

Knutpunkten Kajen | The Dock

PROJECT BOOKLET

TABLE OF CONTENTS

Method.....	3
Building history.....	4
Analysis.....	5
Atmosphere.....	6
Stakeholder quotes, Island program.....	7
Concept.....	8
Program.....	9
Landscape strategies.....	10
Site plan.....	11
Frame, vertical articulations.....	14
Historical articulation.....	15
Program distribution.....	16
Floor 1.....	17
Floor 2 & 3.....	19
Floor 0.....	21
Material.....	22
Meeting points.....	23
Stages.....	24
Facades.....	25
Details.....	26
Exterior perspectives.....	30

ARK626 - Transformation projects and environmental care
Chalmers School of Architecture
Master's Programme 2020/2021
ARCHITECTURE AND URBAN DESIGN / MPARC
Fall 2021

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Examiner:
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ASSIGNMENT

Aim

“This course combines architectural transformation projects with theory and practices of sustainability and 'environmental care'.”

Learning outcomes

- “Implement different perspectives from environmental care theory into an architectural transformation intervention.
- Engaging with discussion on the role of architect/ architecture in relation to climate change.
- Produce site analysis with attention to the local context, social, historical, environmental conditions.
- Do a building inventory, focused on the technical, historical and phenomenological conditions
- Develop a design brief and design intervention for a transformation project, reflecting upon buildings structure, materials, climate, as well as composition, atmosphere, use and relation with surroundings.
- Develop an architectural communication strategy specifically for transformation projects”

(ARK626_2021 Course Book)

Introduction

Our project began with a study visit to the old dairy factory on the island of Orust in Bohuslän, Sweden. A site analysis, building inventory and damage report was made through a team effort, establishing the context and conditions for the project. In the weeks that followed we developed our ideas by using these various methods and strategies:
Workshops + Seminars + Lectures

Our team participated in workshops and seminars relating to the subjects of the course: Heritage & transformation, context mapping, environmental perspectives, circular economy, health & society, storytelling. The theories and perspectives from the seminars laid the foundation for our future concept and design development.

Studio Work

The studio collectively developed a communication strategy and on-site context analysis for the course work. After making a building inventory and damage report, we then created the common documents needed for the continuation of the course. We also interviewed local stakeholders and workers from Orust to get a better understanding of the context in regards to the community and the future plans for the island.

Project Team Work

Start up: After the initial analysis we went into the group work phase of the project. We established our group dynamics and goals during a team workshop. We then continued with more site visits in Gothenburg for inspiration as well as a model workshop to spark concept ideas.

METHOD

Concept: By sketching, having team discussions, finding references and further analyzing the site/ building, we developed our project concept. The concept includes program development, transformation strategies, economic perspectives as well as some creative design ideas. This phase ended with the concept review where we got feedback on our work and ideas about how to continue.

Design: In the development of the project design we spent more time defining the concept to create a solid frame for our work. We approached the design process on different scales simultaneously to deepen our understanding of the project. Frequent themes in our work included the relation between old and new, circular economy, volumes, minor interventions, the surrounding landscape & connections, atmosphere and material. Weekly teacher tutorials helped to guide us forward. This phase ended with the design review where we received constructive feedback.

Storytelling: The final phase consisted of developing our material and finding ways to tell our story. We dove deeper into several aspects and worked on creating coherence in the project

Final review

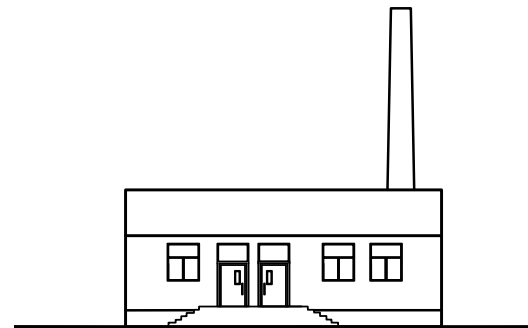
The project ends with a final review and an additional presentation for local stakeholders and the community of Orust.

BUILDING

HISTORICAL CONTEXT

In the mid 20th century Orust flourished with dairy farms, being the most densely populated area of cows in Sweden. In 1935 two larger dairy associations based in Gothenburg united to become Lantbrukarnas Mejeri Central, L.M.C. In 1936 they decided to create a centralized dairy industry On Orust and established the plan for Vräland Mejeri. The factory and an associated dwelling was completed in 1938.

Post WW2 the production increased, and in 1949 the production was close to twice the amount of the WW2 era. In 1950-1952 the factory was extended and the interior of the original part remodeled, expanding the capacity of the factory which then entered its prime during the following decade.



1938



1952



1961

CURRENT USERS

Today the old dairy is housing multiple users. A welding company uses part of the premises for welding and office. The largest part of the building is used by Orust Återbruk which is a reuse store with an additional repair-workshop for bikes. There are also occasional art exhibitions, a weaving course, local food market and culture events in the building. Lastly there is a rentable apartment in the building and a residential building on the site.



island



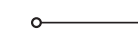
local context

ANALYSIS

Site

Analysis

Main road proximity /
central position on the
island



How to take advantage of
this privileged position?

"An island in an island"
- car dependent



How to create links
between the building and
the landscape?
How to reduce the car use
and increase the bike use?

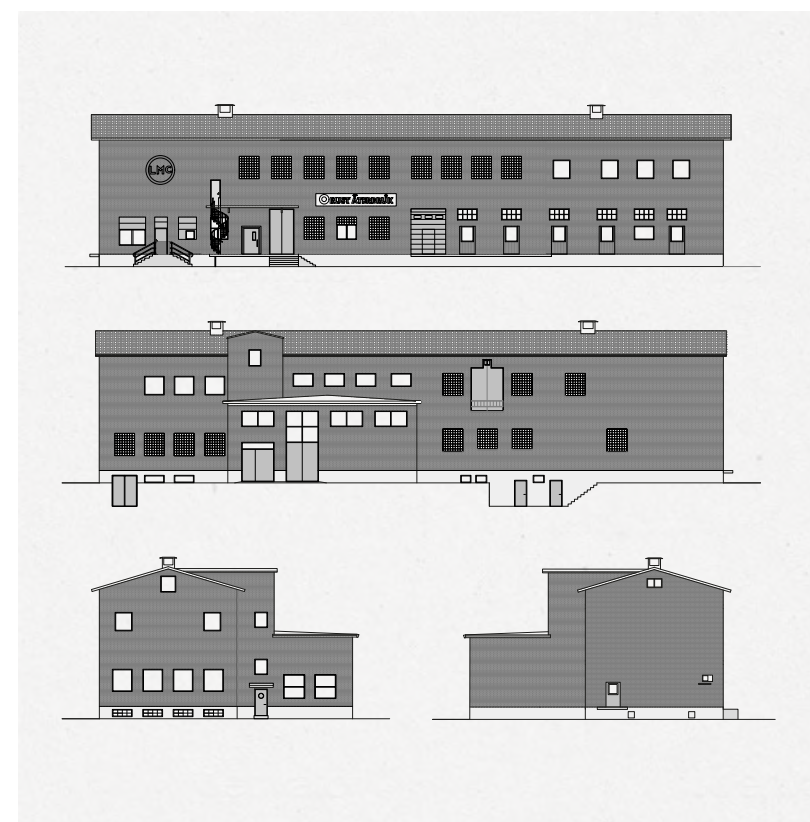
Touristic island but site in a
rural environment



How to make it stay a rural
and local project?



site

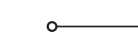


building

Building

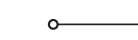
Analysis

Well known dairy factory in
Orust - Historical values



How to transform the
building while respecting its
history and identity?

Difficult to orientate in the
building

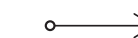


How to clarify, organize and
connect the architectural
spaces ?

Users

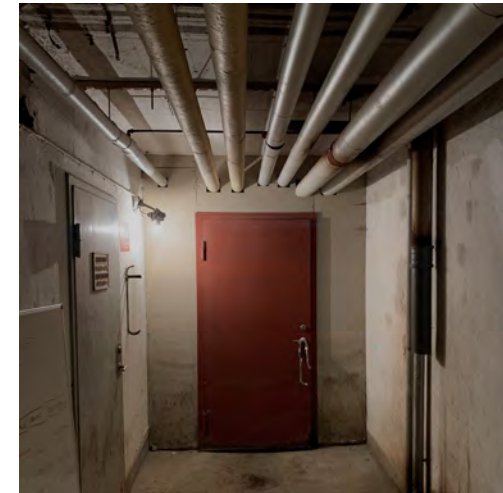
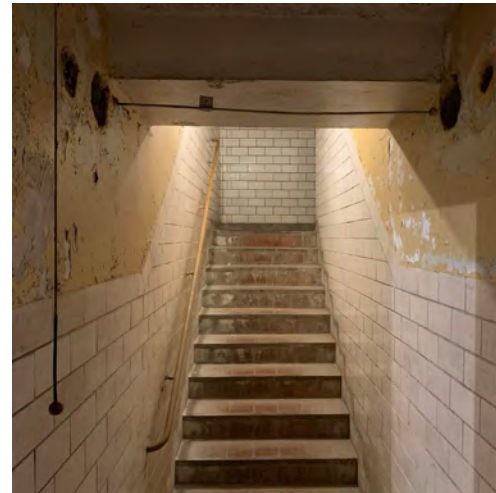
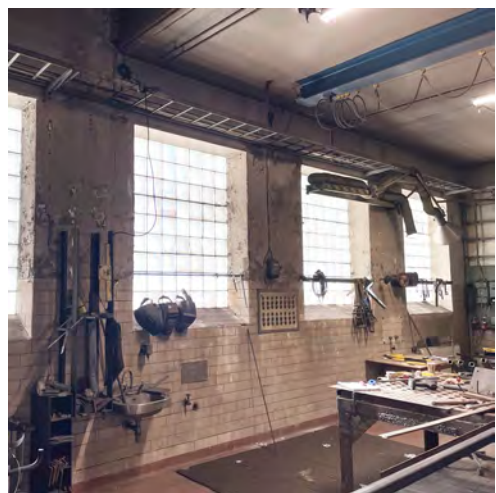
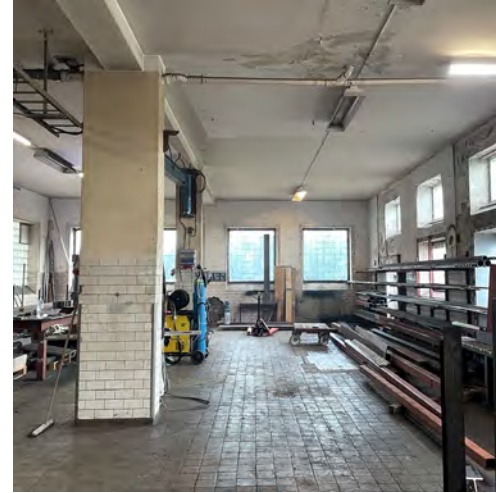
Analysis

Currently multiple functions
and users in the building



How to use and develop the
existing program?
How to make a mixed program
support local cooperation and
social exchange ?

ATMOSPHERE



Stakeholder quotes

"Practical examples of what the hub might include are **neighborhood offices, bike kitchens, and space for culture**, allowing the building to be activated at different times of the day and year."

- Kia Nordqvist, Member of the municipal executive board (Swedish Green Party)

"Another suggestion is having a wholesale store where the **local food** and products are stored and accessible for locals to buy. The need for such a corporation/function is noticeable."

- Vibs Sohlberg, Slussens Pensionat

"There are many at Orust who start companies based on hobby interests. A **common office space** provides a greater opportunity for the ideas to flourish and develop."

- Margareta Andersson, Orust Återbruk

"It needs to be **easier to park**. And **walk around** the building"

- Margareta Andersson, Orust Återbruk

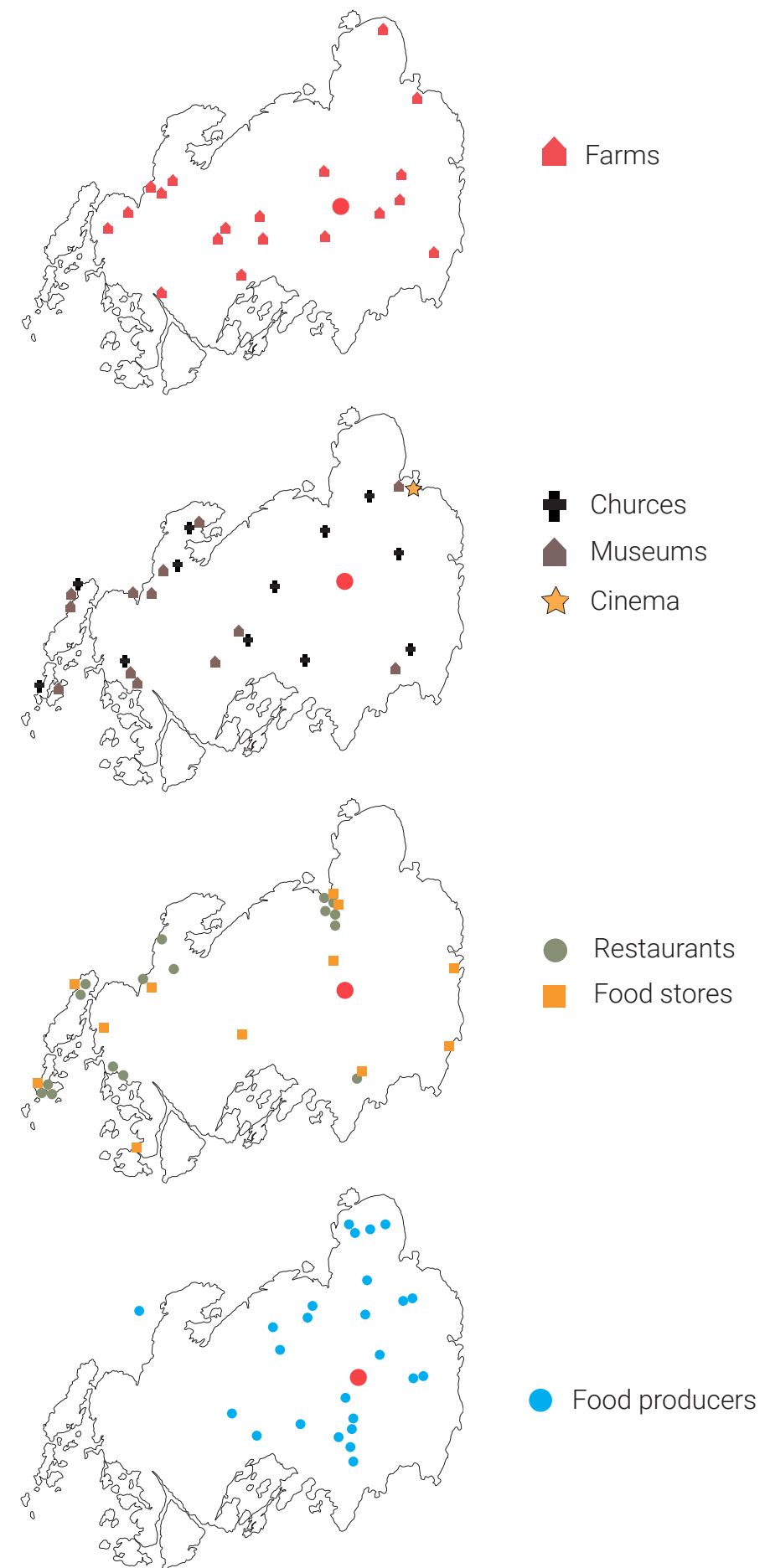
"**Tourists** could boost incomes during summer, **locals** could have access all year."

- Richard Karlsson, Planning office Orust

"When you live in the countryside, you want **proximity to buy locally grown food** without having to go that far. The building is located in the middle of the island close to the road 160 and would be suitable for this kind of function."

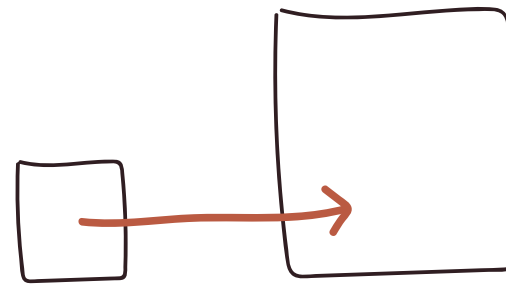
- Richard Karlsson, Planning office

Island program analysis



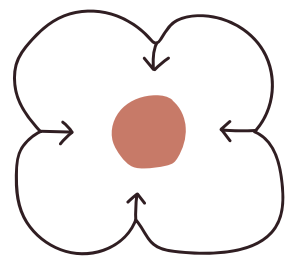
CONCEPT

SMALL CHANGES BIG IMPACT



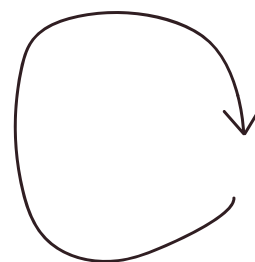
Keep the project realistic and relate to the rural context and scale. Both in the program and in the architectural design.

CONNECTION TO LANDSCAPE



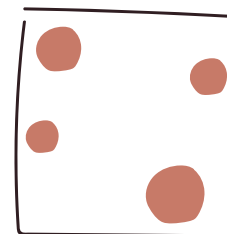
Bring nature closer to the building

CIRCULARITY



A new circular building for an existing circular program. Keep but improve.

FRAME



A structured space to articulate the multifunctional program and social exchange.

MEETING SPACES

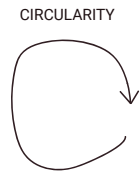
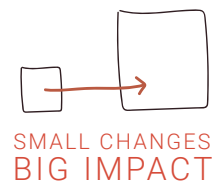


Create meeting places where the program functions meet.

HISTORIC CONNECTIONS

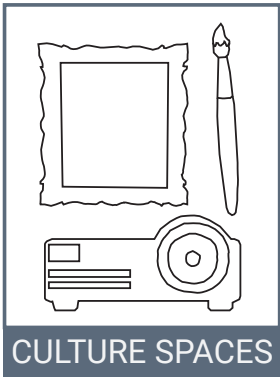


Relate to old building parts in the transformation.



PROGRAM

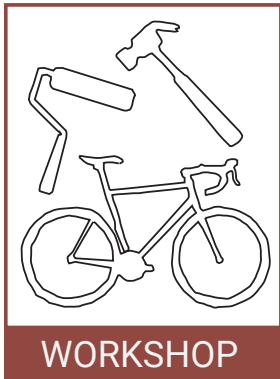
EXISTING PROGRAM THAT WILL BE DEVELOPED



- Developed exhibition space
- Auditorium/film viewing room
- Meeting rooms
- Kitchen in connection



- Only using ground level space
- Developed store in connection to café
- Staff spaces



- Larger space on ground level
- Easy access and connections
- Available for construction work in the building, bike repair

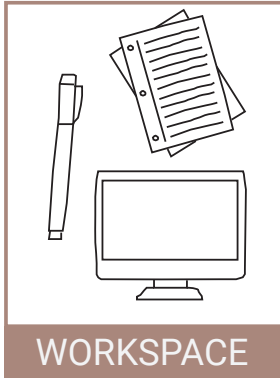


- Large and light indoor space assigned for food market

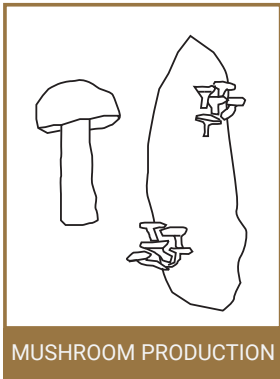
PROGRAM ADDITIONS



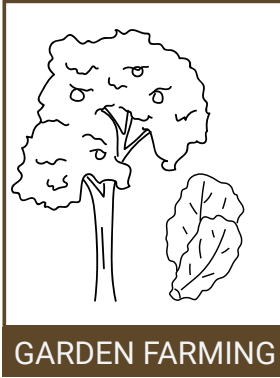
- New bakery and café
- Possibility to have a separate entrance
- Staff spaces



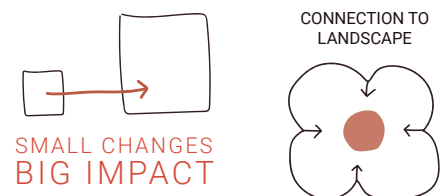
- New office / meeting rooms
- Kitchen and lunch room
- Accessible



- Mushroom production in the basement
- Accessible



- Vegetable farm and fruit trees



CONNECTION TO THE LANDSCAPE - STRATEGIES

LARGE ASPHALT AREA, UNSATISFACTORY PARKING SPACE



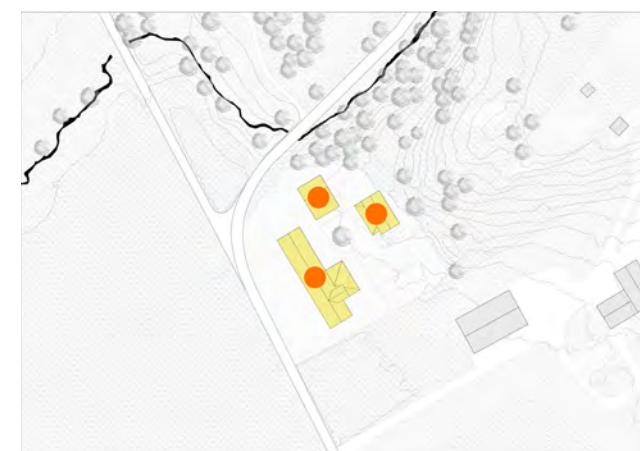
CURRENT

STRUCTURE THE PARKING SPACE, ADD SEPARATE SPACE FOR BIKES



FUTURE

THREE SEPARATE BUILDINGS ON SITE



CURRENT

CONNECT THROUGH A FARMYARD PRINCIPLE



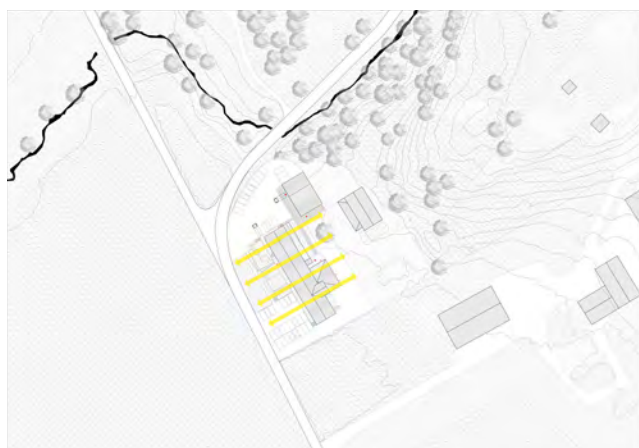
FUTURE

FRONT AND BACK OF THE BUILDING IS DISCONNECTED



CURRENT

CONNECT THE FRONT AND BACK



FUTURE

AN ISLAND IN A CROP LANDSCAPE



CURRENT

BRING THE BUILDING CLOSER TO THE SURROUNDING LANDSCAPE



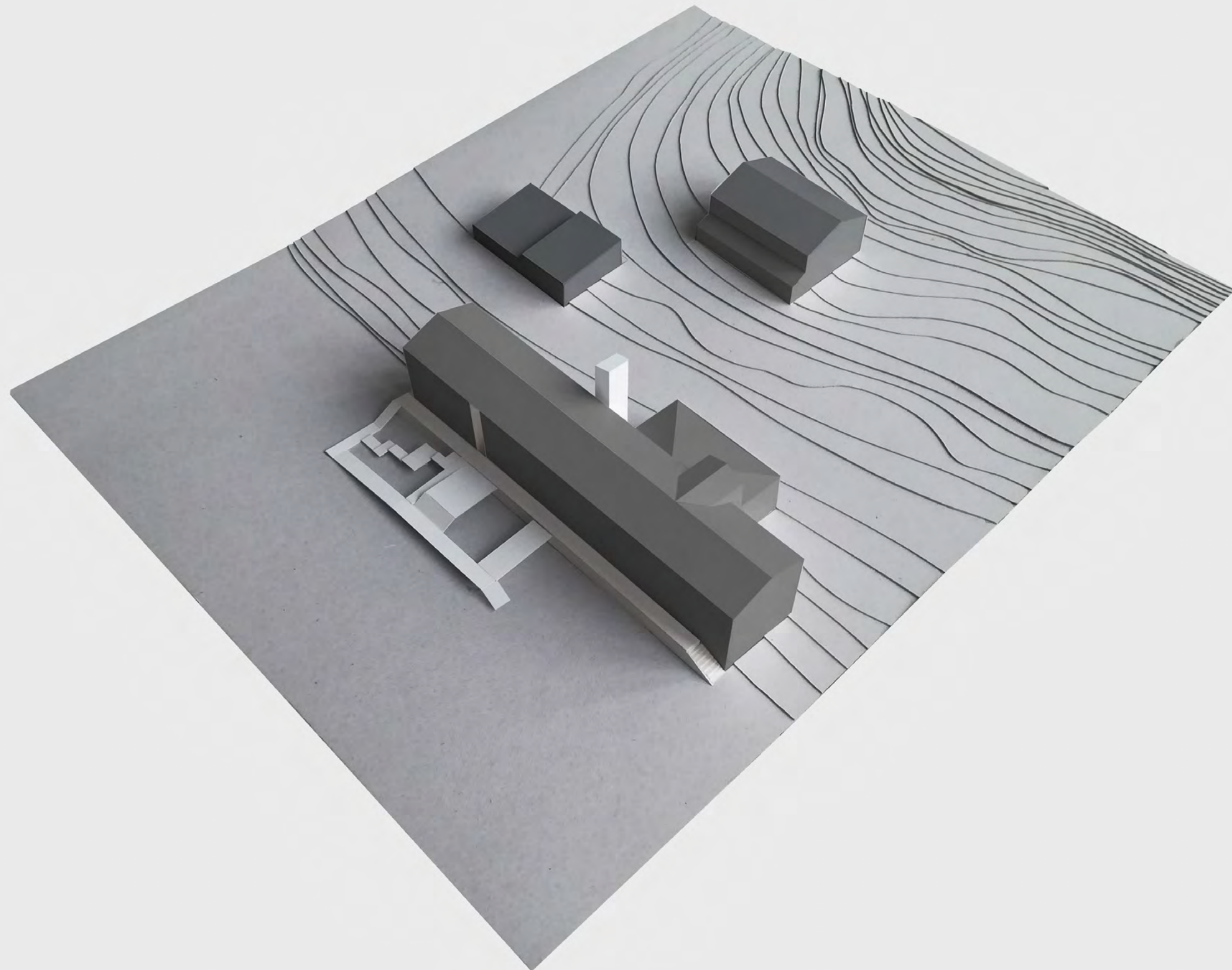
FUTURE



SITE PLAN



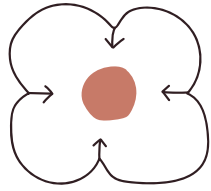
SITE SECTION



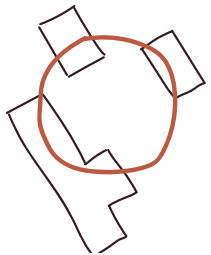
PHYSICAL MODEL

YARD PRINCIPLES

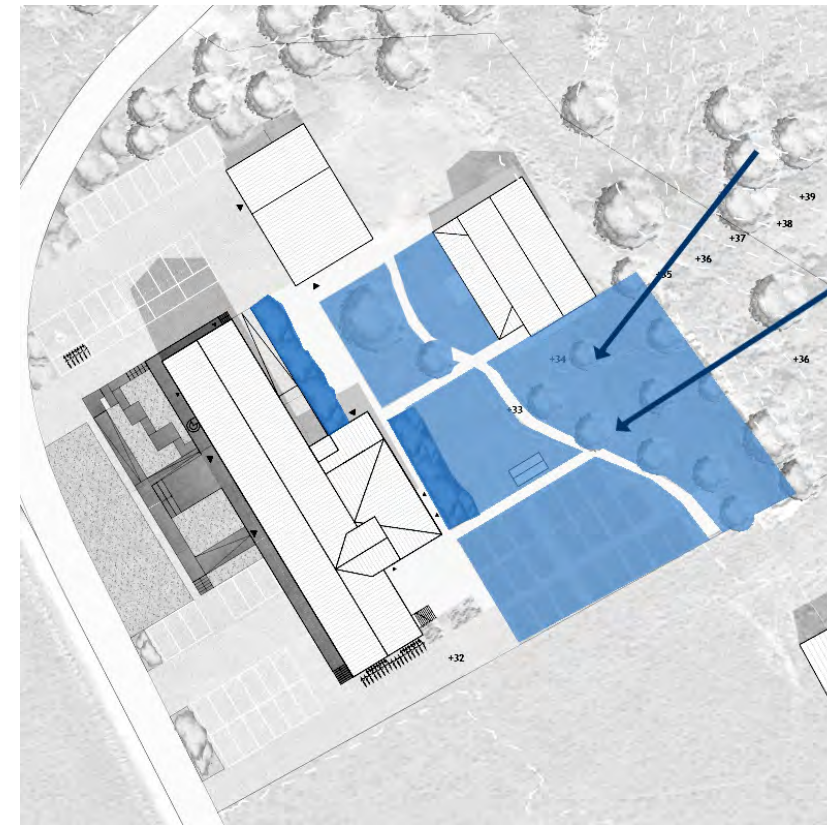
CONNECTION TO
LANDSCAPE



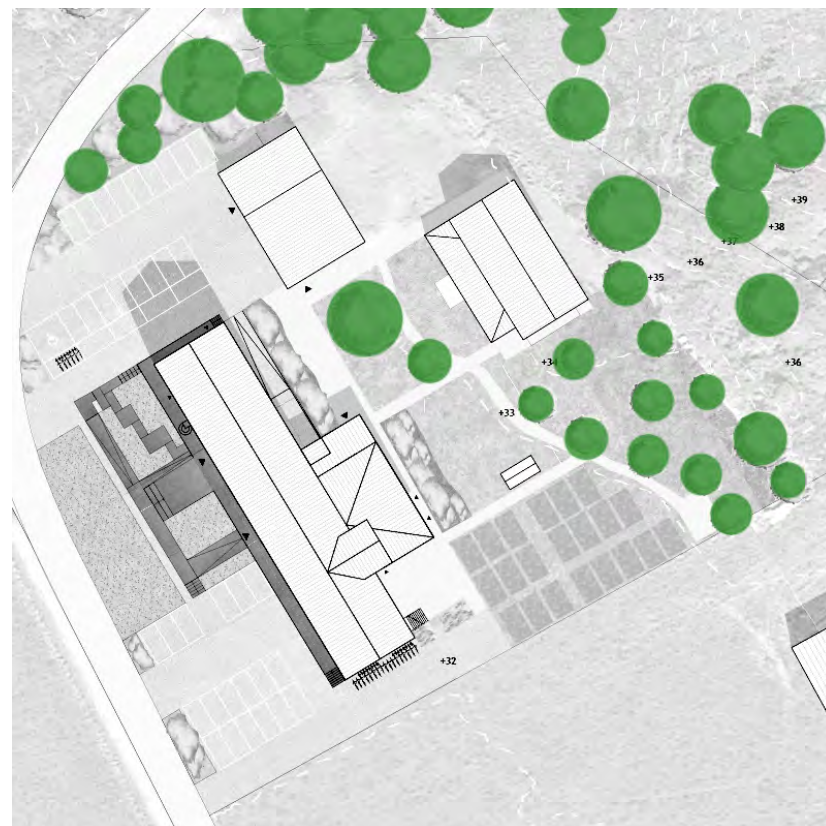
FARMYARD



AGRICULTURE VISIBLE FROM THE MARKET PLACE.



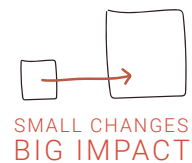
ABSORB WATER FROM THE HILL



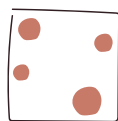
MAKE THE VEGETATION ENTER THE YARD



FOLLOW THE TOPOGRAPHY



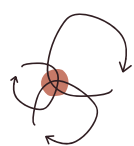
FRAME



CIRCULARITY

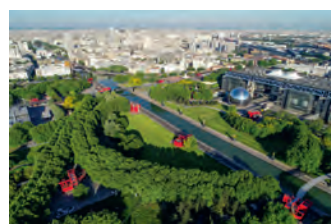
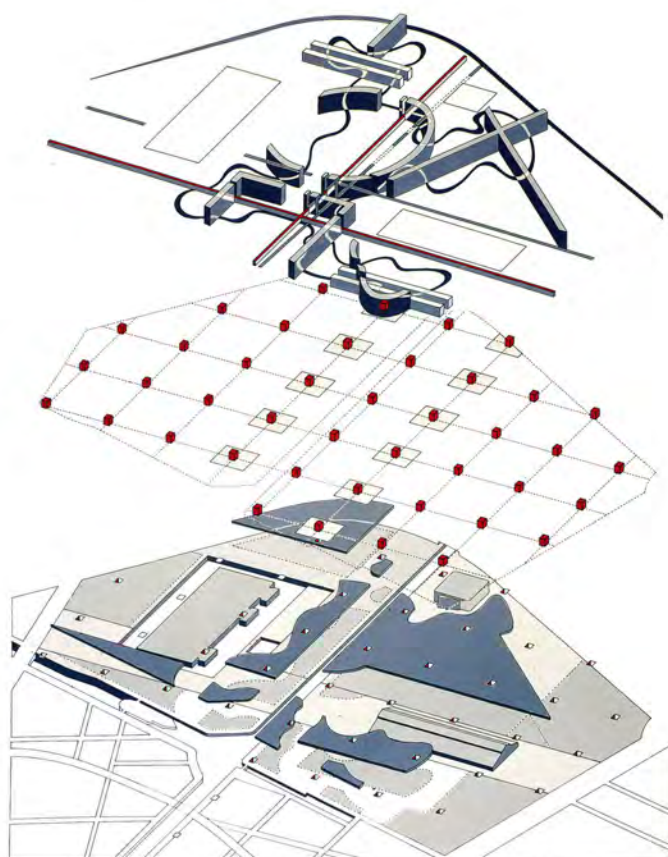


MEETING SPACES



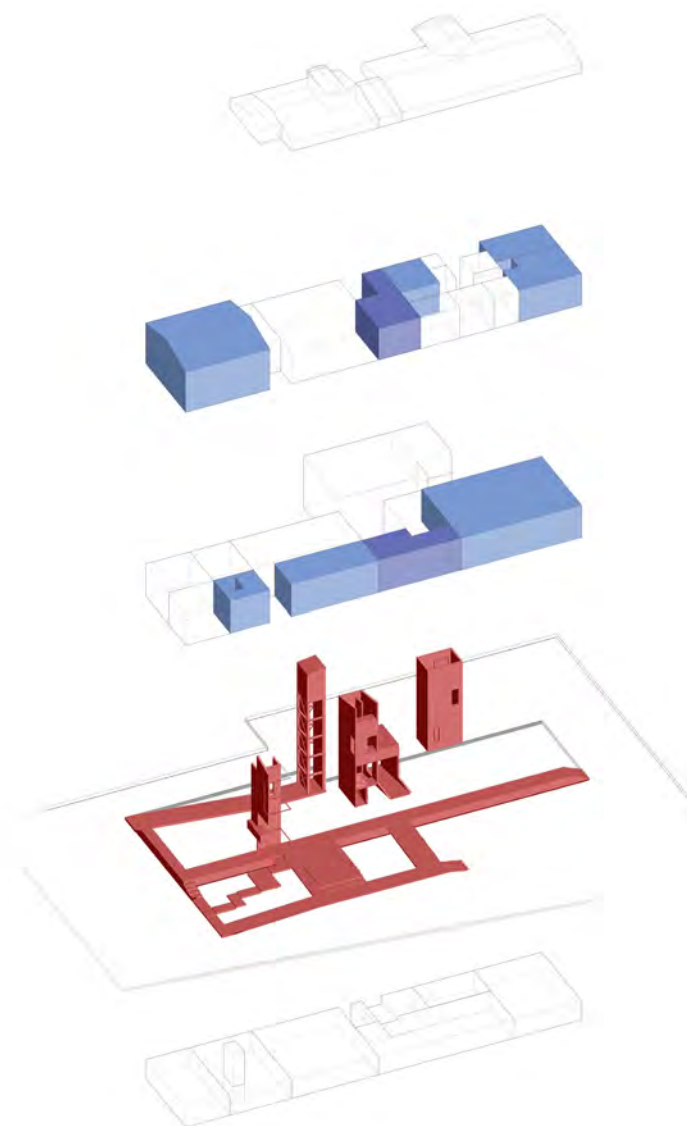
REFERENCE

Parc de la Villette (1982-1998)
Paris, France
Bernard Tschumi Architects



The park has been structured by the building objects (red) which compose a frame. On the same principle we want to use vertical elements to create a frame in our building.

FRAME, VERTICAL ARTICULATIONS



VERTICAL CONNECTIONS

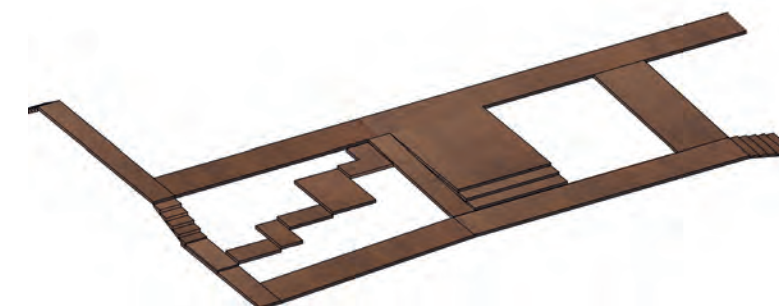
MEETING POINTS



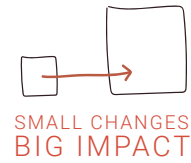
ELEVATOR



OLD ELEVATOR SHAFT -
VISUAL CONNECTION

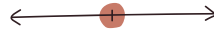


TERRACE



SMALL CHANGES
BIG IMPACT

HISTORIC CONNECTIONS

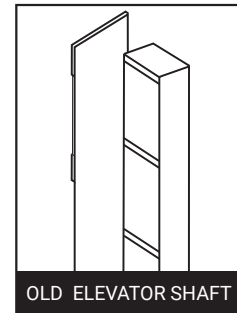
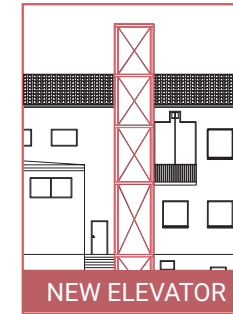


HISTORICAL ARTICULATION

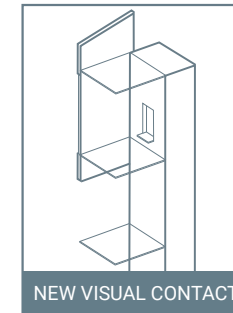
The story we want to tell with our transformation is to let our new additions reflect and tell the past of the building.



The old factory chimney that no longer exists in the current building is symbolically recreated with a new exterior elevator.



The old elevator shaft is transformed by adding glass floors to create a visual connection between the different levels and functions.

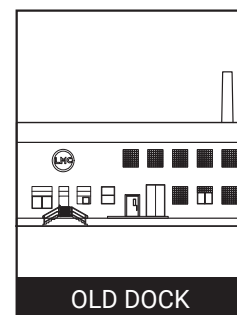
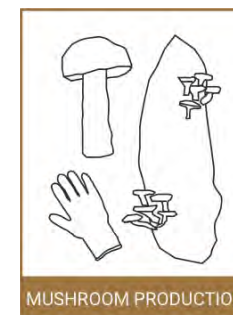


HISTORICAL FUNCTIONS

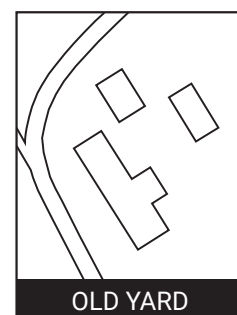
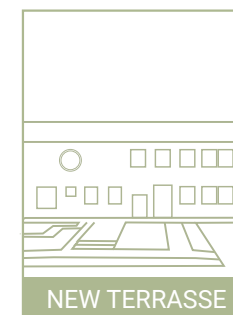
NEW FUNCTIONS



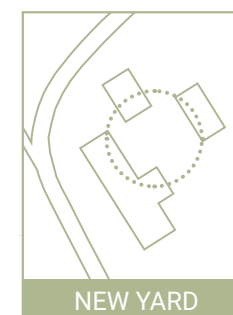
In the past the building started out as a factory for milk production, today we bring back the production element by adding a mushroom cultivation. We utilize the already cool and humid qualities of the basement, and bring income from a low initial investment.



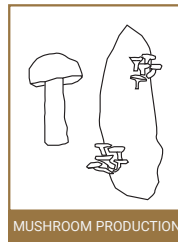
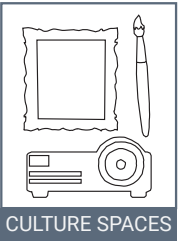
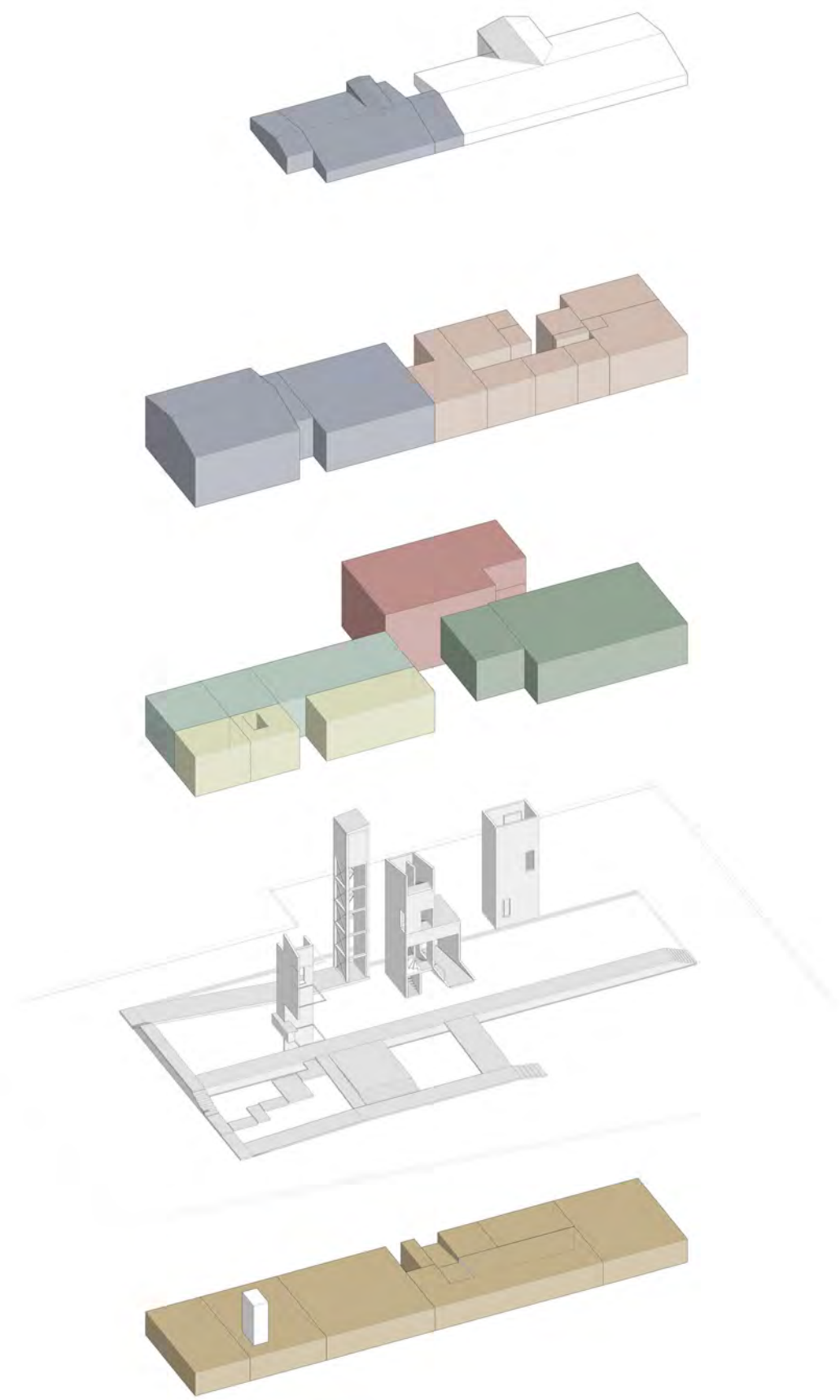
Inspired by the old factory loading dock and projecting canopy the front of the building is transformed into a welcoming green terrasse made from metal and reused asphalt.

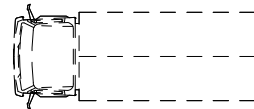
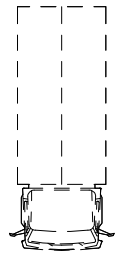
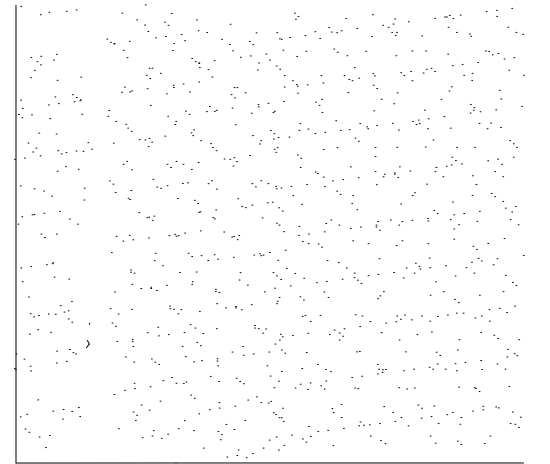
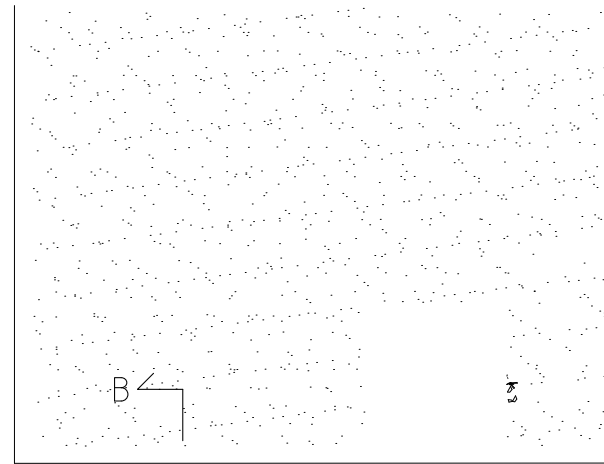
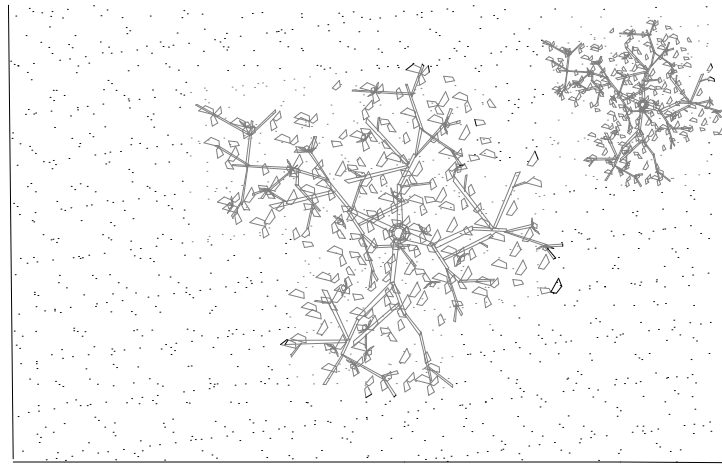
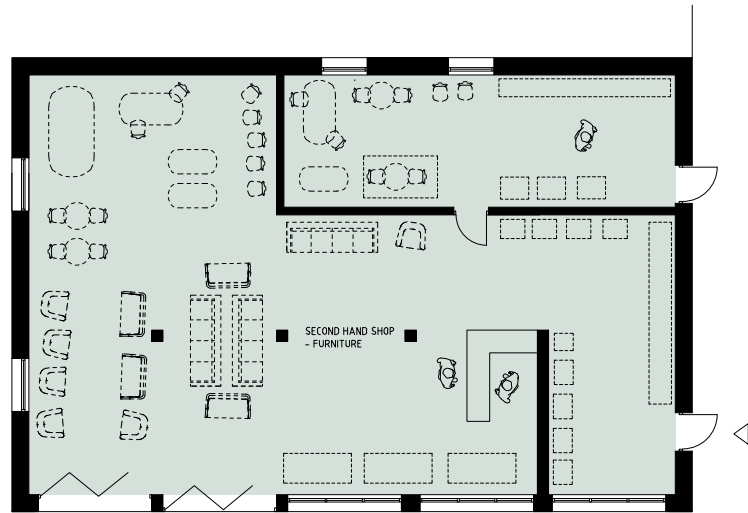


Inspired by the landscape and the surrounding farms yards to connect the existing buildings around the factory by adding defined spaces and function to the backside yard.



PROGRAM DISTRIBUTION



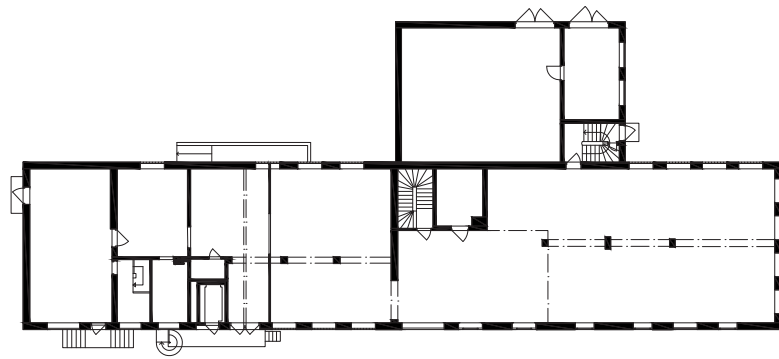


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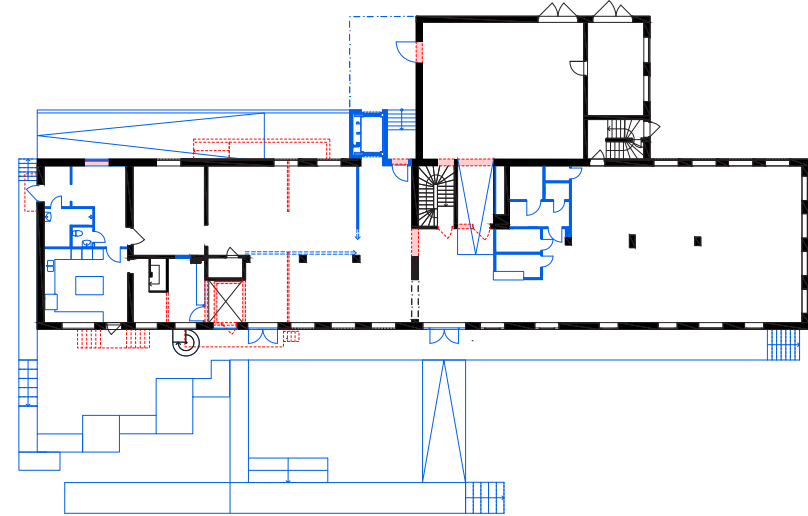


- WORKSHOP
- LOCAL FOOD MARKET
- COMMON SPACE
- CAFÉ
- SECOND HAND SHOP

FLOOR 1
1:200

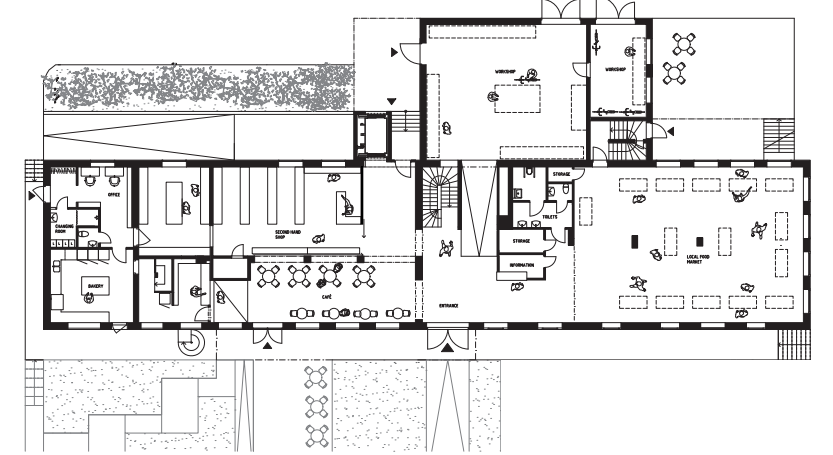


ORIGINAL

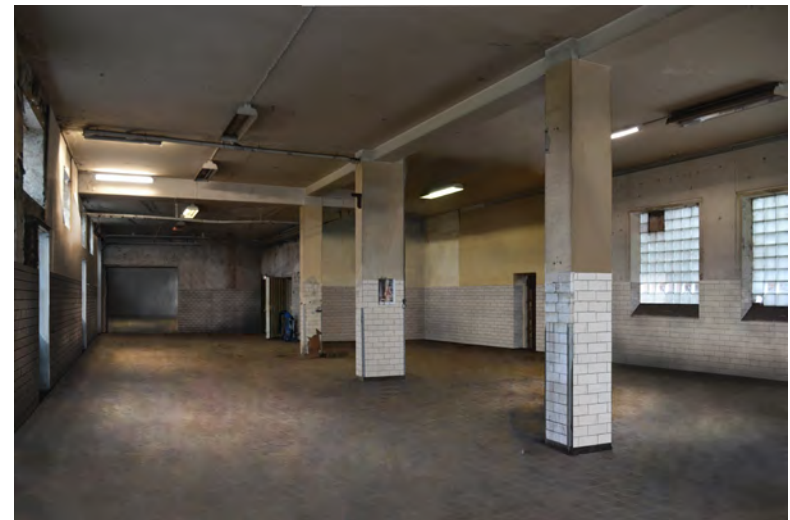


TRANSFORMATION

REMOVED ADDITIONS



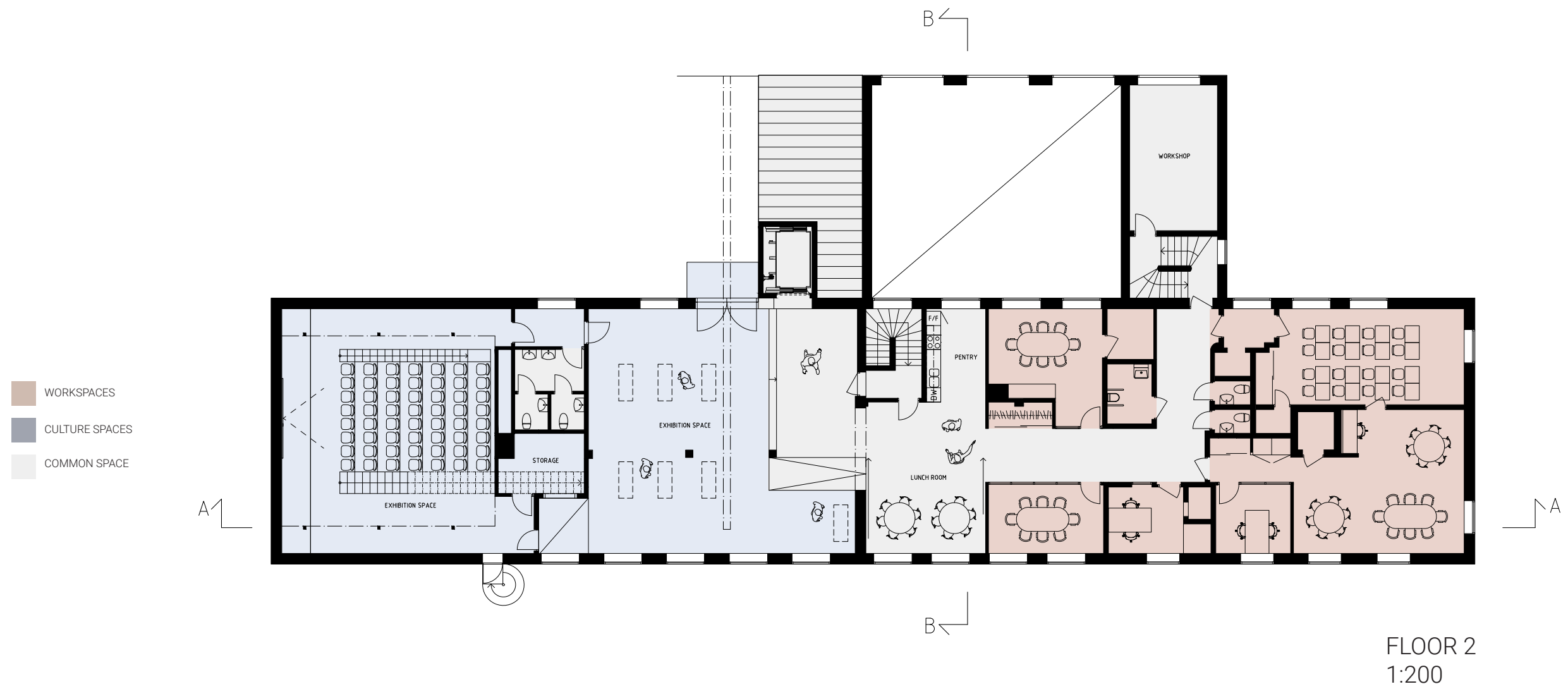
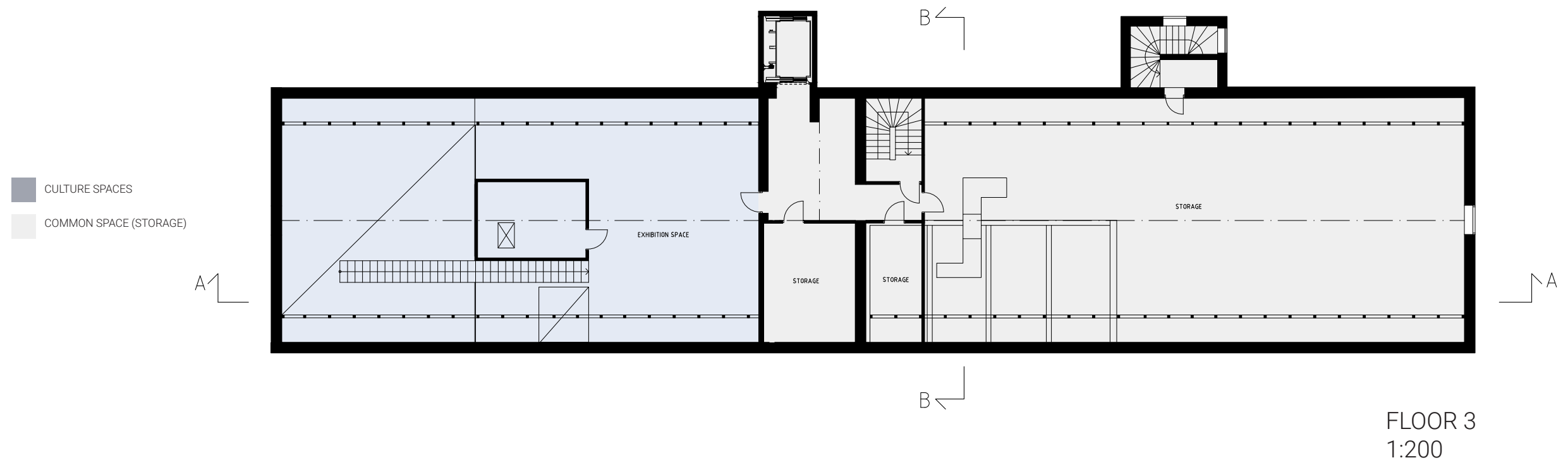
NEW



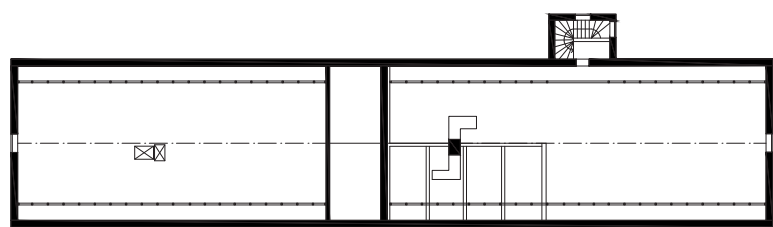
FOOD MARKET



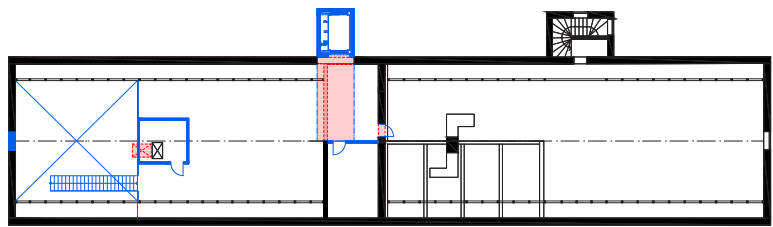
ENTRANCE



FLOOR 3

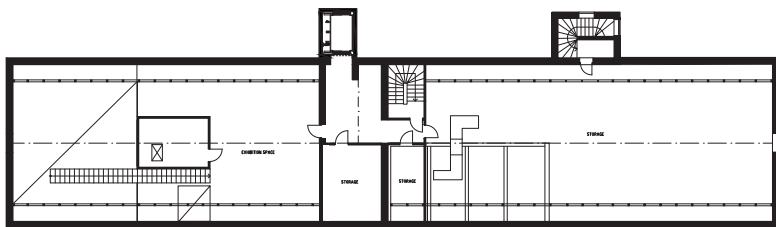


ORIGINAL



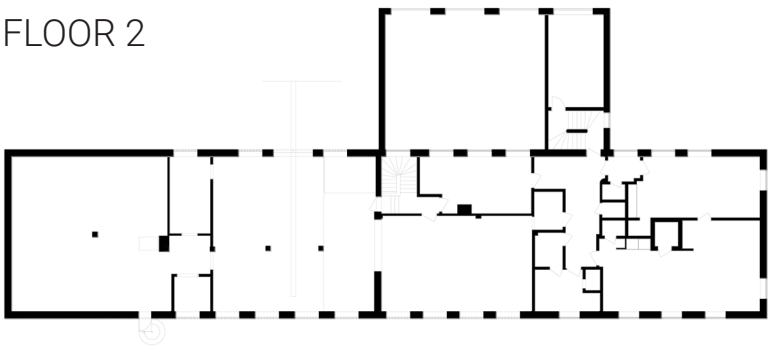
TRANSFORMATION

REMOVED ADDITIONS

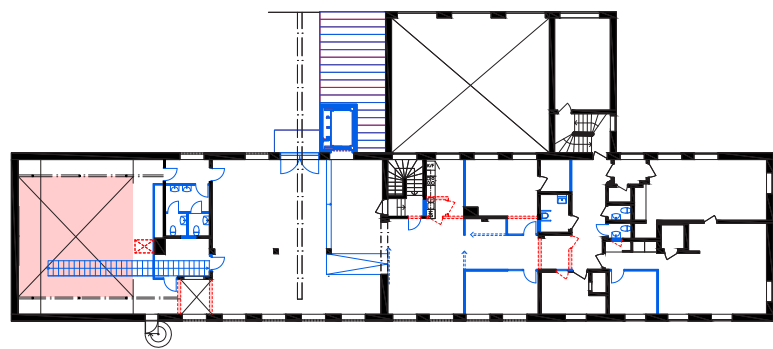


NEW

FLOOR 2

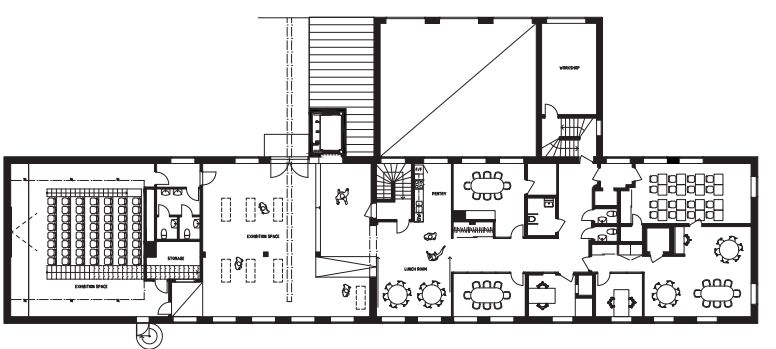


ORIGINAL

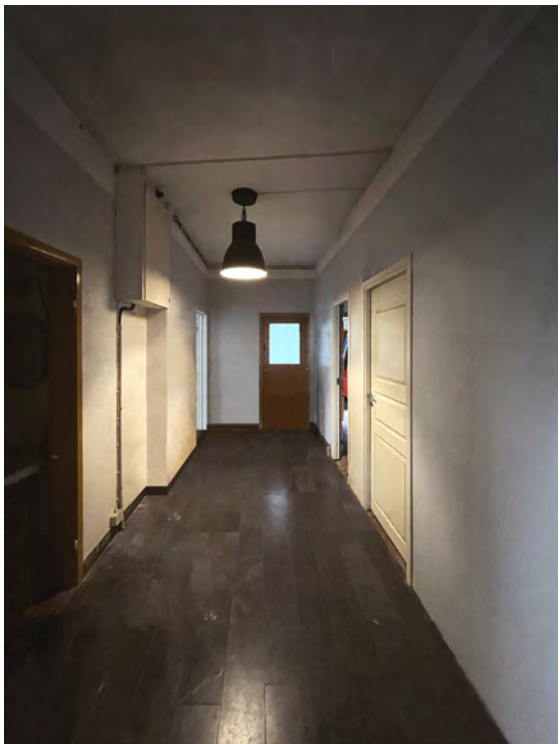
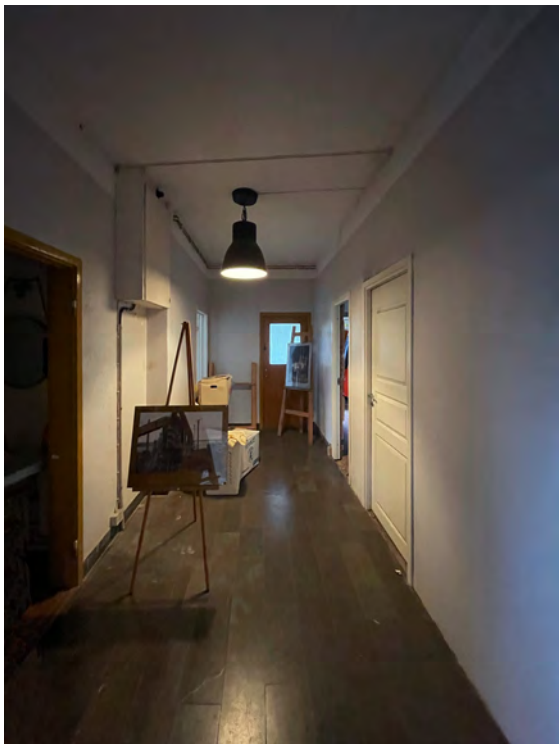


TRANSFORMATION

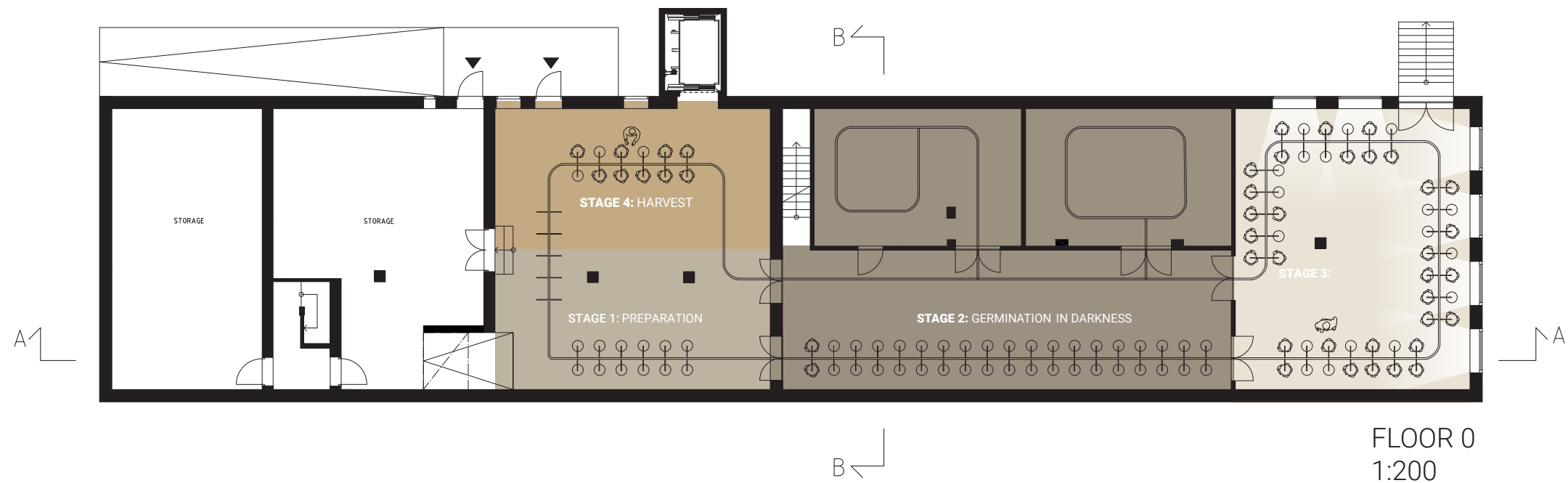
REMOVED ADDITIONS



NEW



COMMON SPACE - OFFICES



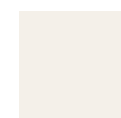
STAGE 1: PREPARATION

The mushroom cultivation is being prepared. Straw, sawdust and coffee grounds are put into large plastic bags that are hung on a meat hook rail system. The rail system is mounted through the basement connecting each stage.



STAGE 2: GERMINATION IN DARKNESS

The mushrooms are germinating in the dark, humid and ventilated environment. Temperature needs to be between 16-22 degrees celsius and humidity around 75 - 90 percent.



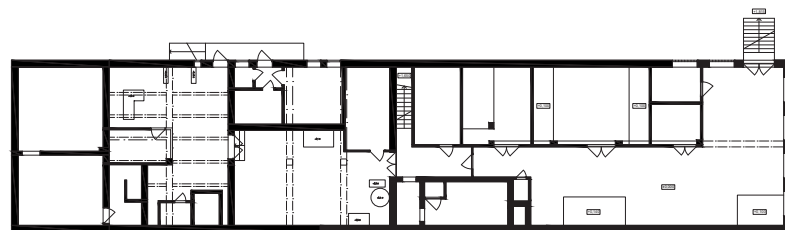
STAGE 3: CULTIVATION IN SUNLIGHT

The mushrooms are cultivating in sunlight. In this stage they need about 5 to 10 hours of sunlight or artificial light in a ventilated room. The room humidity needs to be 80-85 percent with an average temperature of 15 degrees.

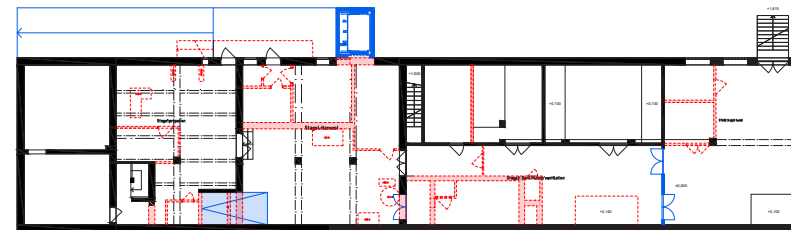


STAGE 4:

The final stage, mushrooms are harvested and prepared to be transported to the kitchen and the market hall on the first floor through the elevator.

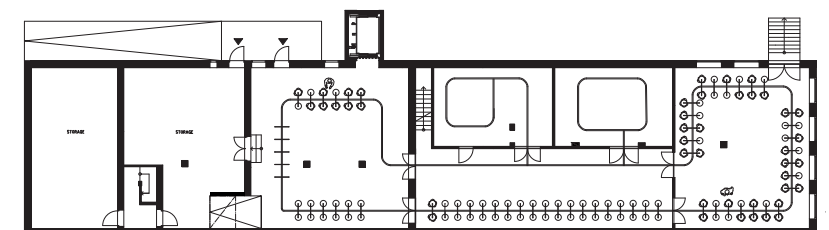


ORIGINAL



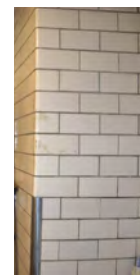
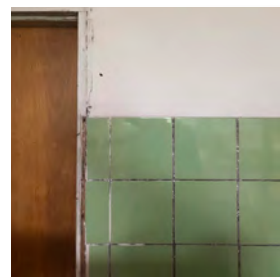
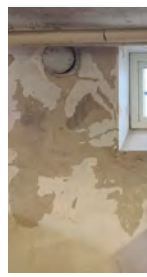
TRANSFORMATION

REMOVED ADDITIONS



NEW

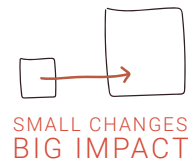
MATERIAL SECTION



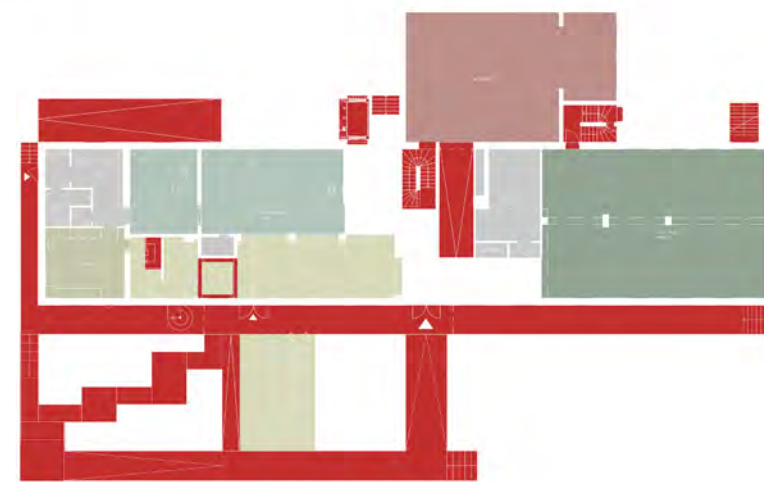
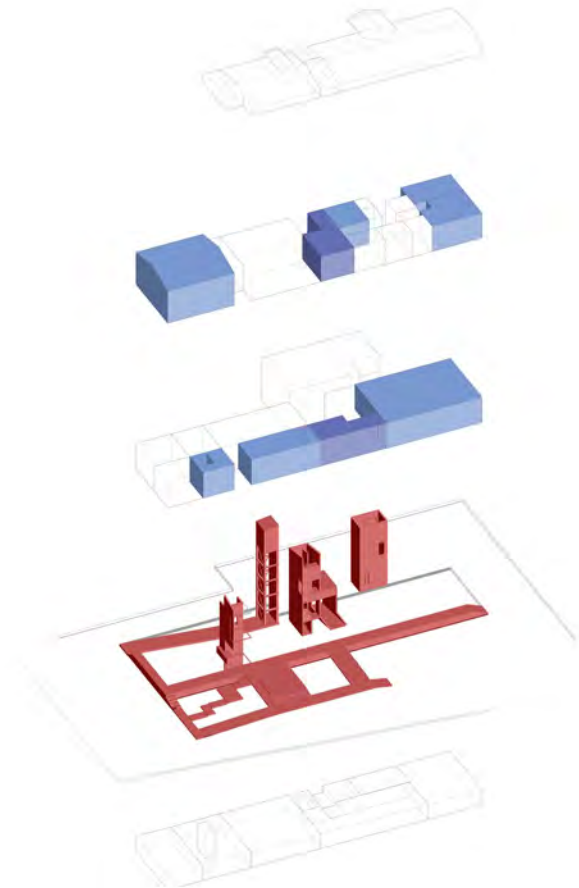
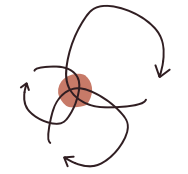
EXISTENT MATERIALS

We want to preserve the atmosphere that the original materials in the building provide. Keep them entirely in some spaces, make smaller renovations in other, and add new surface materials in the rooms where it is required. The glass brick windows will be replaced and used in the interior as room dividers or bases for shelves. Some of the vertical elements will be accentuated by color.

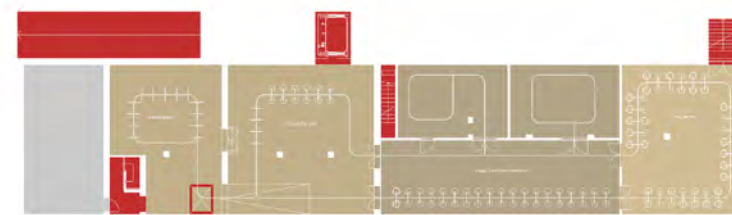
VERTICAL ARTICULATIONS, MEETING POINTS AND PROGRAMS



MEETING SPACES

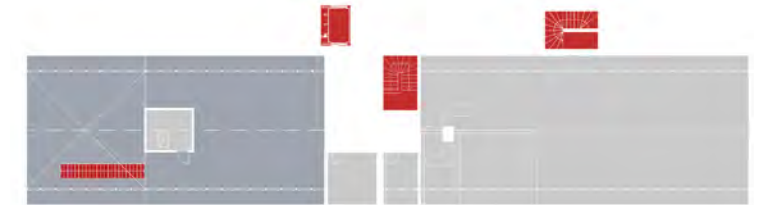


FLOOR 1

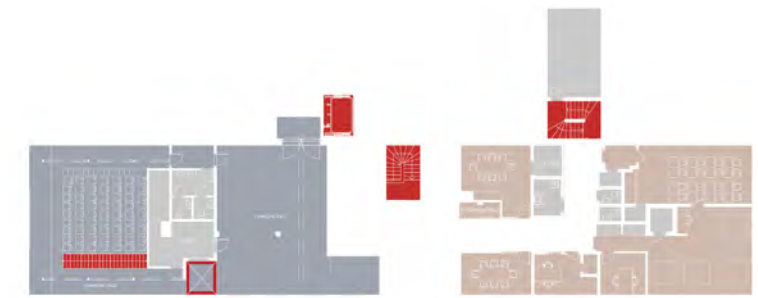


FLOOR 0

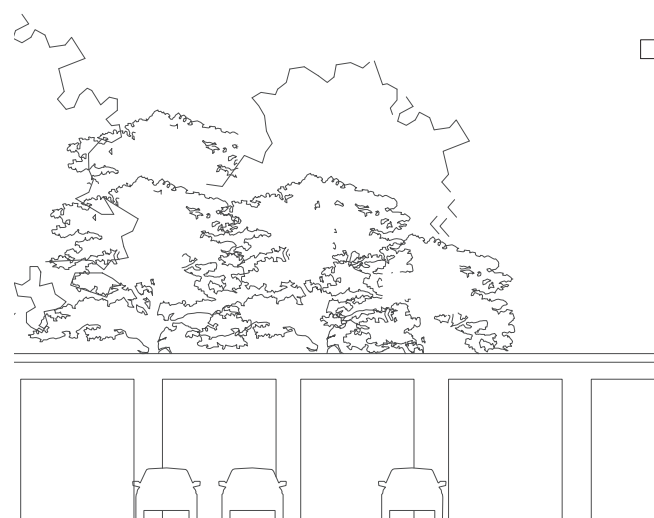
MEETING POINTS VERTICAL CONNECTIONS



FLOOR 3



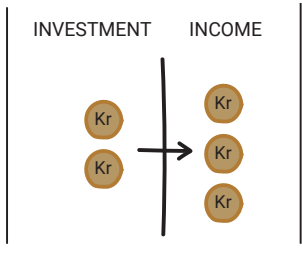
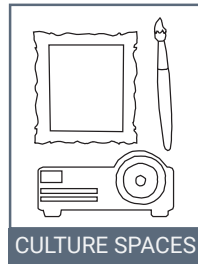
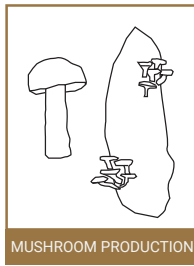
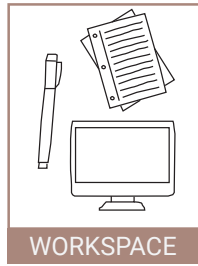
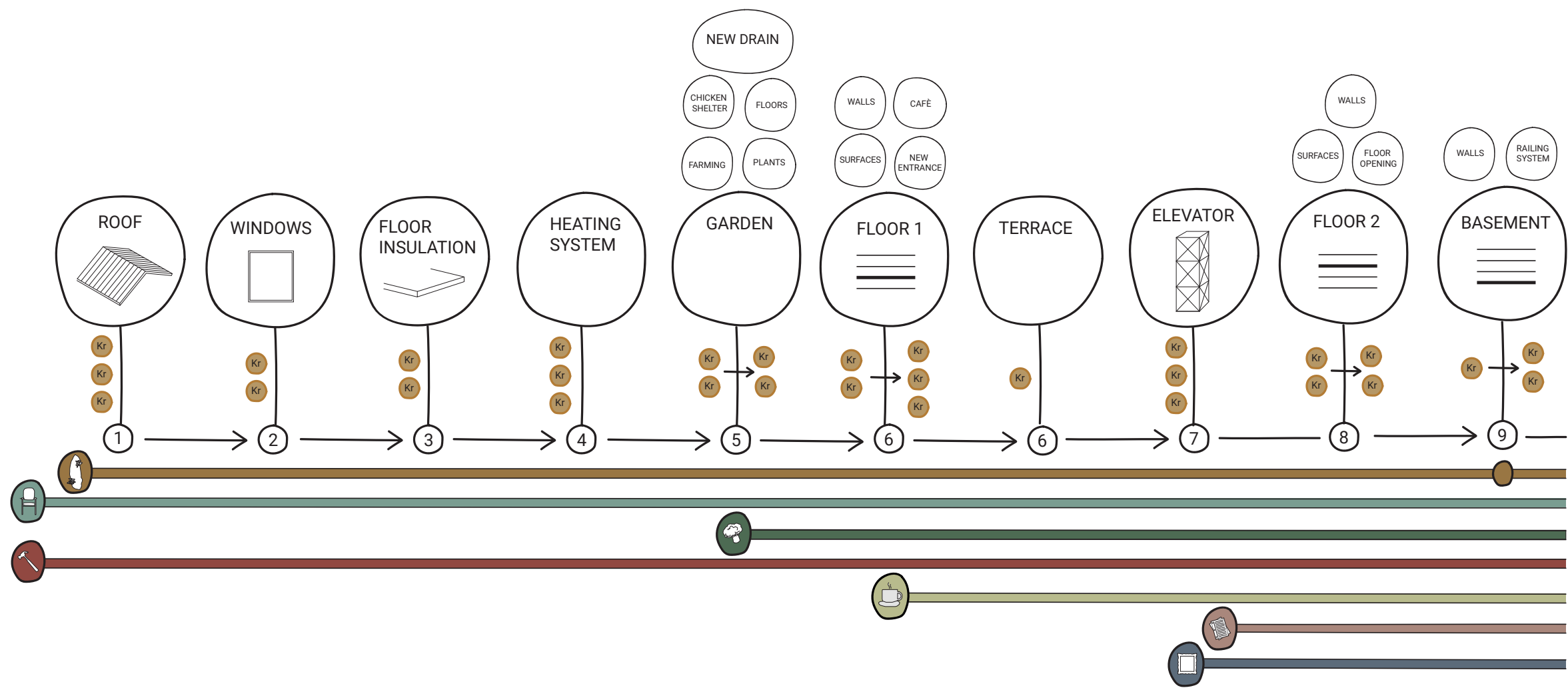
FLOOR 2



SECTION A-A
1:200



PROJECT STAGES

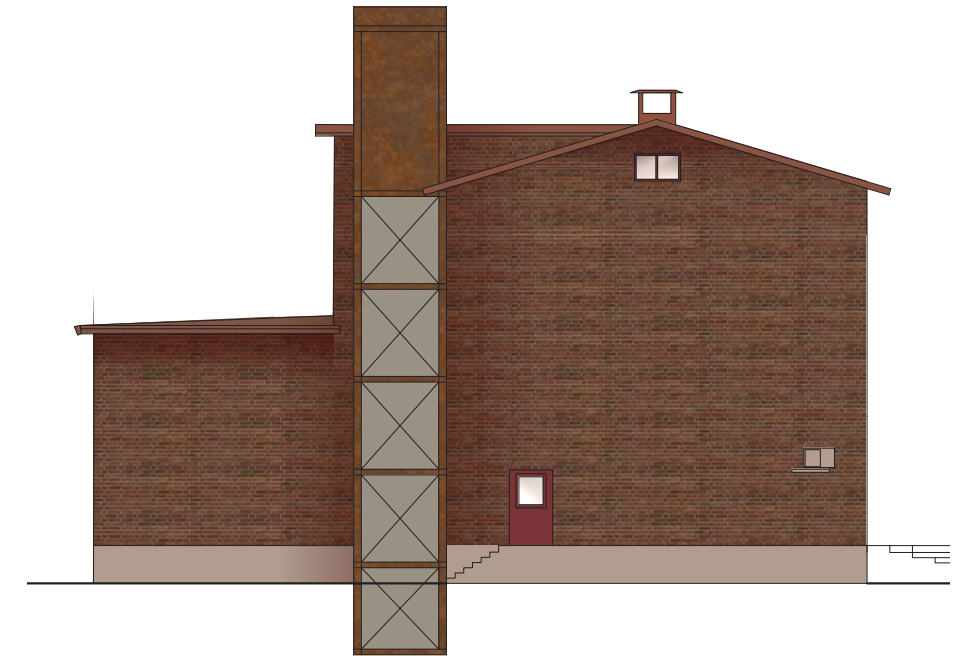


FACADES

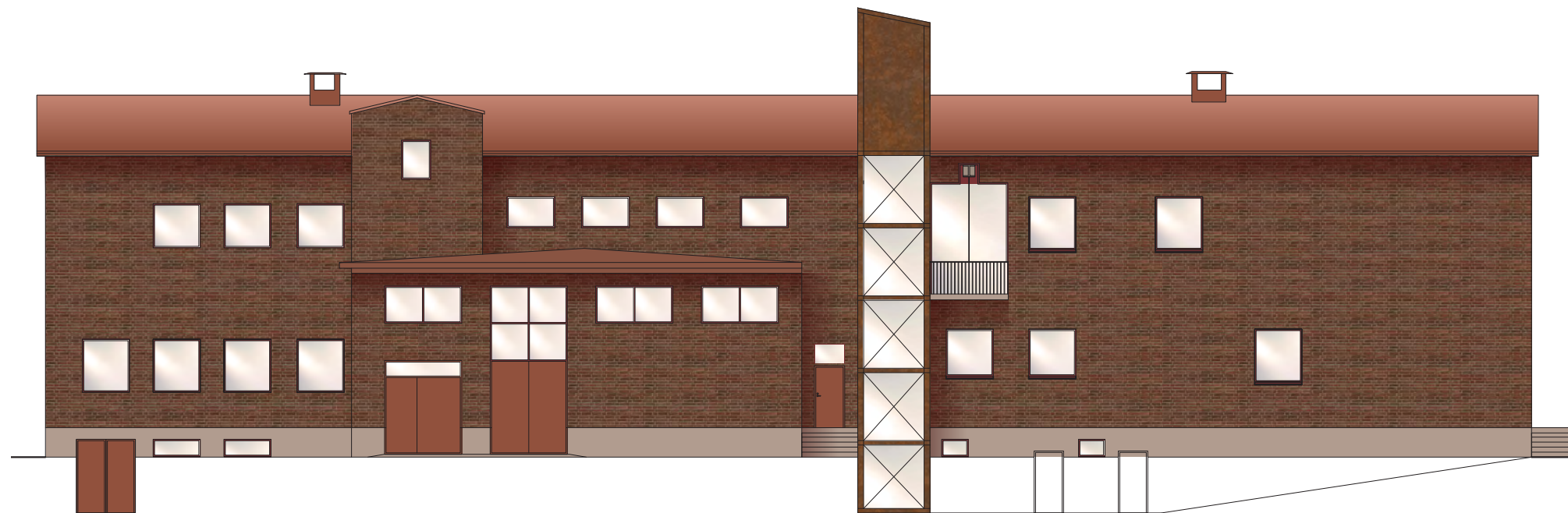


WEST FACADE
1:200

Restored brick facade, additions mainly in corten steel.



NORTH FACADE
1:200



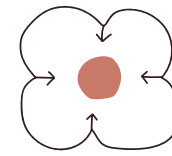
EAST FACADE
1:200



SOUTH FACADE
1:200

TERRACE

CONNECTION TO
LANDSCAPE

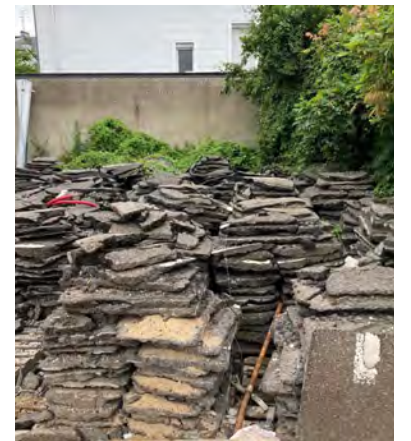


The terrace serves as a bridge between the landscape and the building. It brings nature closer by incorporating plants under ramps and walking spaces. Also creating a division between the parking spaces and the walking spaces. The café gets extended to the outside with an outdoor seating area.

Material references

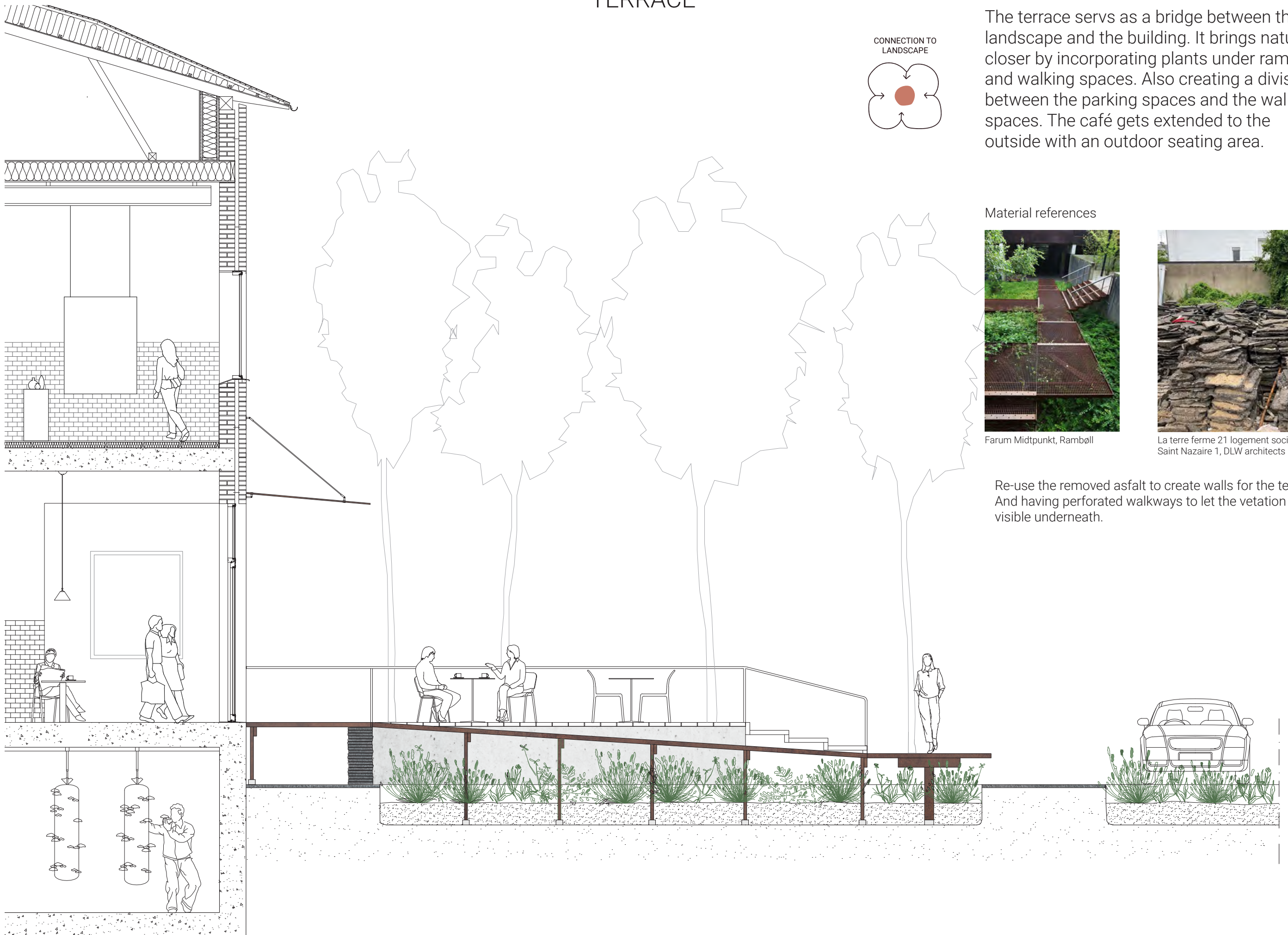


Farum Midtpunkt, Rambøll



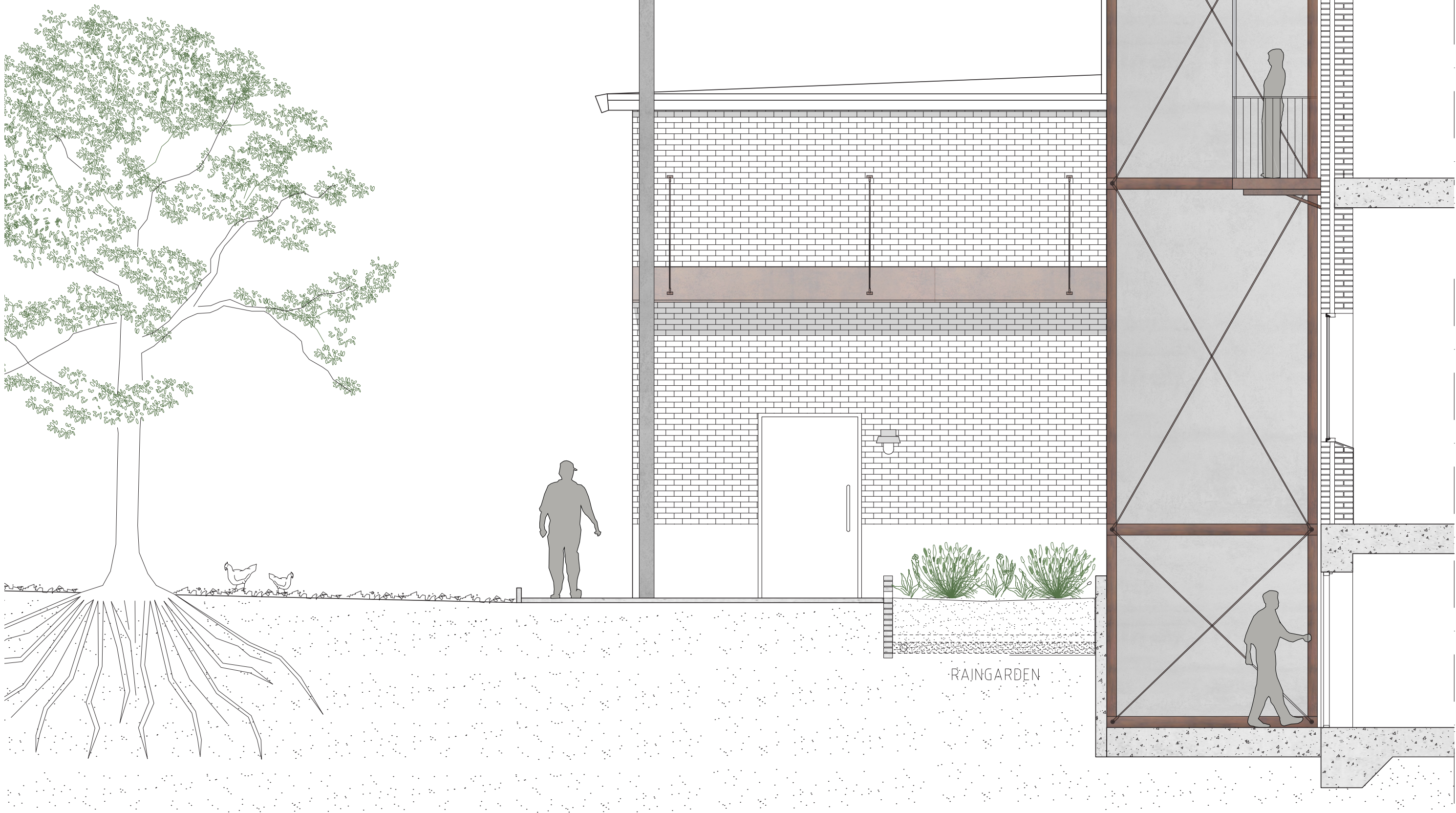
La terre ferme 21 logement sociaux à Saint Nazaire 1, DLW architects

Re-use the removed asphalt to create walls for the terrace. And having perforated walkways to let the vegetation be visible underneath.

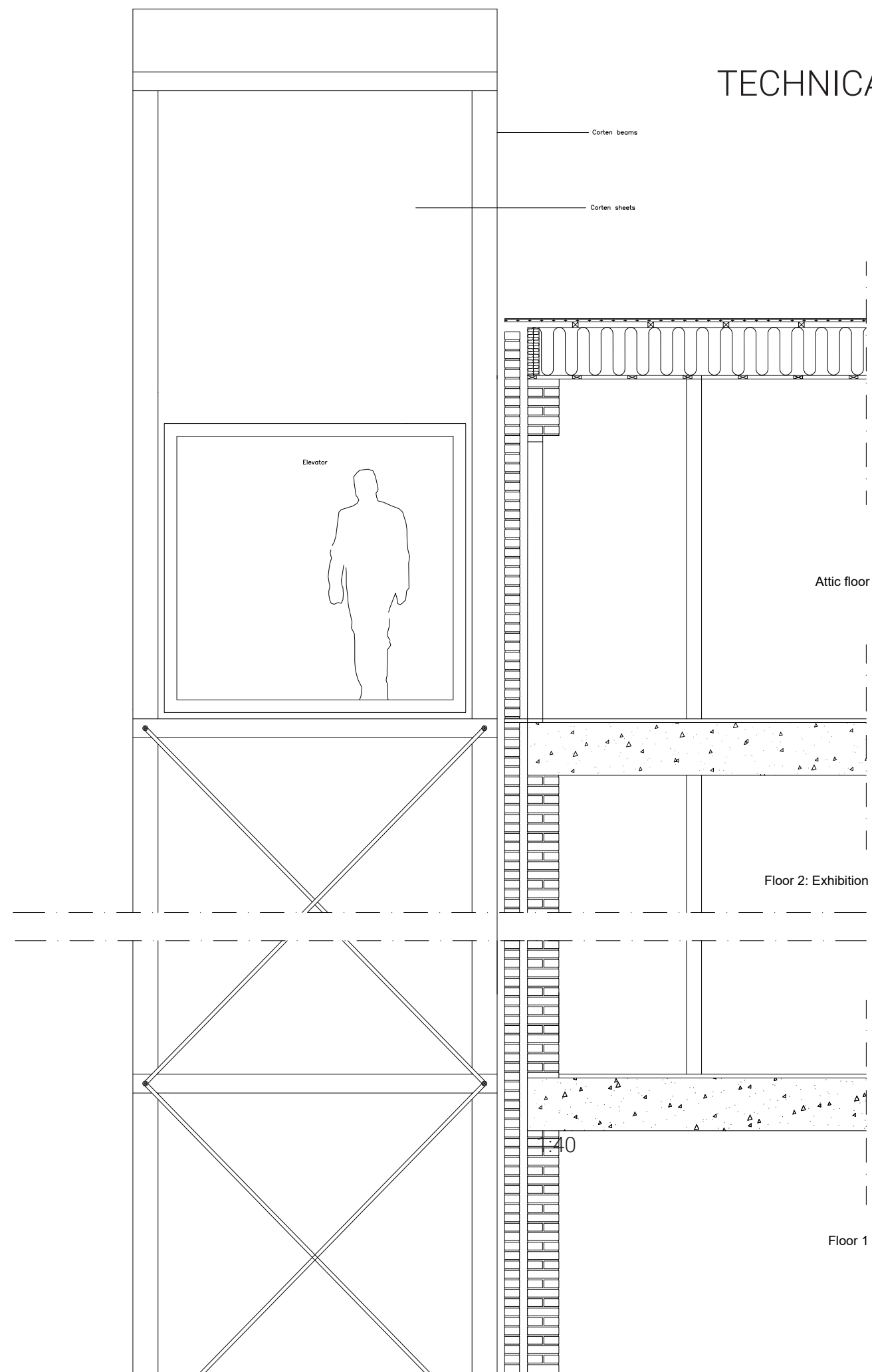


GARDEN - ELEVATOR ELEVATION

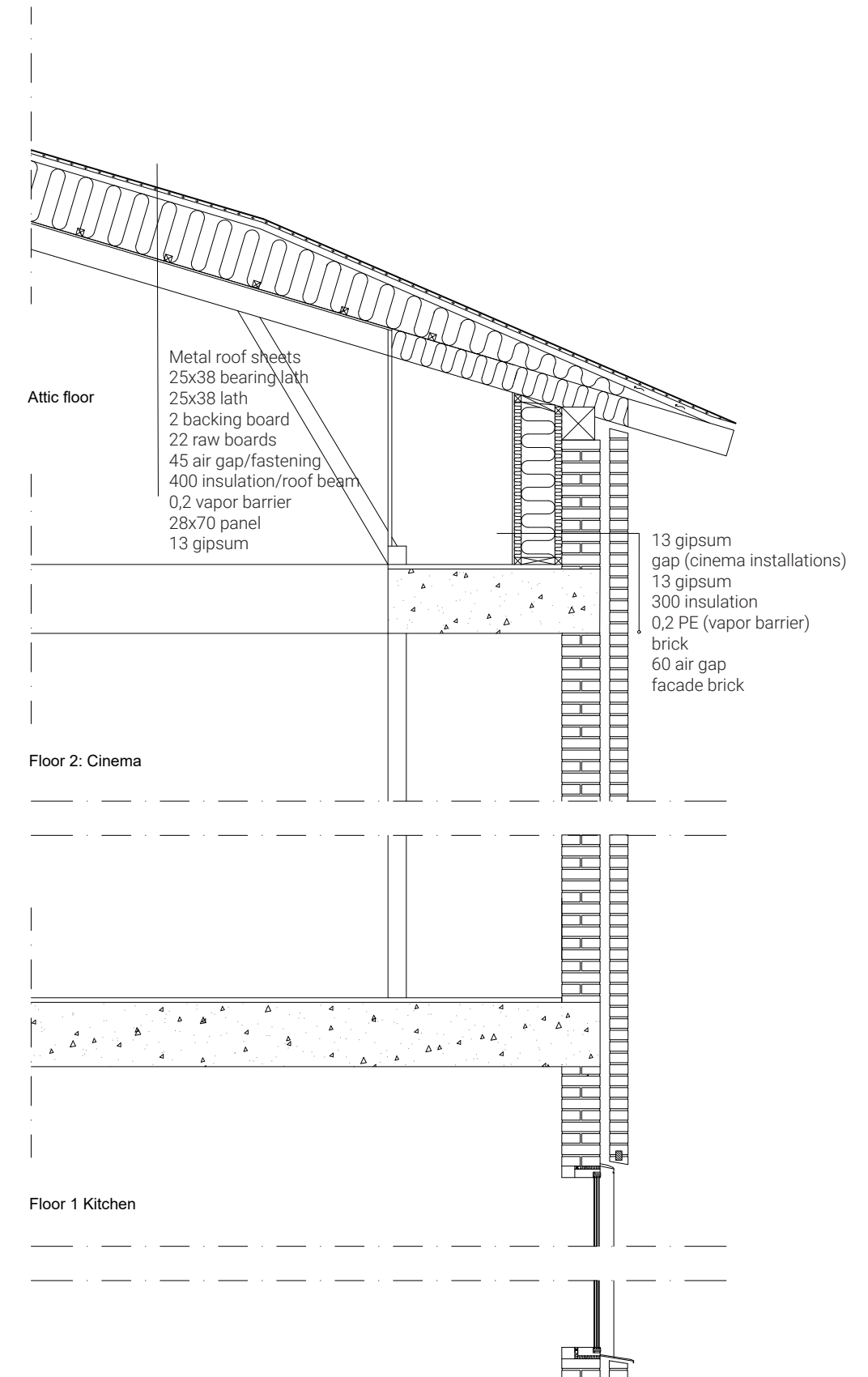
1:50



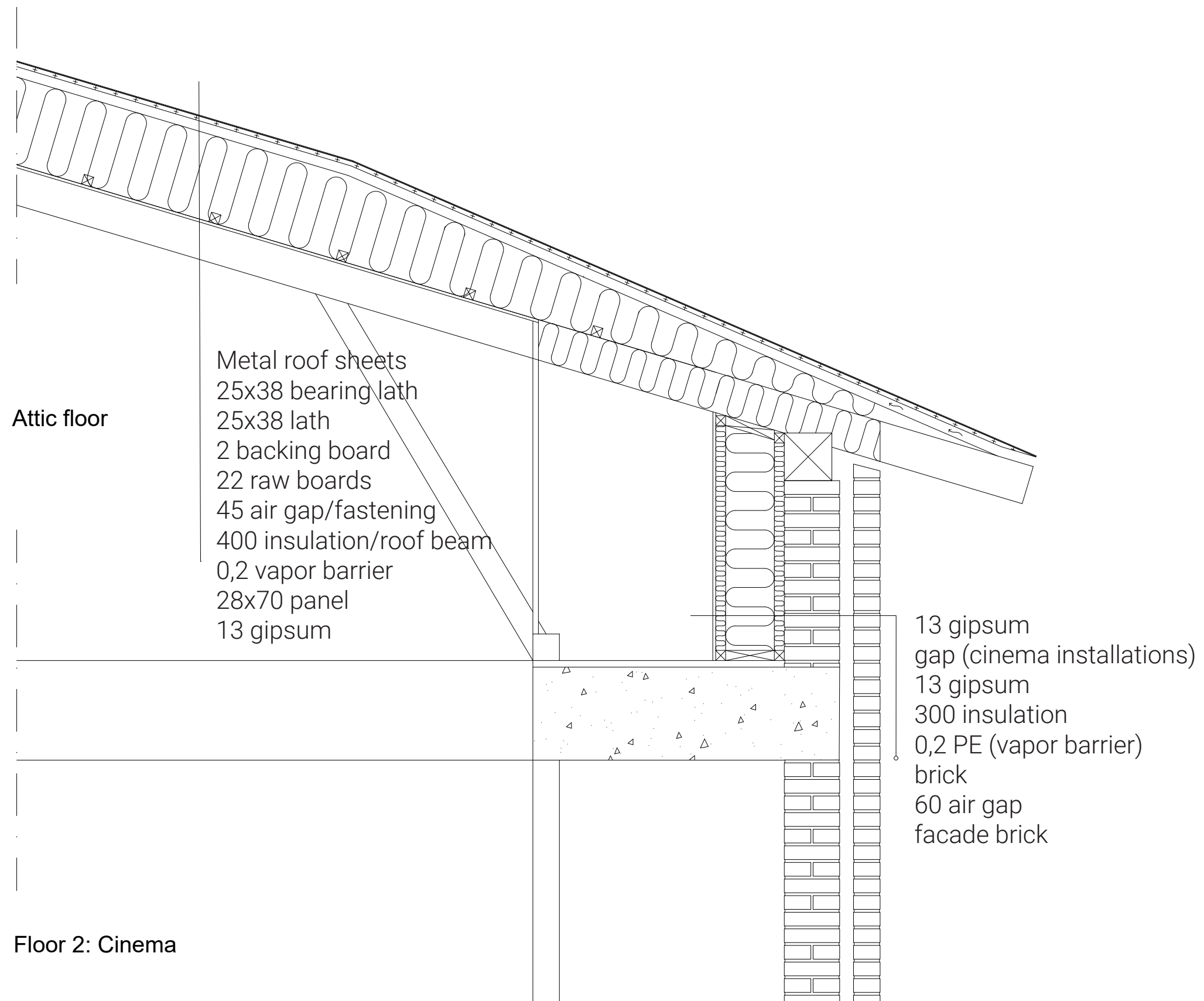
TECHNICAL DETAILS



CONNECTION BUILDING - ELEVATOR
1:40



ROOF INSULATION + REMOVED FLOOR
1:40



ROOF INSULATION + REMOVED FLOOR
1:20



PERSPECTIVE FROM GARDEN



PERSPECTIVE FROM WEST