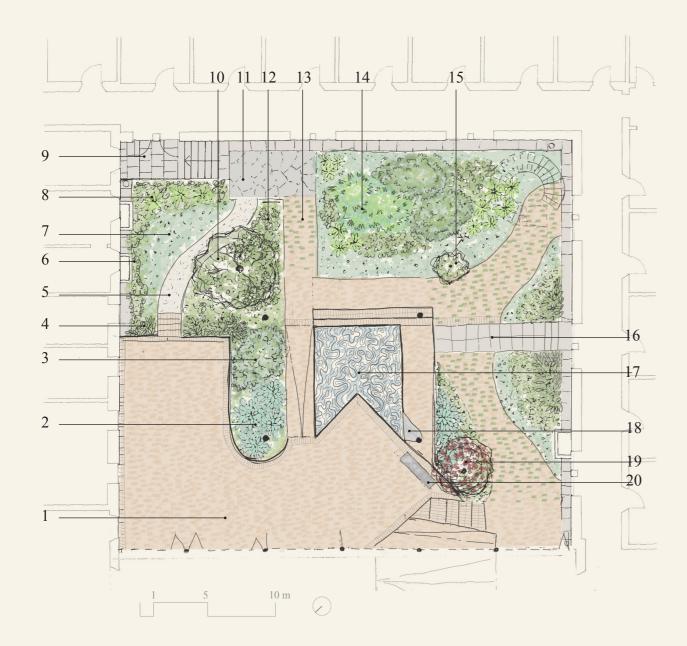
Value of vegetation

The trees in the court yard are valuable for the atmosphere of the space, the design departure from an aspiration to tend to their needs. A majority of the plants are evergreen in zoon 1-3.



Seasonal changes

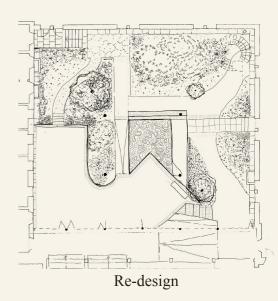
Tending to the need of the vegetation and the microclimate, the design of structure is to allow for seasonal changes.

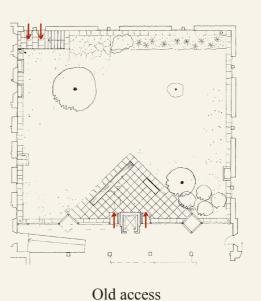


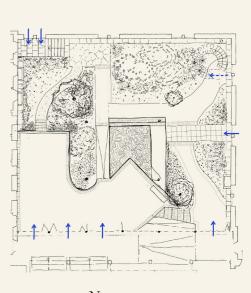
- 1. Reused brick from demolition of old uni library.
- 2. Existing plant: Hosta sierbodiana
- 3. Existing plant/more added: Rhododendron
- 4. Added plant: Kastanjerodgersia
- 5. Added Gravel
- 6. Added plant:
 Alchemilla vulgaris
- 7. Existing plant /more added: Pachysandra terminalis
- 8. Existing plant /more added: Matteuccia Struthioteris
- 9. Existing stairs of Granite

- 10. Existing tree: Magnolia
- 11. Existing shiffer stone
- 12. Existing plant /more added: Rodgersia aesculifolia
- 13. Reused bricks with grass inbetween
- 14. Existing plant /more added: Enkainthus Campanulatus
- 15. Existing tree:
 Ceridiphyllum Japonicum
- 16. Reused limestone from court yard
- 17: Added Pond
- 18: Added gutter of limestone
- 19. Existing tree: Japanese maple
- 20. Statue

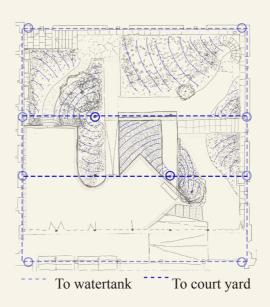




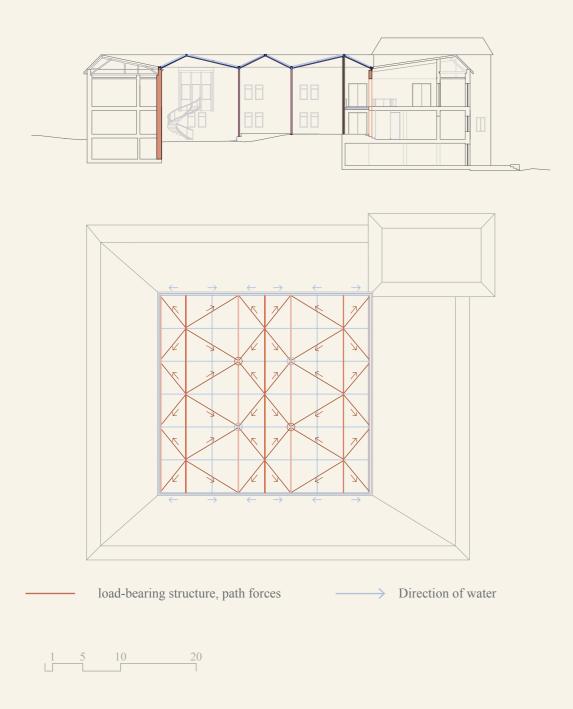






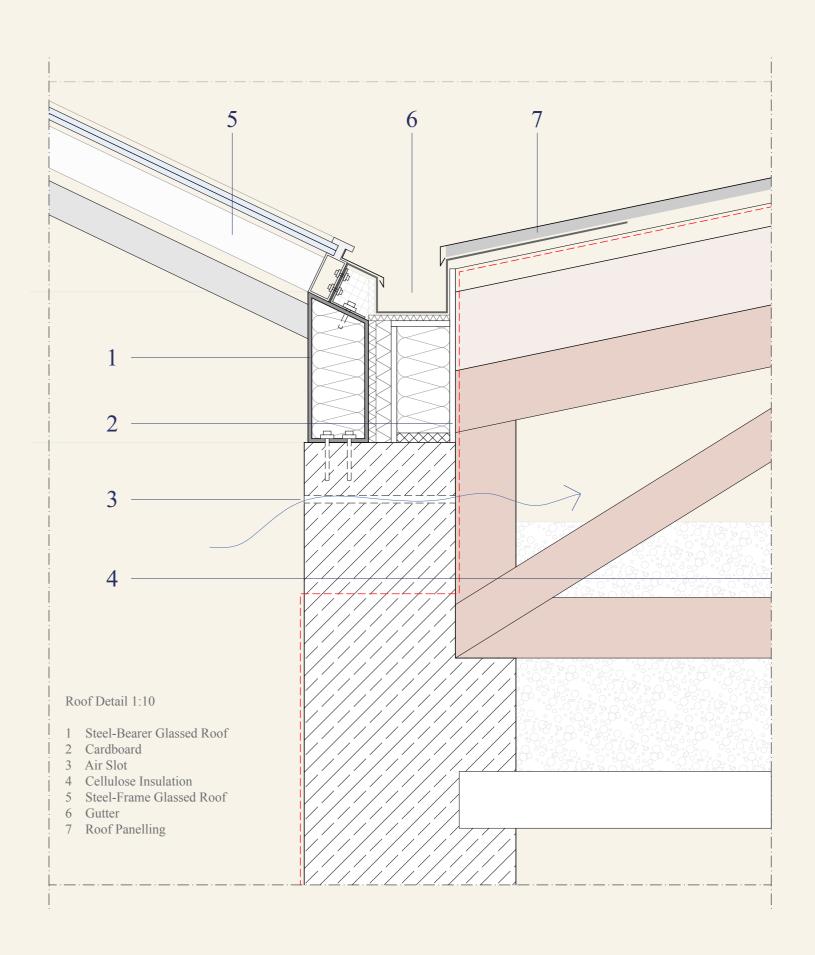


Water distribution



Explaination of glassed roof

The design of the courtyard's glassed roof implements itself in a gentle way into the existing. To generate a connection, the angles of the glass surface orientate themselves on the existing roofs angles. With this folded roof construction we also built a meeting point for the roof and the extensions facade. Furthermore, we decided to keep the structure as slender as possible, so to secure that, we install beams in the center of the courtyard to support the roof.



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Interview:

Jimmy Lee Öman, Mentor and senior business developer at Game incubator, Gotheburg. Interviewed 2022-04-12.