CRAFTING ALONG MATERIAL WEAR

Interweaving crafts and materials towards wear in architecture & beyond



The institutionalization of the architectural practice has consequently caused a linear life cycle, that **relies on mass standardization and optimization** *(often breeding mediocrity in architecture)*

An **epistemic break from the expressive and creative process of crafting**, *which has been marginalized into a practice of the past.*

Research

Results

Site

Program

Design

When *Where* *Who*

How can historic material culture and rituals in Madrid be interwoven within the emerging crafting of wear to discover alternative forms of architectural expression?

Why *What*

CONTEXT
FOCUS OF RESEARCH

CRAFTING MATERIAL

who/how



HISTORIC CRAFTMANSHIP

?

?

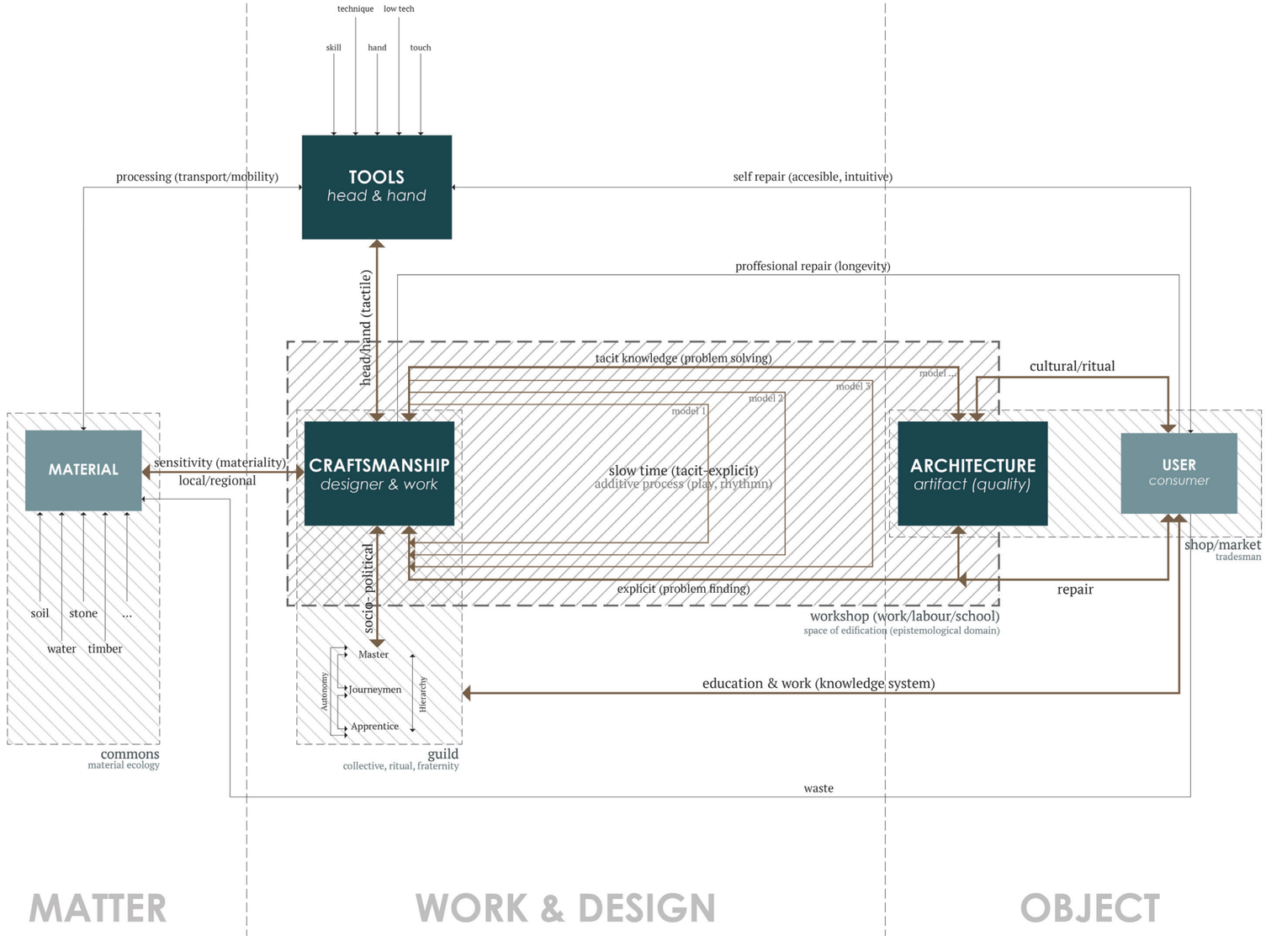
THE CRAFTSMAN
THEORY

Everything
This ancient process of craftsmanship began without industry, in which "**everything was craft**" (McCullough 1996).

Religion
This slowly **evolved into monasteries during medieval times**, providing a spiritual haven for craftsmen.

Urbanization
This monastic equilibrium was degraded during the **transition to urban life** in the 12th and 13th centuries

"what we've done is given the notion of innovation, of creating something new, **the value of the epistemic break**... *we've given in our culture, that slights the work that's collective, additive" Richard Sennett.*



"Crafts work is about additive skill (rhythm of tacit, explicit tacit, slow time)... **Innovation separates the innovator from the mass**... *Craftsmanship is a collective activity" Richard Sennett.*

CRAFTSMAN/GUILD TRADITION
HISTORICAL

"44% the city's laborers were organized in guilds, known as gremios , artes , or colegios" (Sánchez, 2016)

Manufacturing production in Madrid was not geared towards exports like some other Castilian industrial towns

1757 Workforce distribution
42% handicrafts
35% Construction and furniture
23% food and energy

Proportion of artisans increased to 55% by end of century, due to downturn in building construction

Major craft trades: tailoring, shoemaking, baking, and woodwork. Influenced by the establishment of the court in 1561, which fostered the development of a secondary sector based on building, luxury, and finishing trades (capitaline triad).



Silversmith - were found in the Platería quarter (near the Plaza Mayor,or main square)

Botoneras - women guild that served as button makers for royal fmaily

Silk Crafts - crafts in Lavapiés (a southern district of the city).

La Ribera de Curtidores - where tanners use to sell their product

Tailors - dispersed throughout the city, but densified in central urban locations for direct contact with potential clients.

Small Shoe Repair - LaManzana, contained a profusion of repair stalls

Tanners - left the city center in the early 16th century, to occupy the southward area close to the city walls and near the slaughterhouse

Other trades relating to leather tanning were also located close to the tanneries on the Manzanares River

CRAFTSMAN
STUDY TRIP RESEARCH



IAAC



Arte Factum



Espartería



Ocampo



Estuco Metal Arts



Hidrocal Revocos

moving beyond craftsmen, towards material...

HIDROCAL REVOCOS
MANUEL DÍAZ MARTÍN



Natural Orange Tone of Mineral - hidrocal utilizes ecological mortars without chemical additives. Utilizing pure materials, enables natural colours to withstand weathering and UV Rays for longer periods

*"**lime today, is the only material that breathes**... although the eye cannot see it, moves with the movement of the buildings... That is to say, lime is like a living being"*

yes, and **I touch it...so that you know that it is pure lime**... *see that it's here, you see your fingerprint"*

"he not only talks about theory, but he also shows how to do it, how to practice...there is a phrase in Spanish that says that **theory gives you the degree and practice gives you the profession**."



Manuel Díaz Martín - After years of training with Mr. Lopez as an apprentice, he was entrusted with the business and has brought the practice in commercialization , distribution and application

MARISA DE LUCAS
CERAMICS



Spanish-Arabic reflex - during the firing treatment in a reducing atmosphere (without oxygen), a chemical reaction between metal oxides and carbon, generates deeps colors of metallic shine

"even [in] the colors, these looser colors, the ingredient, **the most important ingredient are the mineral***"*

*"***to find the color as we are in the nature***, as we find it. But not as we find it now with our eyes, but as there is in the earth, inside, with fire"*

"for me it was most important to develop the right colors. To arrive to develop the right **colors that I dream***. The bird that has wonderful feathers...Peacock hey have blue color, metallic blue color. Have you seen? Yes, sure. And* **I want to find it. I make, I start to make my tests***.*

It's not easy. [it's not] Patience... **It's passion***...I have the experience for many years,* **alone in the atelier, working, working, working, working***. All investigation was my passion, really.*





Marisa de Lucas - is ceramist that specializes in carbonization ceramics. Has an atelier that has developed many recipes through the Spanish-Muslim technique to generate a range of colors, through variations in minerals



Do you think that this fascination of the faculty for terracotta or clay maybe comes also from the kind of local products?
"Definitly, in Spain, specifically in Catalonia, they're one of the **biggest producers of clay** *for Europe"*

*"***You know, like you come back to earth***, it's not like you do like the crazy things. Every time a student group presents a project, they need to have a solution for the scale"*

"of course there's so much to learn from craftsmanship. I don't think we're discovering anything really... **indigenous people, they are like engineers... using local materials to construct"**

*"***Earth is a very easy material to manipulate, to work with in your hand***. Almost easier than to print it... When you're printing the material, you're* **constantly rectifying, because of factors like humidity, or if it's sunny***, or if it's hot, or the amount of water"*



Yara Tayoun - architect and researcher specialized in the digital and technology-driven transition of circular processes in architecture and design. Coordinator of Postgraduate 3D applied printing program

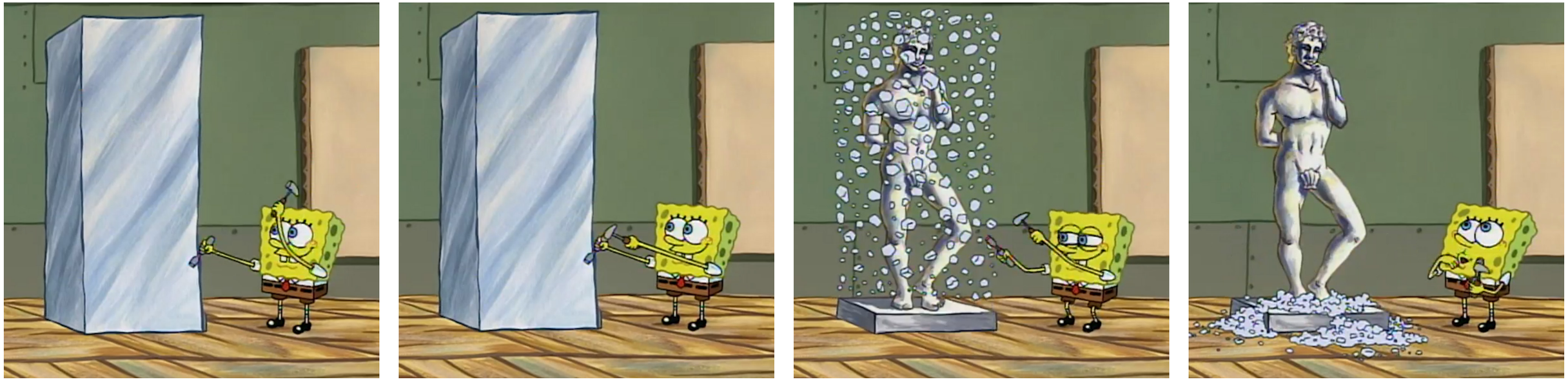


There is tremendous untapped potential in the material sensitivity & knowledge of an existing network of skilled crafters in Madrid

~~**HYLOMORPHIC MODEL**~~
ANTHROPOCENTRIC

CRAFTSMAN TRADITION

"Form came to be seen as imposed, ***by an agent with a particular end or goal*** *in mind...matter rendered passive and inert"* (Ingold, 2010)



interaction between a person (spongebob) and an object (marble)

by imagining that the marble is endowed with an **internal animating principle, an agency**, that sets it in motion

The object stands before us as a fait accompli. Anything beyond point of completion, is a phase of use or consumption

Abduction of Agency (Alfred Gell)

to read creativity 'backwards', starting from an outcome in the form of a novel object and tracing it, through a sequence of antecedent conditions, to an unprecedented idea in the mind of an agent

TOWARDS A MATERIAL ECOLOGY
THE TEXTILITY OF MAKING

CRAFTSMAN TRADITION

*"the variable undulations and torsions of the fibres...of surrendering to the wood, and **following where it leads**" (Deleuze and Guattari, 2004)*

The carpenter's whose skill lies in their ability to find the grain of the world's becoming and to follow its course while bending it to their evolving purpose. Woodsman brings down the axe so that its blade enters the grain (through its previous history of growth).



Greek antiquity to describe the skill of the practitioner

tekhne

Derived from **Sanskrit** word for:

Axe

tasha

+

+

Carpenter (a shaper or maker)

taksan

Latin verb "to weave"

texere

TOWARDS A MATERIAL ECOLOGY

EXPERIMENTATION WITH CHIZEL

CRAFTSMAN TRADITION





FORM-GIVING
FOLLOWING MATERIALS

*"Architects think of a building as a **complete thing**, while builders think of it and know it as **a sequence**—hole, then foundation, framing, roof, etc. The separation of design from making has resulted in **a built environment that has no 'flow' to it**." (Brand, 1994)*

crafting

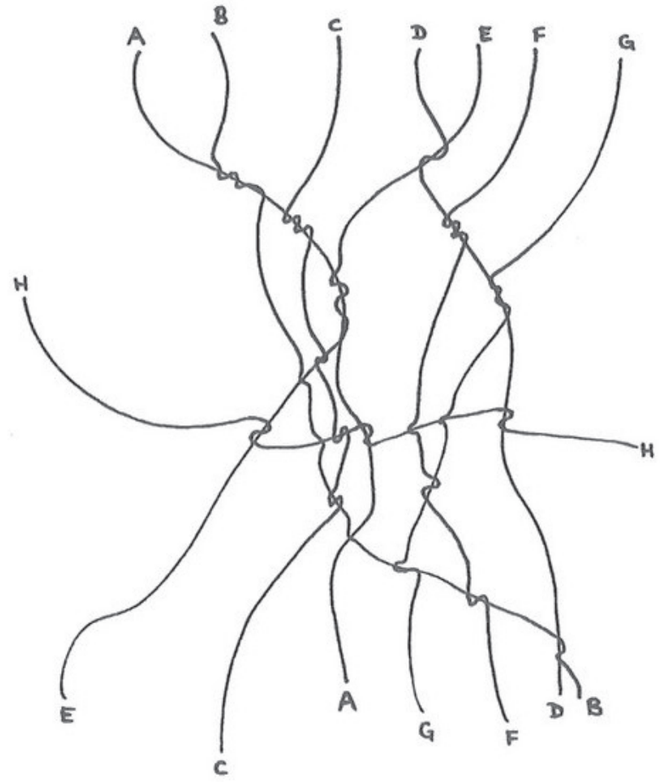
What I am urging for is a evolution towards the tactile and sensuous knowledge that once guided architects/craftsman, as **wanderers and wayfarers that followed the varied and heterogeneous materials**.

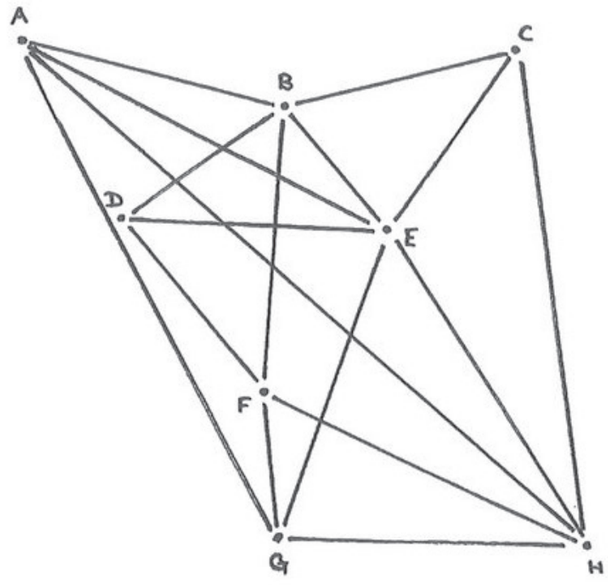
heterogenity

Not to impose form on matter, but to follow them, **weaving, combining or redirecting their diverse material flows into the texture of the built environment**

temporality

To **embrace the decay of things**, as they are alive and bound for leakage. "material things, like people, are processes, and that their real agency lies precisely in the fact **that they cannot always be captured and contained**" (Pollard, 2004)





Network vs. Meshwork - not of interconnected points but of interwoven lines, not a network but what I shall call a meshwork

n these flows and counter-flows, winding through or amidst without beginning or end, and not as connected entities bounded either from within or without (e.g. Fungal Mycelium)

CONTEXT
FOCUS OF RESEARCH

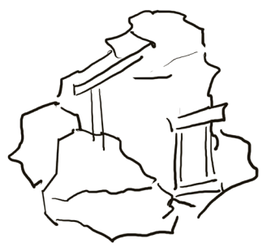
CRAFTING MATERIAL

who/how



EXTRACTING MATERIAL

where



?

HISTORIC CRAFTMANSHIP

QUARRY PRACTICE

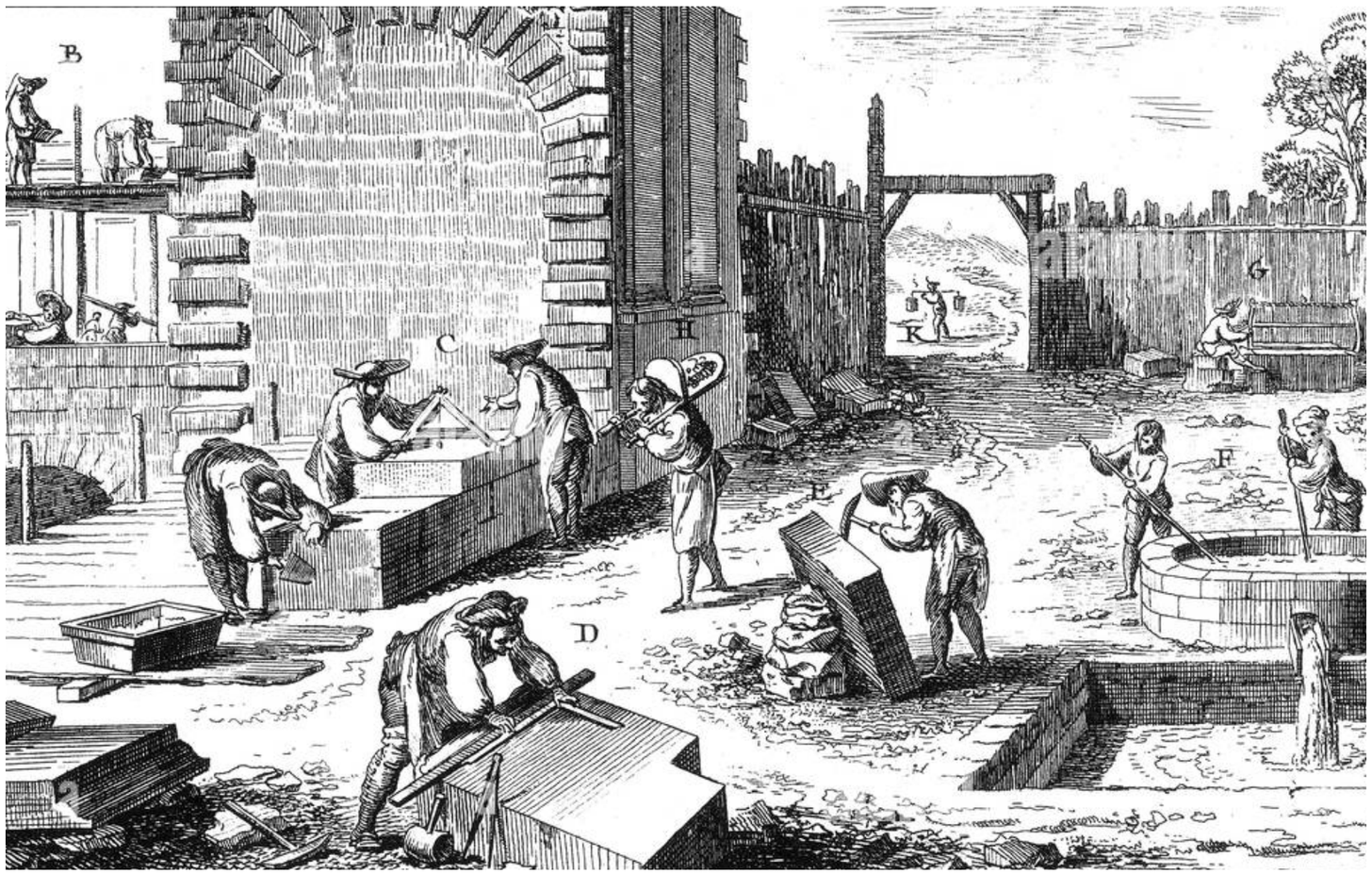
Potentials

The **tacit knowledge** *within crafting towards material can not be replaced. The process of craft, that* **embraces imperfection, heterogenity and decay** *provides a means to follow materials instead of controlling it*

STONE MASONS
TOWARDS A MATERIAL ECOLOGY

*"the architect was literally a **master among builders**, who worked on site"*
(Ingold, 2009)

The great medieval cathedral of Chartres as described by David Turnbull: the master builder was "coordinating teams of masons whose task was to cut stones by following the curves of wooden templates and to lay the blocks along lines marked out with string"



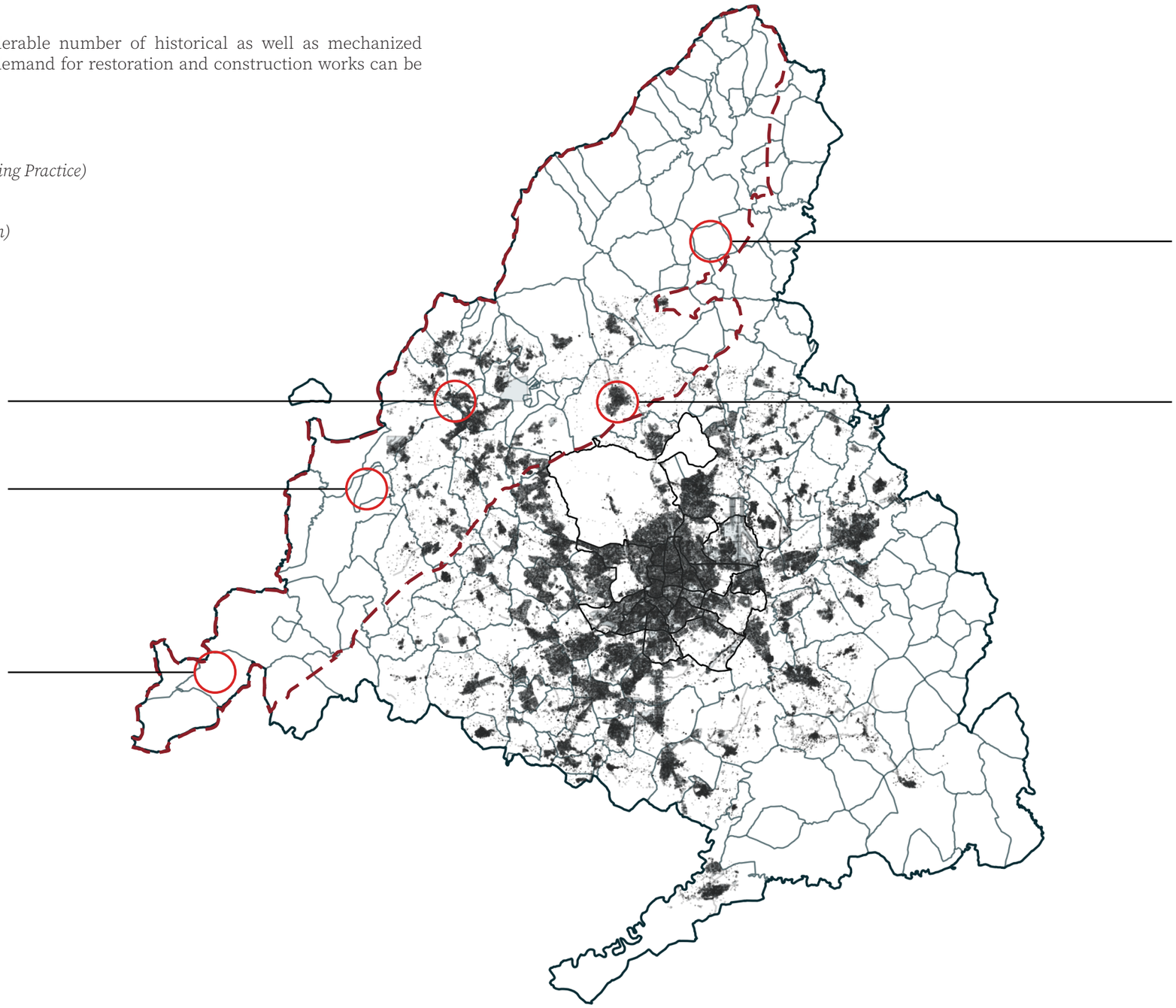


*"There was no plan, and the outcome—far from conforming to the dictates of a prior design—**better resembled a patchwork quilt**"*
(Harvey, 1974

QUARRY
STONEMASONRY

The existence of a considerable number of historical as well as mechanized quarries ensures that the demand for restoration and construction works can be met.

- *Historical Towns*
  (More traditional Hewing Practice)
- *Modern Practice*
  (Mechanized Operation)



Alpedrete
Traditionally, monzogranites were the stones most widely used in heritage buildings in the city of Madrid

Zarzalejo
also traditionally the stones most widely used in heritage buildings

Cadalso de los Vidrios
granites were used as building materials in the villages, from before Roman times until mid-late 20th century, neither was deployed in Spain's capital city

Today, however, output at Cadalso de los Vidrios and La Cabrera is greater than at Alpedrete, Zarzalejo or Colmenar Viejo

La Cabrera
granites were used as building materials in the villages, from before Roman times until mid-late 20th century, neither was deployed in Spain's capital city

Today, however, output at Cadalso de los Vidrios and La Cabrera is greater than at Alpedrete, Zarzalejo or Colmenar Viejo

Colmenar Viejo
monzogranite was used primarily for paving and cobblestones

In **Spanish:**
piedra is stone

Alpedrete

In **Spanish**:
a place where granite boulders outcrop

Berrocal

based on the pre-**Roman** roots 'mor(r)' or 'mur(r)', meaning a pile of stones

Moralzarzal & Valdemorillo

BEYOND TANGIBLE
TRADITIONAL PRACTICE

crafting of granite transcended the confines of industry,
and ***permeated into everyday social practices***

workshop

exhibition

tradition

built form

urban furniture (play)

Library

Collective Practice
Lintel in historic quarry at Alpedrete





Tangible Traces
laying of Piedra Berroqueña at Madrid's Santo Domingo Square

Education
outdoor Quarry Museum at El Berrueco





Practice/Ritual
shoeing pen at Villavieja de Lozoya

The use of stone, has infiltrated daily rituals in the urban fabric through the pavement, cobblestones,manhole lids and urban furniture

Culture
quarrymen's competition at Colmenar Viejo





Archive
Geology Museum at Colmenar Viejo

Catalogueing and documenting such materials

MATERIAL RITUAL & CULTURE

Material extraction & crafting goes beyond its tangible boundaries and extends beyond its internalized practice.

Cultivating & permeating into everyday ritual & culture



CONTEXT
FOCUS OF RESEARCH

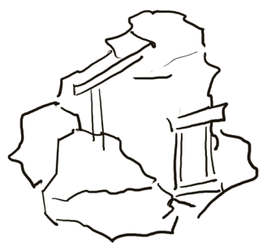
CRAFTING MATERIAL

who/how



EXTRACTING MATERIAL

where



DECAYING MATERIAL

what/why



Potentials

HISTORIC CRAFTMANSHIP

The **tacit knowledge** *within crafting towards material can not be replaced. The process of craft, that* **embraces imperfection, heterogenity and decay** *provides a means to follow materials instead of controlling it*

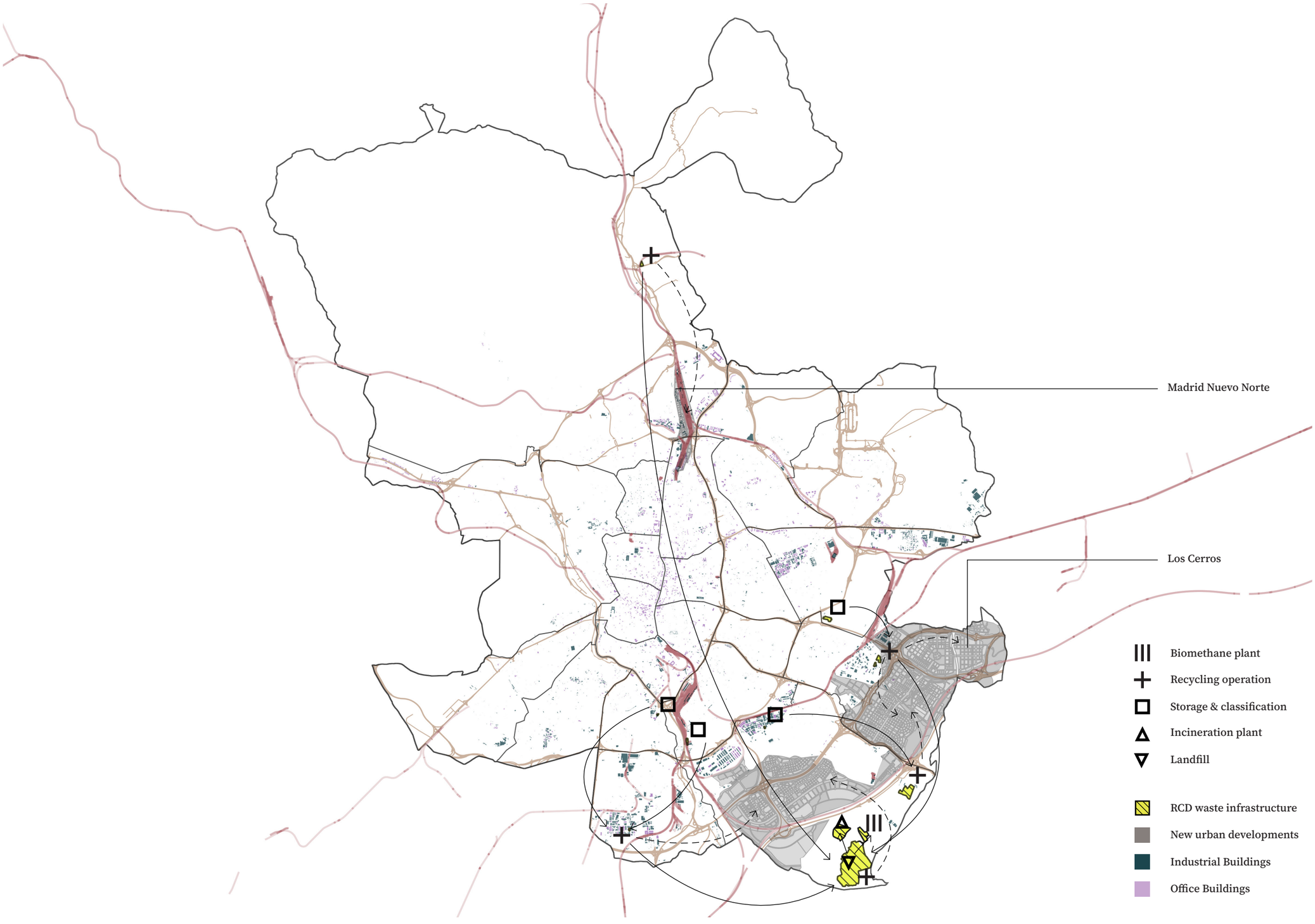
QUARRY PRACTICE

The historic practice of stonemasons, reveal the potential of craft and **material in building a strong connection towards the daily rituals of everyday life.** *Building a stronger awarness towards material sensitivity in urban life.*

WASTE SYSTEM

CENTRAL MADRID WASTE SYSTEM

MAPPING



WASTE MANAGEMENT
RESIDUOS DE CONSTRUCCIÓN Y DEMOLICIÓN (RCD)

treatment of only 250,917 tons (4.3% of waste generation)

Annual generation in 2004 of 5.8 million tons (100%):

- disposal in authorized landfills of 4.02 million (69%)
- treatment of 250,917 tons (4.3% of generation) ***recovery of of 110,403 tons (1.9%)***
- uncontrolled discharge, including that carried out in ***unauthorized facilities 1.62 million tons (28%)***



WASTE MANAGEMENT
BYPRODUCT MARKET

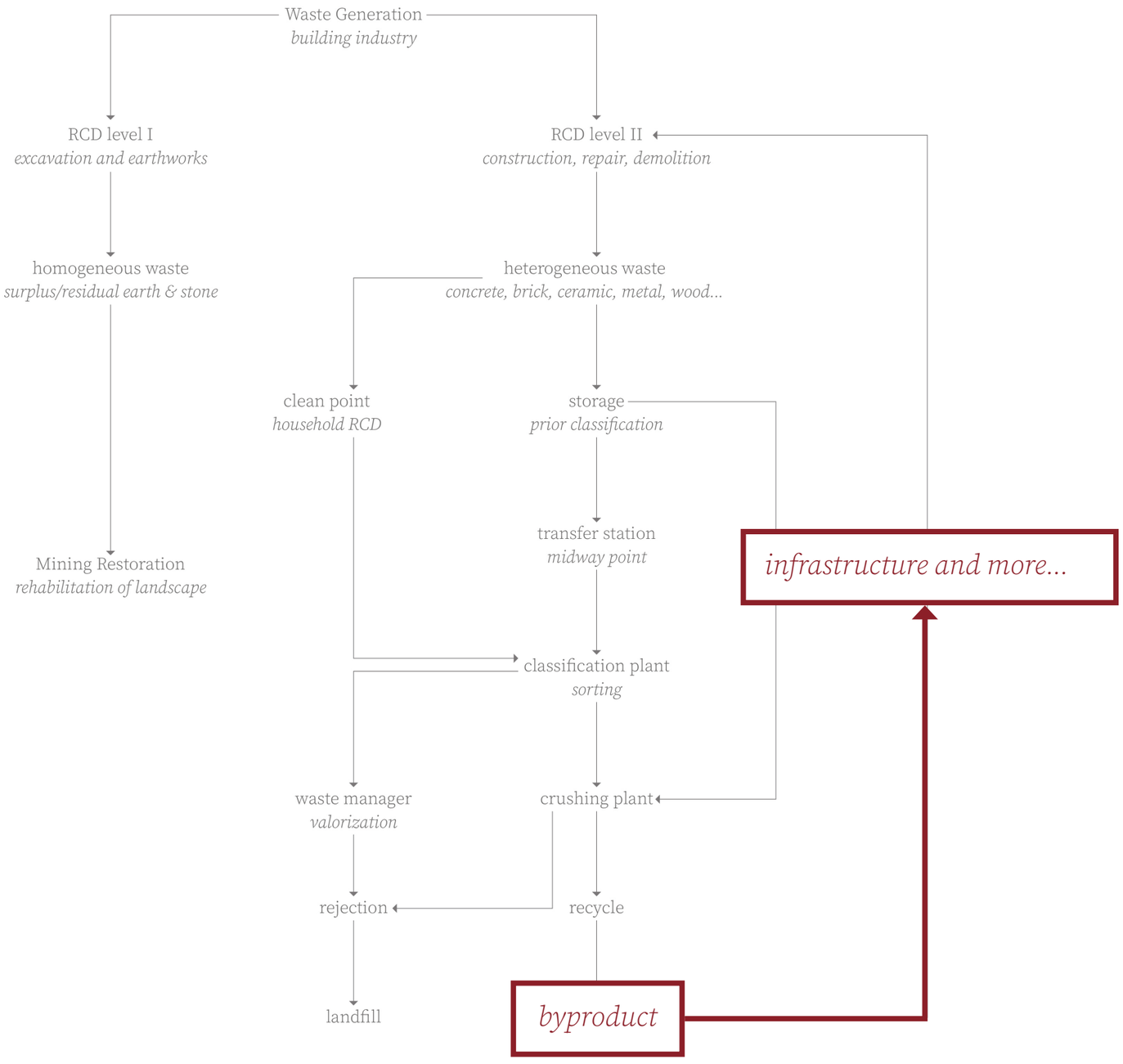
Madrid consumes more aggregate than its quarries produce

- Demand 7.05 while supply is 5.56 (t/ inhabitant per year)

- The price of *recycled aggregate (€ 4/t on average)*
- Competitive with commercialization, ***natural*** *aggregate (€ 6.66/t)*

Why is byproduct not being utilized in industry?
Absence of quality standards applicable to aggregate recycled

Lack of requirements for recycled aggregates in publics works
- The Community of Madrid does not require, for the moment, the incorporation of recycled materials in its works

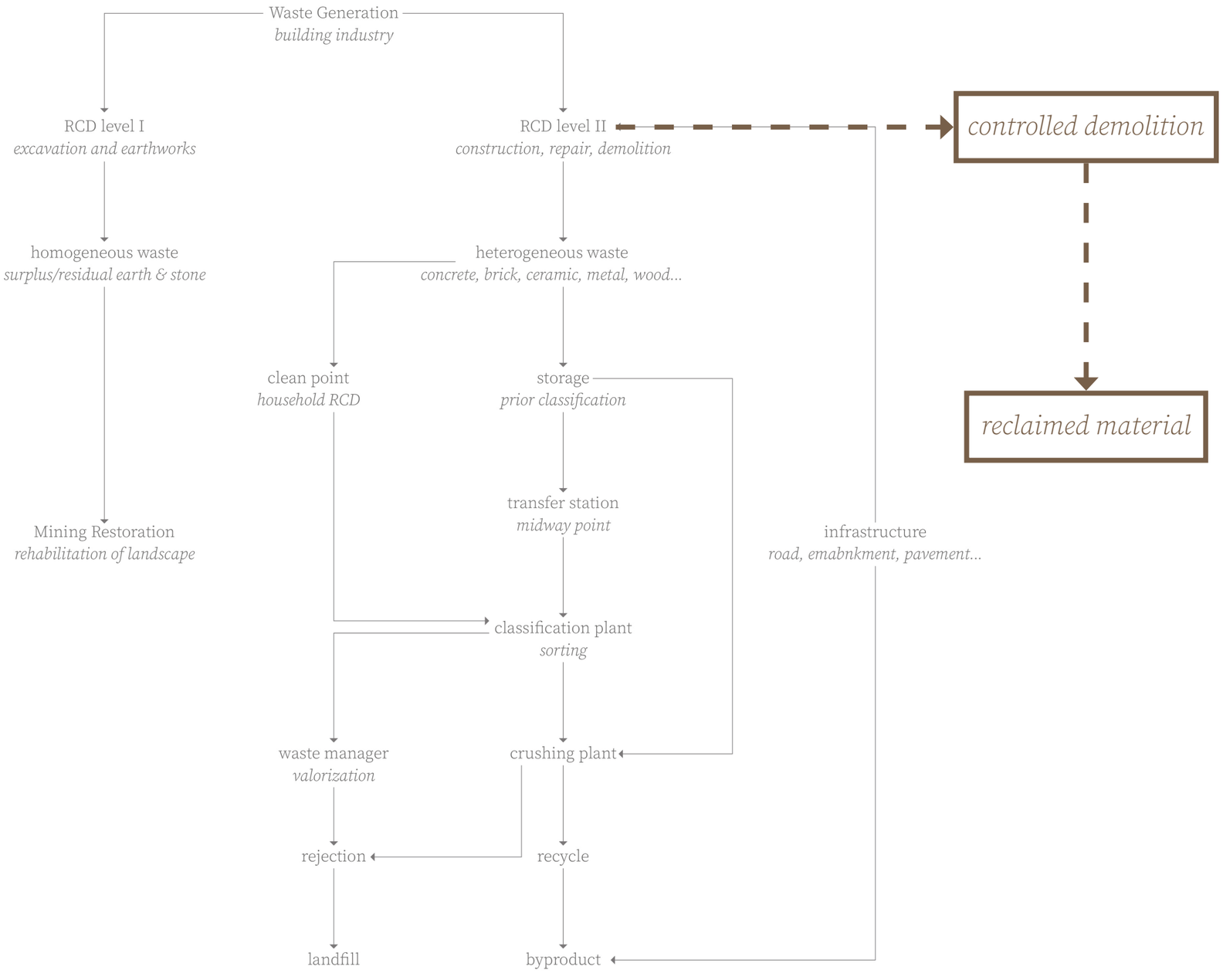


WASTE MANAGEMENT
POOR CLASSIFICATION

The composition of these wastes is characterized by being very heterogeneous

Poor classification at source
- ***Little management/classification during construction and demolition*** (waste become heterogenous), causing high treatment cost (around €12/m3)
- High entry prices for treatment, compared to direct dumping in unauthorized landfills (make it much more attractive)
- Subcontracting needed for classification at origin requires substantial management

Less focus on the public sector, rather ***private initiative has to play a essential role in RCD management***



MORE ON REUSE
UNDERDEVELOPED FIELD

construction and demolition sector is responsible for generating
the most amount of waste in Europe at 37.5%

In Spain, the constructions and demolition sector contributes
30.8% towards waste *(most of any indicator)*

The Construction Sector uses
no less than half of the Earth's raw material

less than 1% of the materials disposed *of as waste during construction or demolition* **are effectively reused in the EU**

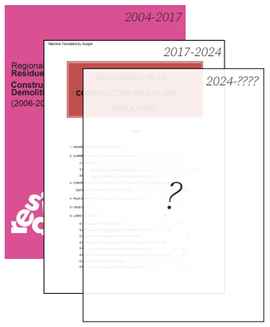


Europe

The European Union, has recommended a shift from "energy efficiency" towards "**resource efficiency**"

Currently, the main focus is towards energy and waste.
With many restricting regulations. But requirements towards "reuse" are still relatively lower and are generally **non-binding**

Madrid



These circumstances are reflected in the current waste system of Madrid, where reuse has **an under-exploited potential**

The "*Management Plan of Construction Waste and Demolition 2017-2024*" still prioritizes recycling and almost **interchangeably or simultaneously use reuse and recycle together**, as if constituting the same requirements.

> *"progress must be made in the preparation of data on RCD treated in authorized facilities, and on the recovery percentages (***reuse-recycling** *and filling)" (RCD, 44).*



The severe limitations of Madrid's waste system, provides opportunities for a more creatively driven practice that moves beyond the reuse market. Towards an overall reparative approach, an alternative system that embraces the variability of aging materials

ESSENCE OF FINDINGS
POTENTIALS

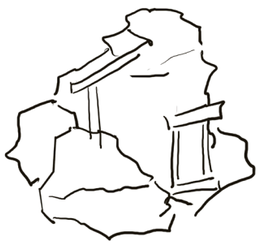
CRAFTING MATERIAL

who/how



EXTRACTING MATERIAL

where



DECAYING MATERIAL

what/why



Potentials

HISTORIC CRAFTMANSHIP

The **tacit knowledge** *within crafting towards material can not be replaced. The process of craft, that* **embraces imperfection, heterogenity and decay** *provides a means to follow materials instead of controlling it*

QUARRY PRACTICE

The historic practice of stonemasons, reveal the potential of craft and **material in building a strong connection towards the daily rituals of everyday life.** *Building a stronger awarness towards material sensitivity in urban life.*

WASTE SYSTEM

The current waste system has severe limitations in its implementation of ***material efficiency****. These challenges provide an opportunity to introduce reuse as an productive domain in the* ***life cycle of materials***

PROJECT AMBITIONS
FOCUS OF INTERVENTION

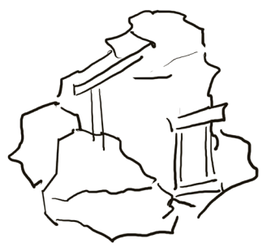
CRAFTING MATERIAL

who/how



EXTRACTING MATERIAL

where



DECAYING MATERIAL

what/why



Project Ambitions

CRAFTING HETEROGENEITY

Empower existing/ invisible network of crafters towards a more comprehensive hybrid architectural expression embracing the heterogeneity of wear

URBAN PLAY

To develop a stronger material culture towards the embrace of wear and aging through urban play

MATERIAL WEAR PILOT PROJECT

Start a pilot project that moves beyond the conventional reuse market, that adopts all facets of material aging

PROJECT AMBITIONS
FOCUS OF INTERVENTION

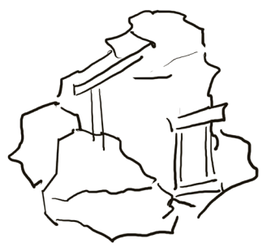
CRAFTING MATERIAL

who/how



EXTRACTING MATERIAL

where



DECAYING MATERIAL

what/why



Project Ambitions

CRAFTING HETEROGENEITY

Empower existing/ invisible network of crafters towards a more comprehensive hybrid architectural expression embracing the heterogeneity of wear

URBAN PLAY

To develop a stronger material culture towards the embrace of wear and aging through urban play

MATERIAL WEAR PILOT PROJECT

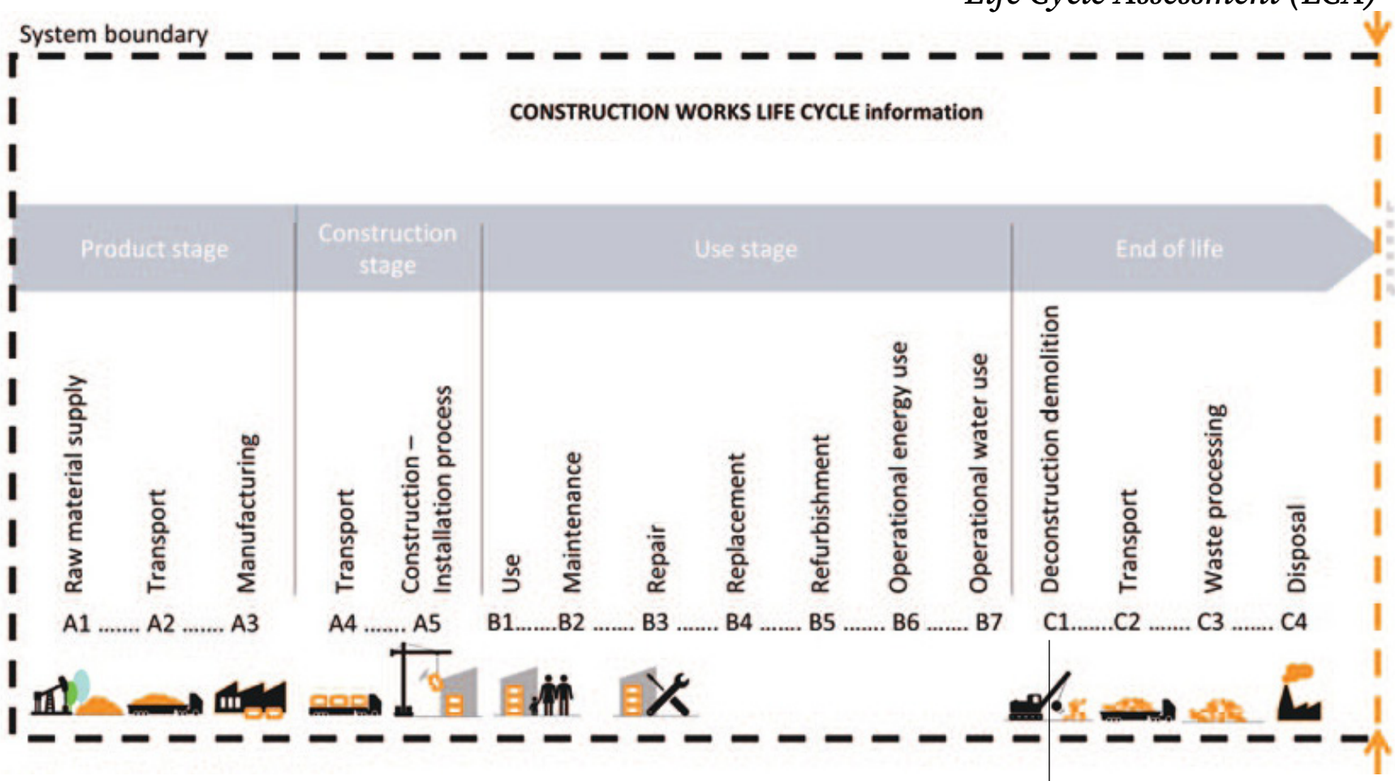
Start a pilot project that moves beyond the conventional reuse market, that adopts all facets of material aging

Incubator for crafting material wear

BEYOND REUSE

TOWARDS THE EMBRACE OF WEAR (AT ALL SCALES)

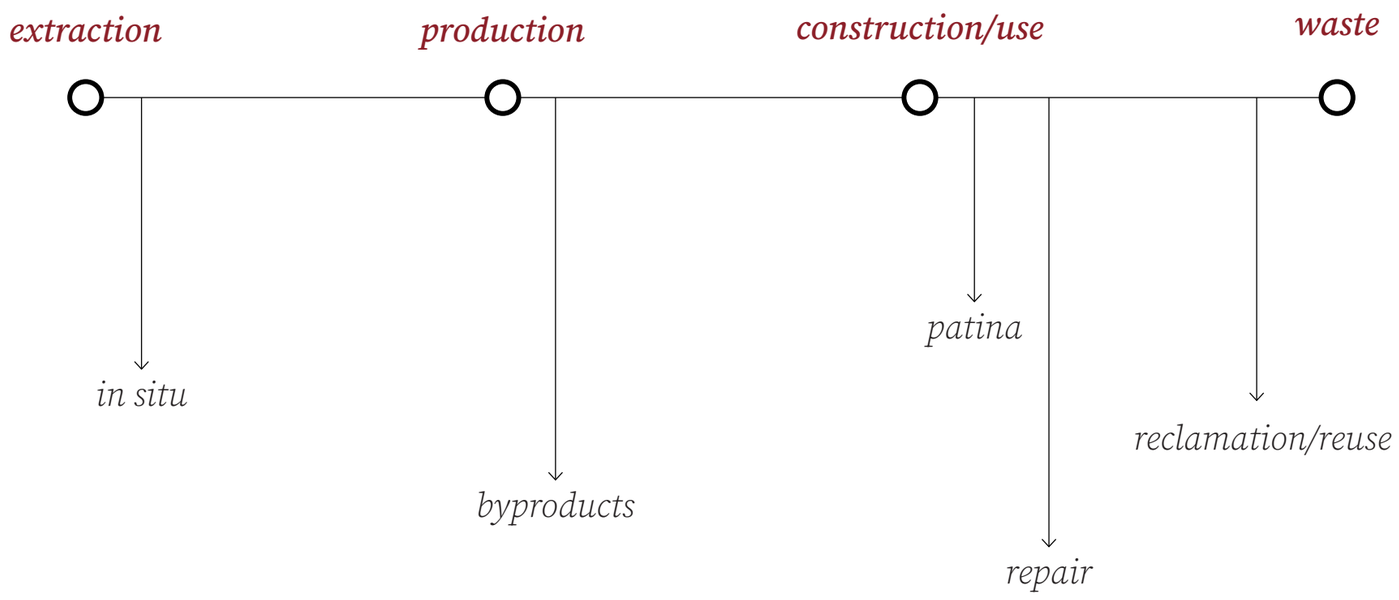
Life Cycle Assessment (LCA)



reclamation/reuse

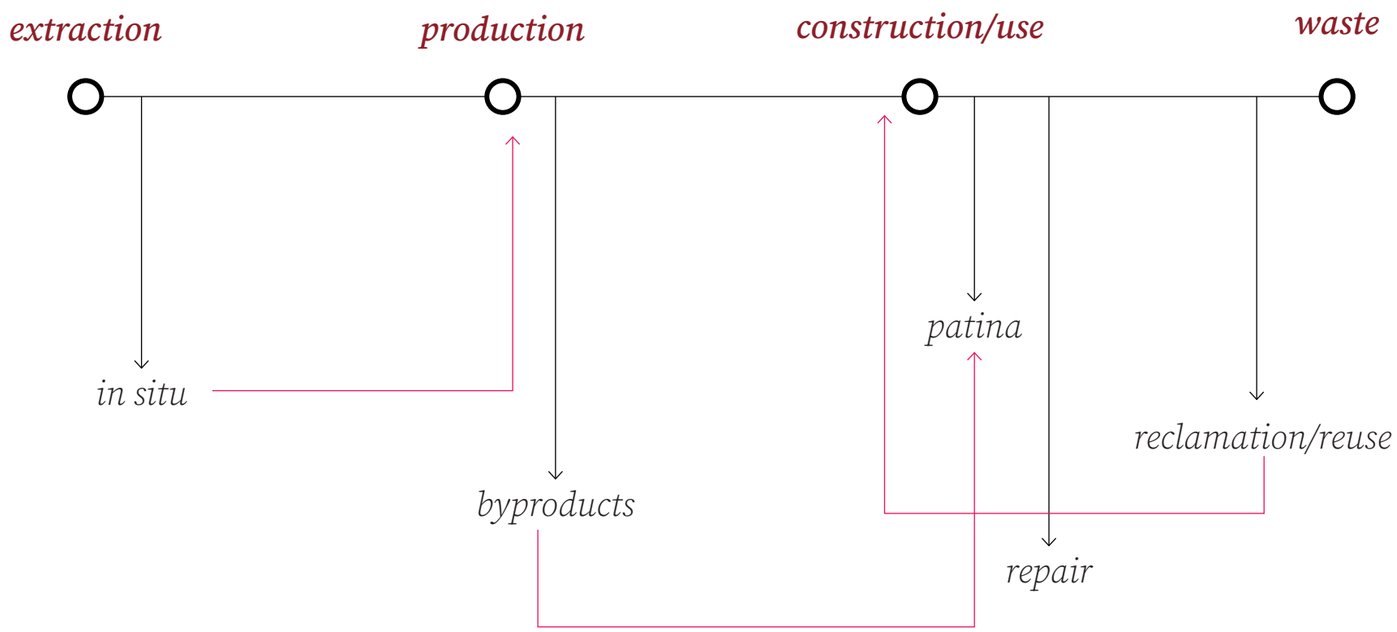
BEYOND REUSE

TOWARDS THE EMBRACE OF WEAR (AT ALL TIMESCALES)



BEYOND REUSE

TOWARDS THE EMBRACE OF WEAR (AT ALL TIMESCALES)



SITE

Madrid Nuevo Norte

MADRID NUEVO NORTE
URBAN DEVELOPMENT



Madrid Nuevo Norte will reuse 800,000 tonnes of materials

29 March 2023

Author
Madrid Nuevo Norte

Share
LinkedIn
Facebook
Twitter

Madrid Nuevo Norte aspires to be an international benchmark for its pioneering urban model, centred on people. To this end, the many environmental, economic and social sustainability measures implemented included adopting an innovative strategy based on the circular economy, with the aim of achieving truly sustainable urban development. Work is being done to minimise environmental impact right from the initial construction stage, by reclaiming materials from the dismantling of existing structures and then reusing them in the works of the same project. This initiative–which aims to reduce the carbon footprint of construction waste management by 70%–was presented jointly by Madrid Regional Government and Crea Madrid Nuevo Norte (the main private promoter of the project) on 27 March.

This strategy aims to recycle nearly 90% of the existing materials within the area of action and give them a second life as raw materials for construction. To this end, more than 800,000 tonnes of materials will be reused within the project. As a result of locating the necessary infrastructure for this purpose in the area itself, the traffic

by **reclaiming materials from the dismantling of existing structures and then reusing them in the works** *of the same project*

aims to reduce the carbon footprint of construction waste management by 70%–was presented jointly by Madrid Regional Government and Crea Madrid Nuevo Norte

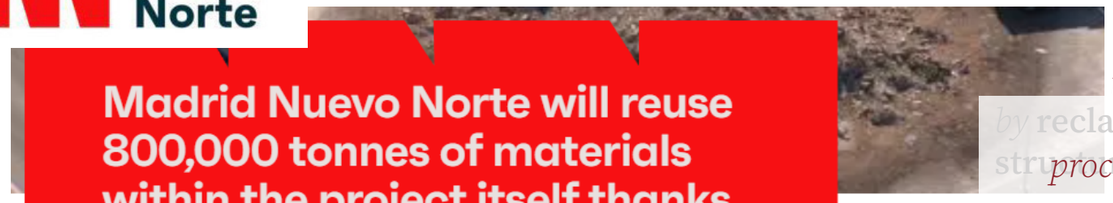
strategy aims to recycle nearly 90% of the existing materials *within the area of action and give them a second life* **as raw materials for construction**

locating the necessary infrastructure for this purpose in the area itself, the traffic caused by shipping materials by lorry through the city will be significantly reduced

The **temporary facility will occupy 38,000 square metres** *and will be active only for the duration of the construction of the project.*

The waste will then be **transferred to the centralised plant**, *within the works area, which will have specialised machinery to convert the rubble into new materials*

MADRID NUEVO NORTE
URBAN DEVELOPMENT



Madrid Nuevo Norte will reuse 800,000 tonnes of materials

29 March 20

Author
Madrid Nuevo Norte

Share
LinkedIn
Facebook
Twitter

Madrid Nuevo Norte aspires to be an international benchmark for its pioneering urban model, centred on people. To this end, the many environmental, economic and social sustainability measures implemented included adopting an innovative strategy based on the circular economy, with the aim of achieving truly sustainable urban development. Work is being done to minimise environmental impact right from the initial construction stage, by reclaiming materials from the dismantling of existing structures and then reusing them in the works of the same project. This initiative–which aims to reduce the carbon footprint of construction waste management by 70%–was presented jointly by Madrid Regional Government and Crea Madrid Nuevo Norte (the main private promoter of the project) on 27 March.

This strategy aims to recycle nearly 90% of the existing materials within the area of action and give them a second life as raw materials for construction. To this end, more than 800,000 tonnes of materials will be reused within the project. As a result of

though it mentions the process of reclaiming materials, there is little mention of infrastructure or collaborators needed in this process of extraction. **Only the development of treatment plant**

aims to reduce the carbon footprint of construction waste management by 70%–was presented jointly by Madrid Regional Government and Crea Madrid Nuevo Norte

reuse and recycling are once again used interchangeably,

where the operations means the reuse of byproducts

from treatment plants

“The crushed aggregates which exit at the end of the chain…have a **low economic value** *and relatively* **limited ranges of use** *(they are mainly useful for backfilling work and foundation layers and, to a* **lesser extent, as a constituent for production of new concrete***)” (Ghyoot, 17).*

The waste will then be **transferred to the centralised plant**, *within the works area, which will have specialised machinery to convert the rubble into new materials*

COMPLICATED HISTORY
URBAN DEVELOPMENT

The Madrid Nuevo Norte proposal has its origins in Operation Chamartín in 1993.

Been in development **for more than 25 years**

1993
Operation Chamartín (Ricardo Bofill)
New Offices & Station

1997
Prolongación de la Castellana
New General Urban Planning Plan

2004
New Urban Plan (José María Ezquiaga)
Shift in Government PSOE

2013
Urban Plan Rejected
Superior Court of Justice Annulled the urban plan

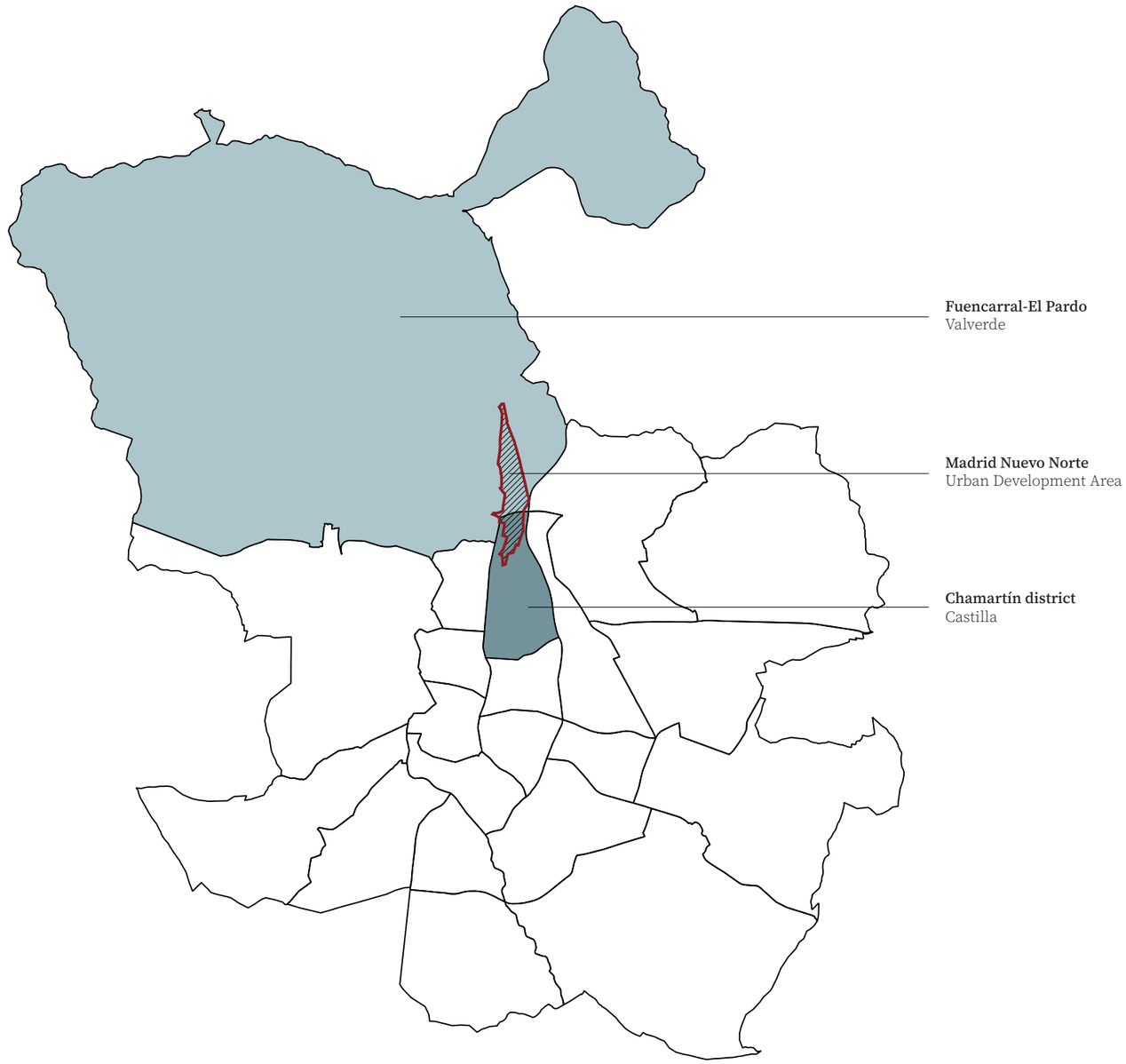
2014
Restructuring of Developer Company
DUCH to Castellana Norte District (DCN)

2014
Castellana Norte District (Richard Rogers)
New Urban Proposal Local Government

2015
2200 Allegations by Neighborhood Associations
Project rejected before submission

2016
Madrid Puerta Norte (Rejected by DCN)
Shift in Government, Ahora Madrid Party

2017
Madrid Nuevo Norte
New agreemetns with City Council/Ministry Public Works



2017 & NOW - MADRID NUEVO NORTE

CURRENT URBAN PLAN



2017

Institutional Consensus

July 27, a historic consensus was reached between the main stake holders

2019

Provisional approval

July 29, the Plenary Session of the City Council unanimously votes the provisional approval

2020

Final approval

March 25, the project obtained final approval from the Community of Madrid

2021

Hydraulic Infrastructure

March, Canal de Isabel II present the large hydraulic infrastructure Plan

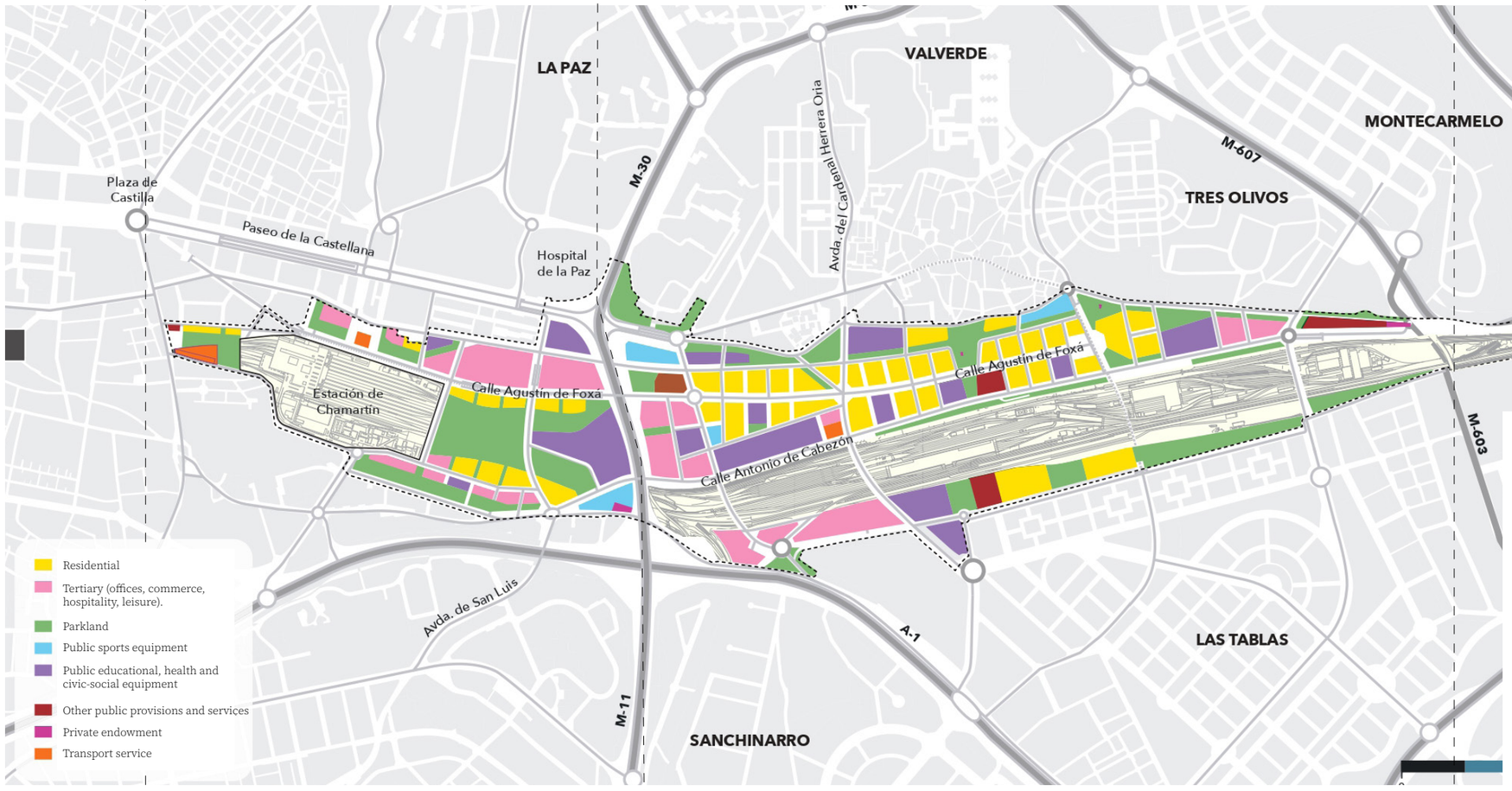
2022

Breaking Ground

November 2022, Start of the first urbanization works, construction of structures for Central Park

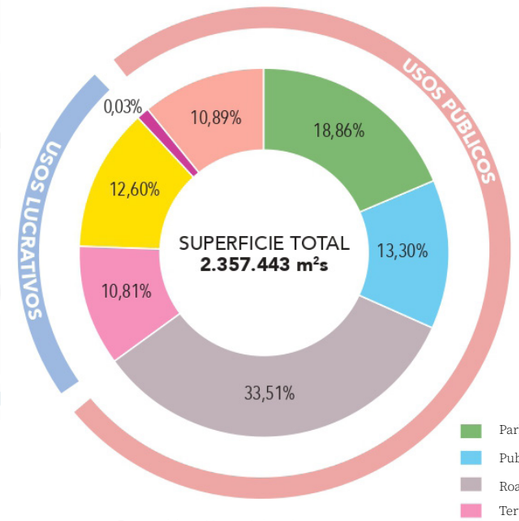
MADRID NUEVO NORTE

URBAN PLAN



Financial Centre

Residential Zone

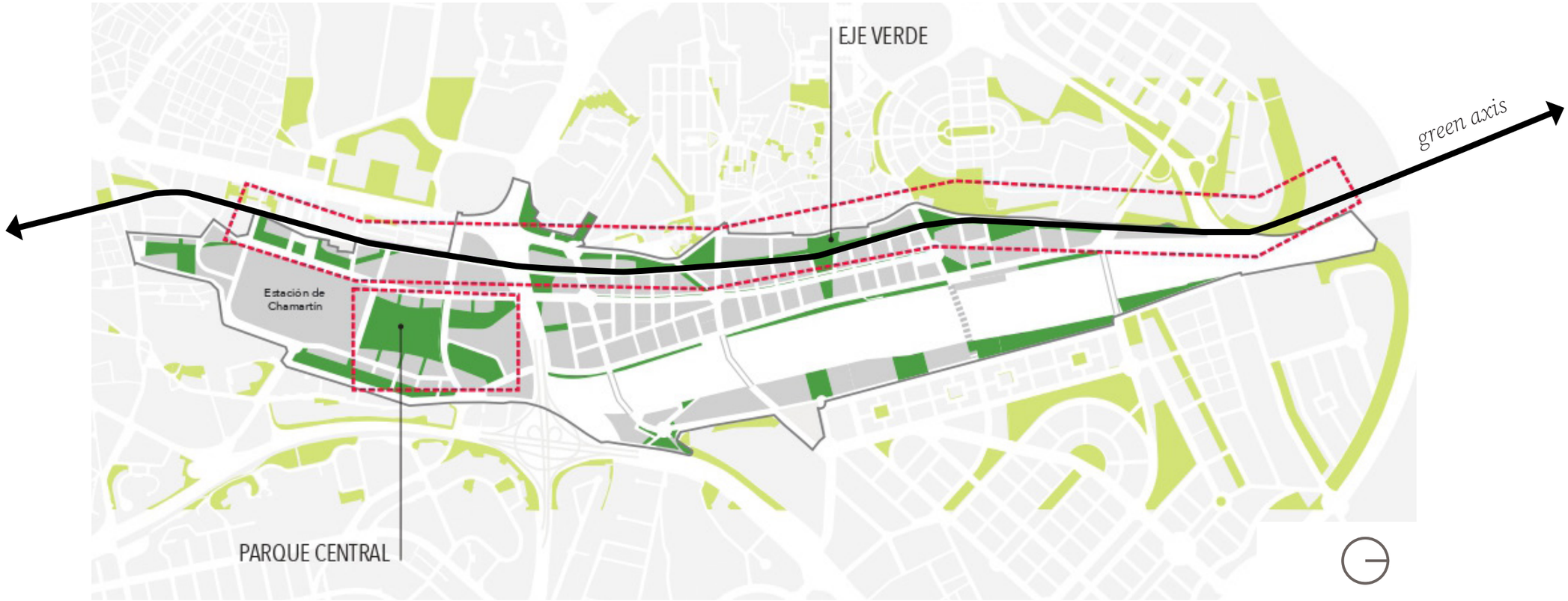


Fuente: elaboración propia basada en los datos obtenidos en la MPG.

19% Green Space
11% Office
12.6% Residential — *10,500 residents*
13.3% Public — *20% public housing*

GREEN VISION
URBAN PLAN

First urban project precertified with BREEAM and LEED



400,000 m2 of green areas
13km+ of cycle path

Chosen by European Commission as
pilot project in several sustainability projects

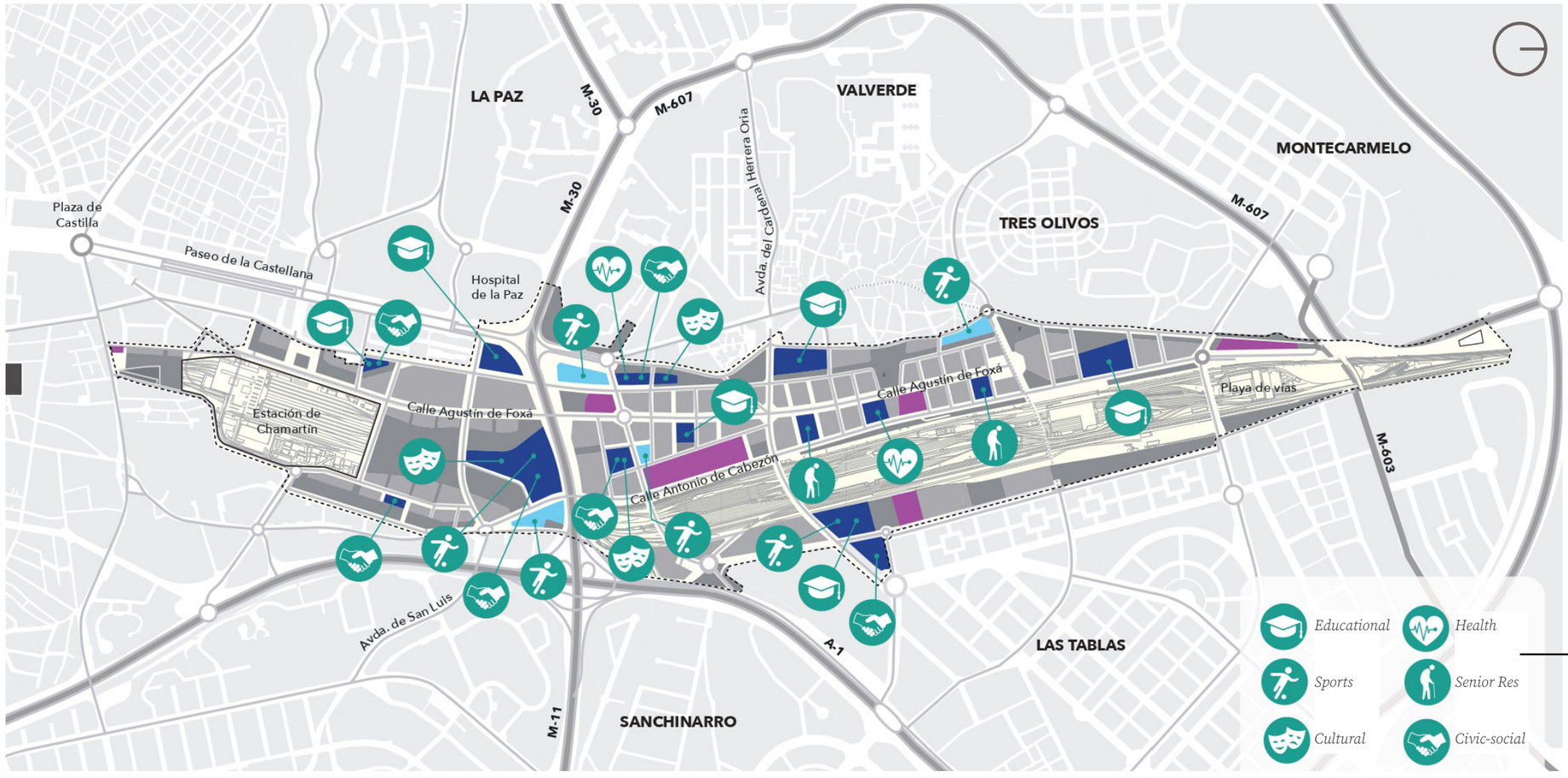
MADRID DEEP DEMO
EIT Climate KIC
Madrid City Council

Studying Madrid's transition towards a regulatory model to mitigate climate emergency

EU FIVE
Laudes Foundation & EIT Climate KIC

analyzes how to decarbonize construction

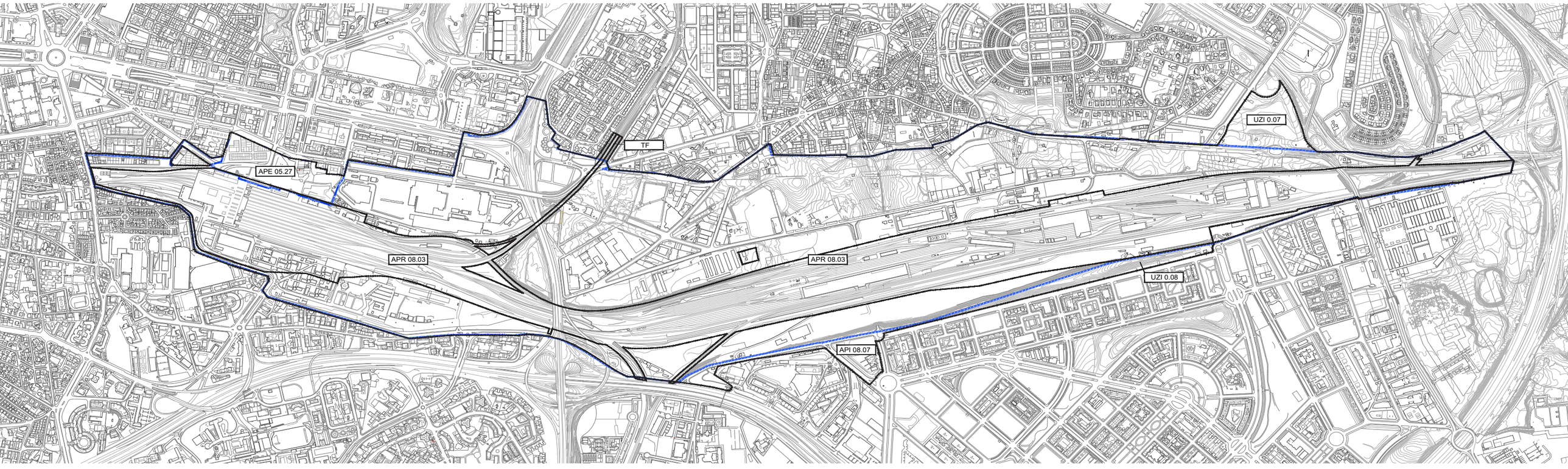
PUBLIC DEVELOPMENTS
URBAN PLAN



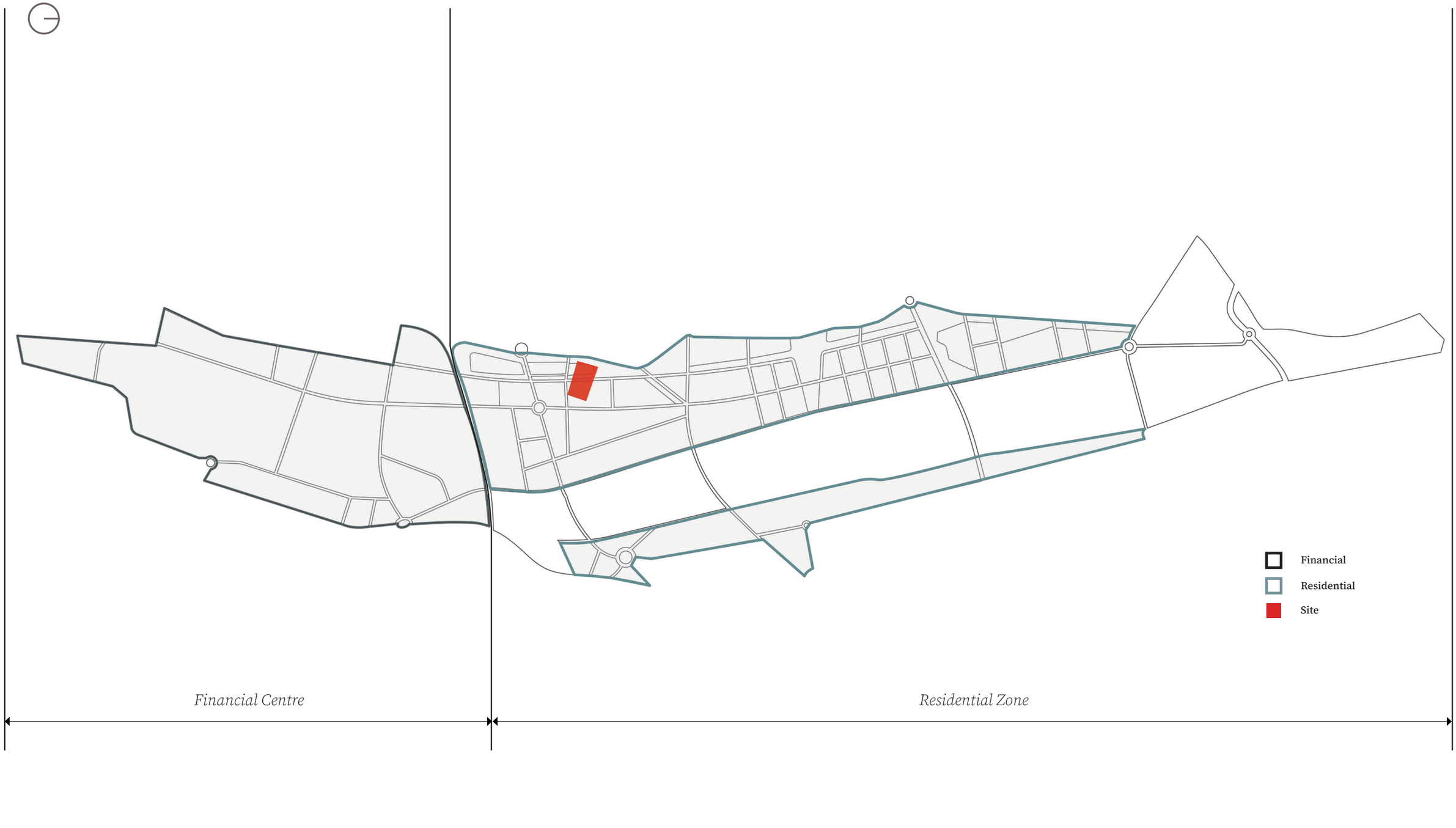
6 educational centers
2 health centers
6 sports centers
2 Senior Residential
3 Cultural
6 Civic-Social

Current public programs are "aimed at: the life sciences sector, the expansion of the existing cultural proposal in Madrid, higher education and **startup incubators"**

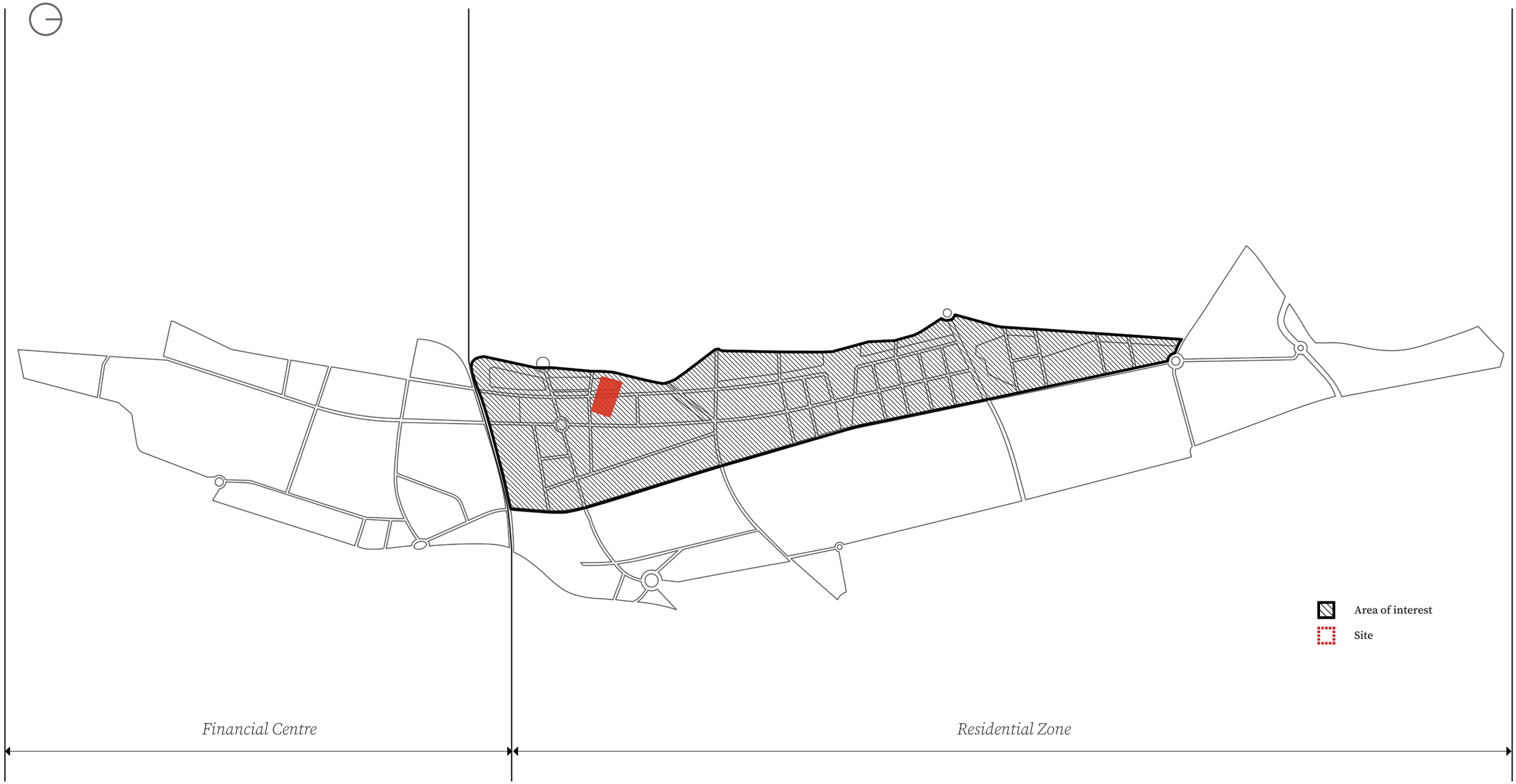
SITE XL
AREA OF INTEREST



SITE XL
AREA OF INTEREST



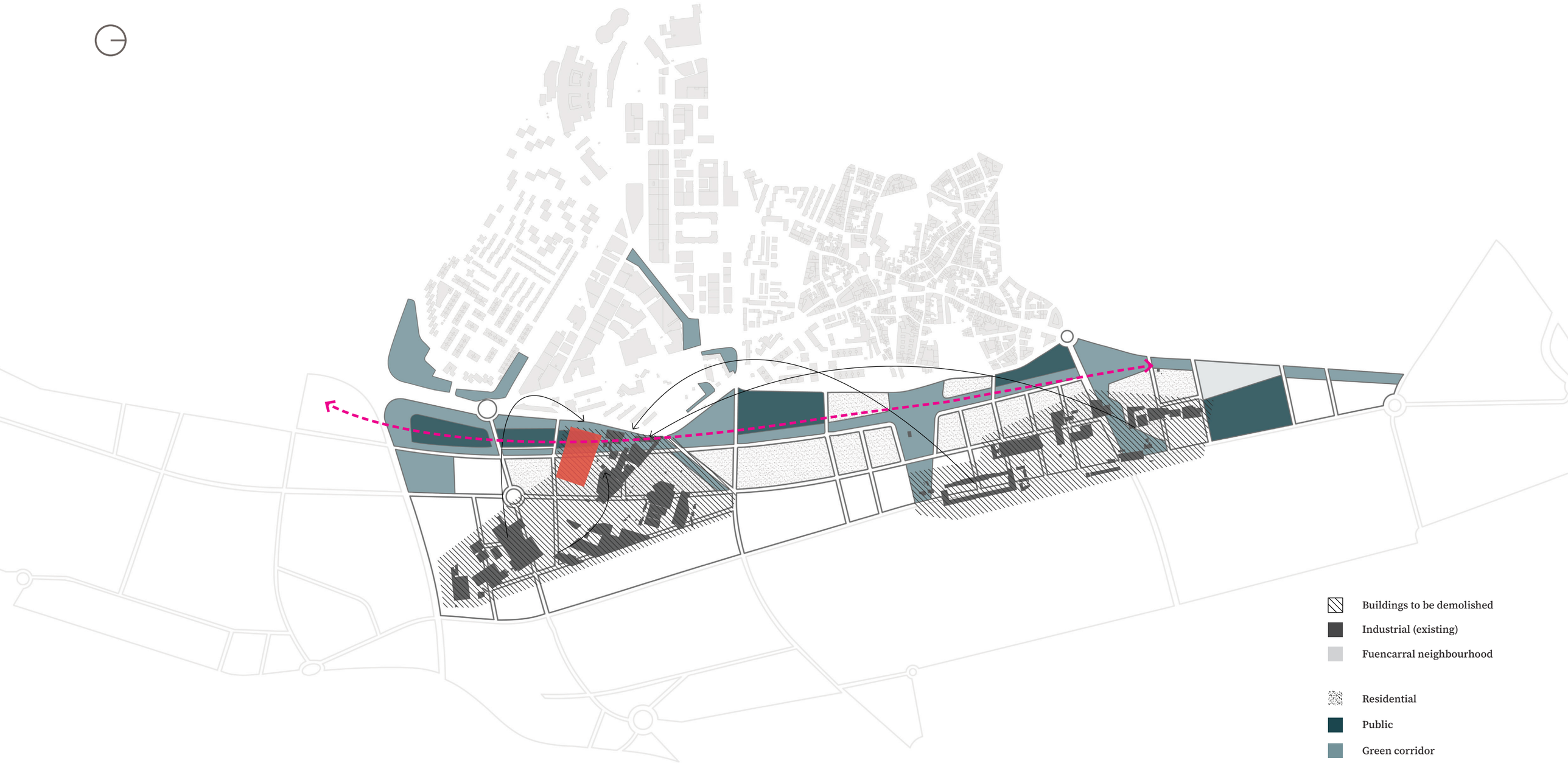
SITE XL
AREA OF INTEREST



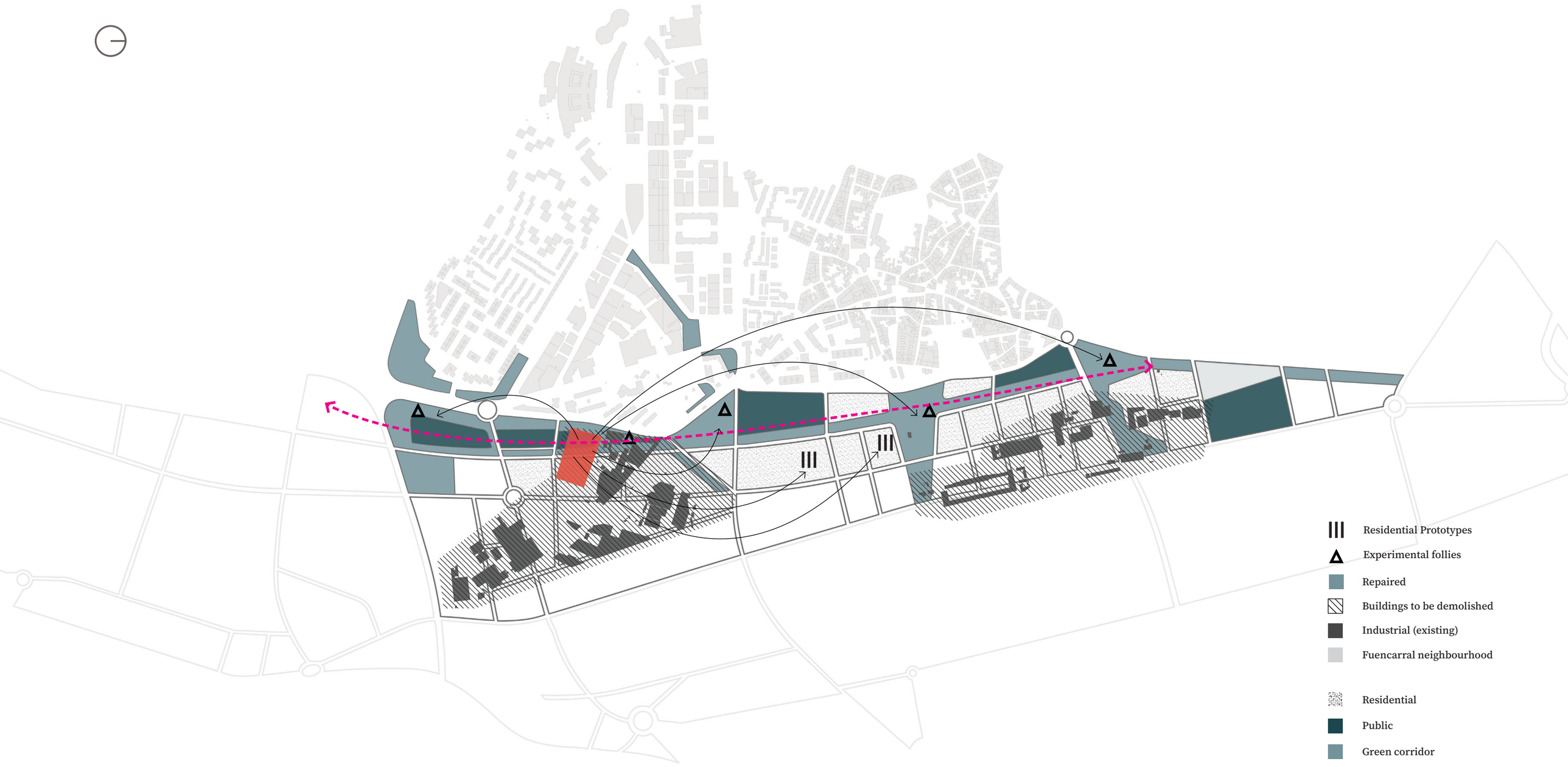
SITE XL
AREA OF INTEREST



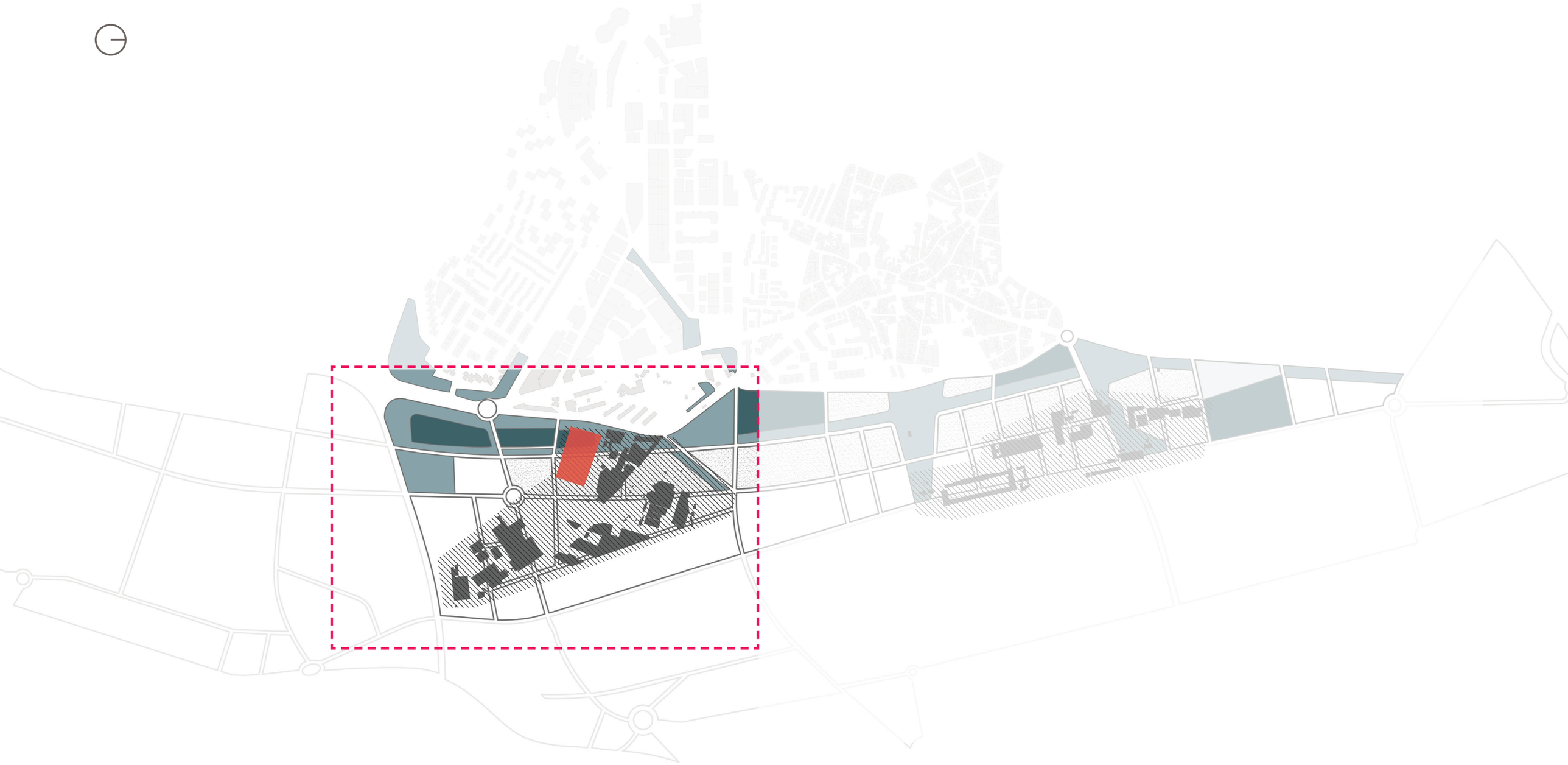
SITE XL
URBAN MINING



SITE XL
URBAN PLAY

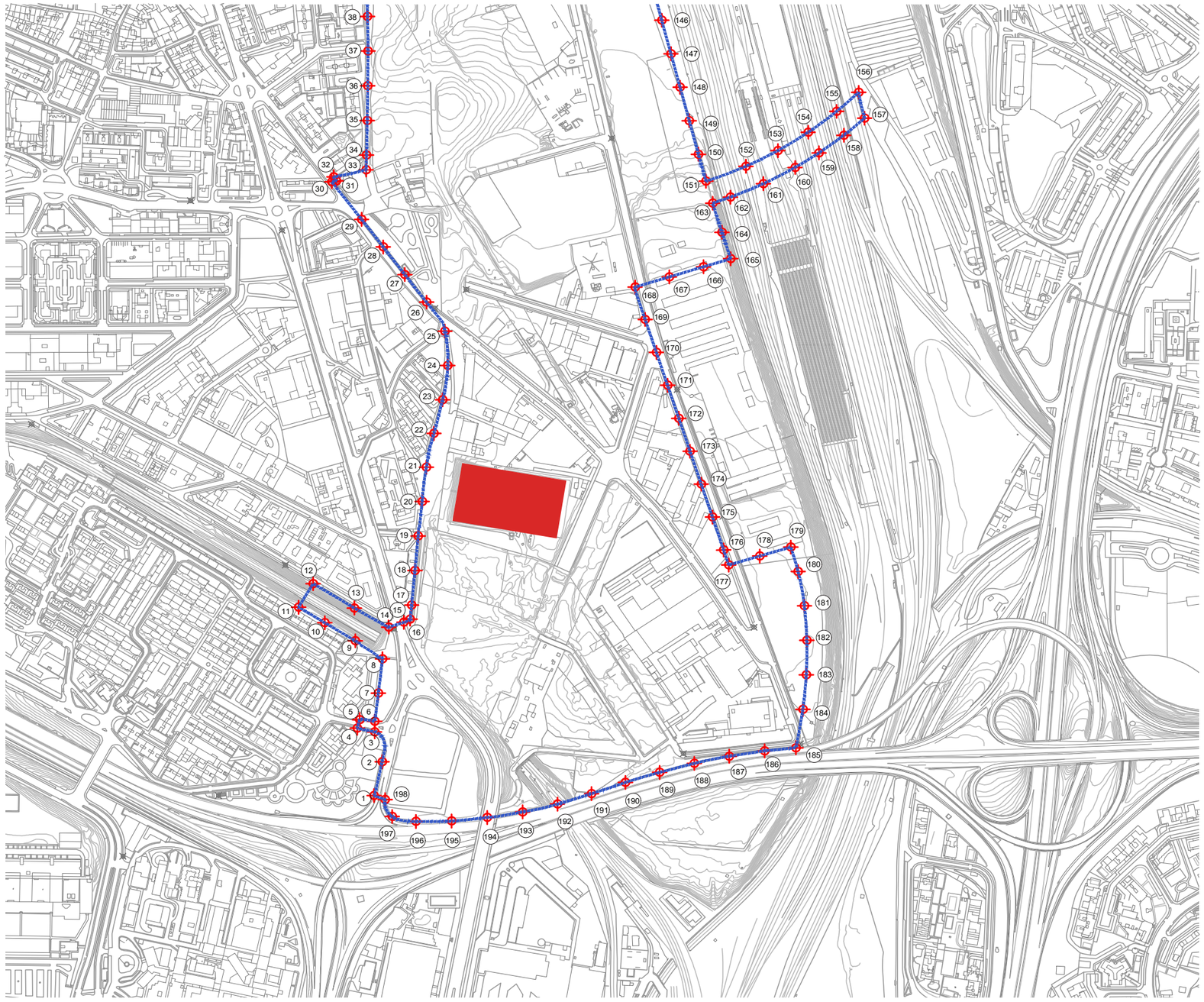


SITE XL
URBAN PLAY



SITE L

EXISTING CONDITIONS, 1:8000

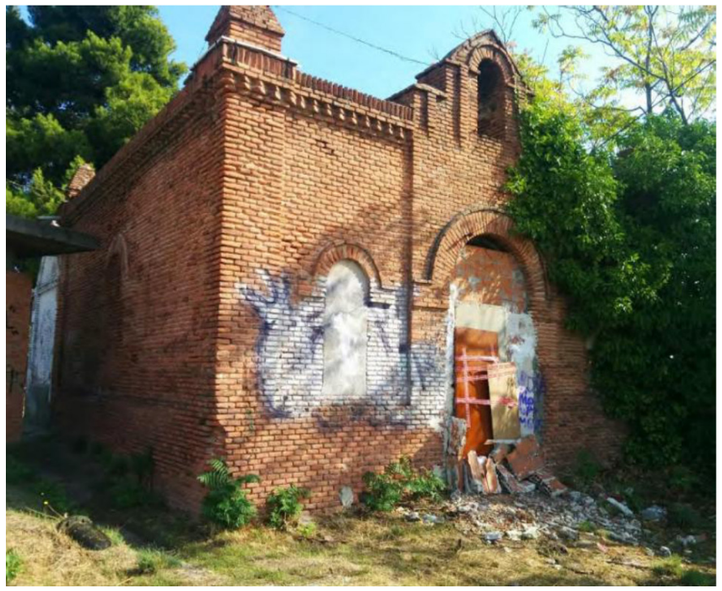


SITE L

EXISTING CONDITIONS, 1:8000



SITE L
URBAN CONDITION (RUIN/REPAIR)











SITE S
GOOGLE EARTH: DEPÓSITO DEL OLIVAR



North-West View



South-West View

SITE M
GOOGLE EARTH



SITE S: DEPÓSITO DEL OLIVAR

REPLACEMENT OF WATER INFRASTRUCTURE

MADRID DISTRICTS MUNICIPALITIES SOCIAL HEALTH CULTURE AND LEISURE POLICY ENVIRONMENT EDUCATION INNOVATION

SPAIN AND WORLD | OPINION | PHOTOS | YEARBOOK 2023 | LETTERS TO THE DIRE(

MADRID HABLA DE

Renfe Adif Strike love scams Feroz Awards E



(Photo: Chema Barroso)

The supply of the Canal de Isabel II in Madrid Nuevo Norte, an "unheard of work in Europe"

- Environment seeks investors to turn Madrid Nuevo Norte into a living city

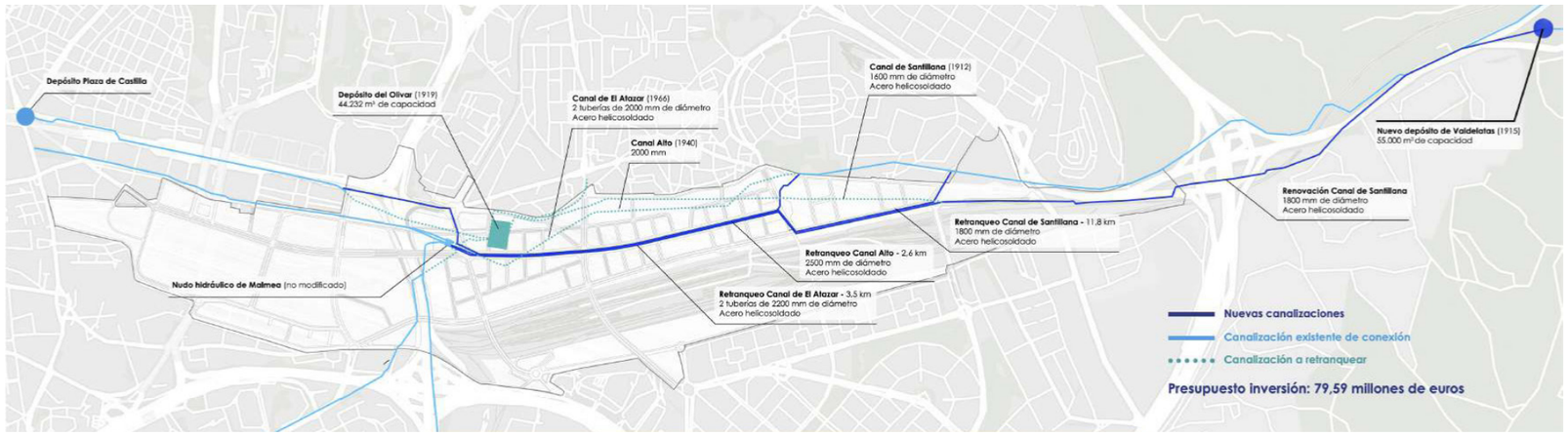
By Alba Cabañero Aina

More articles by this author

Thursday, March 4, 2021 , 1:49 p.m.

This Thursday, the president of the Community of Madrid, **Isabel Díaz Ayuso** , the Minister of Environment, Territorial Planning and Sustainability of the regional Government, **Paloma Martín,** the mayor of Madrid, **José Luis Martínez-Almeida** , and the president of the Castellana District Norte, **Álvaro Aresti** , have met at the Olivar Depot of Canal de Isabel II to present the actions planned in **Madrid Nuevo Norte** by the public company to guarantee a supply and sanitation network ready for the large urban development that will be built in the next years.

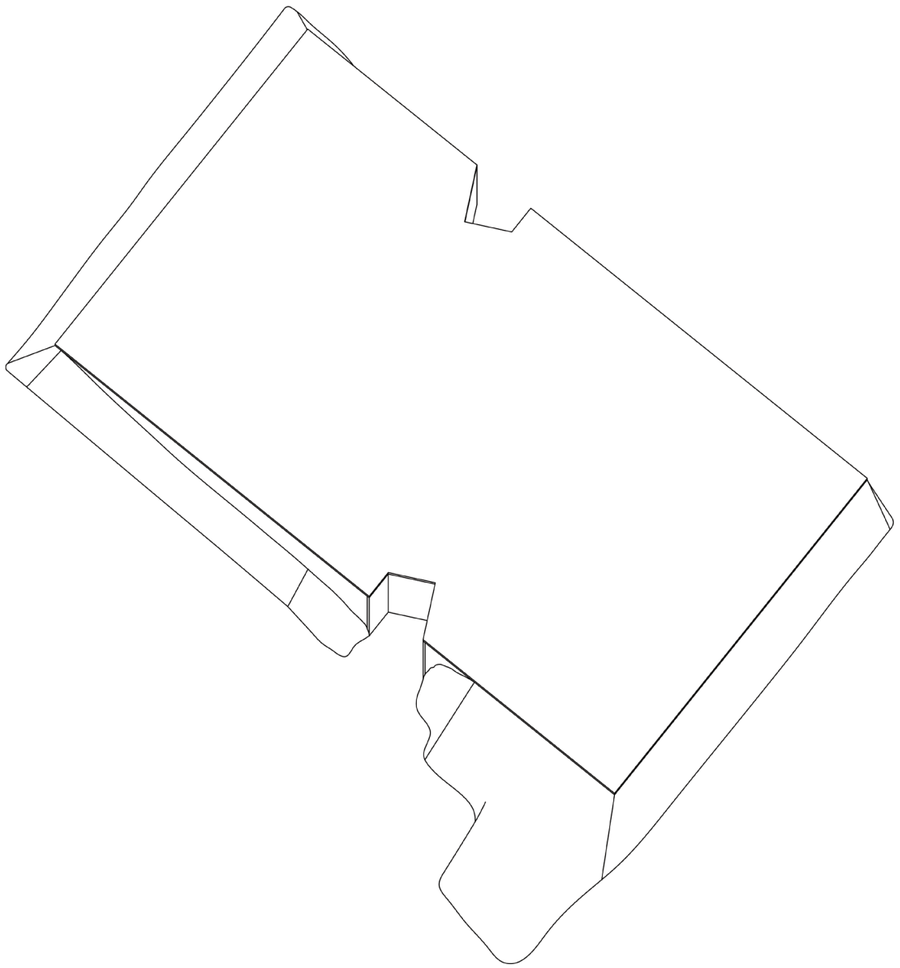
The current Depósito del Olivar (1919) del Canal de Isabel II, which today supplies the Salamanca neighborhood, ***will be demolished and a new one will be built in Valdelatas***



Three of the main supply arteries run through the land of this large urban development, ***supplying 60% of the region's population*** *daily*

DEPOSIT CONDITIONS
GREEN PLINTH

green plinth serves as extension of fourth nature landscape,
building becomes natural node



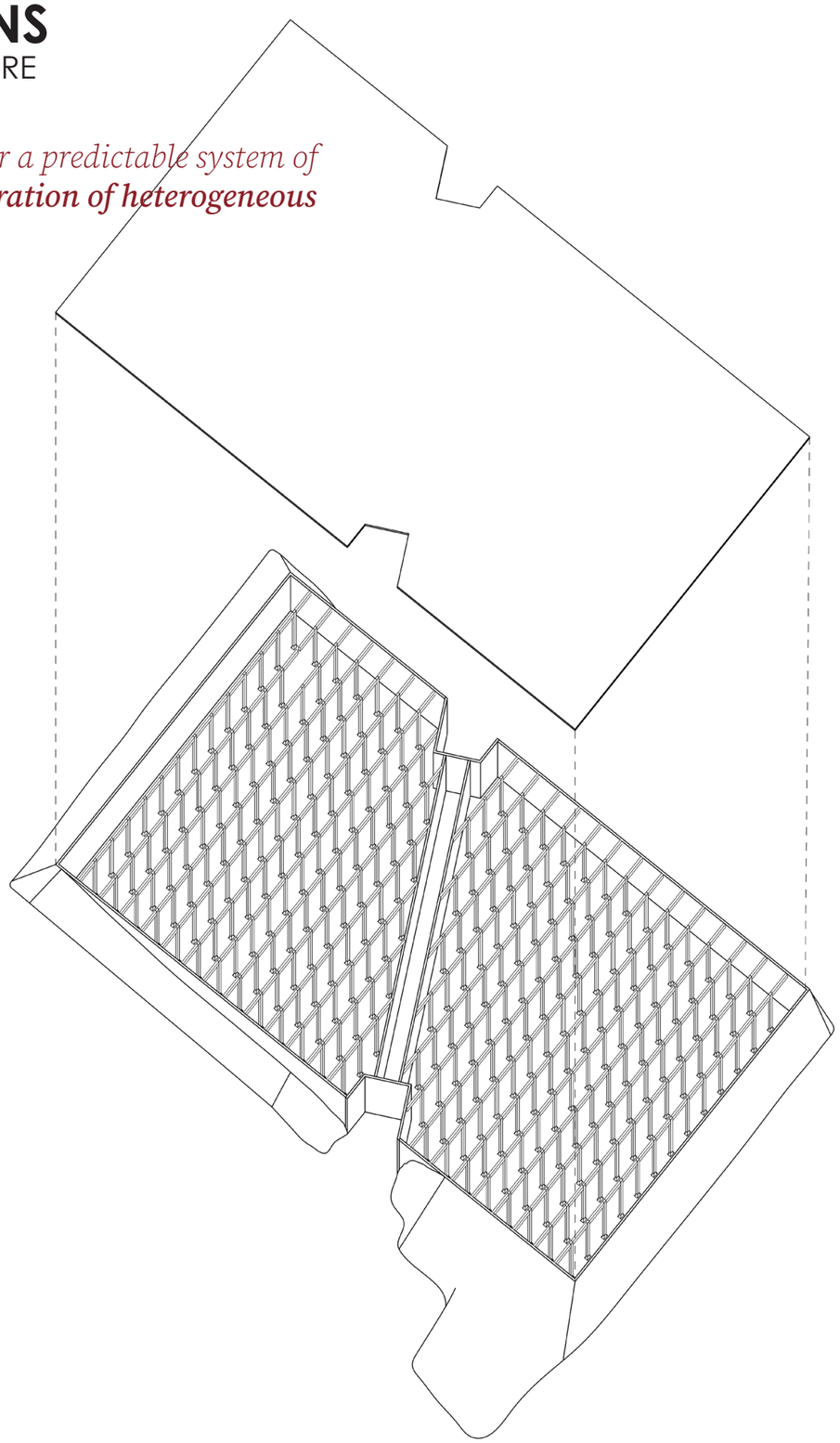




DEPOSIT CONDITIONS

6X6M CONCRETE BEAM STRUCTURE

*simple grid, enables opportunities for a predictable system of intervention (**a clean slate for exploration of heterogeneous materials and crafting**)*







TIMELINE
AGEING AND TIME

official schedule of MNN development

MP-CALENDARIO APE 08.20																								
MALMEA-SAN ROQUE-TRES OLIVOS	IMPORTE MM€	AÑOS																						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Formalización de Iniciativa, Constitución de juntas, proyectos urbanización																								
ESTACIÓN DE CHAMARTÍN. Ampliación Vestíbulo	300,00				150,00	150,00																		
ESTACIÓN DE CHAMARTÍN. Fase-2	550,00							150,00	150,00	150,00	100,00													
Remodelación de haz de vías haz convencional (ADIF/RENFE)	100,00		50,00	50,00																				
Estaciones de Cercanías (ADIF/RENFE)	50,00										50,00													
NUDO NORTE fase-2 (ayuntamiento)	38,29										19,14	19,14												
NUDO FUENCARRAL (ayuntamiento)	164,79								54,93	54,93	54,93													
ACTUACIONES FINAL CASTELLANA (ayuntamiento)	121,89									40,63	40,63	40,63												
INFRAESTRUCTURAS COMUNES (propietarios)	189,62		63,21	63,21	63,21																			
AFECCIONES CYII (adjudicatario)	79,59			39,80	39,80																			
NUEVA LINEA DE METRO (adjudicatario)	141,01			74,00					22,00			45,01												
MALMEA-SAN ROQUE-TRES OLIVOS	196,32					34,52	50,61	42,74	44,22															
Urbanización	128,29					42,76	42,76	42,76																
Cubrimiento de vías	8,05					8,05																		
Afecciones a edificaciones existentes	36,52					36,52																		
Puentes Norte	23,46								23,46															
Túnel Tres Olivos - Las Tablas	24,78										24,78													
CONSTRUCCION PROMOCIONES										87,87	87,87	87,87	87,87	87,87	87,87	87,87	87,87	87,87	87,87	87,87	87,87	87,87	87,87	87,87
VENTA PROMOCIONES											407,71	407,71	407,71	407,71	407,71	407,71	407,71	407,71	407,71	407,71	407,71	407,71	407,71	407,71	
CONSTRUCCION EQUIPAMIENTOS CAM													32,51	32,51	32,51	32,51								
CONSTRUCCION EQUIPAMIENTOS Ayuntamiento													32,51	32,51	32,51	32,51								
SANEAMIENTO Y DEPURACIÓN	55,05							27,52	27,52															

TIMELINE
AGEING AND TIME

INSTALLATION
PHASE 1 (PH1)

Temporary lease
Decommission of water deposit, RCD & ADIF agree to temporarily lease space for repair cooperative

Reclamation Audit
surveying neighbouring industrial buildings

Masons develop Installation
traditional masons/bricklayers are consulted and build the heterogeneous patchwork wall, expressing wear

Masonry Installation opened for public

DEPOT/REPAIR
PHASE 2 (PH2)

Scaling Operations
Increased funding towards reclamation, demands for more intensive crafting/processing/storage space

Develop Repair Catalogue
the variability in technical/climatic develops a diverse logbook of interventions

Makerspace
other skilled crafters of diverse backgrounds contributing to dialogue in material wear

the process repeats (repair/ expansion)...

MATERIAL CULTURE
PHASE 3 (PH3)

Urban Development
The MNN has finally began developing residential spaces which demands for more public engagement

Public retrofitting
daylight, climatic insulation and expansion of spaces continues to develop repair catalogue

creating programs assisting in collaboration and dialogue

Playful Shallow Pool Courtyard
the artificial ruination of the concrete roof slab and alludes to the historical function of the water deposit

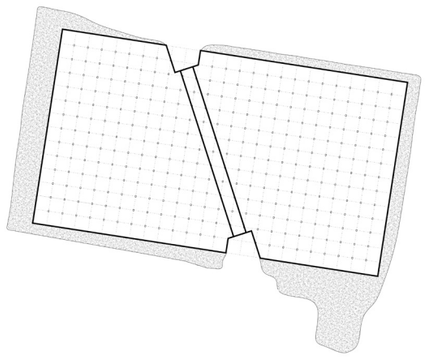
BEYOND
PHASE 4 (PH4)

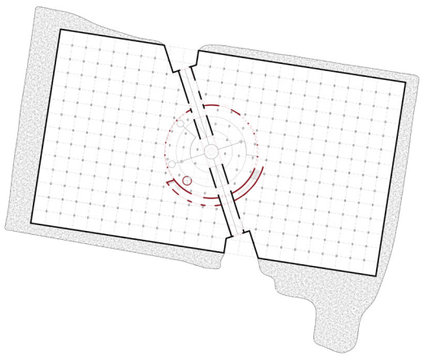
Green Plinth
landscaping embraces a process of wear and ageing naturally, hardscapes enable permeation of vegetation

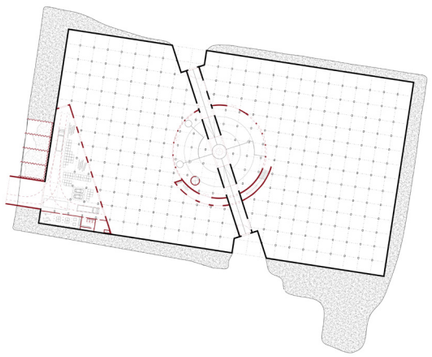
Fourth Nature Repair
A similar attitude towards uncontrolled growth of plant communities are adopted in green axis

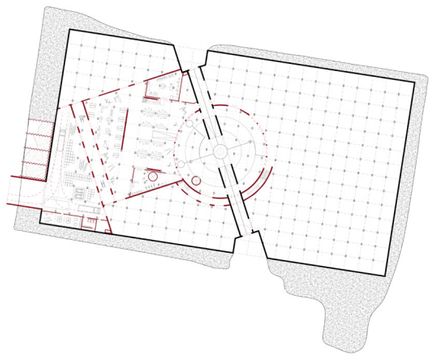
Repair filters into Urban life
the cultivation of material culture and knowledge within the deposit is adopted in the continued developments of MNN...

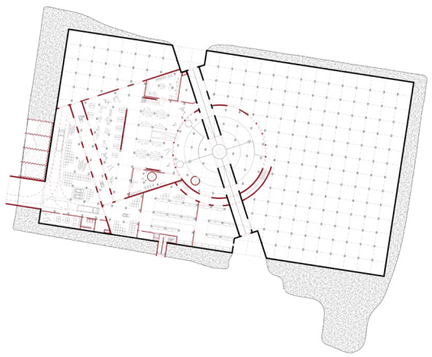
TIMELINE
AGEING AND TIME

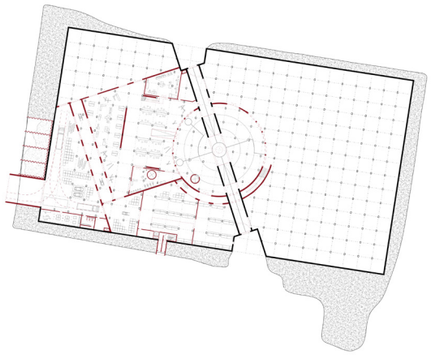


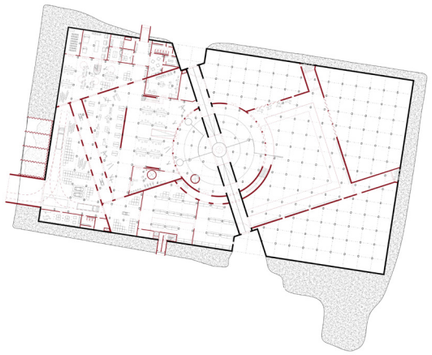


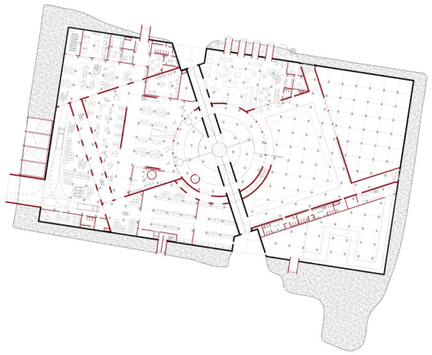


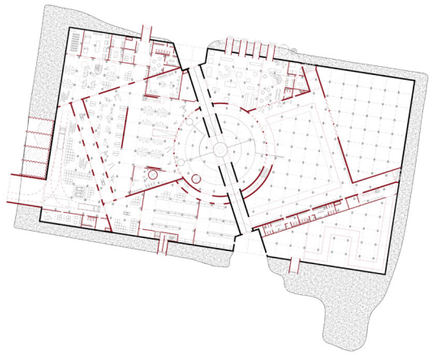


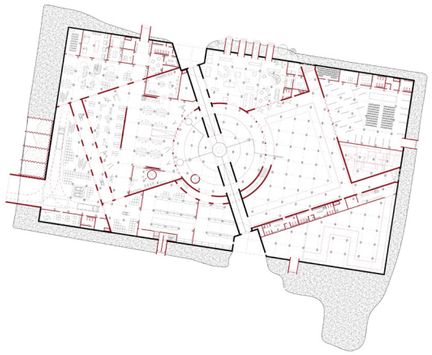












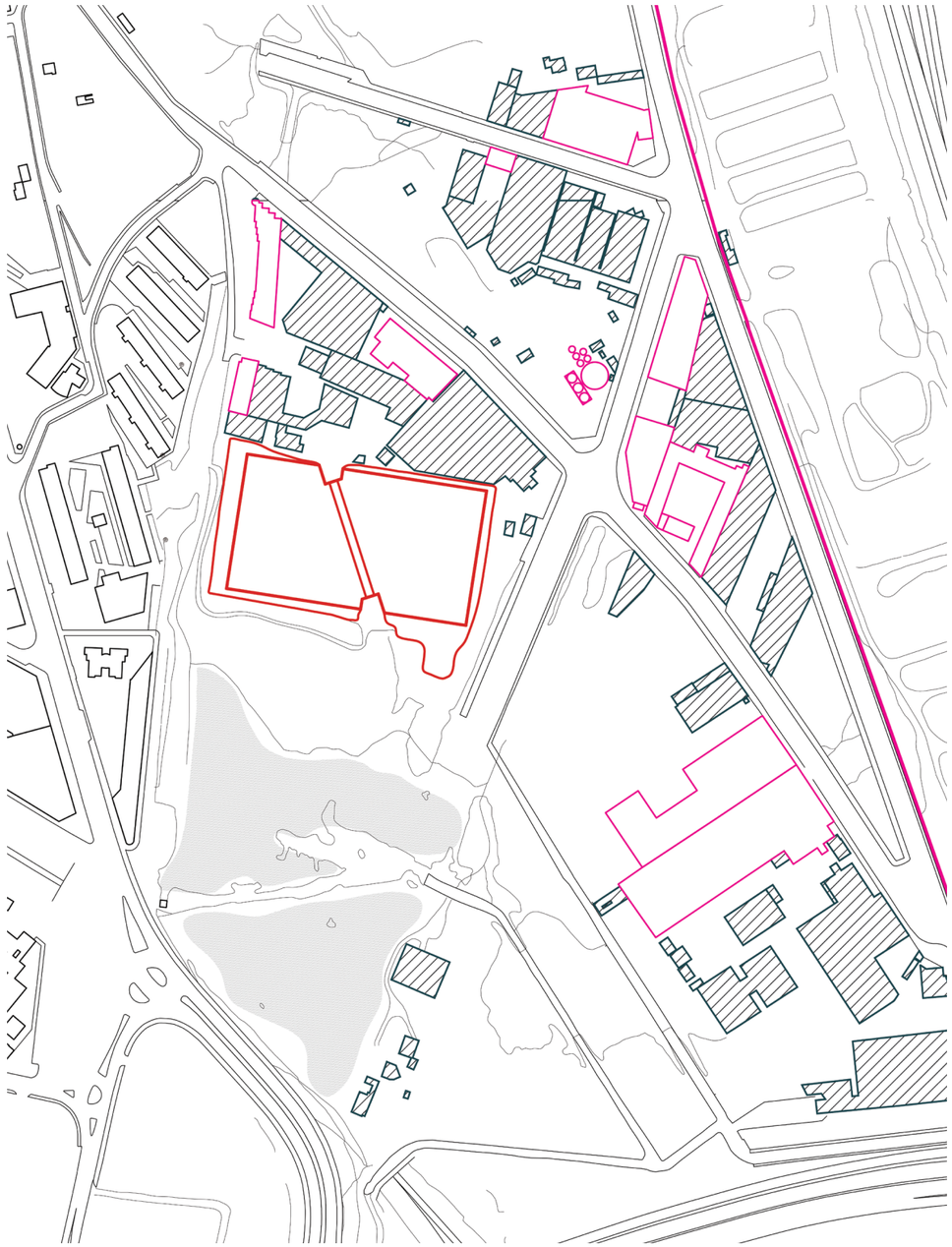


PHASE 1

masonry installation

RECLAMATION AUDIT

INDUSTRIAL CLUSTER 1:2000



old: existing urban condition

potential relamation
industrial cluster
project site





brickwork



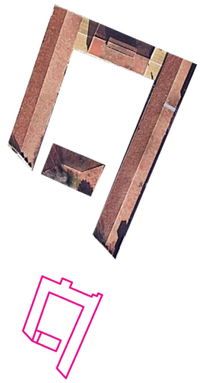
office balcony



modular glazing



modular glazing



tiled roof



fire stair



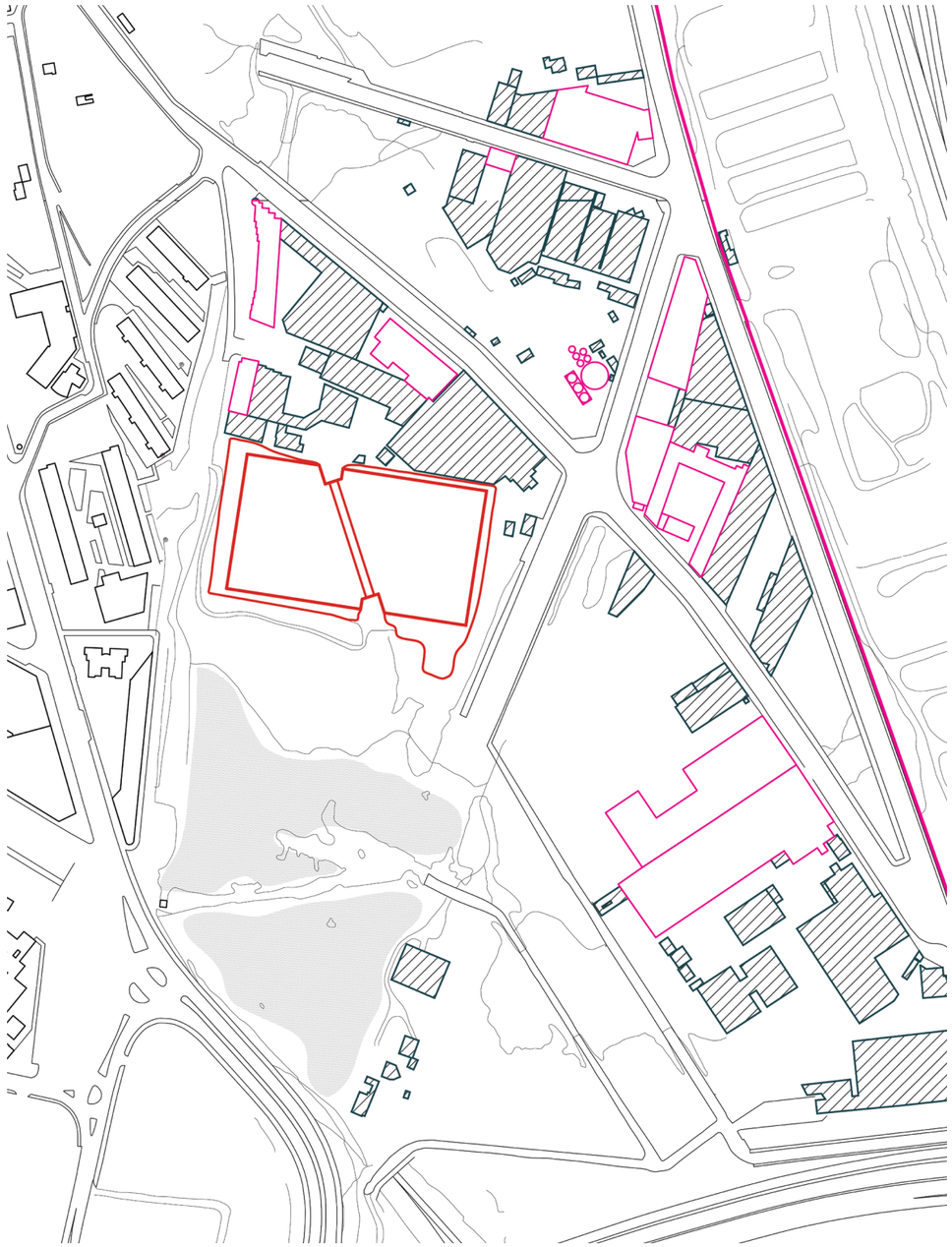
aggregate silo



granite wall barrier

RECLAMATION AUDIT

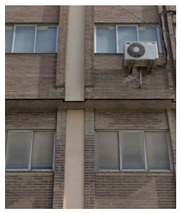
INDUSTRIAL CLUSTER 1:2000



old: existing urban condition

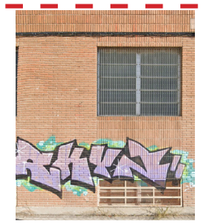
- *potential relamation*
- *industrial cluster*
- *project site*

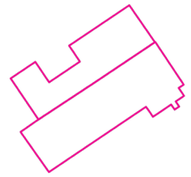




















brickwork

office balcony

modular glazing

modular glazing

tiled roof

fire stair

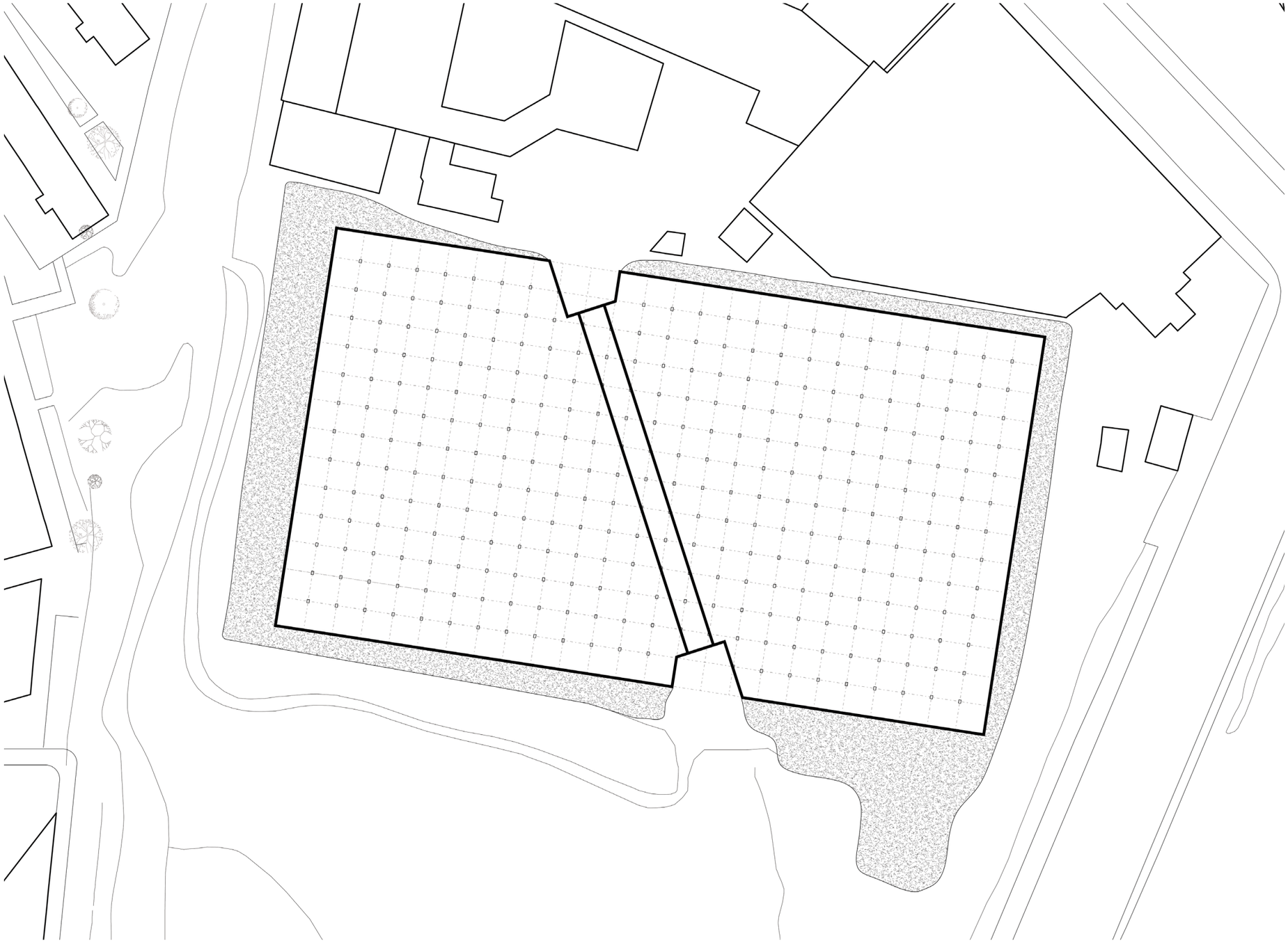
aggregate silo



granite wall barrier

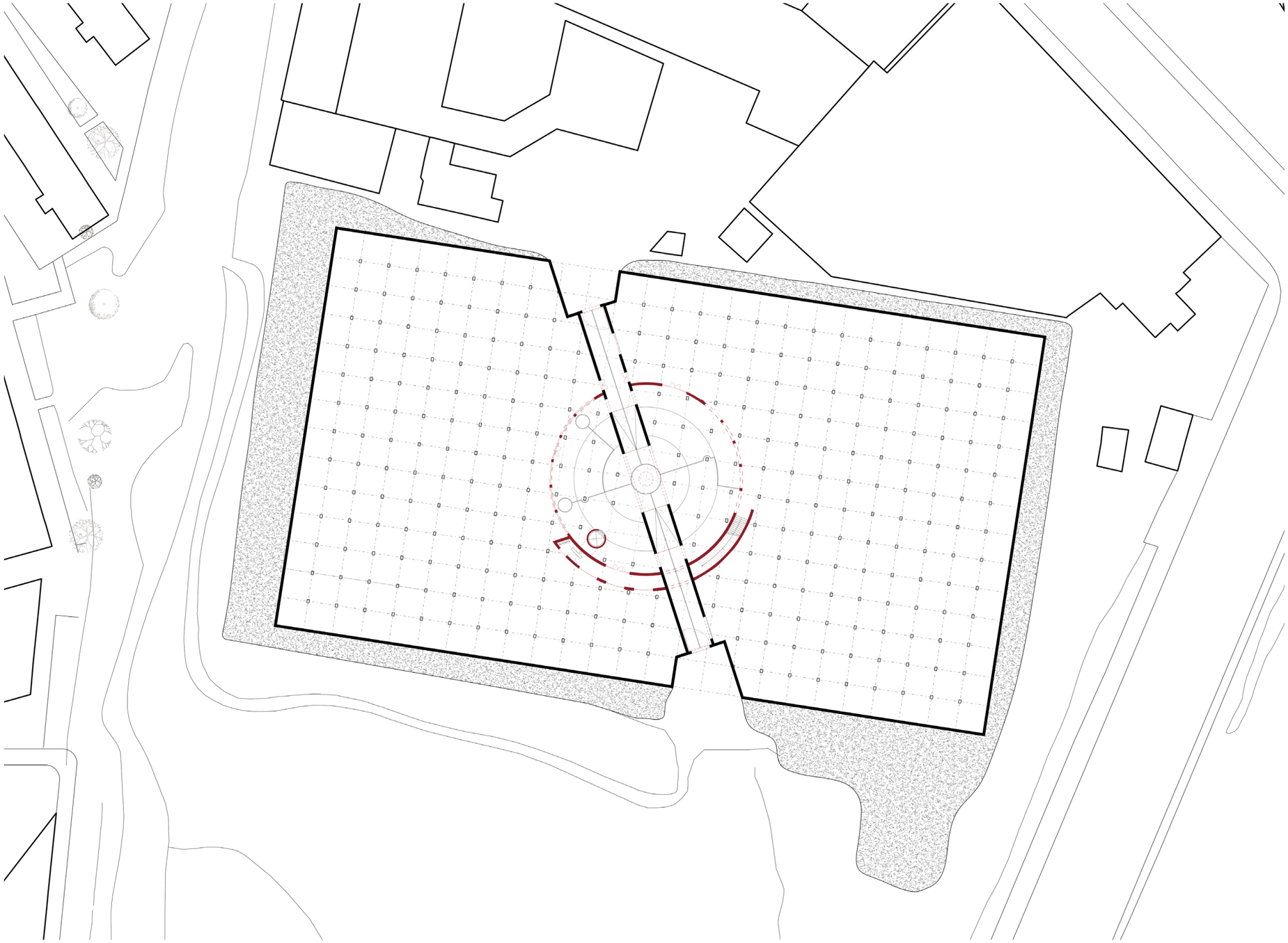
SITE M_ORIGINAL

SCALE 1:500



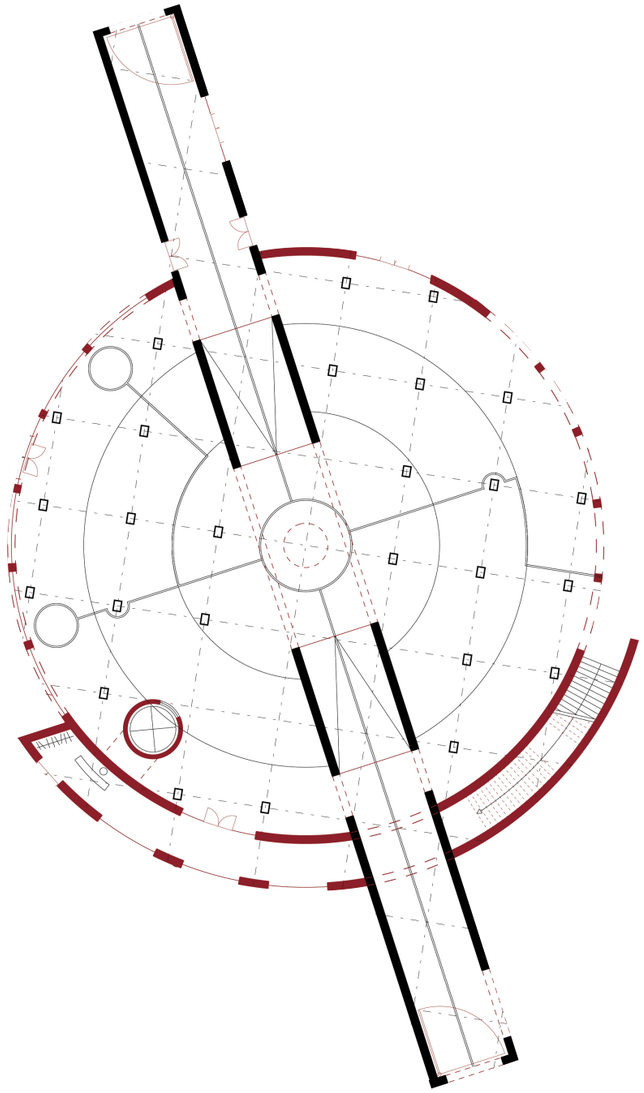
SITE M_INSTALLATION

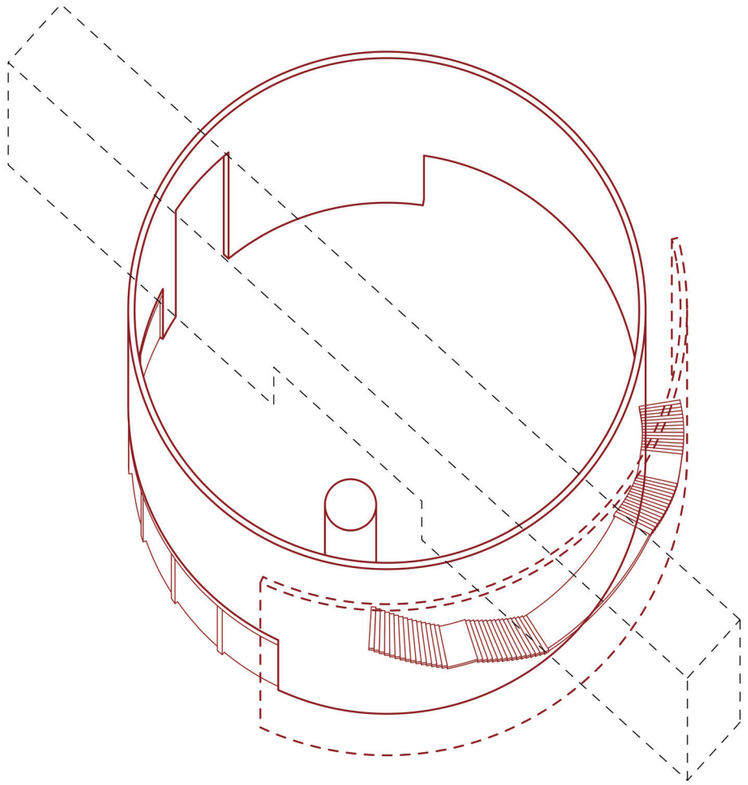
SCALE 1:500



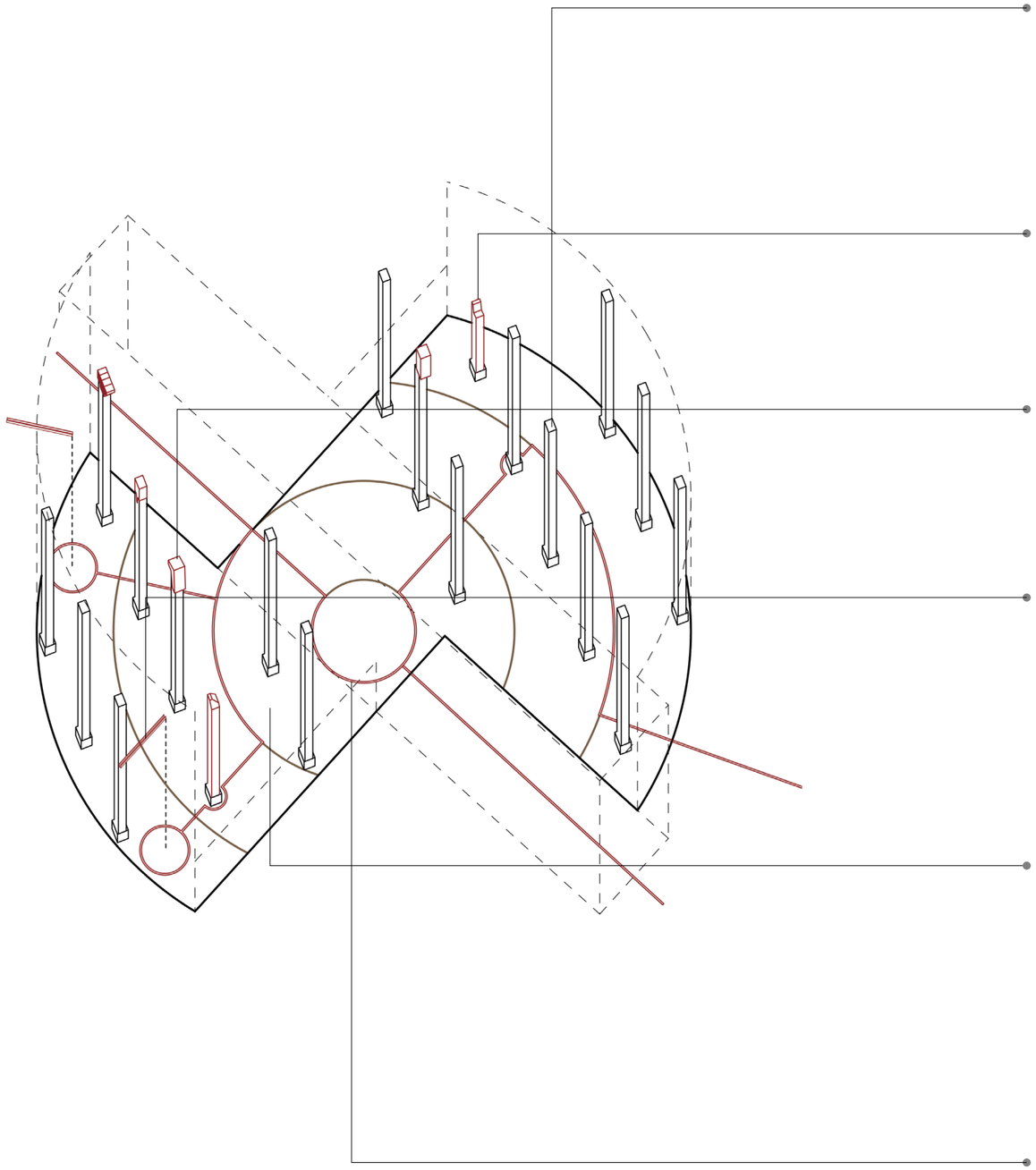
SITE M_INSTALLATION

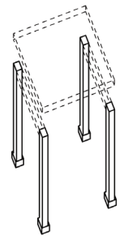
PLAN 1:500





SITE M_INSTALLATION
CRAFTED ELEMENTS (RUINATION)



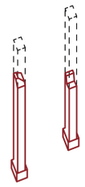


CRAFTED ELEMENT

demolish slab/beams
in spite of central void, columns are preserved, old/ new and visual element pointing upwards

MATERIAL

manipulating original structure



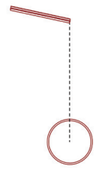
imperfections
the uncontrolled breakage of columns during demolition are preserved and celebrated

manipulating original structure



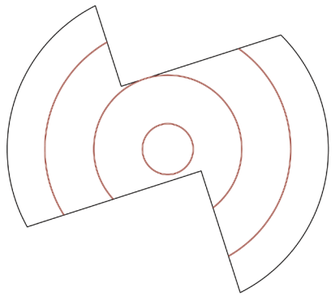
crafted capital
some columns are embellished creating visual hierarchy

heterogeneous reclaimed elements (joinery)



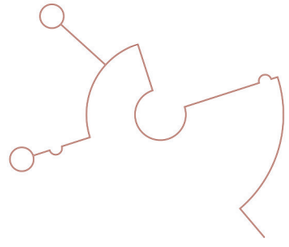
drain
roof & ground connection through gutter/chain/pool elements

reclaimed roof gutter, gate chain



paved design
circular flooring design, using irregular blocks to preserve continuity of spaces

reclaimed granite paving blocks placed into pattern



gutter
subtle gutter detail as way finding cues

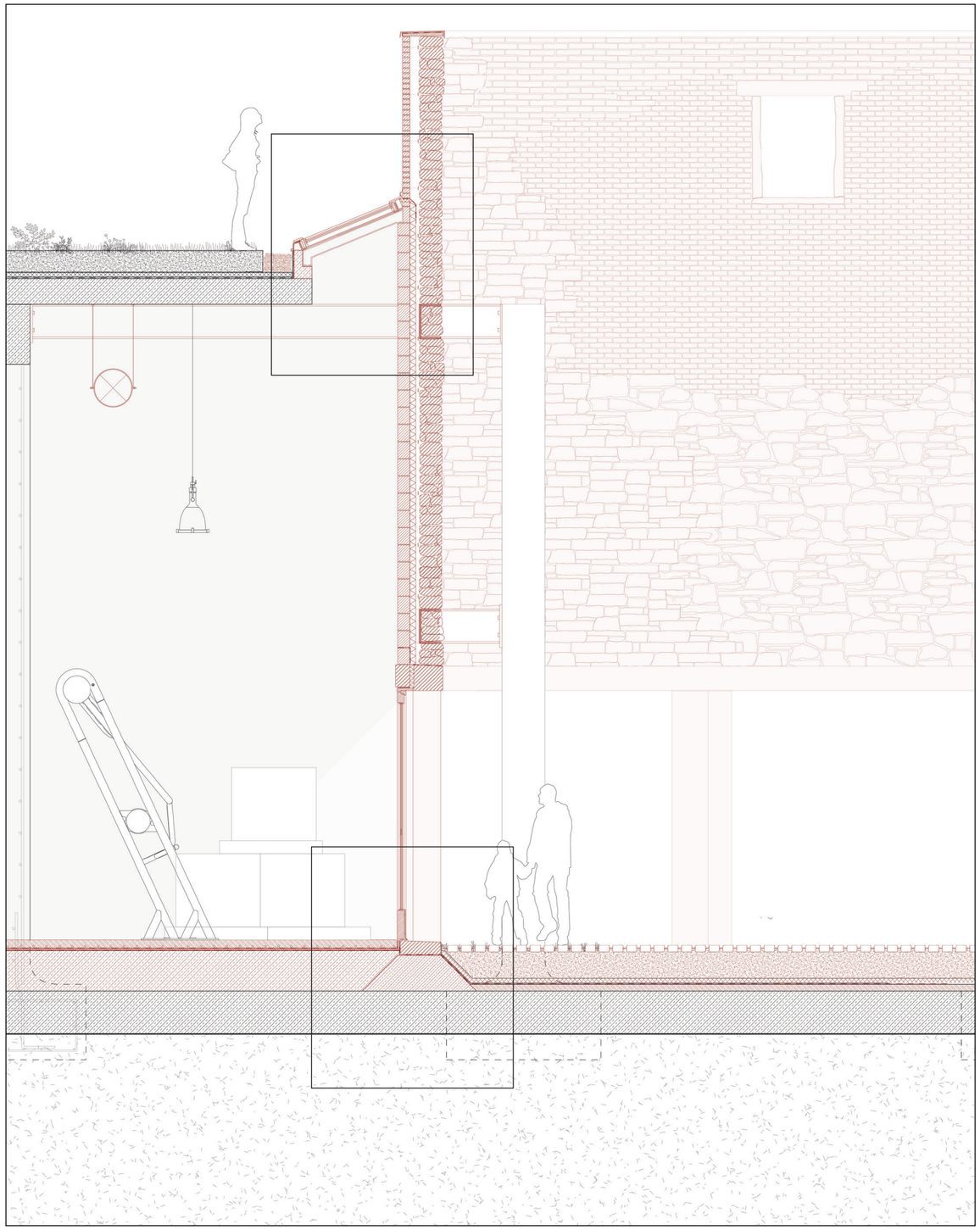
incut of original cement screed, as to not damage original slab structure

SITE M_INSTALLATION
SPATIAL QUALITY



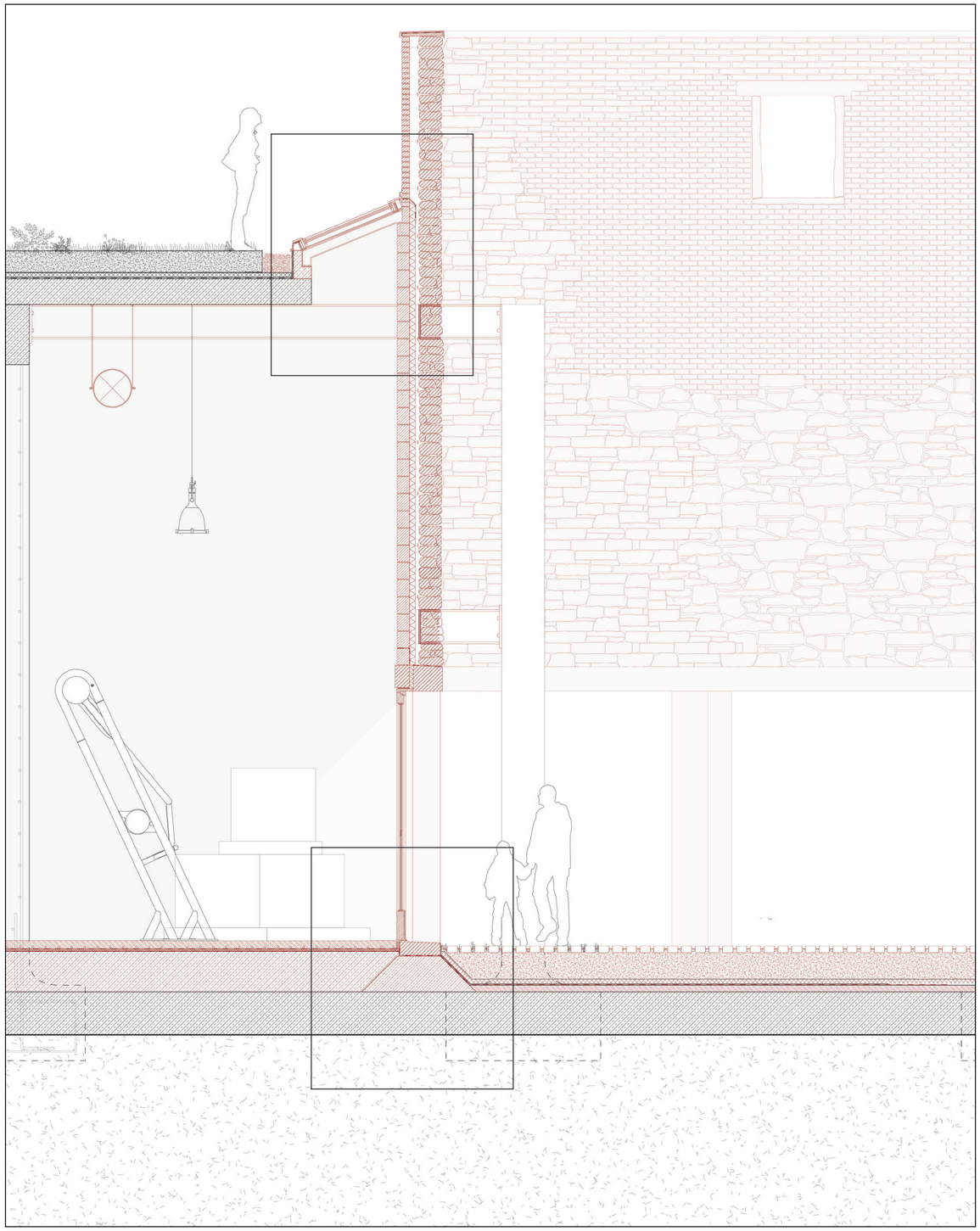
MASONRY RECLAMATION INSTALLATION

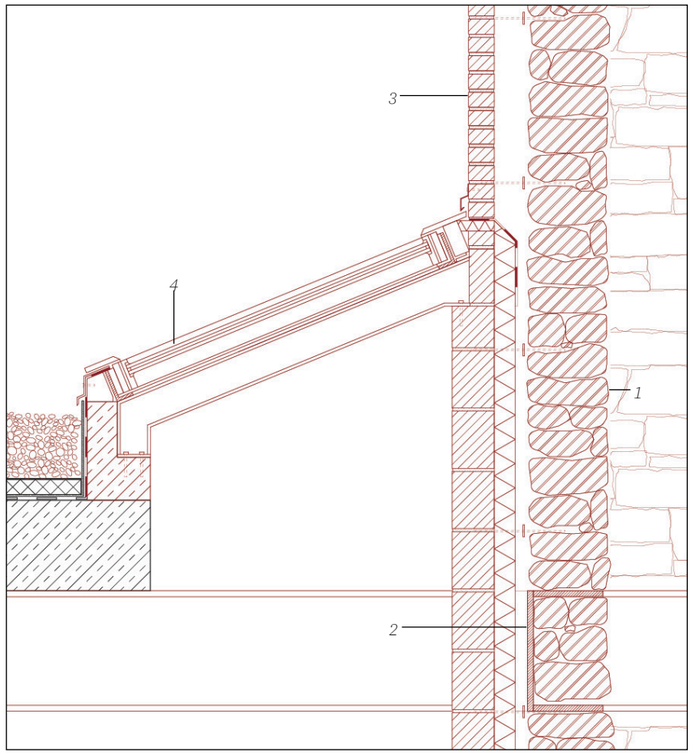
PARTIAL SECTION 1;50



MASONRY RECLAMATION INSTALLATION

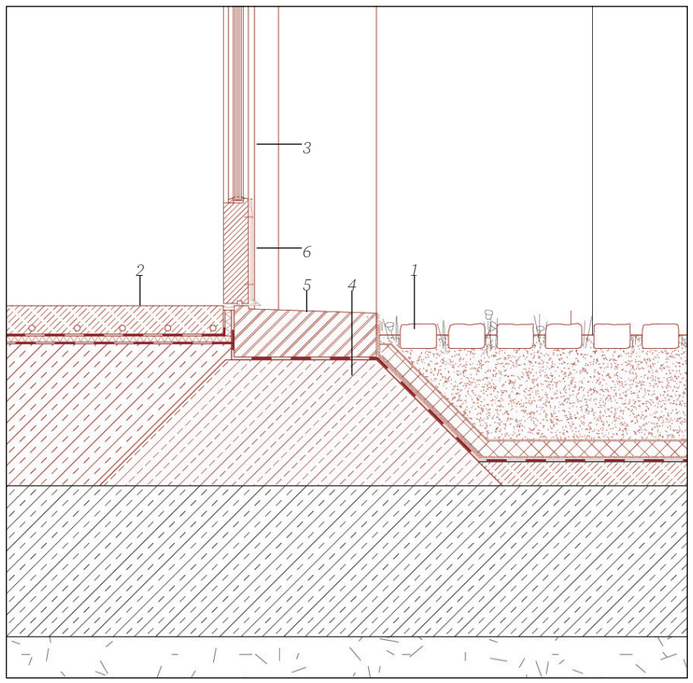
PARTIAL SECTION 1:50





C1. Brick Wall & Skylight Detail 1:20

1. *Facade System: 260mm reclaimed masonry wall, 50mm back ventilation, cavity wall anchors, 70mm thermal insulation, 600/140/200 mm vertically perforated brick*
2. *Continuous Steel reinforcing C-channel integrated within masonry wall, welded to I-Beam attachment on column (existing)*
3. *Skylight: double glazing in alum., frame supported on 100m I-beam post*
4. *Other Facade system:180/85/50 mm recycled brick masonry wall, 100 mm back ventilation, cavity wall anchors, 260mm sandstone masonry*

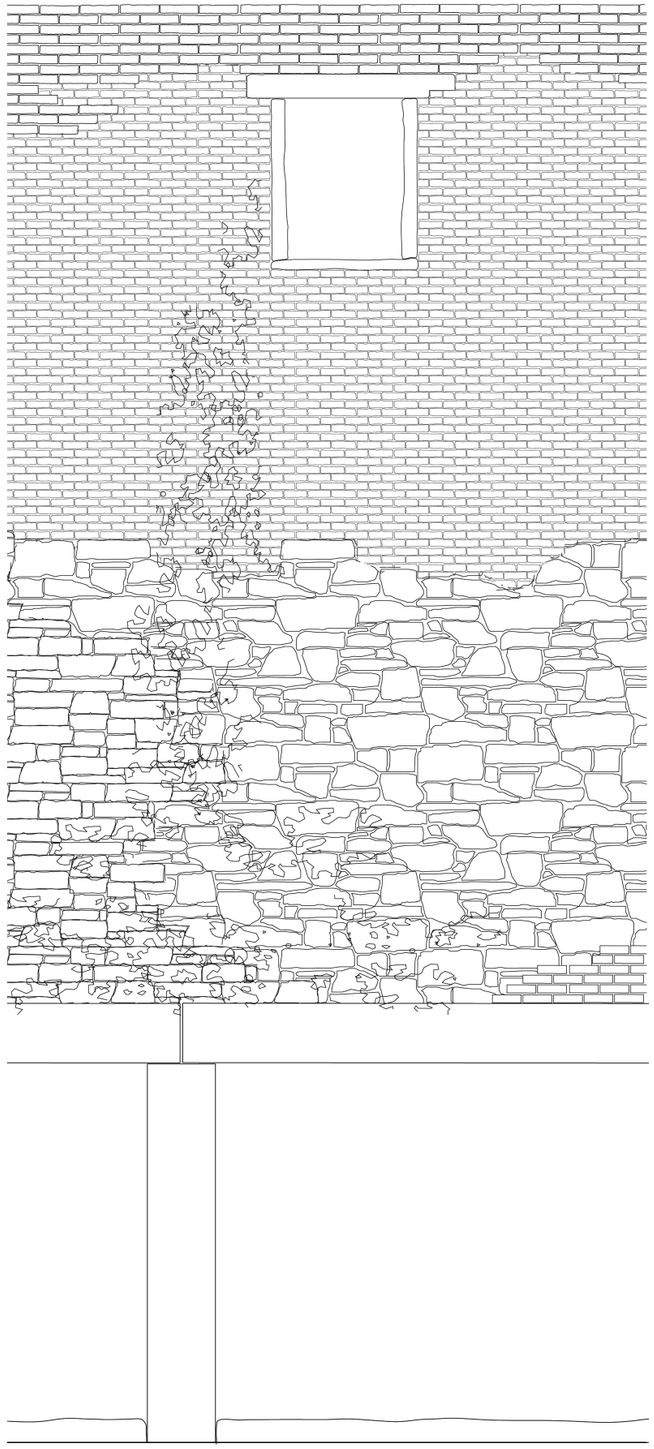


C2. Brick Wall Ground Detail 1:20

1. *Exterior Floor System: Moss/ Pioneer Community inbetween 80/120 Granite Paving Blocks, 250 mm intensive substrate layer; filter fleece; 50 mm drainage layer, Protection Layer, Waterproofing (root-resistant), 300m r.c. Slab (existing)*
2. *Interior Floor System: 100 mm heating screed, separating layer, 20 mm EPS thermal insulation, vapour barrier, concrete ramp, 500 mm r. c. slab (existing), Fine Grandulated Sand, Course Gravel, Earth*
3. *french door: insulation glazing within wood frame*
4. *supplementary foundation*
5. *rubblestone footstep*
6. *copper flashing*

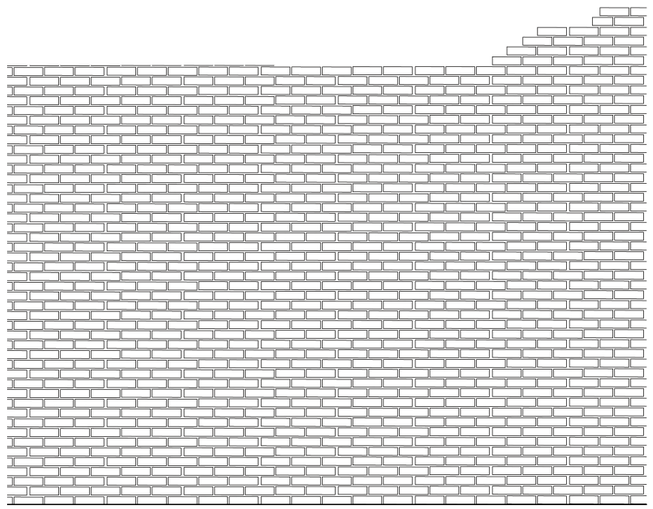
MASONRY WALL GEOLOGY

PARTIAL SECTION 1:50



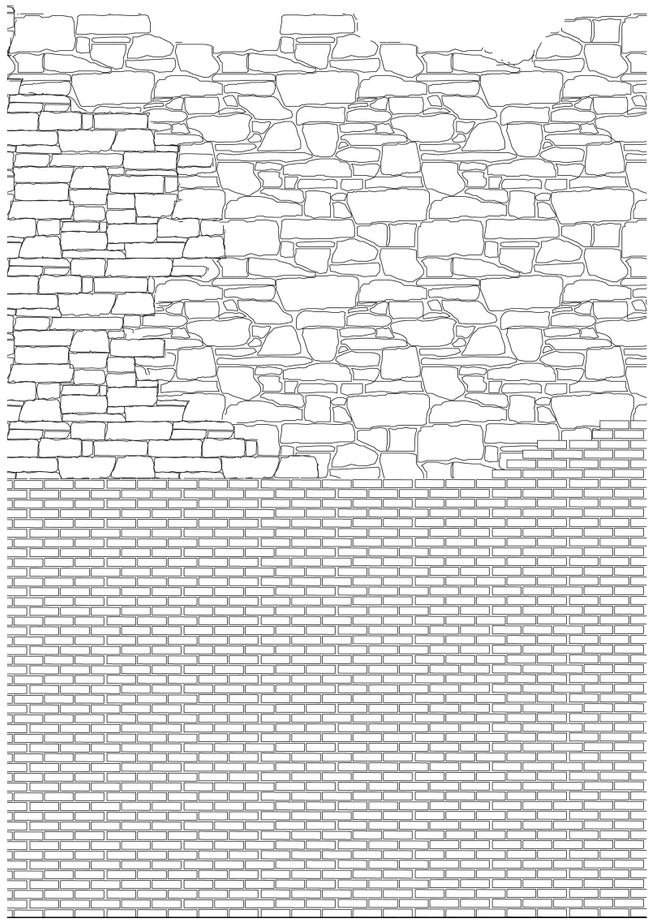
MASONRY WALL GEOLOGY

PARTIAL SECTION 1:50



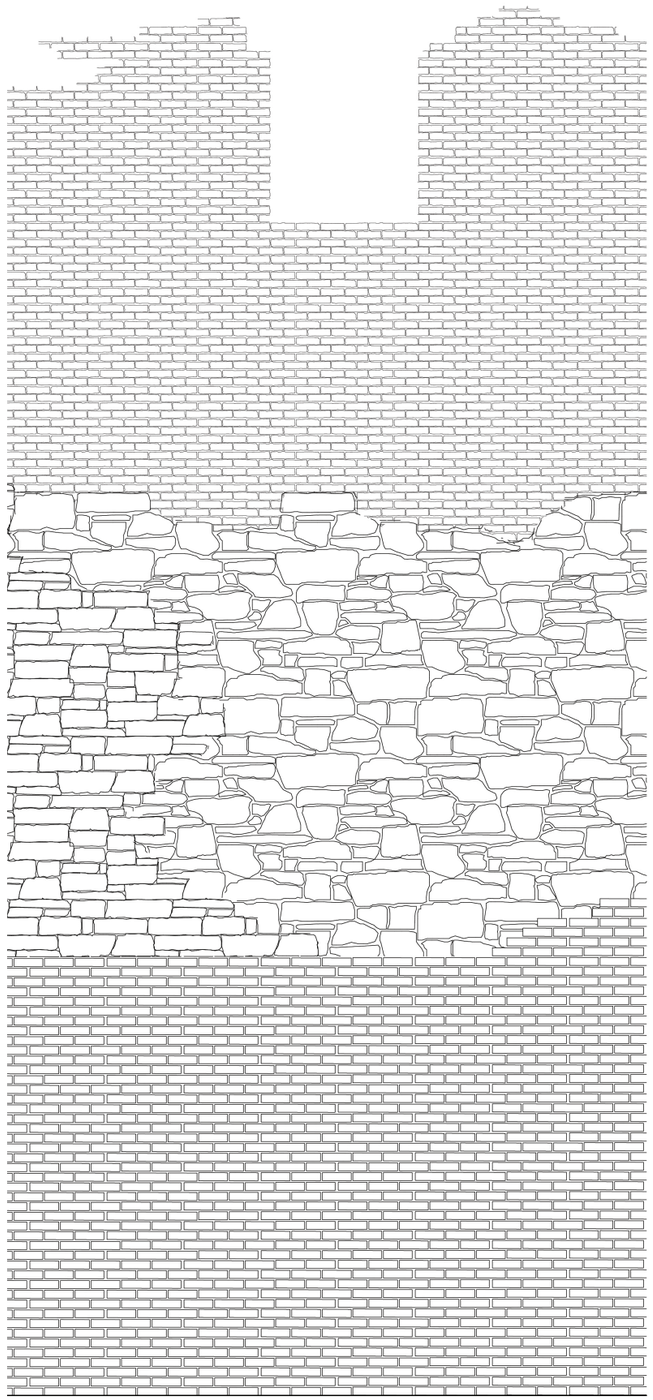
MASONRY WALL GEOLOGY

PARTIAL SECTION 1:50



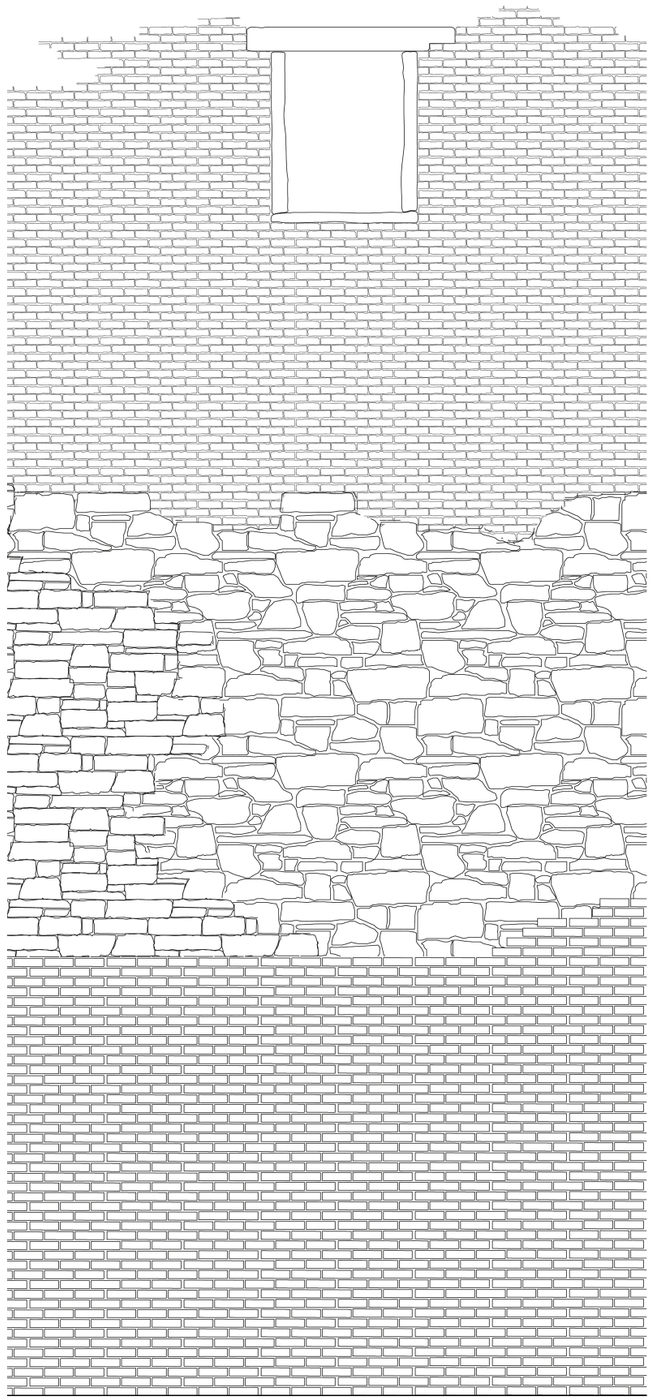
MASONRY WALL GEOLOGY

PARTIAL SECTION 1:50



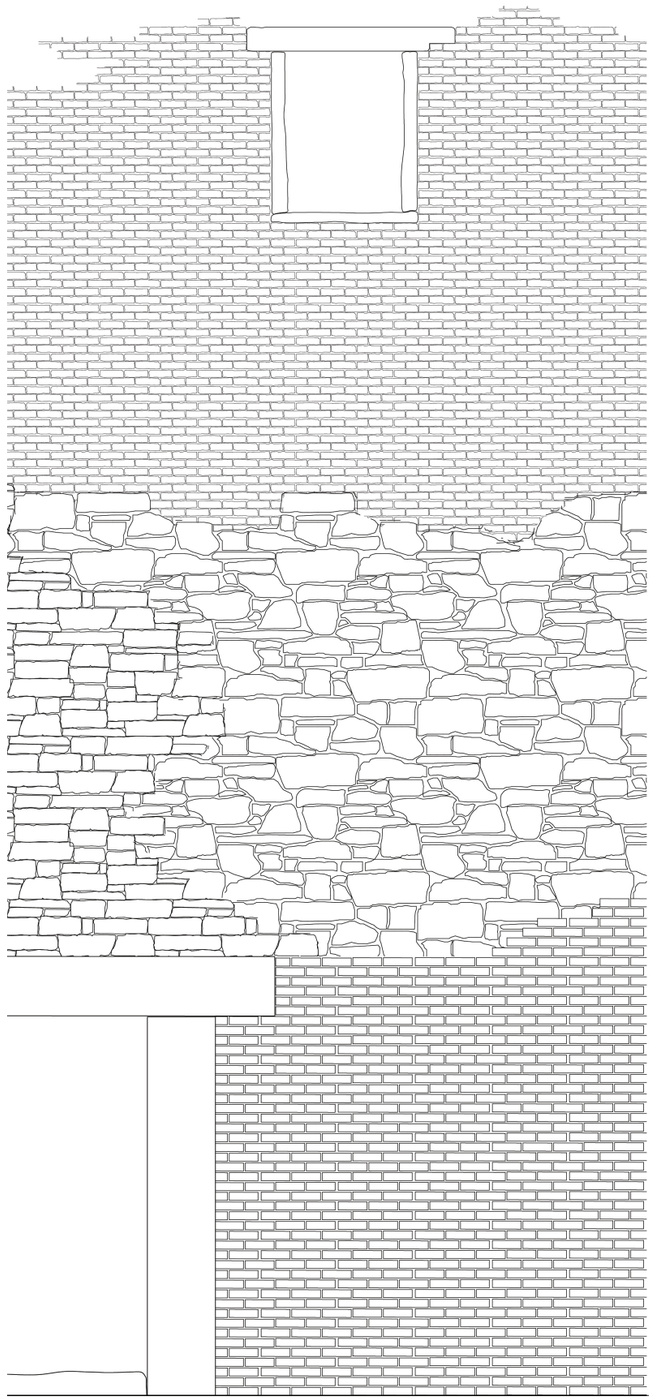
MASONRY WALL GEOLOGY

PARTIAL SECTION 1:50



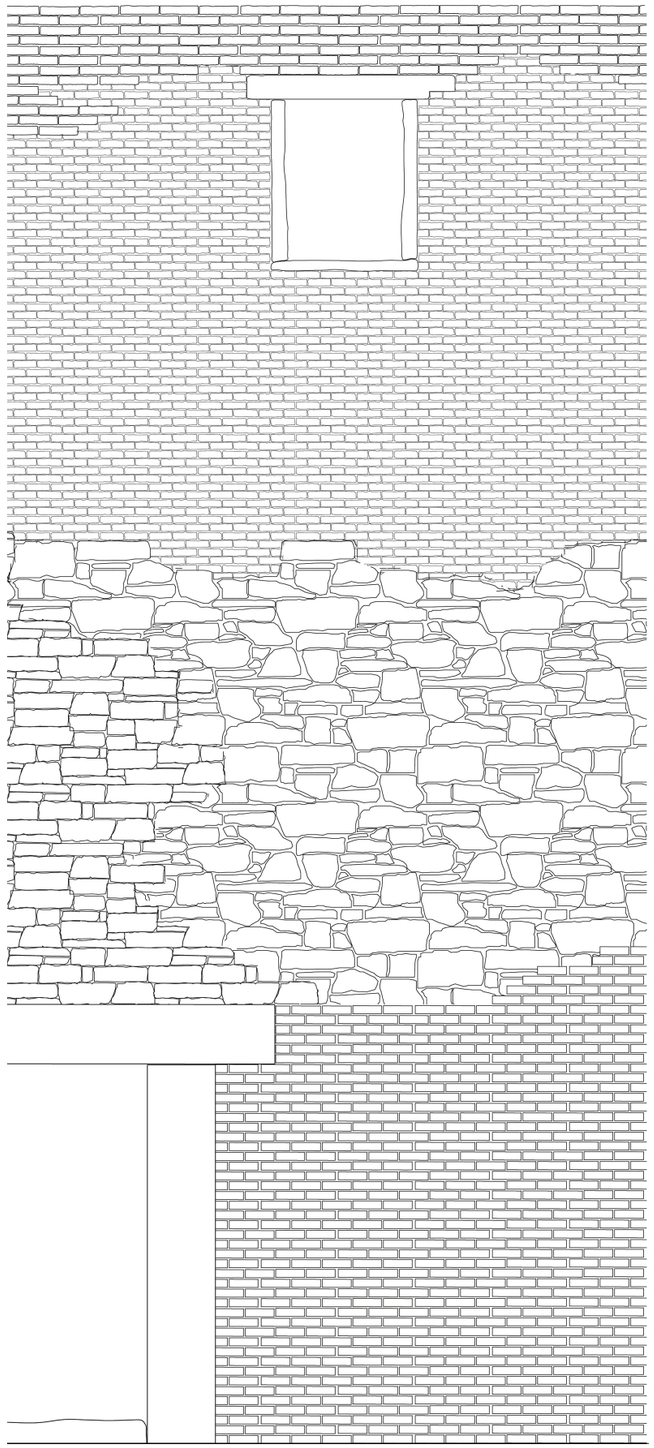
MASONRY WALL GEOLOGY

PARTIAL SECTION 1:50



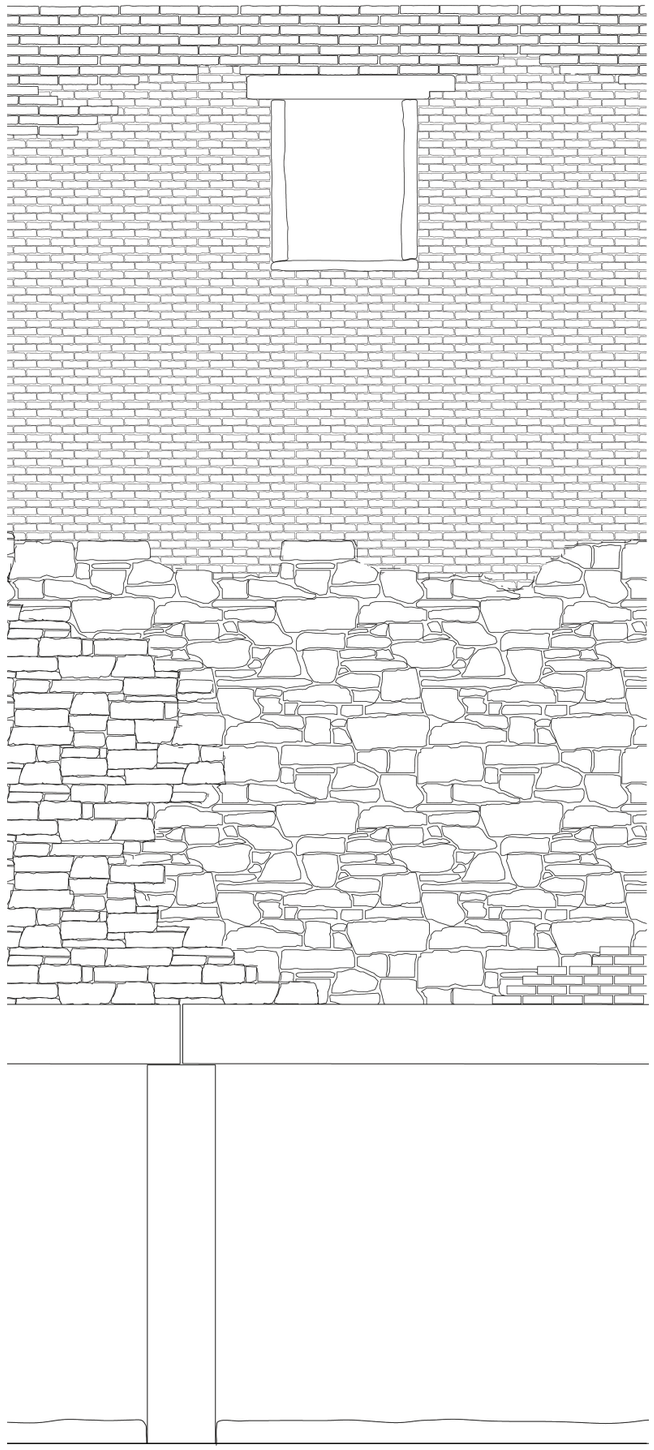
MASONRY WALL GEOLOGY

PARTIAL SECTION 1:50



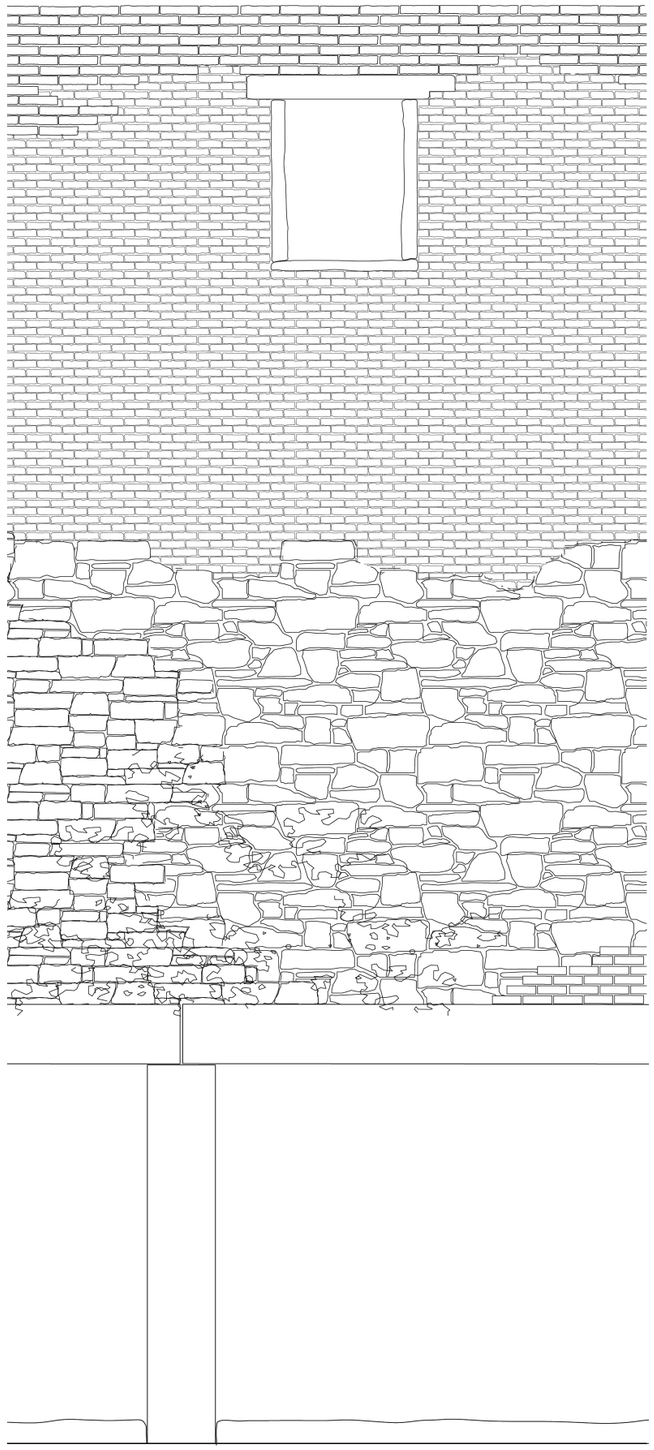
MASONRY WALL GEOLOGY

PARTIAL SECTION 1:50



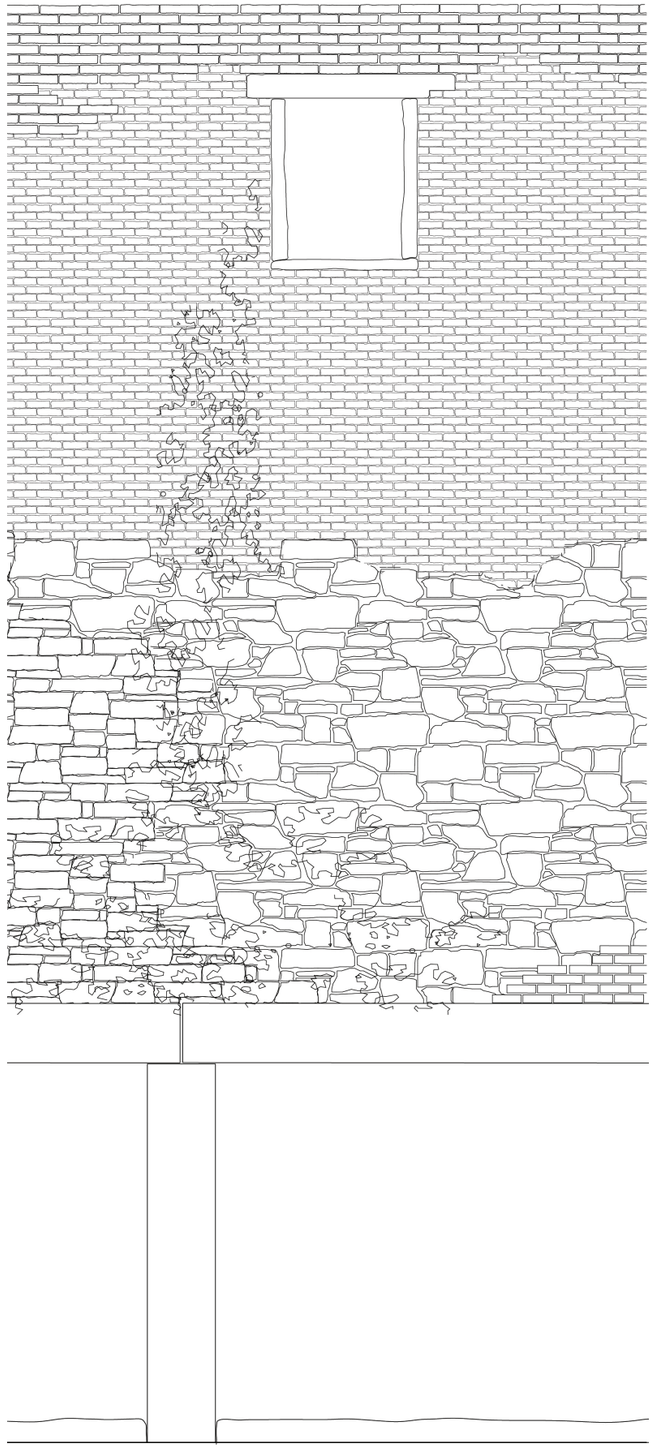
MASONRY WALL GEOLOGY

PARTIAL SECTION 1:50



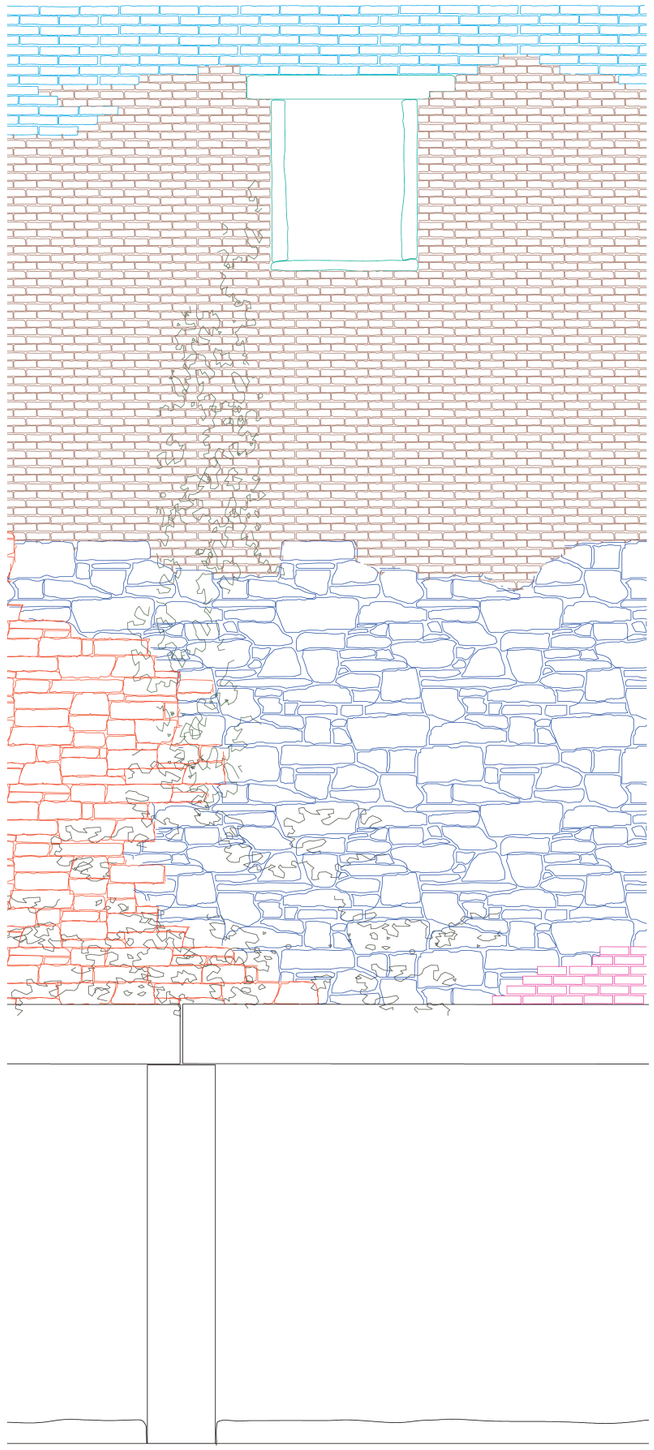
MASONRY WALL GEOLOGY

PARTIAL SECTION 1:50



MASONRY WALL GEOLOGY

PARTIAL SECTION 1:50



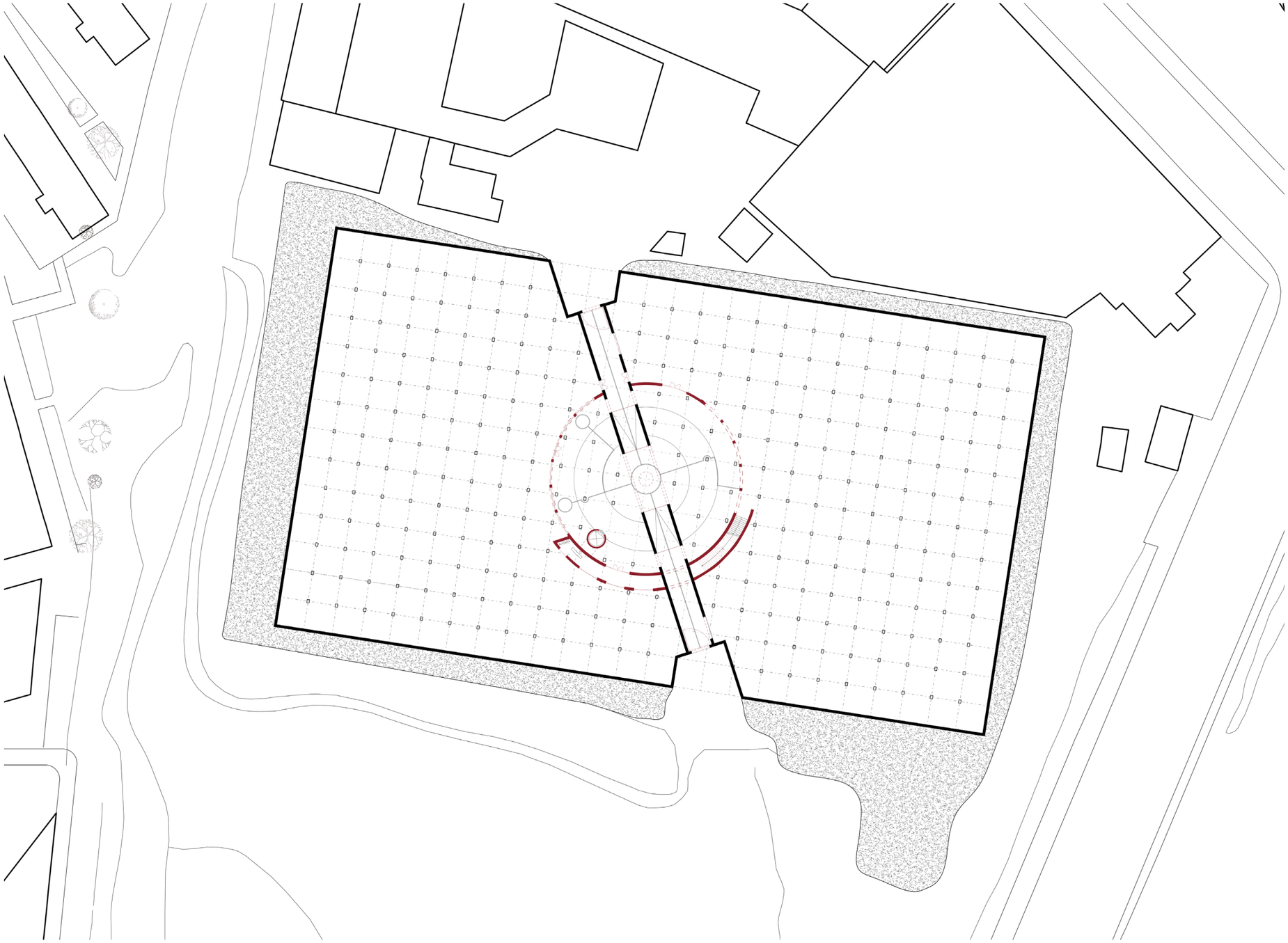


PHASE 2

depot/repair

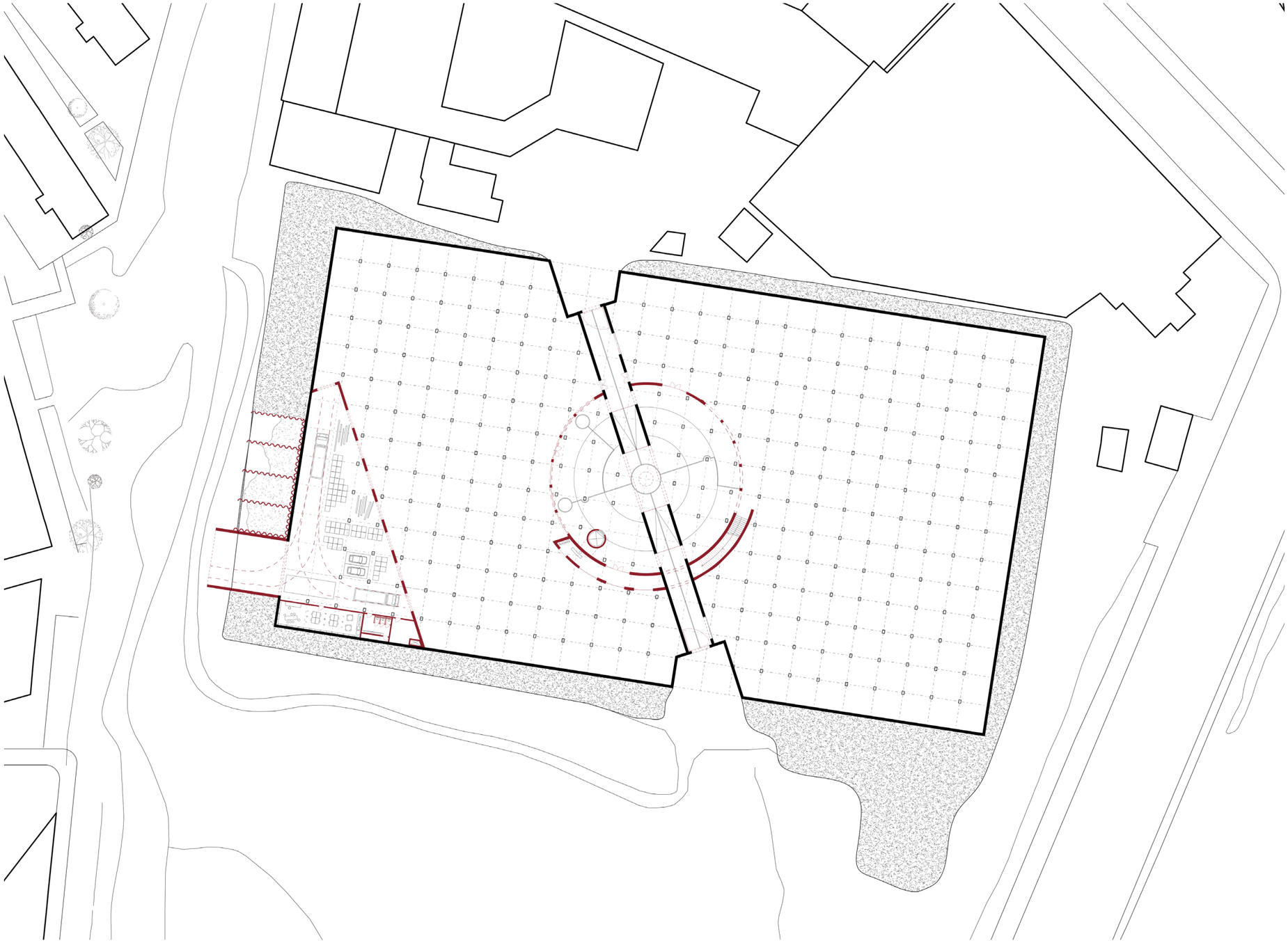
SITE M_INSTALLATION

SCALE 1:500



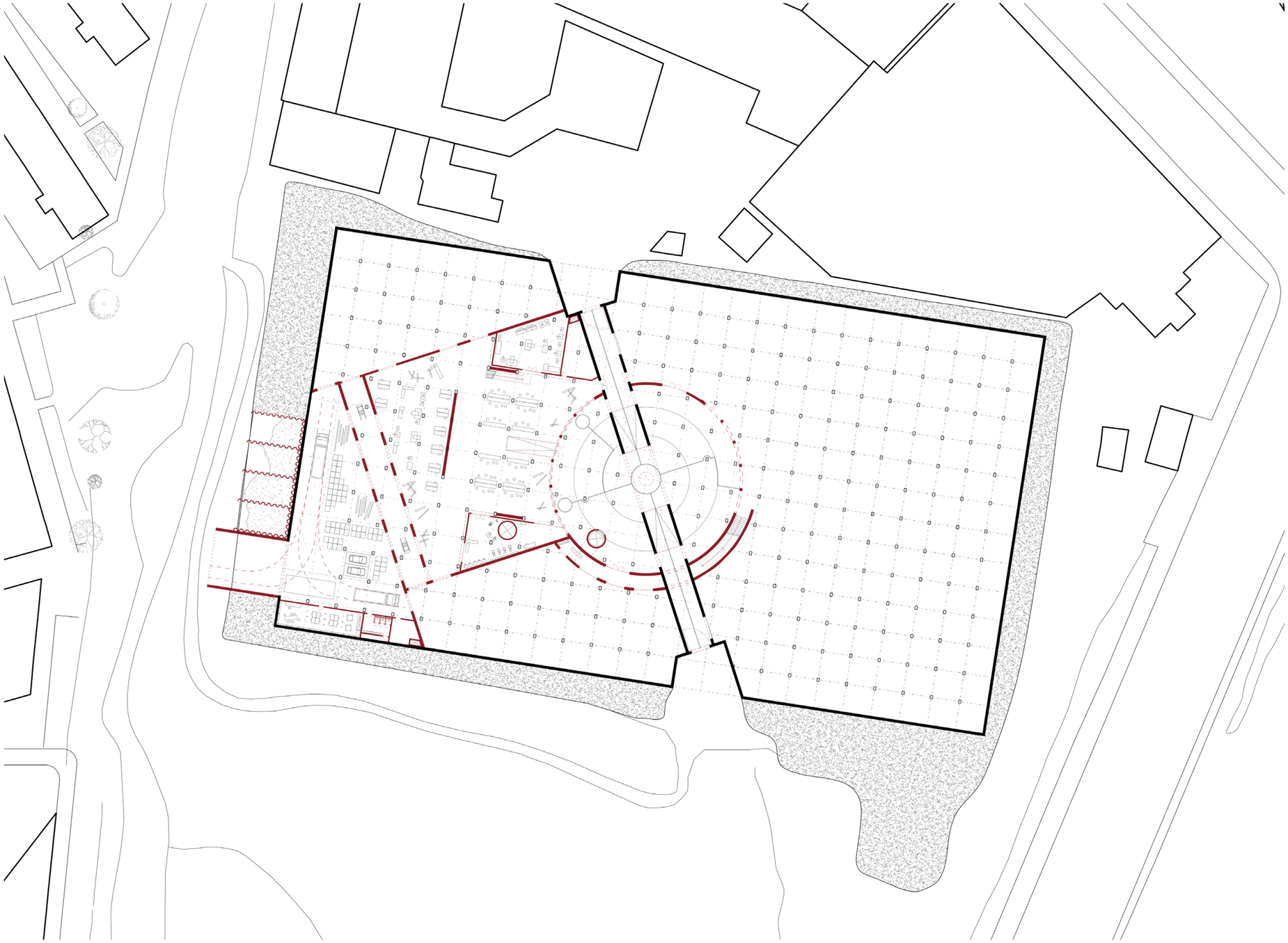
SITE M_INSTALLATION

SCALE 1:500



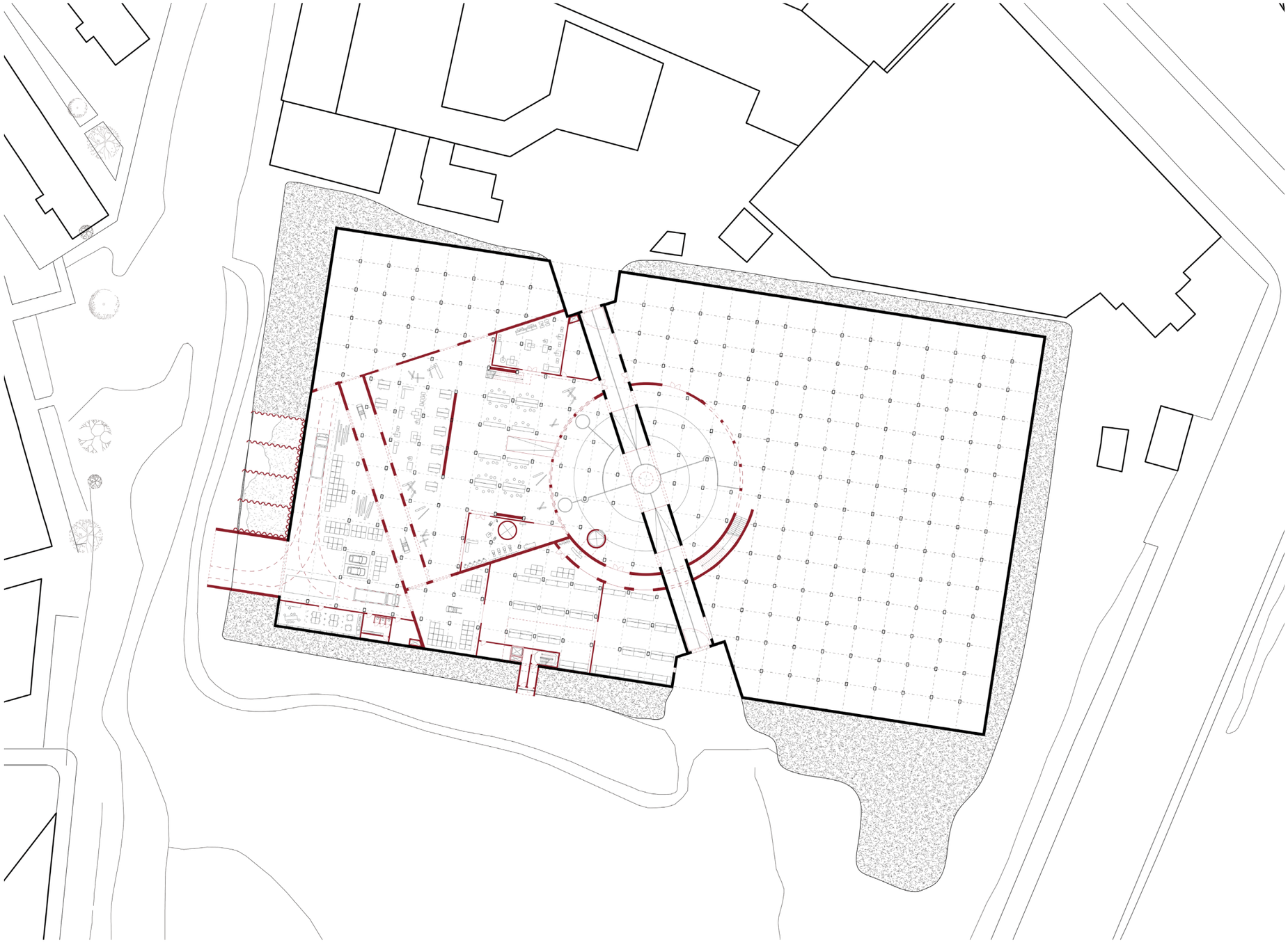
SITE M_INSTALLATION

SCALE 1:500



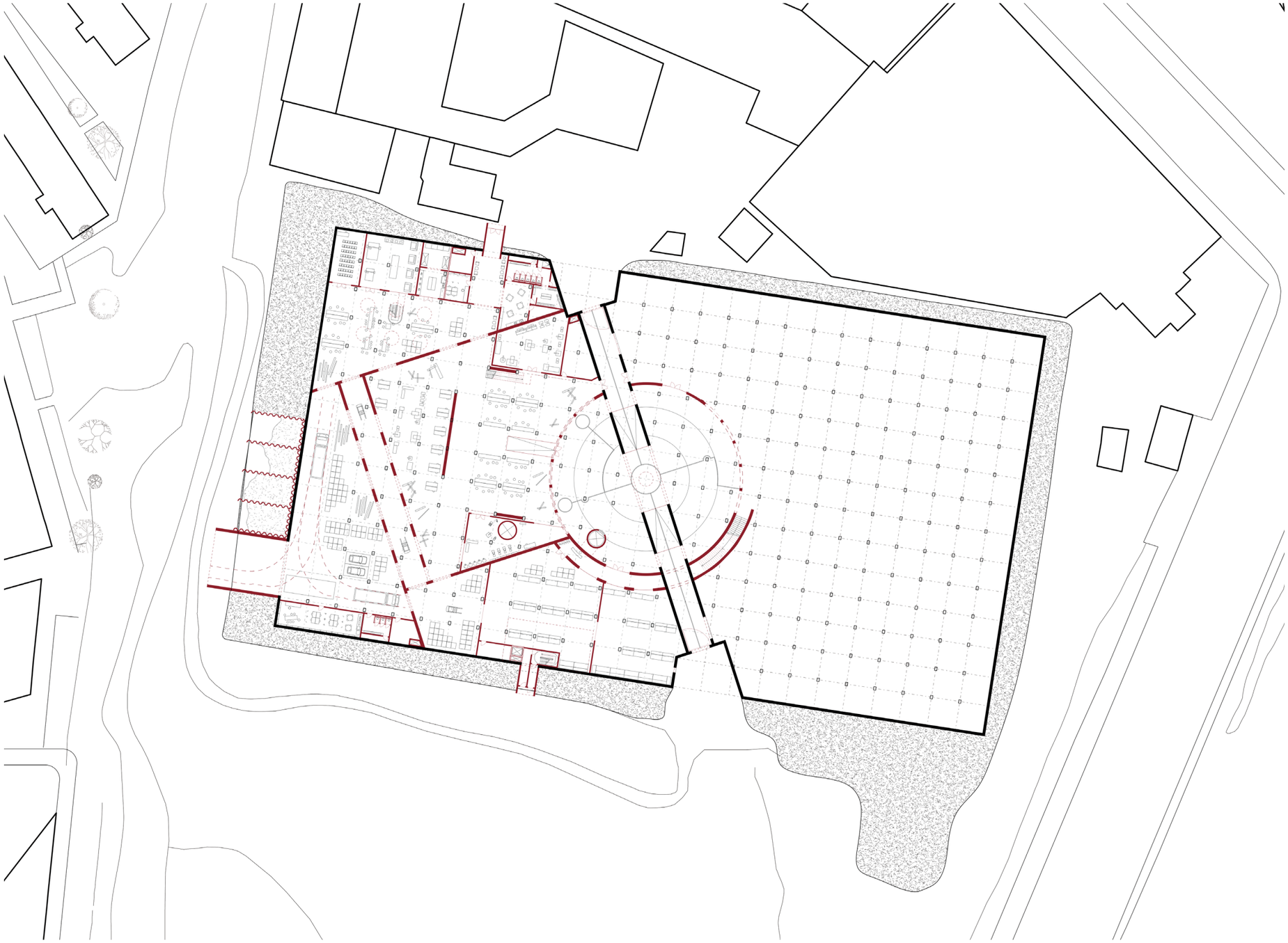
SITE M_DEPOT/REPAIR

SCALE 1:500



SITE M_DEPOT/REPAIR

SCALE 1:500



DEPOT PROGRAM FLOW

PHASE 2



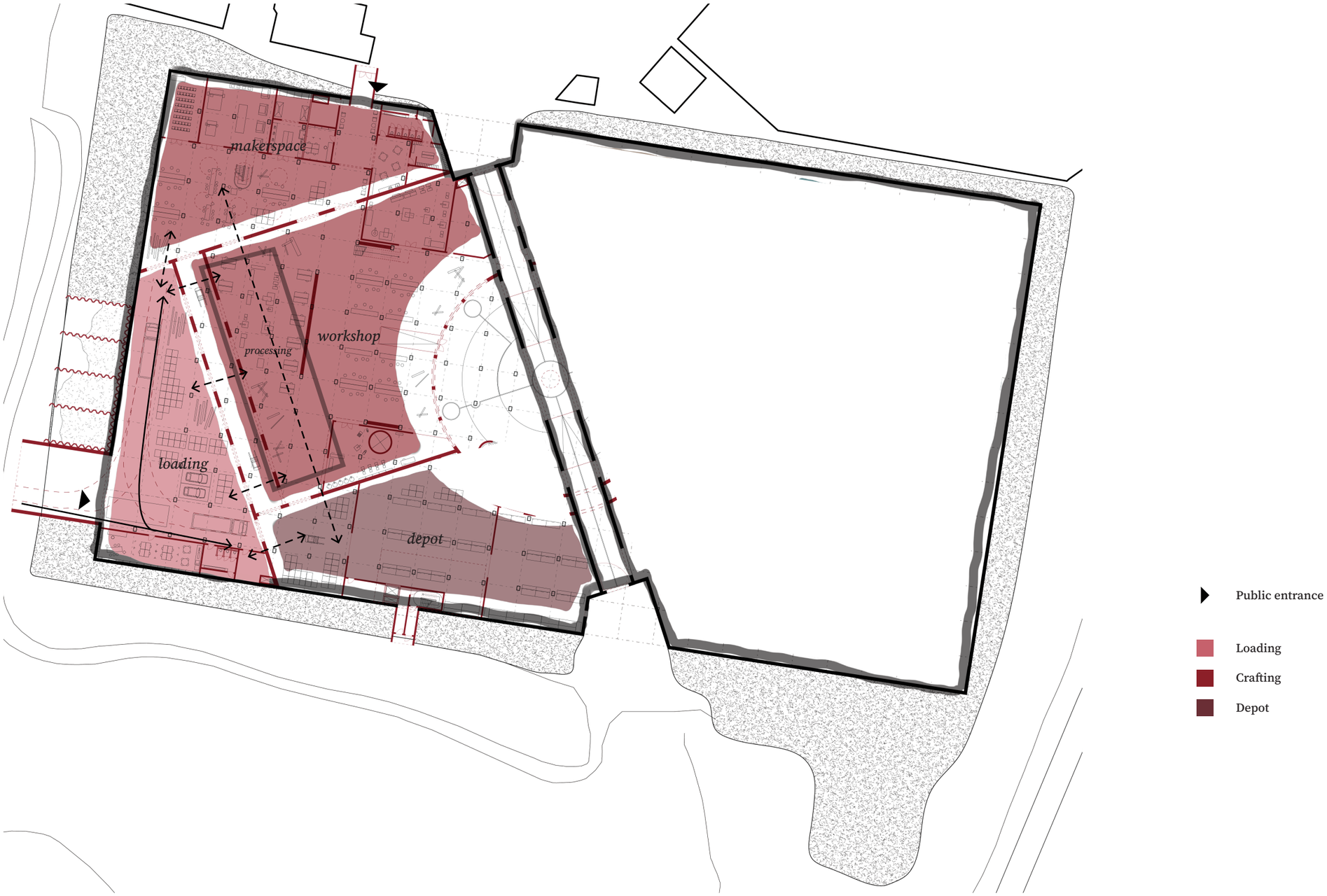
DEPOT PROGRAM FLOW

PHASE 2



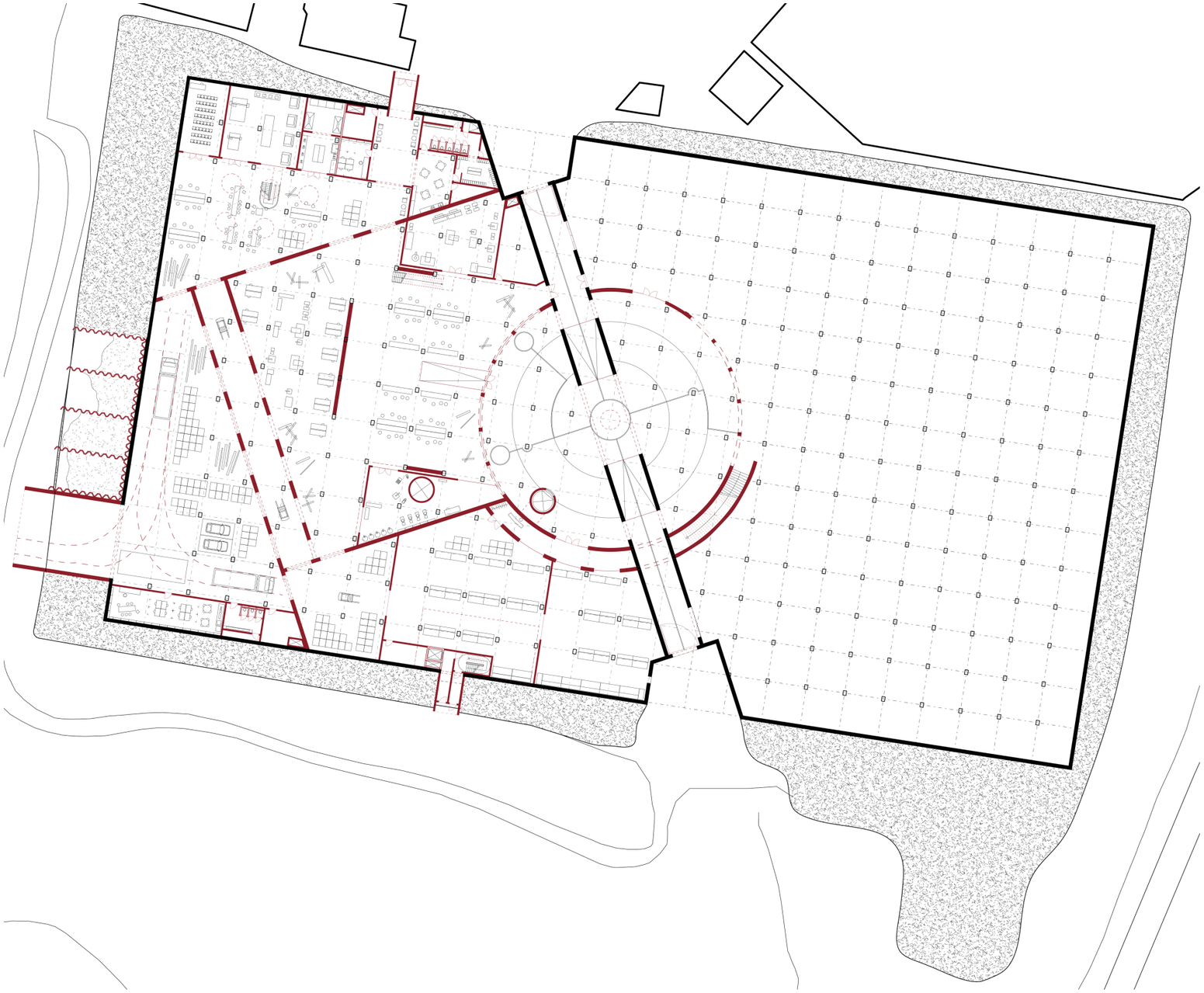
DEPOT PROGRAM FLOW

PHASE 2



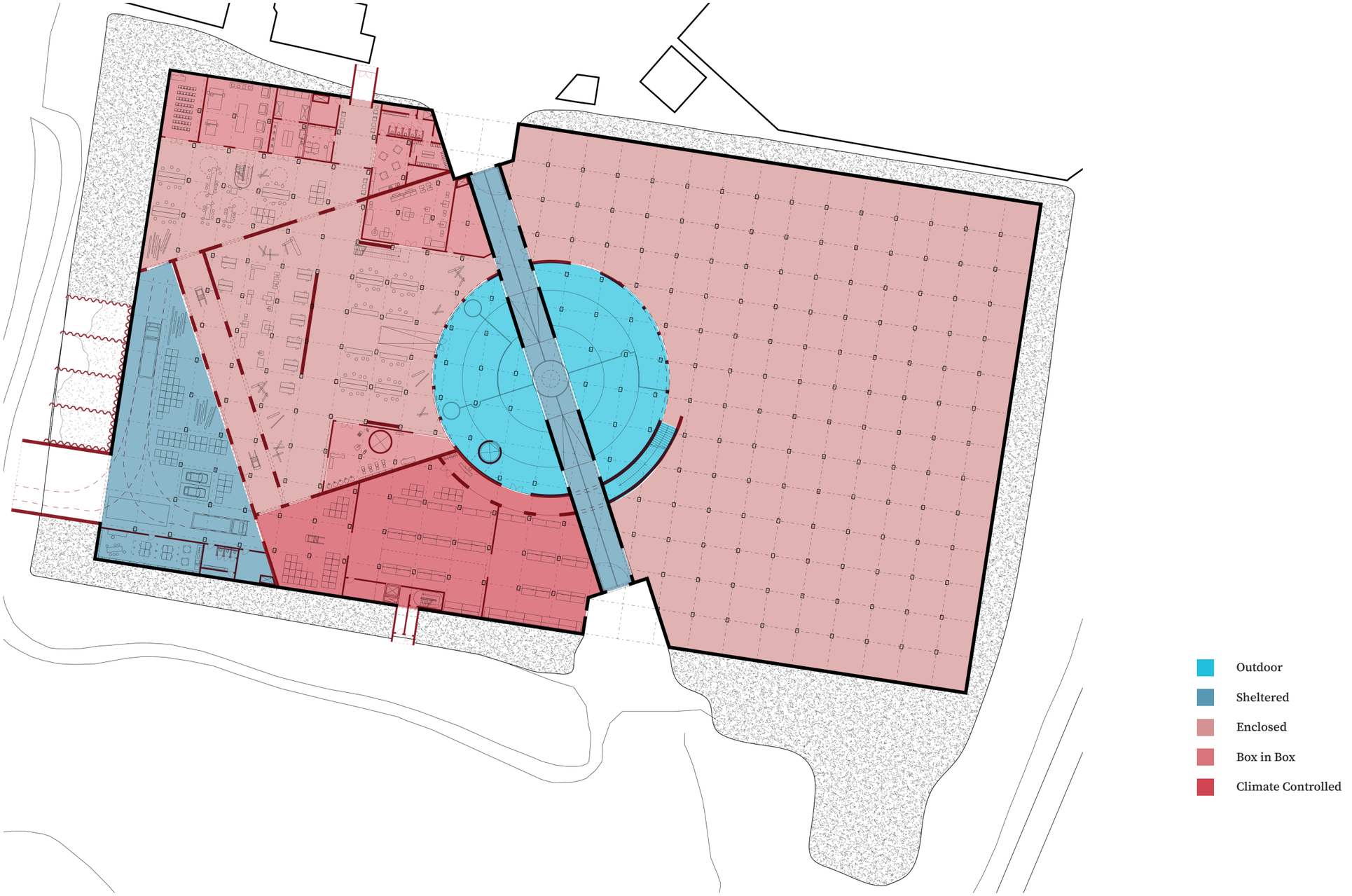
SITE M_DEPOT/REPAIR

SCALE 1:500



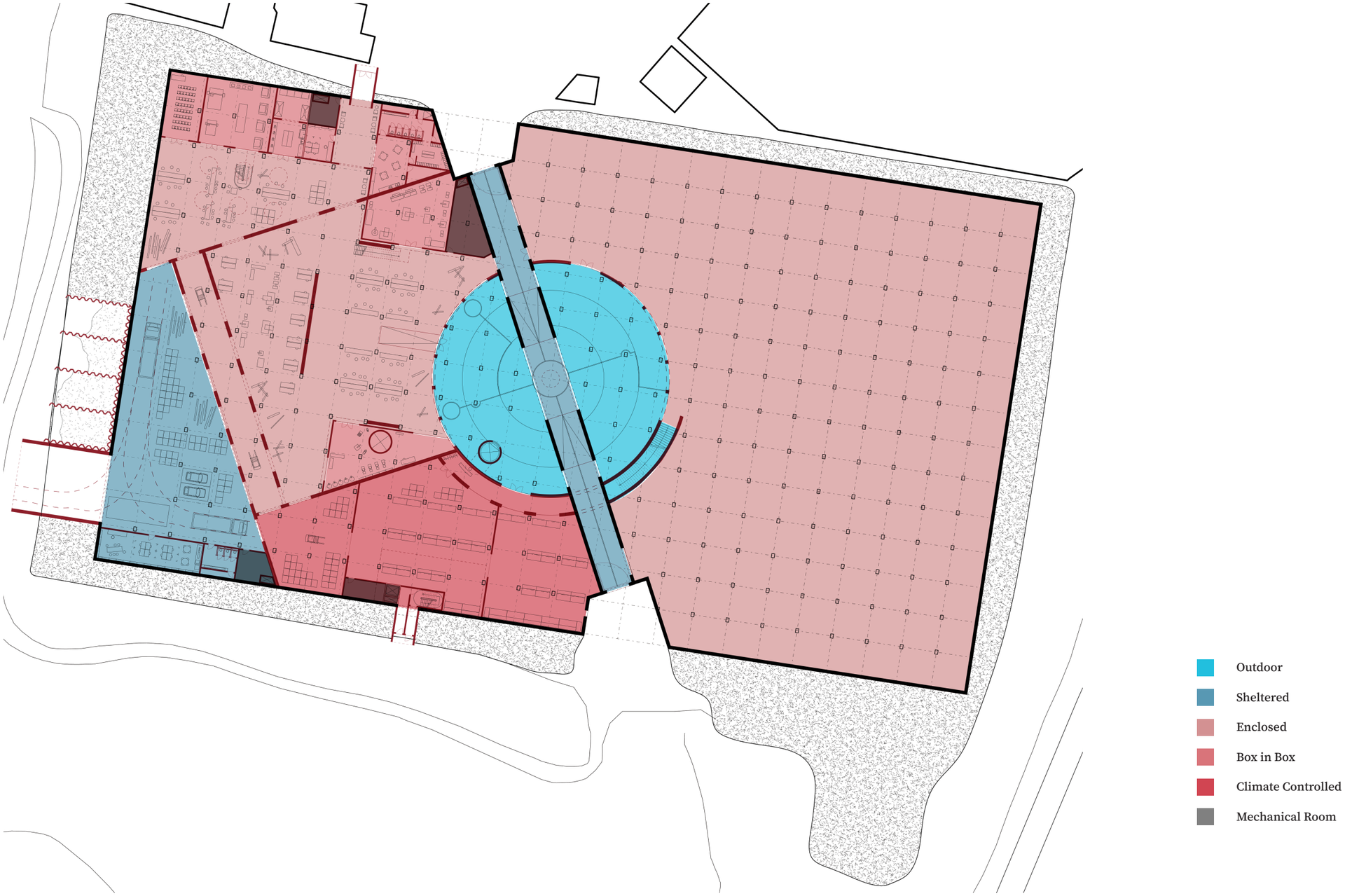
CLIMATIZATION AND COMFORT

SCALE 1:500



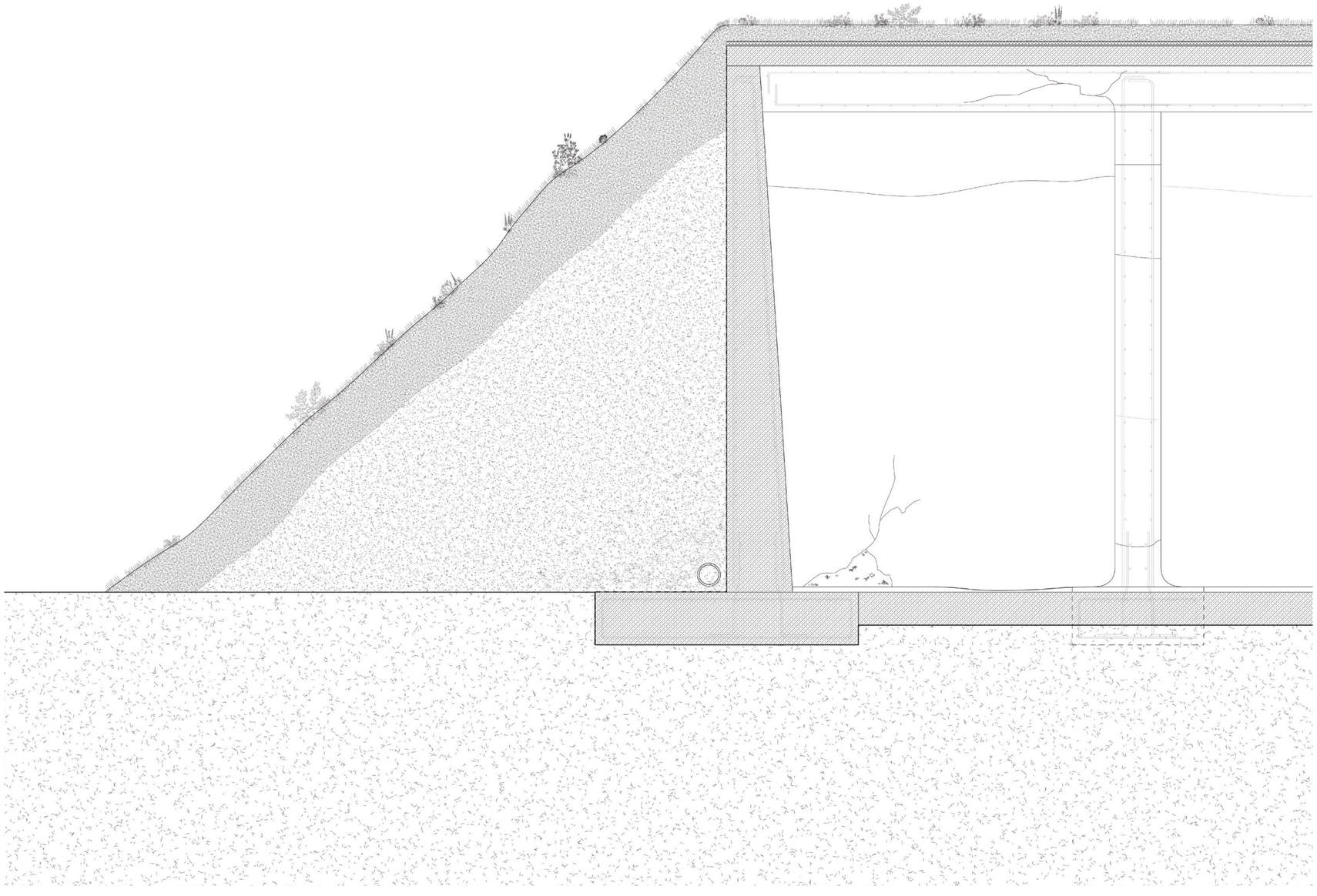
CLIMATIZATION AND COMFORT

SCALE 1:500



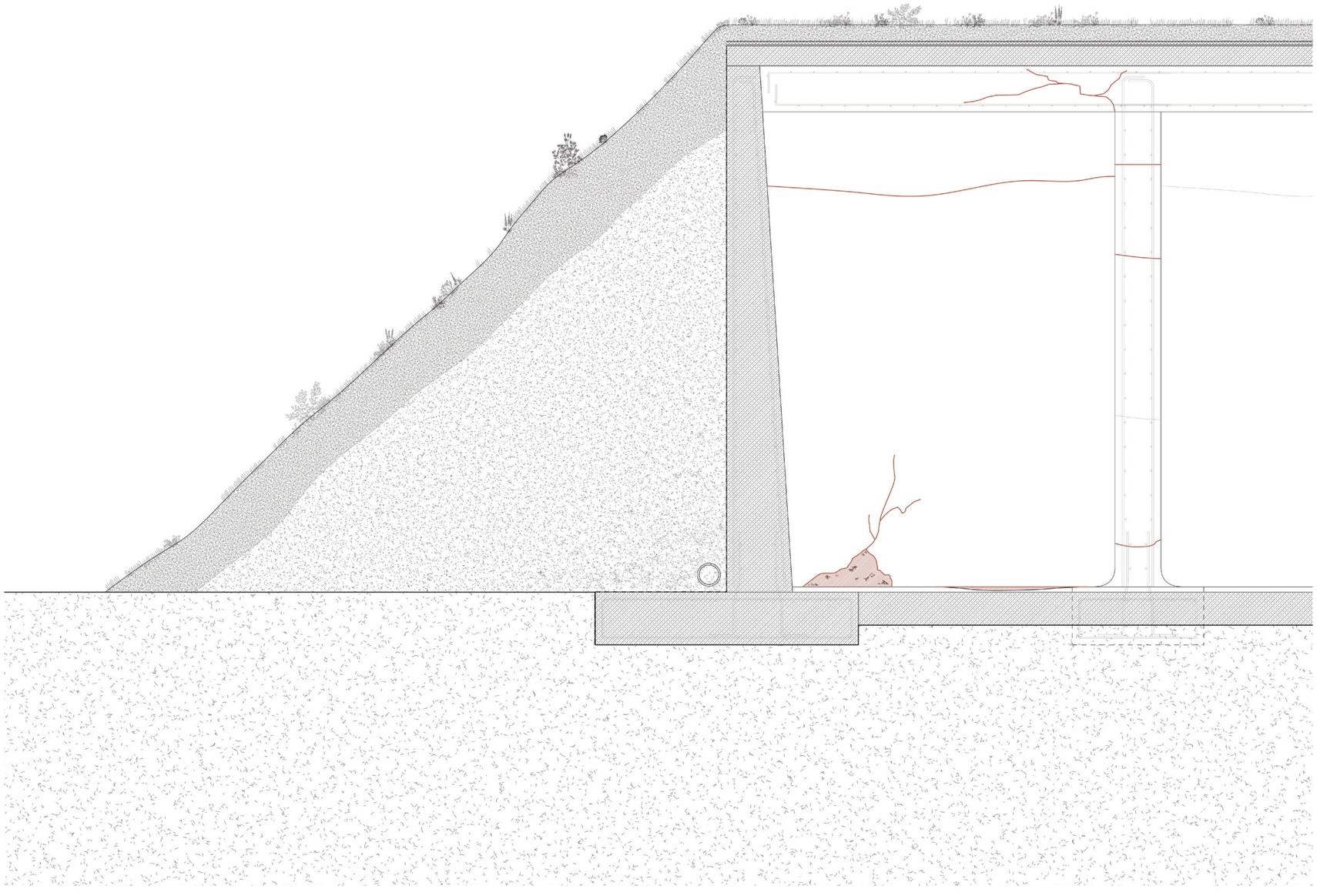
DEVELOPING CATALOGUE OF REPAIR

PARTIAL SECTION 1:50



DEVELOPING CATALOGUE OF REPAIR

PARTIAL SECTION 1:50



REPAIRING SCARS
MODEL MAKING PROCESS

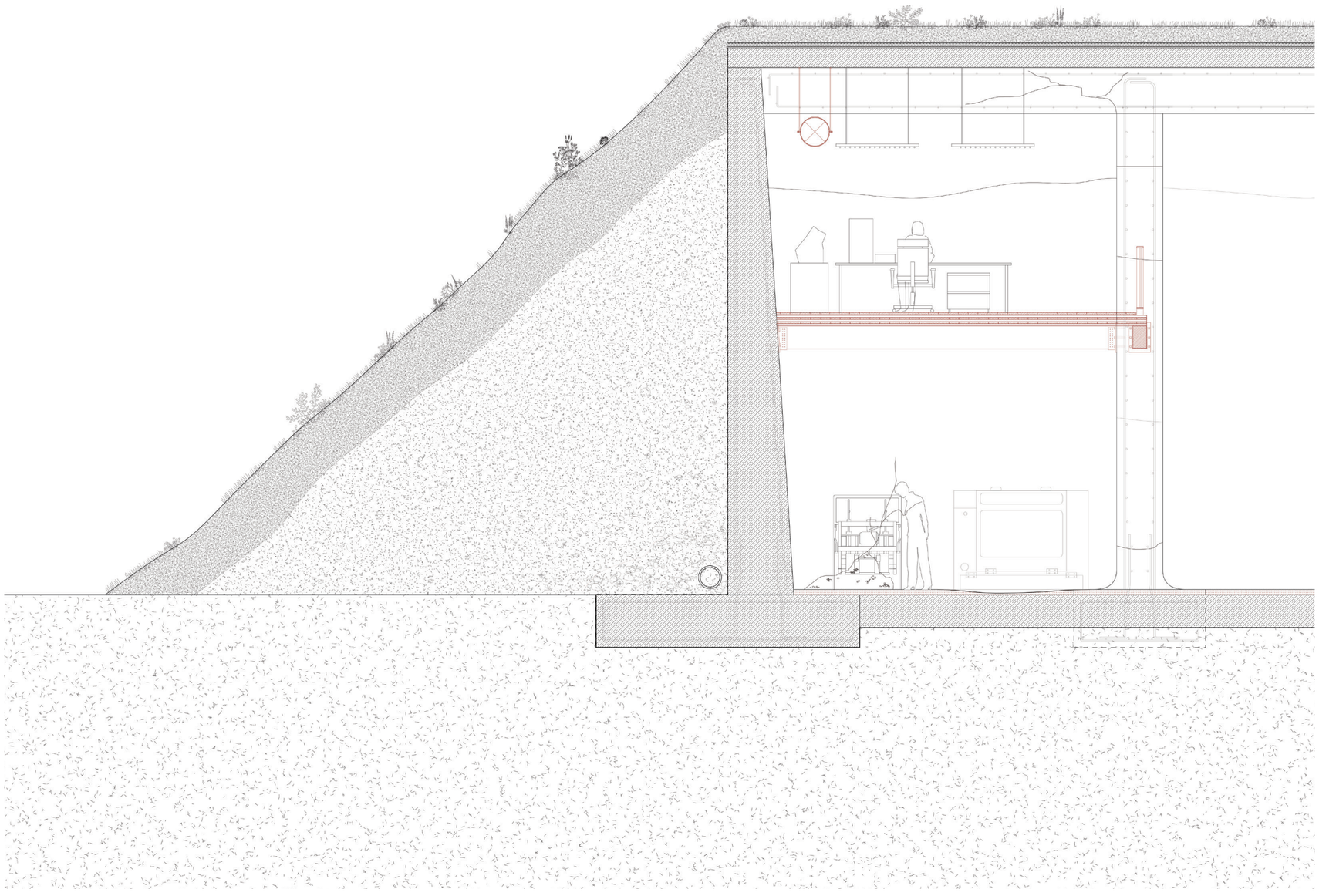






DEVELOPING CATALOGUE OF REPAIR

PARTIAL SECTION 1:50



DEVELOPING CATALOGUE OF REPAIR

PARTIAL SECTION 1:50



aggregate silo



office balcony

modular glazing

DEVELOPING CATALOGUE OF REPAIR

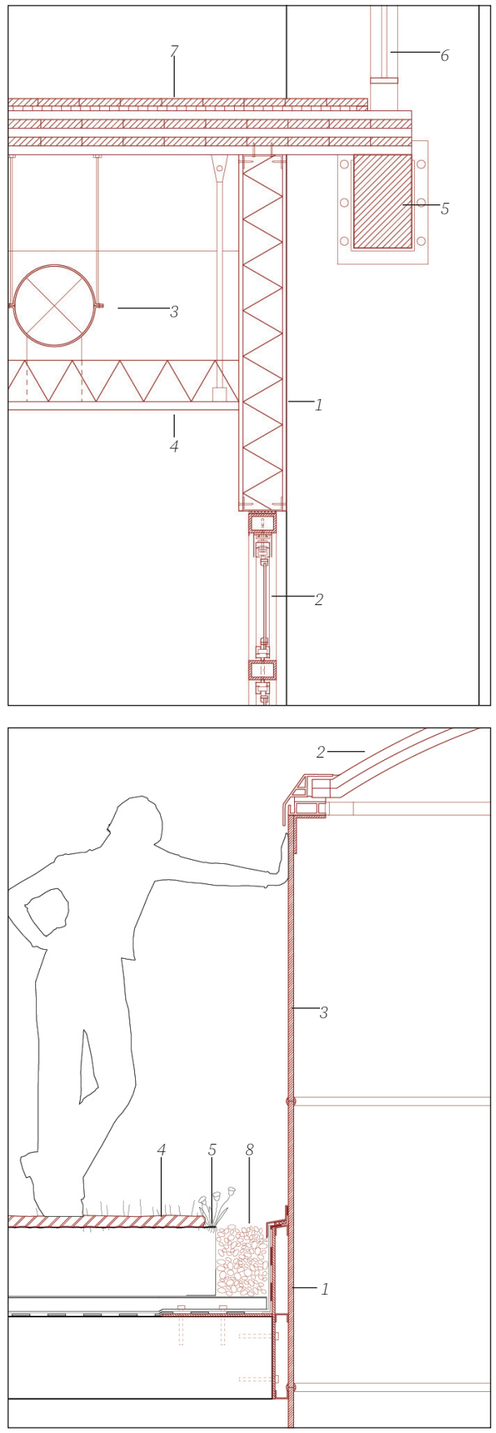
PARTIAL SECTION 1:50

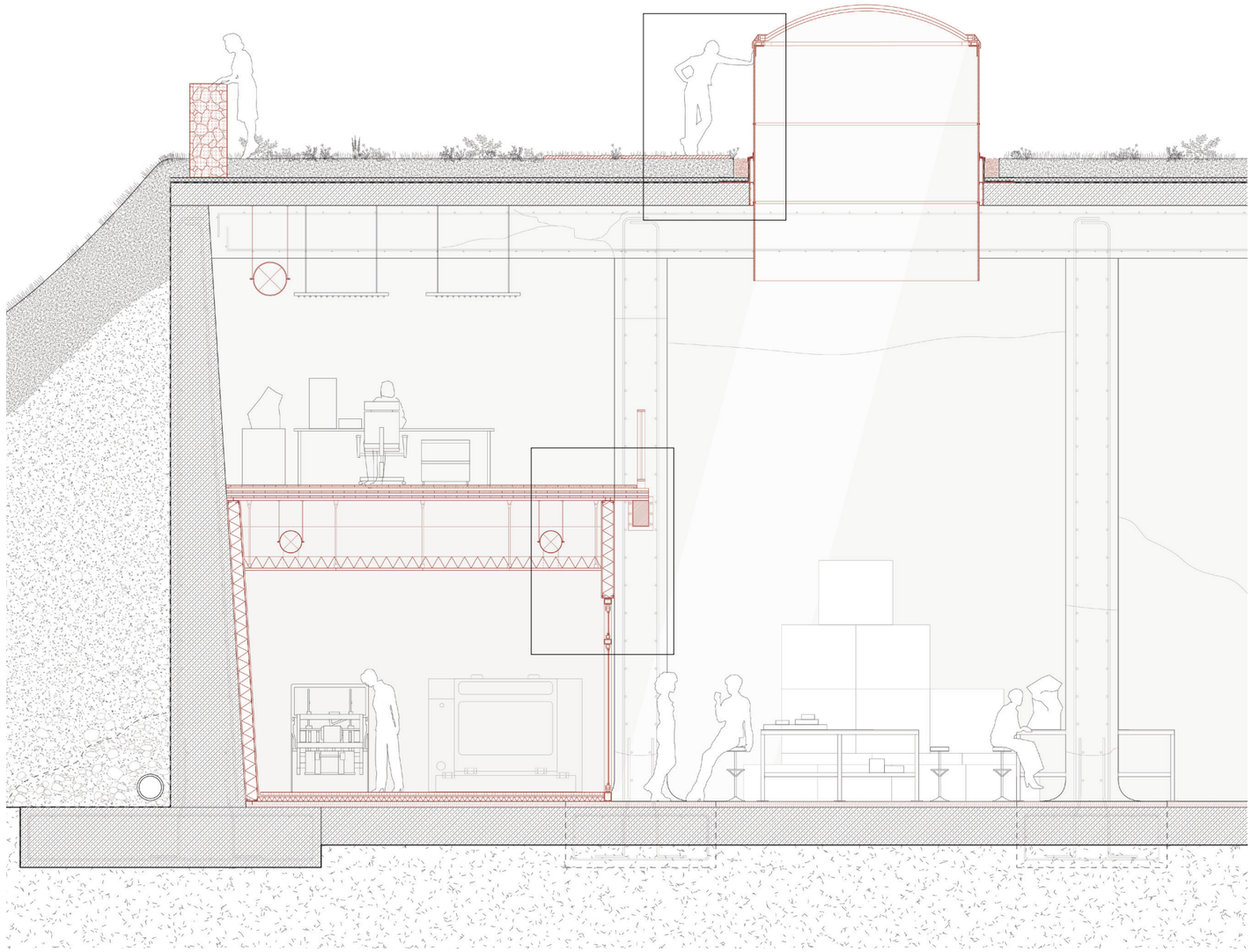
Mezzanine Detail 1:10

1. *Wall System: 15mm Reclaimed Stained Plywood Board, Vapour Barrier, 150mm Hemp Insulation between steel studs, 15mm Plywood Board*
2. *reclaimed office partition metal frame glass wall*
3. *Ventilation Duct*
4. *Suspended ceiling system*
5. *Beam Perpendicular Column Connection (existing): 200/350 timber beam attached to bucket plate with dowel-type fasterners.*
6. *Reclaimed steel railing, refurbrished with new blue coating*
7. *Mezzanine flooring: 27mm silver fir strip floor, flooring sleepers, impact sound insulation 17mm*

Reclaimed Silo Skylight Detail 1:10

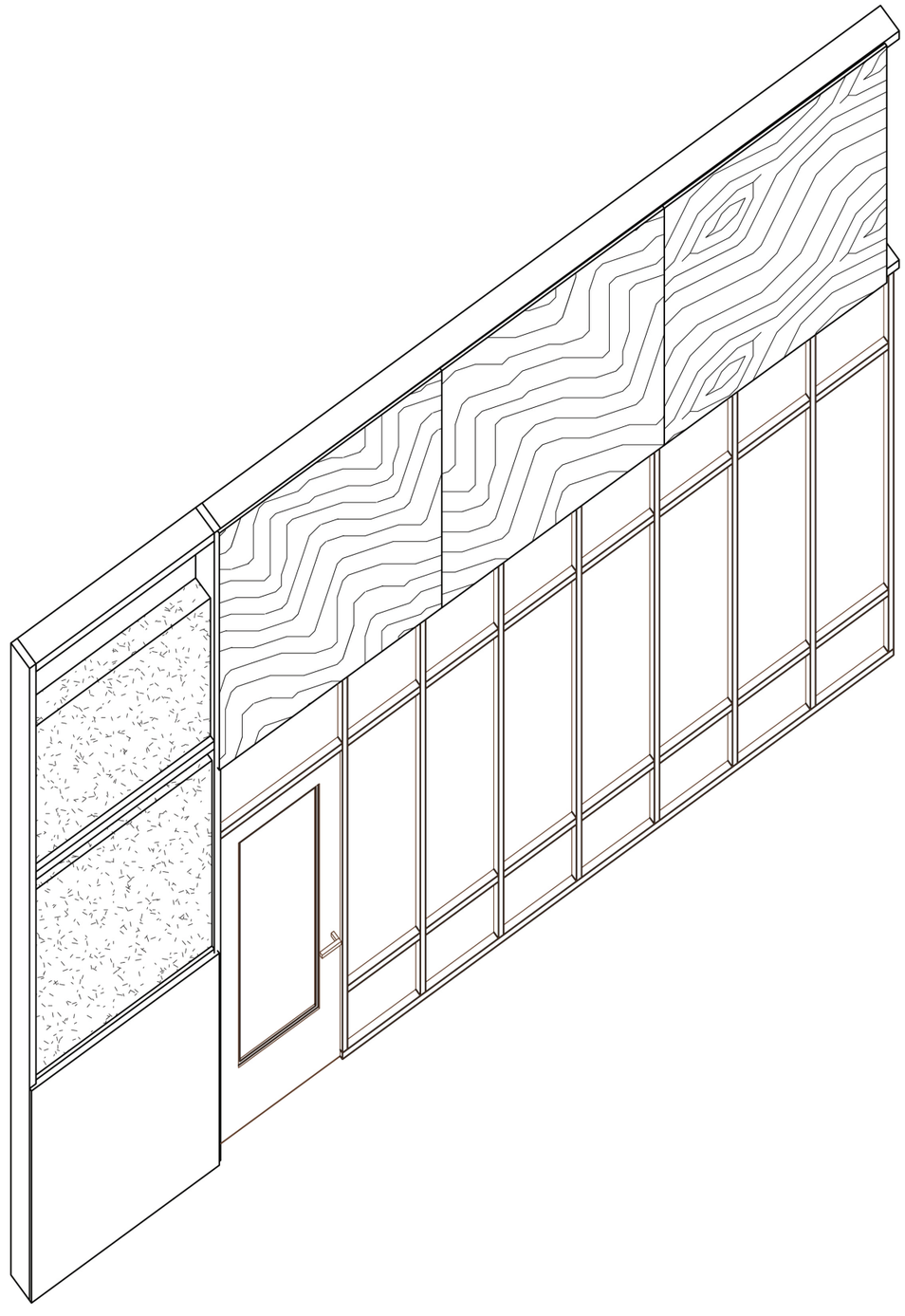
1. *Old-New Skylight Structural system: circular sheet-steel supporting structure fixed with adjustable brackets to reinforced concrete slab (existing); attached metal sections for fixing silo*
2. *light dome/smoke vent, acrylic glass, 3-ply, attached to reclaimed aggregate silo via steel plate*
3. *white coated internal silo walls*
4. *granite offcut paving*
5. *Green roof system: Plant Community, 250 mm intensive substrate layer; filter fleece; 50 mm drainage layer, Protection Layer, Roof Waterproofing (root-resistant), 300m r.c. Slab (existing), Closed-Cell 150mm Spray-Applied Thermal Insulation (grey tinted)*
6. *loose gravel edge*





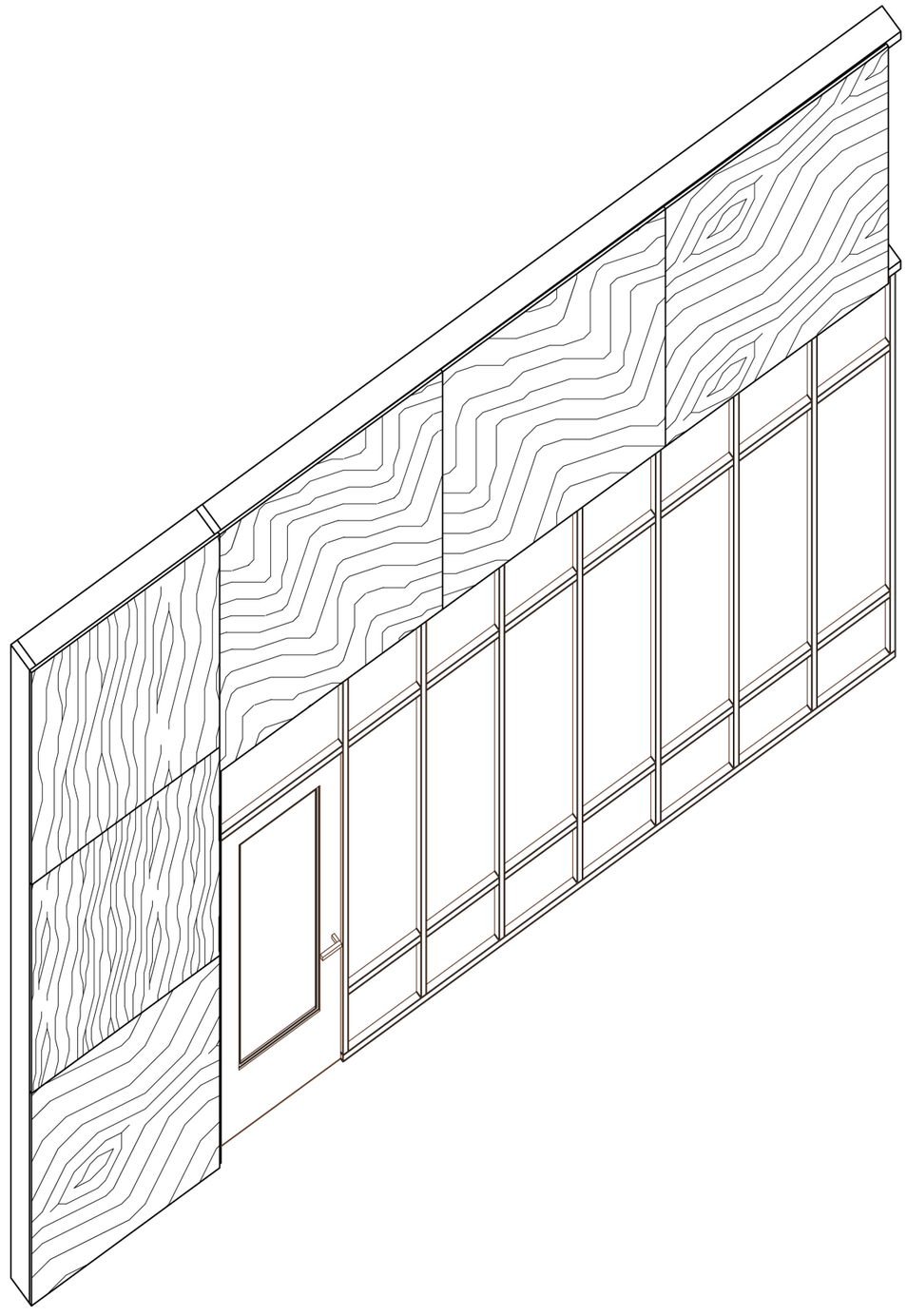
A CYCLICAL SYSTEM

PARTITION WALL AS MICROCOSM



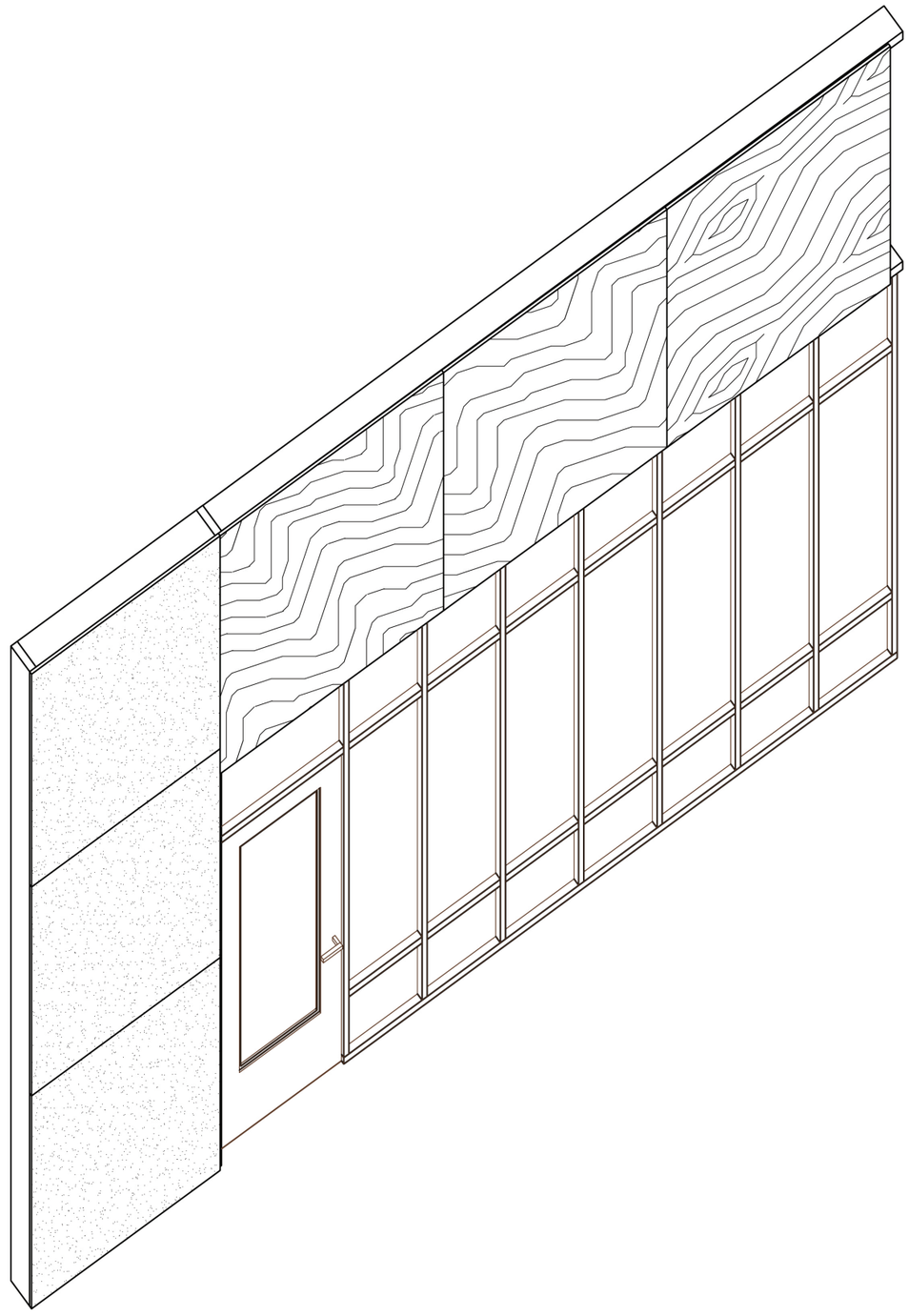
A CYCLICAL SYSTEM

PARTITION WALL AS MICROCOSM



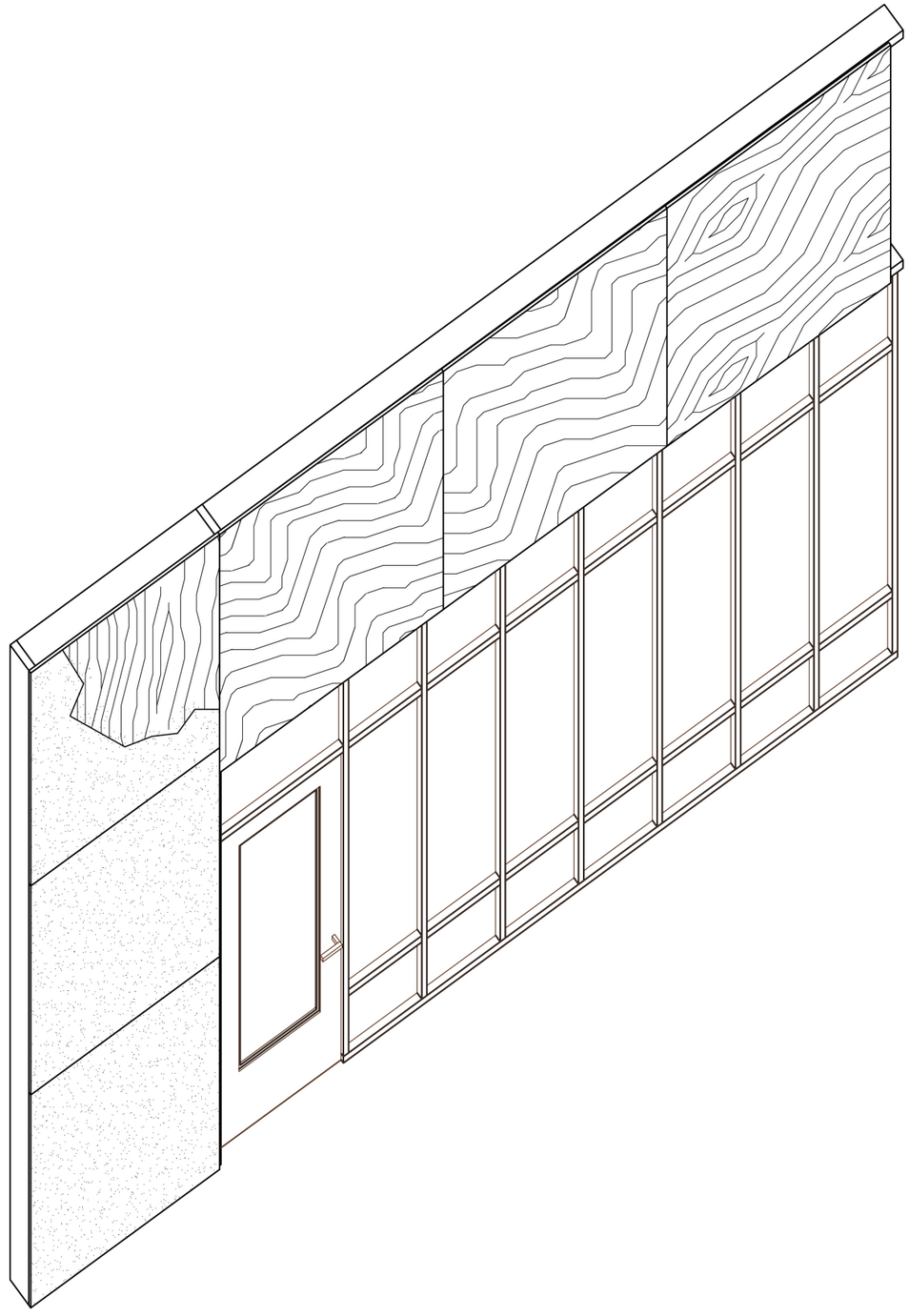
A CYCLICAL SYSTEM

PARTITION WALL AS MICROCOSM

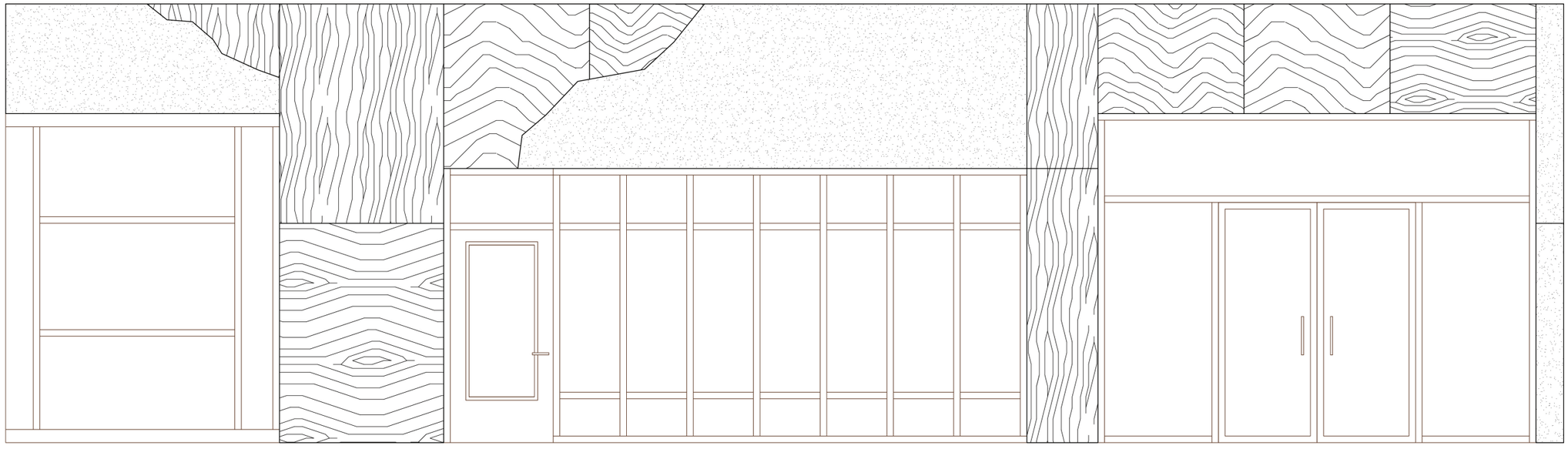


A CYCLICAL SYSTEM

PARTITION WALL AS MICROCOSM



A CYCLICAL SYSTEM
PARTITION WALL AS MICROCOSM



A CYCLICAL SYSTEM
PARTITION WALL AS MICROCOSM



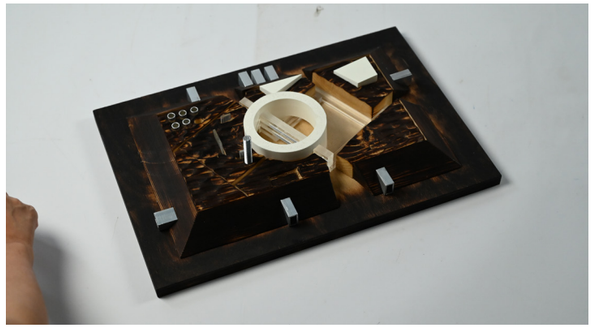
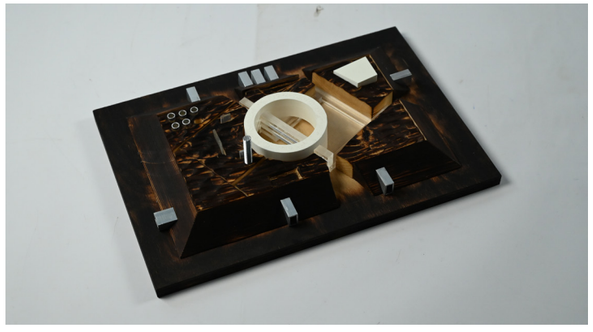
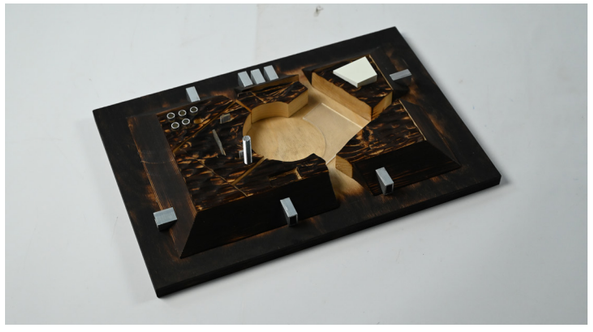
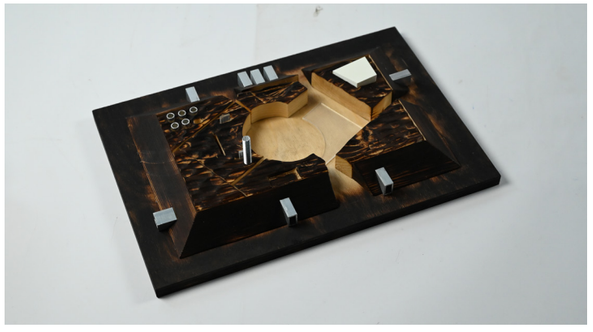
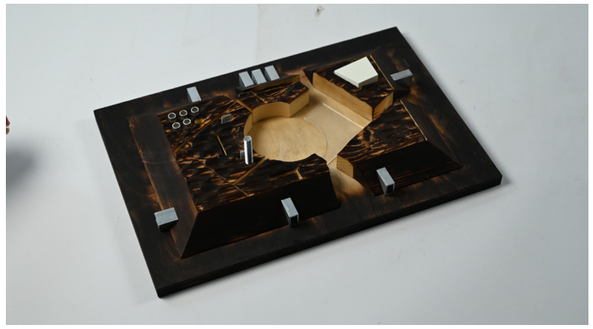
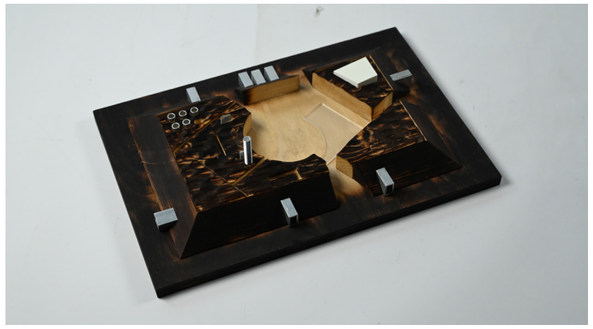
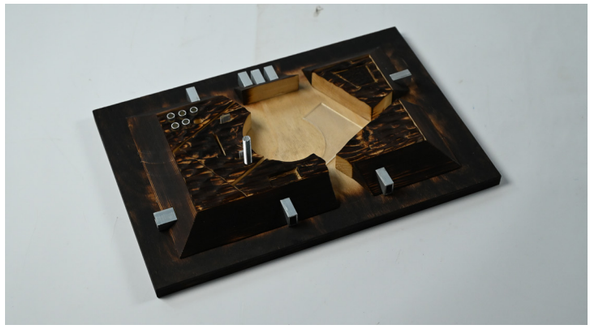
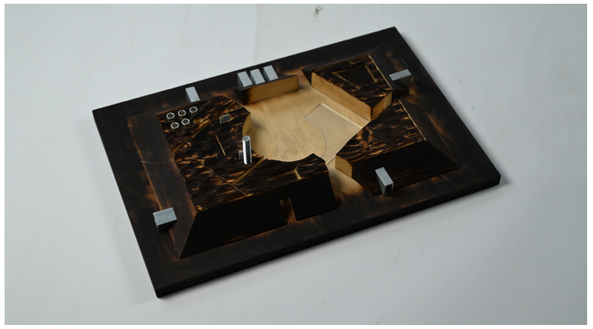
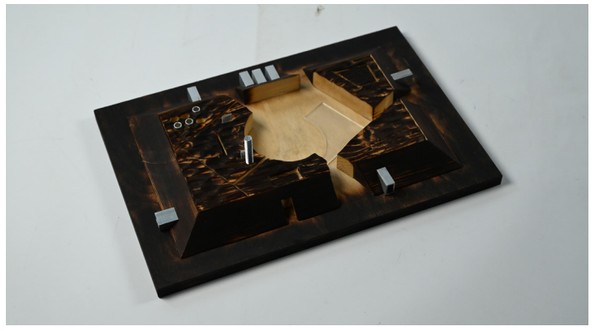
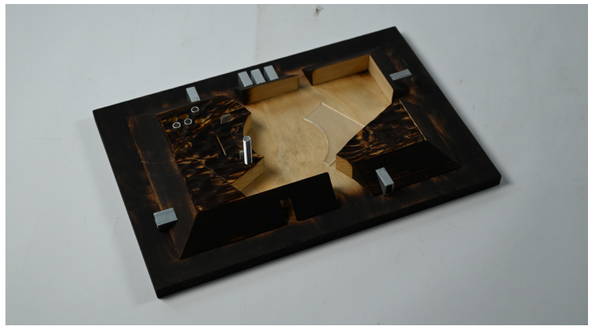
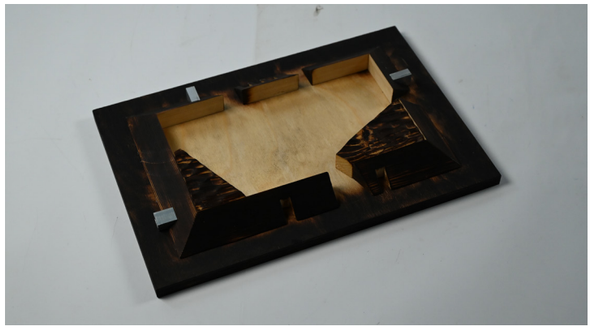
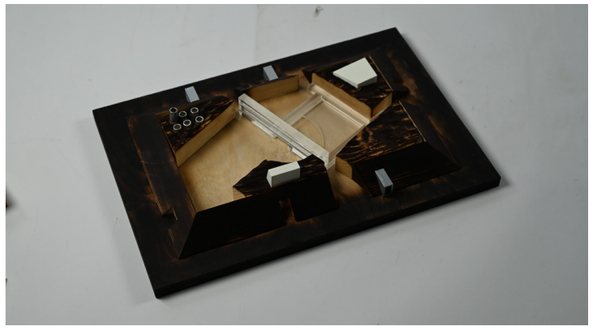
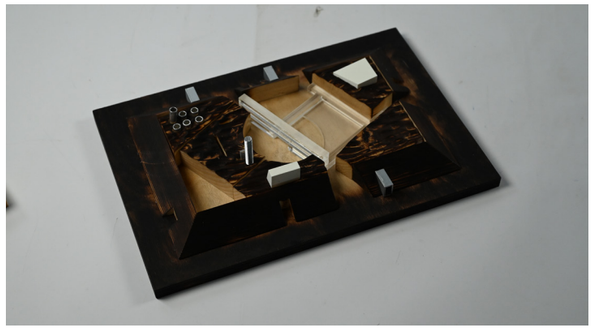
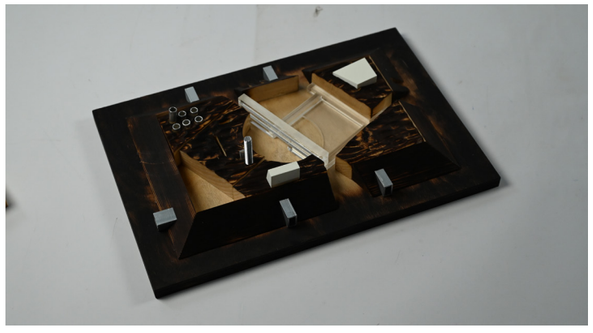
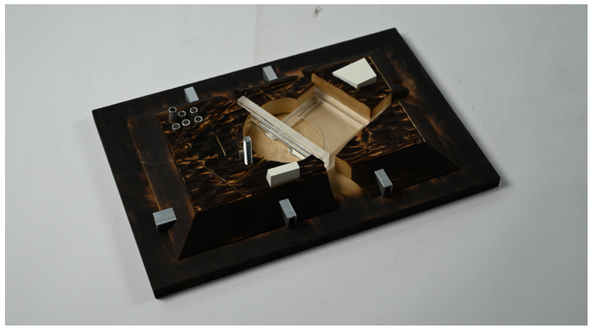
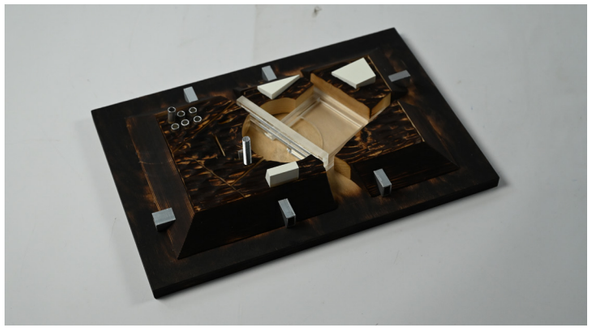
A CYCLICAL SYSTEM
PARTITION WALL AS MICROCOSM





DYNAMIC & RESPONSIVE

A NON STATIC APPROACH TO WEAR

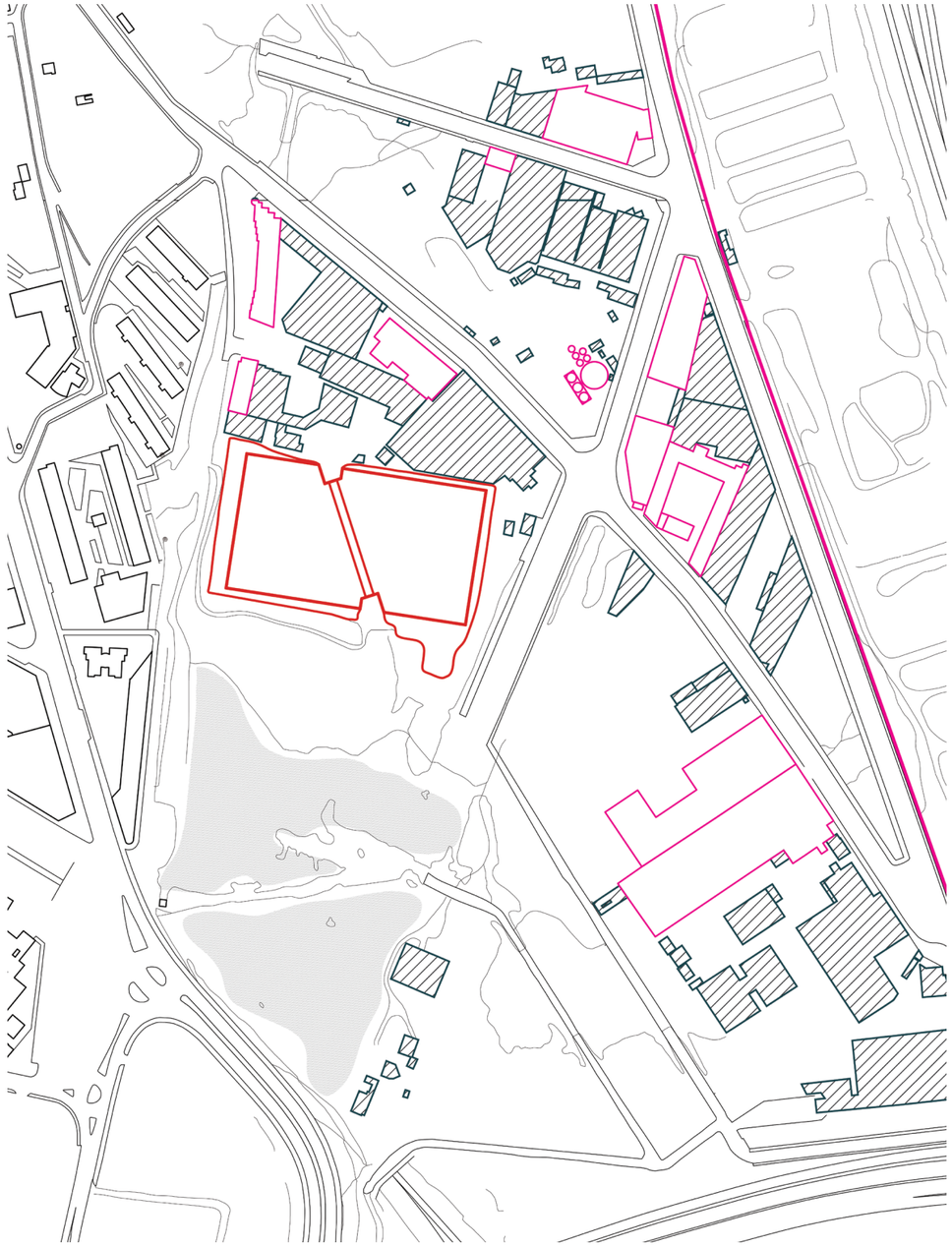


PHASE 3

material culture

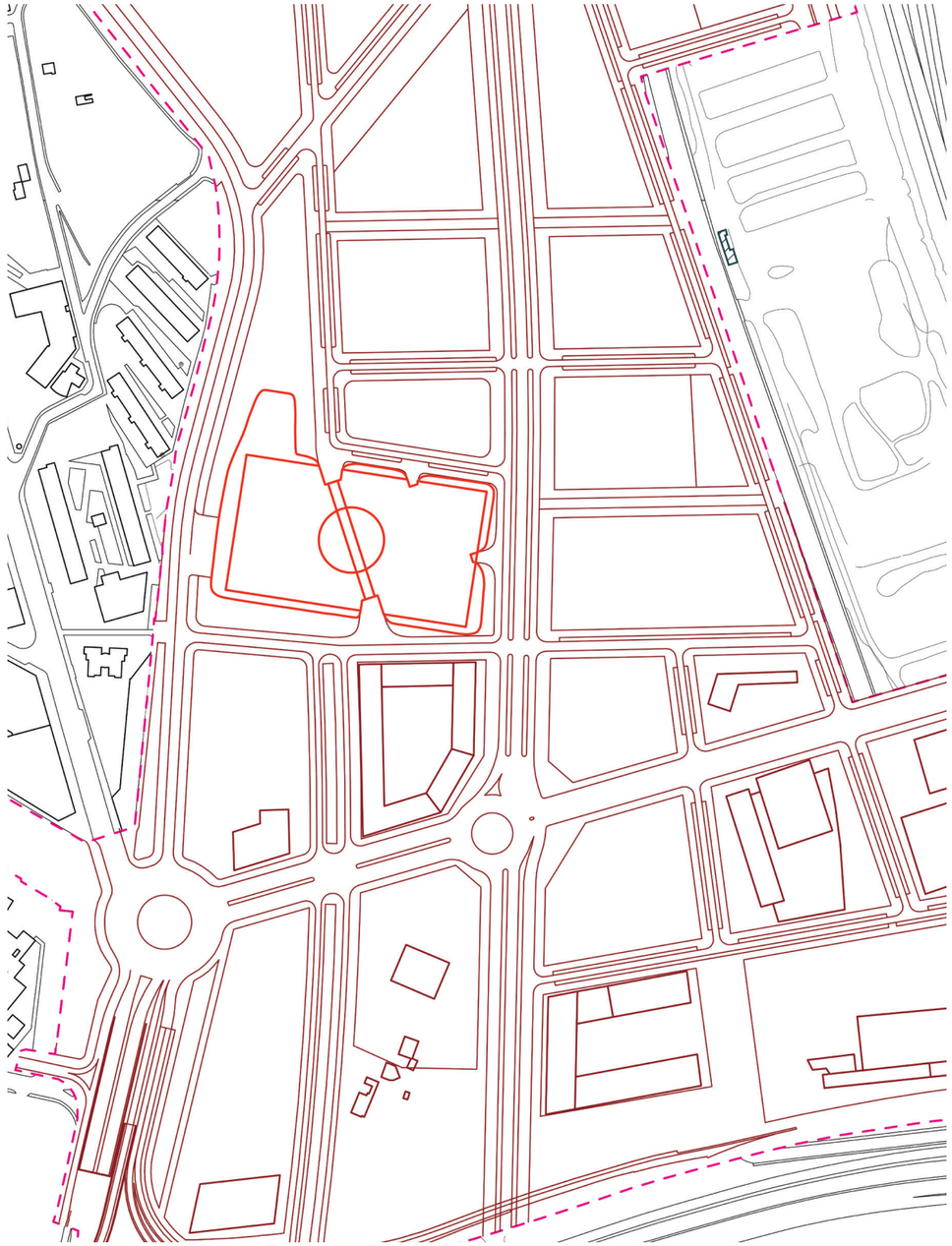
OLD URBAN CONDITION

INDUSTRIAL CLUSTER 1:2000



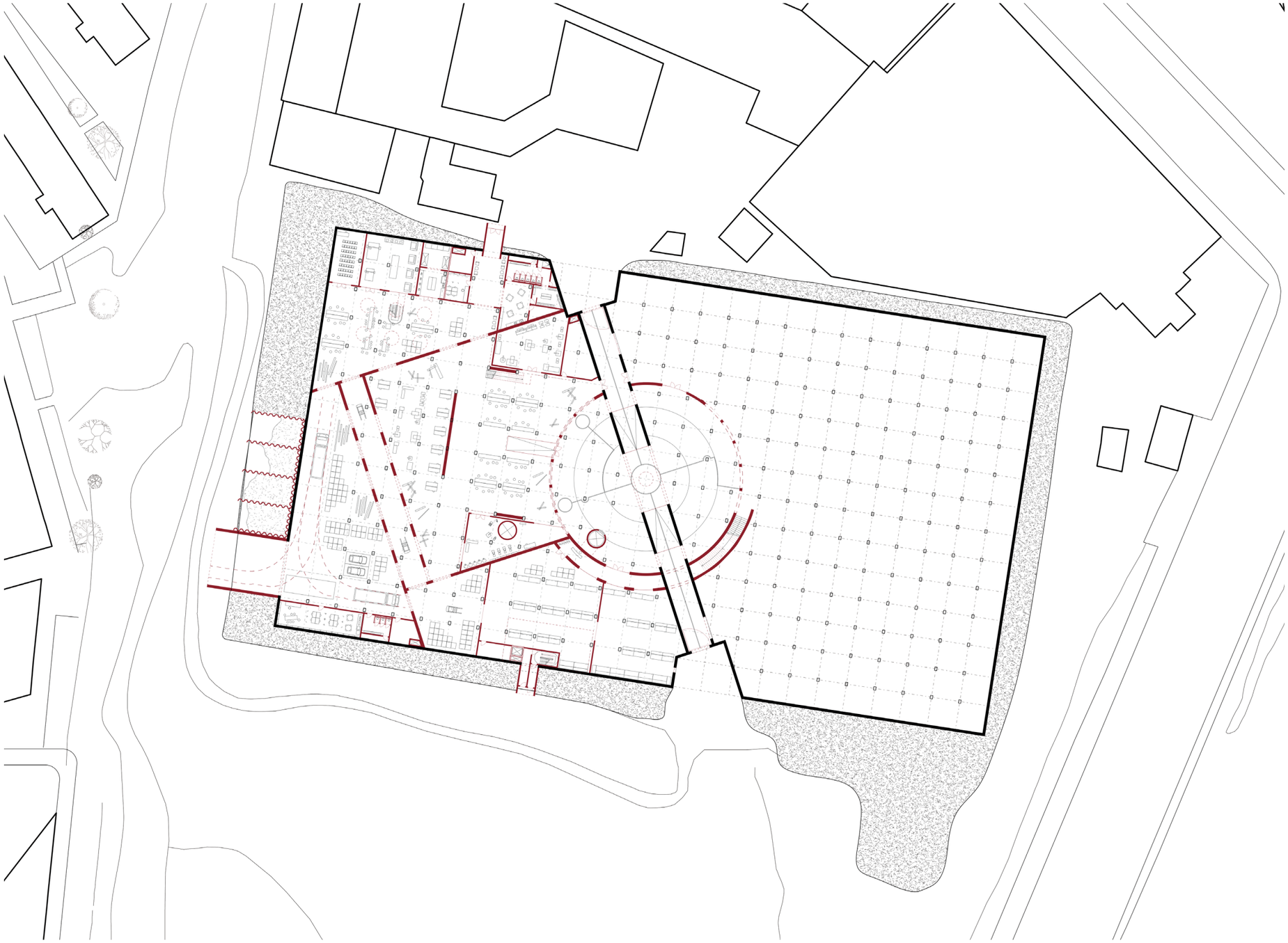
OLD URBAN CONDITION

INDUSTRIAL CLUSTER 1:2000



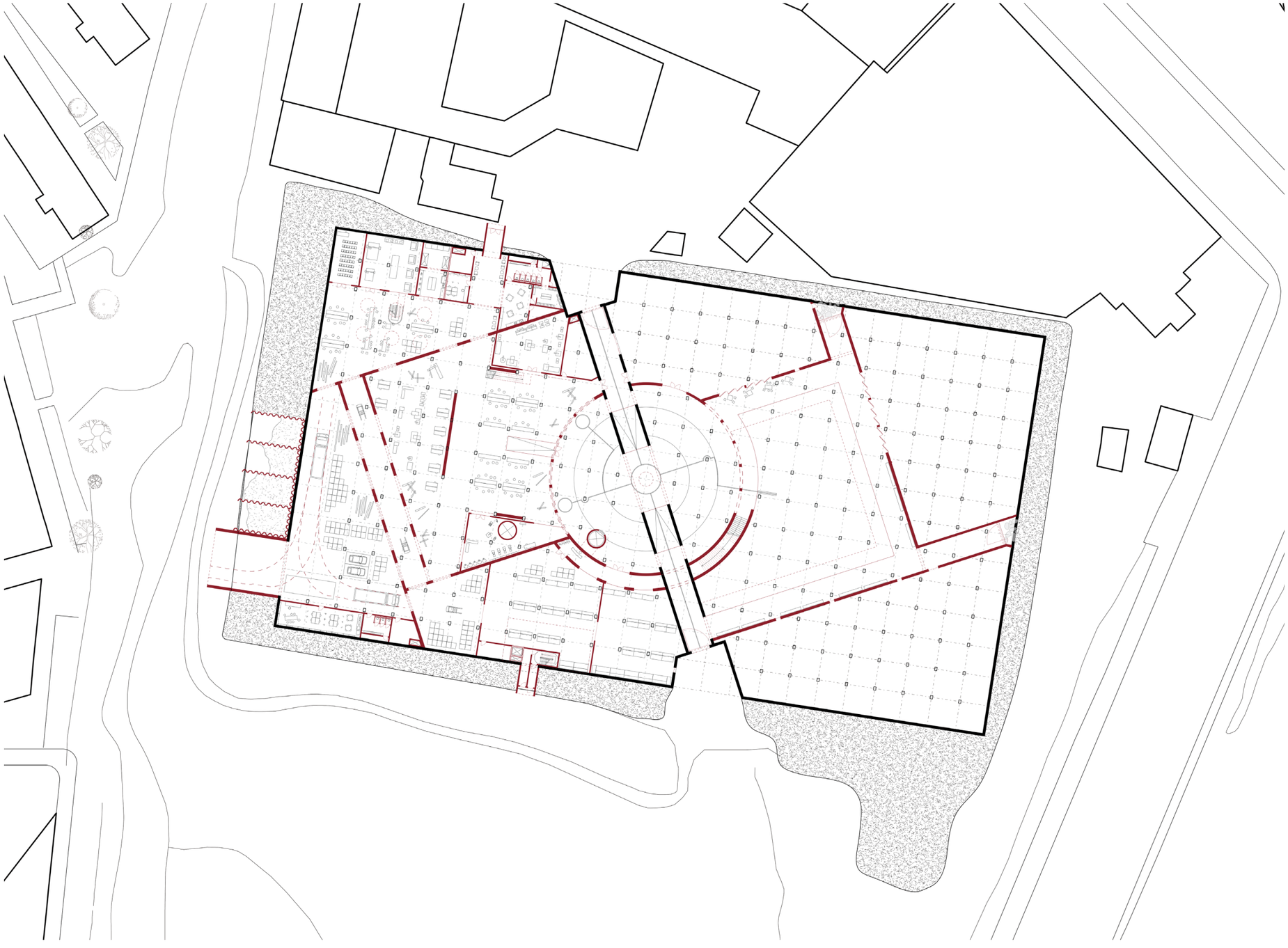
PHASE 2 PLAN

SCALE 1:500



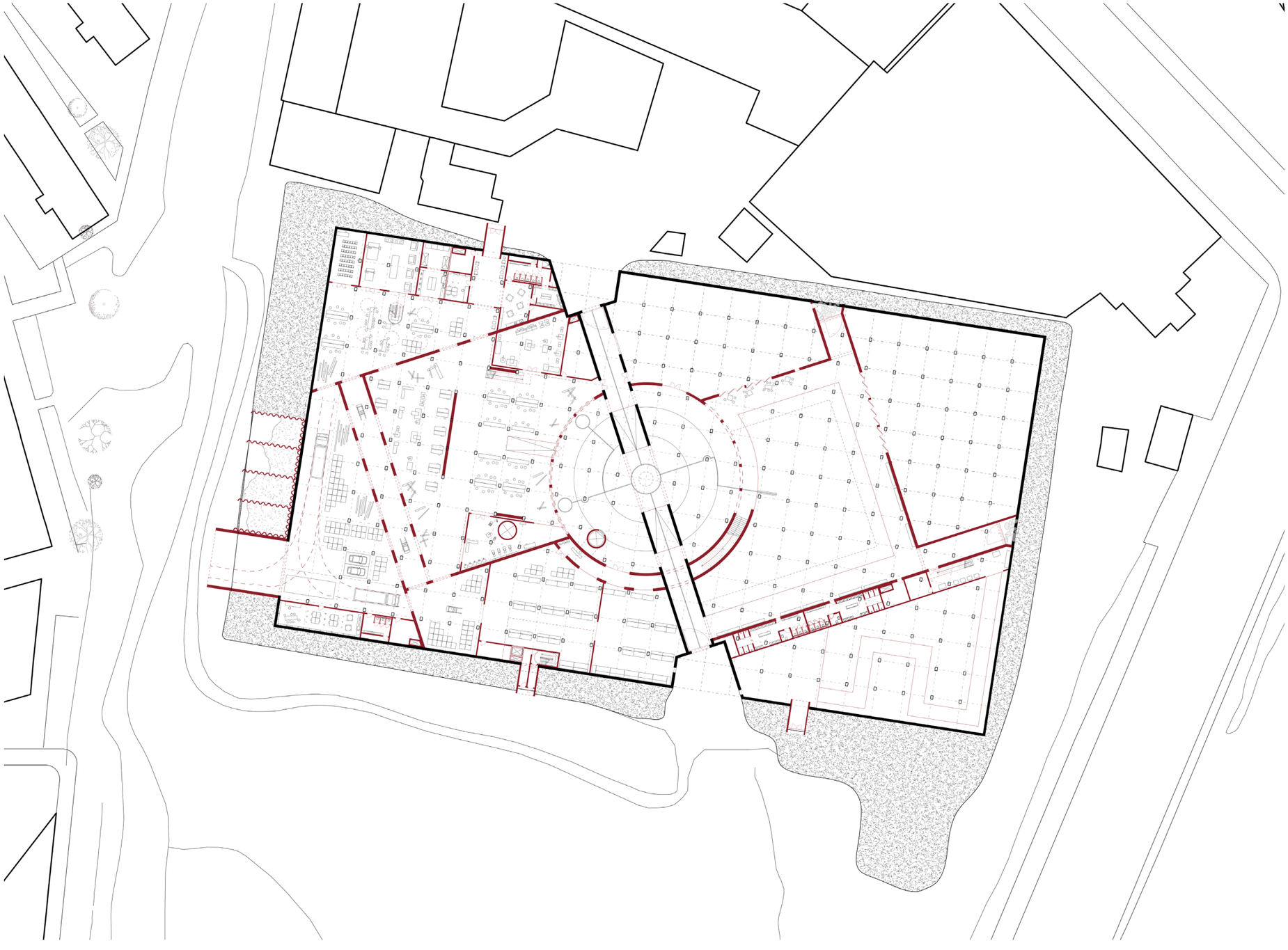
PHASE 2 PLAN

SCALE 1:500



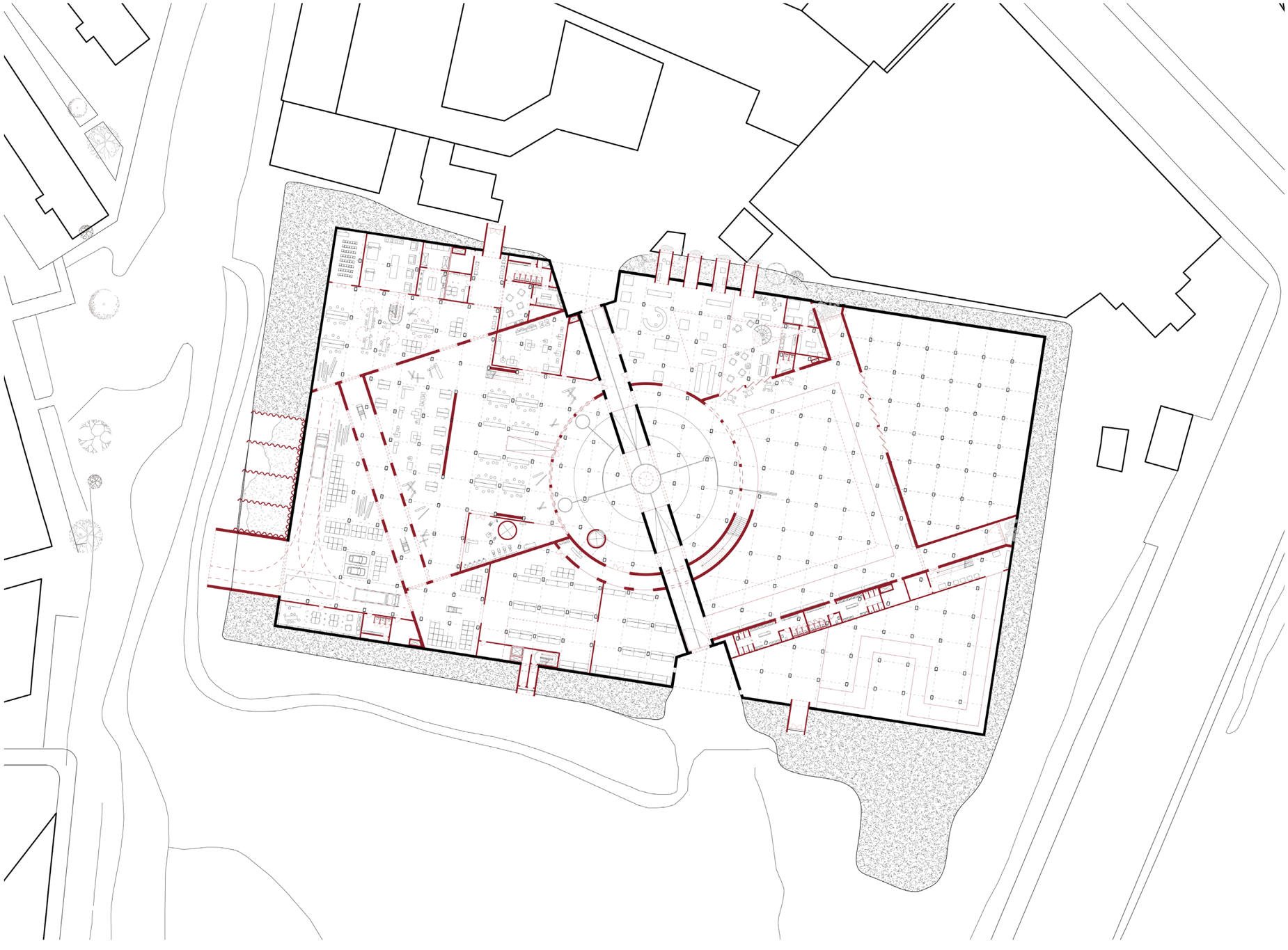
PHASE 2 PLAN

SCALE 1:500



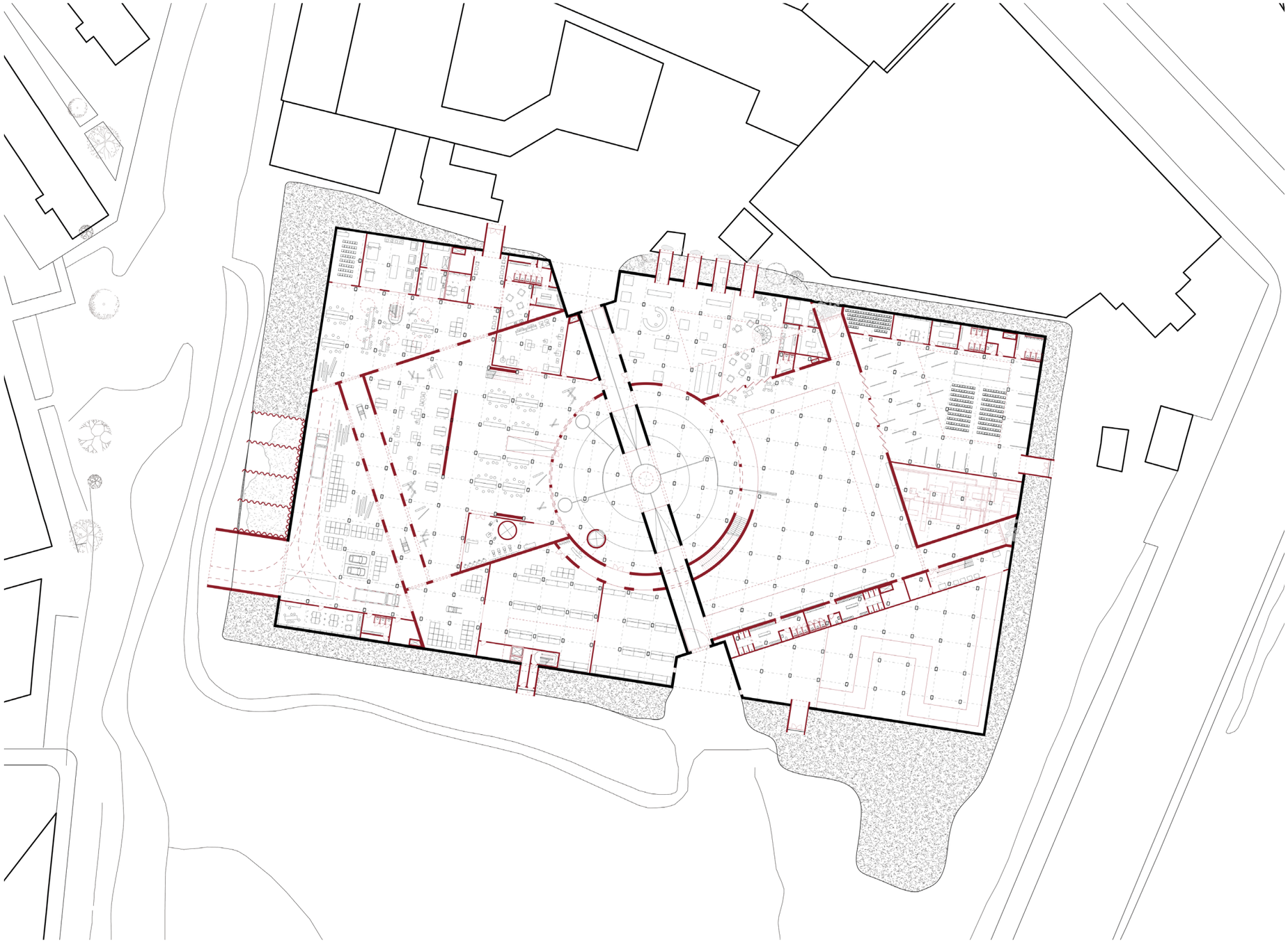
PHASE 2 PLAN

SCALE 1:500



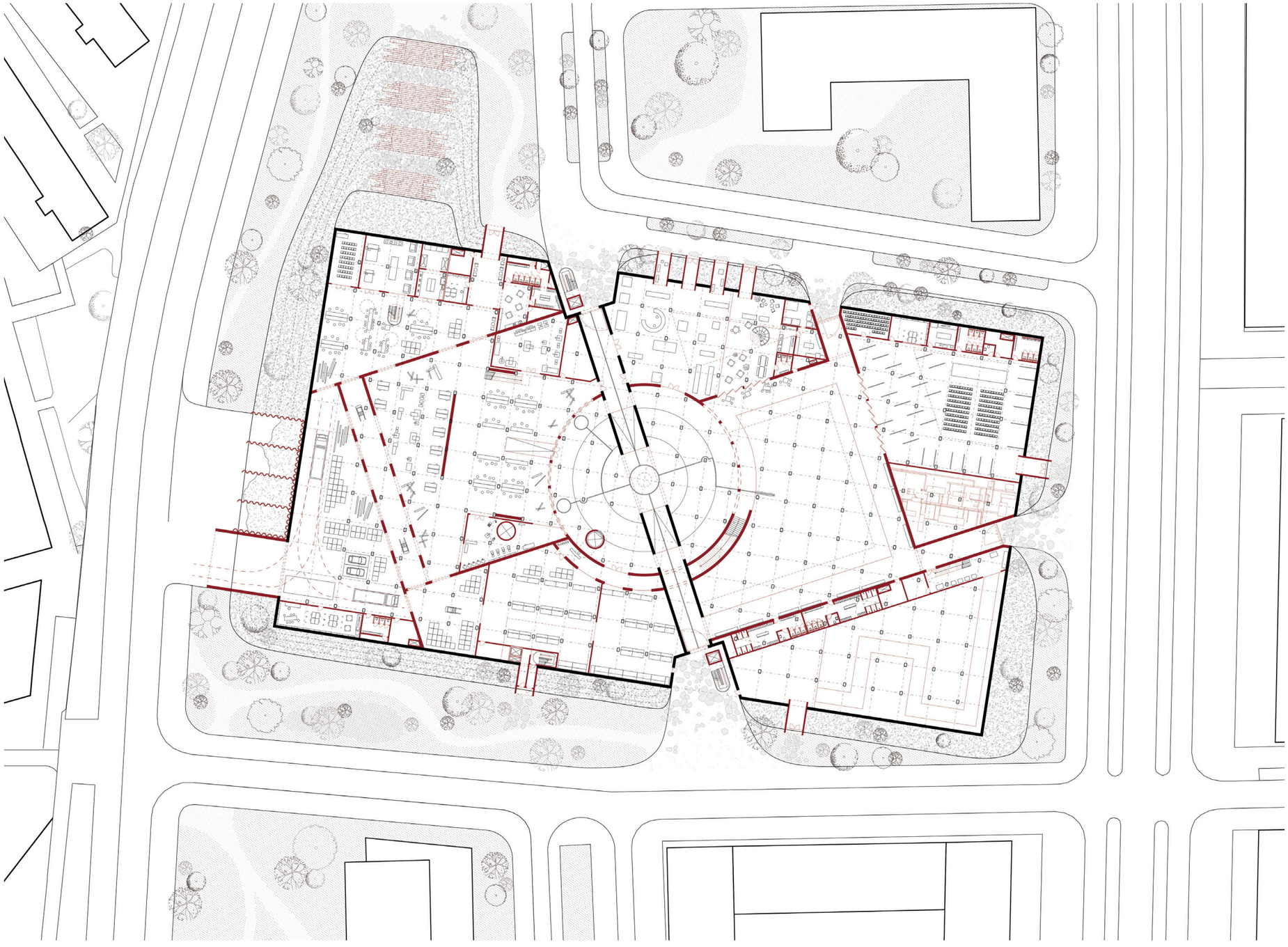
PHASE 2 PLAN

SCALE 1:500



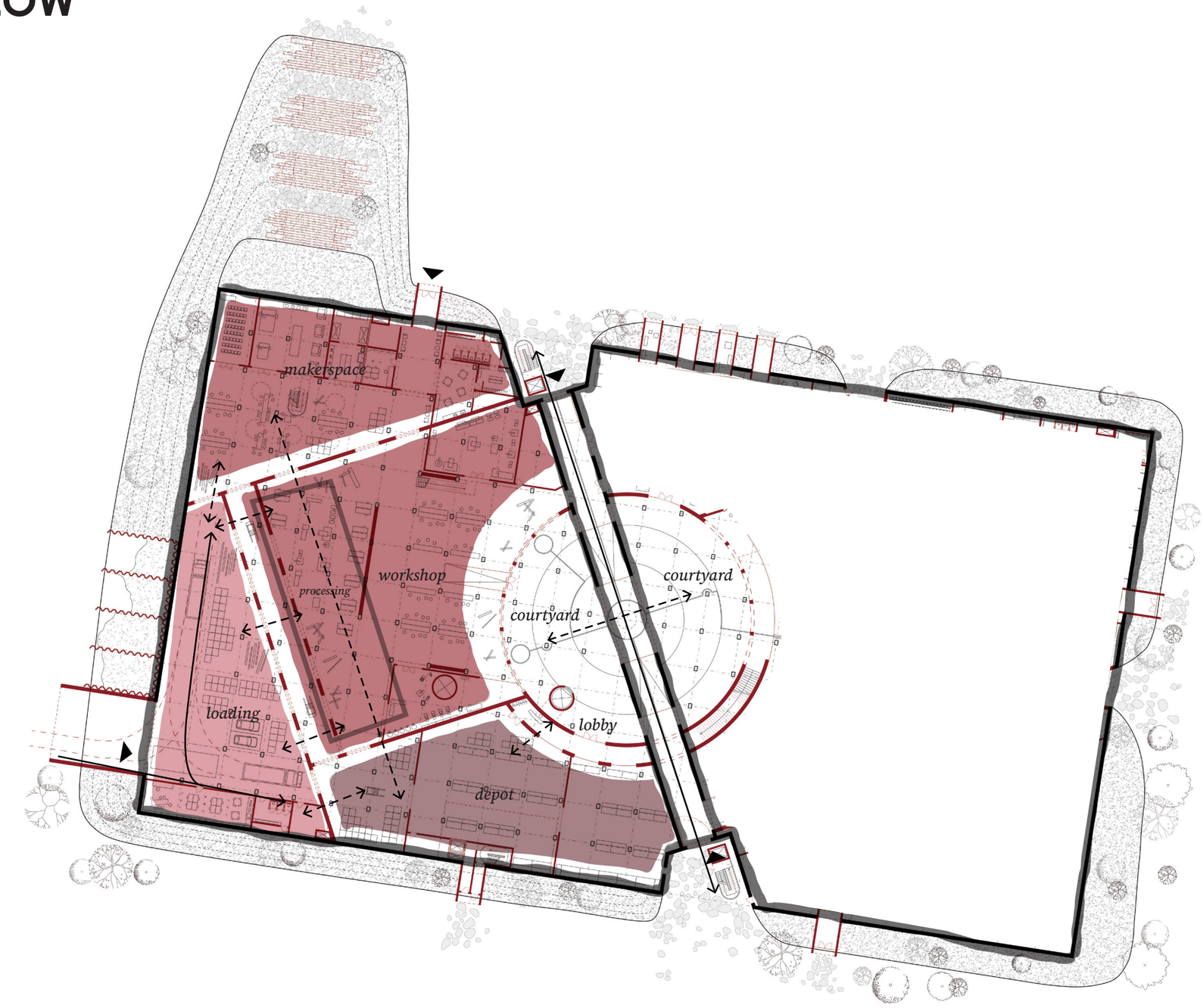
PHASE 2 PLAN

SCALE 1:500



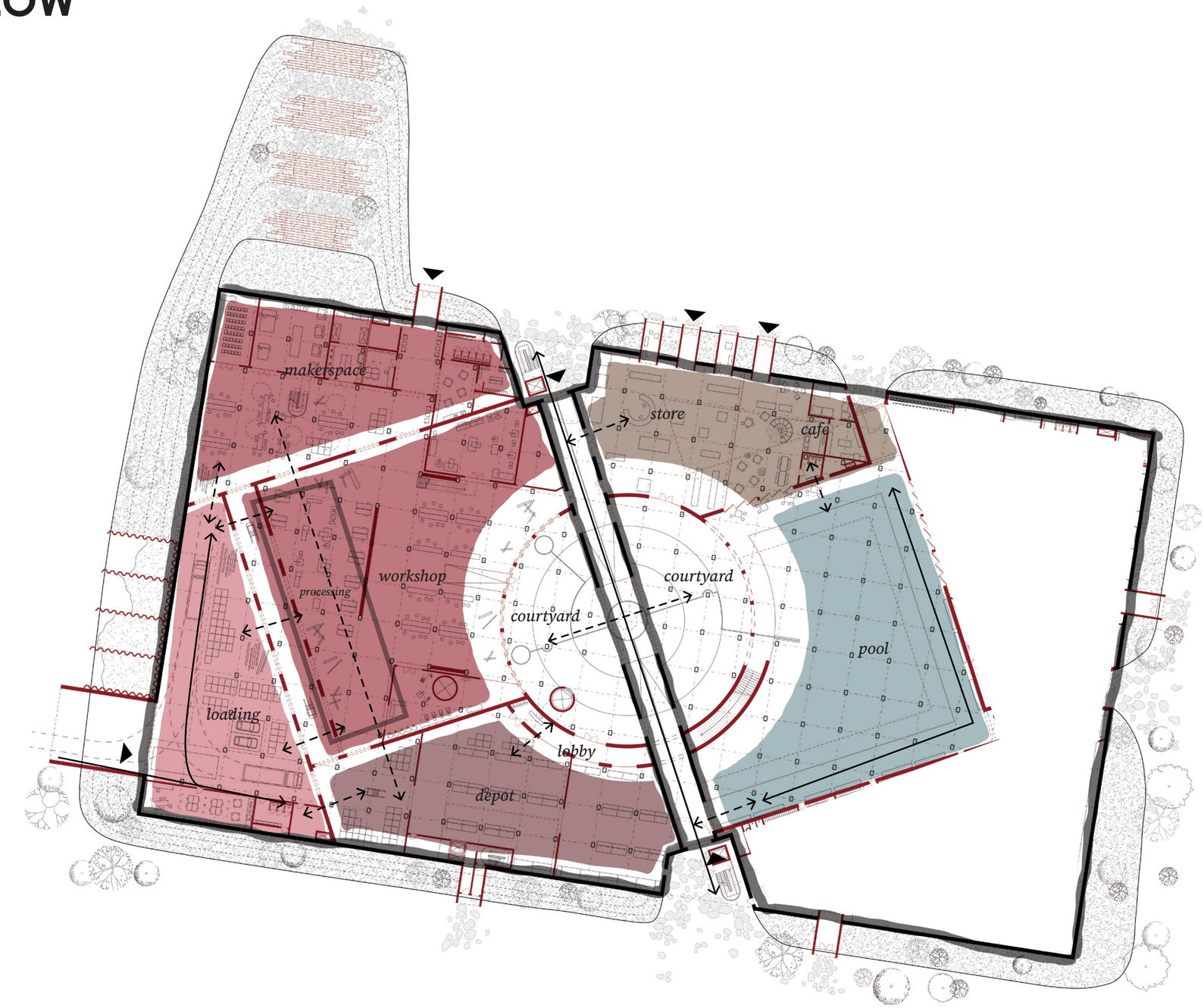
PROGRAM FLOW

PHASE 3



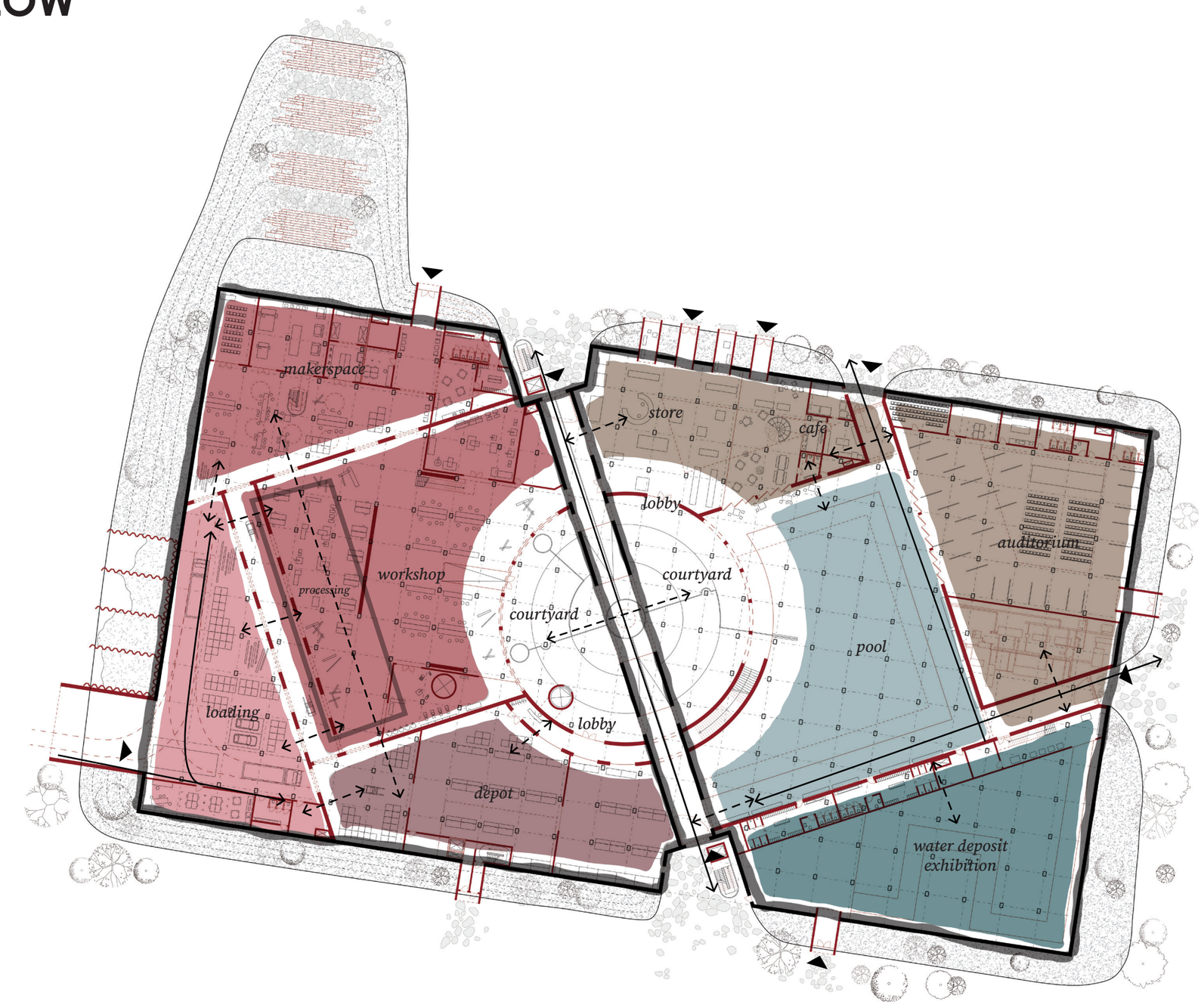
PROGRAM FLOW

PHASE 3



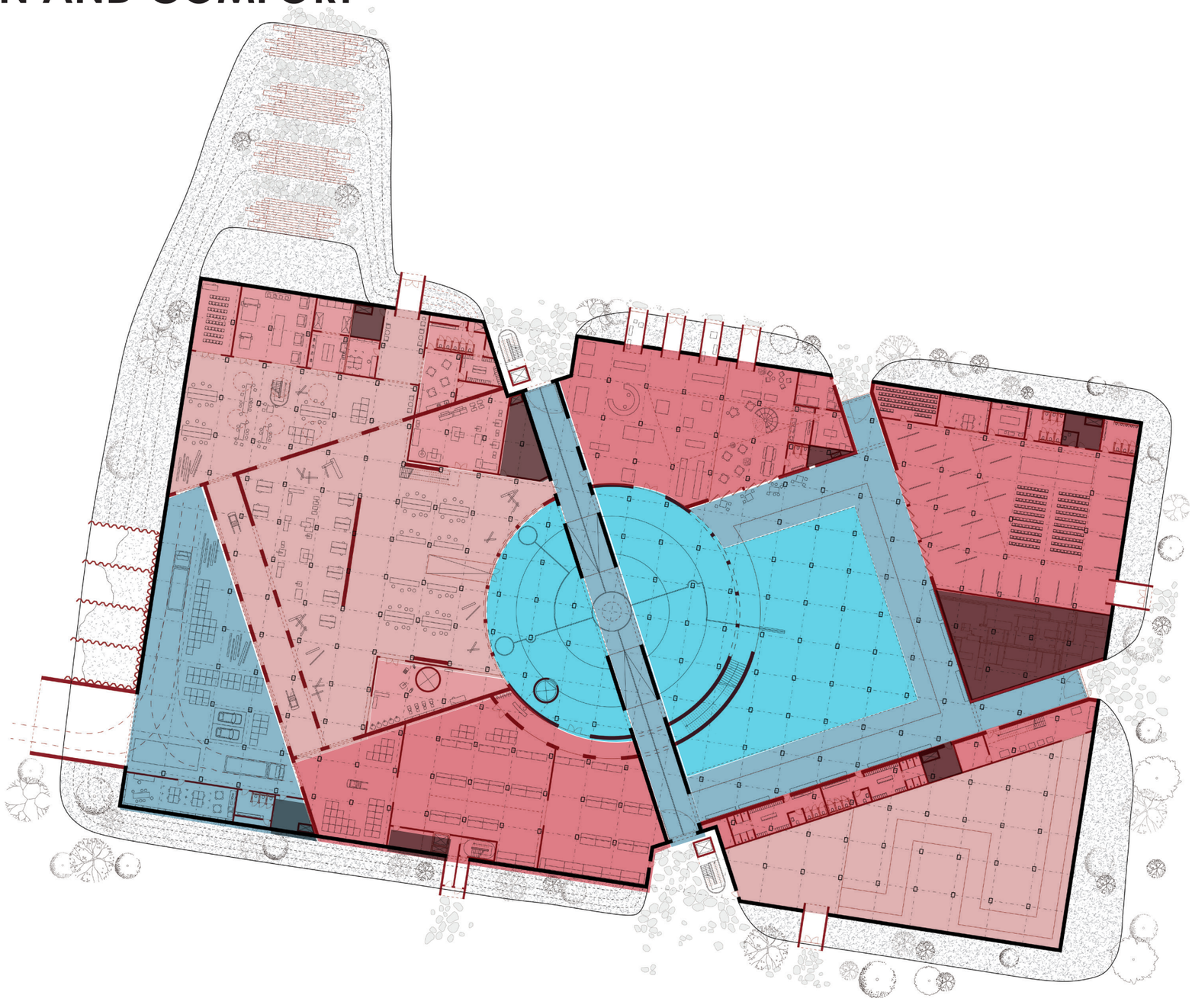
PROGRAM FLOW

PHASE 3



CLIMATIZATION AND COMFORT

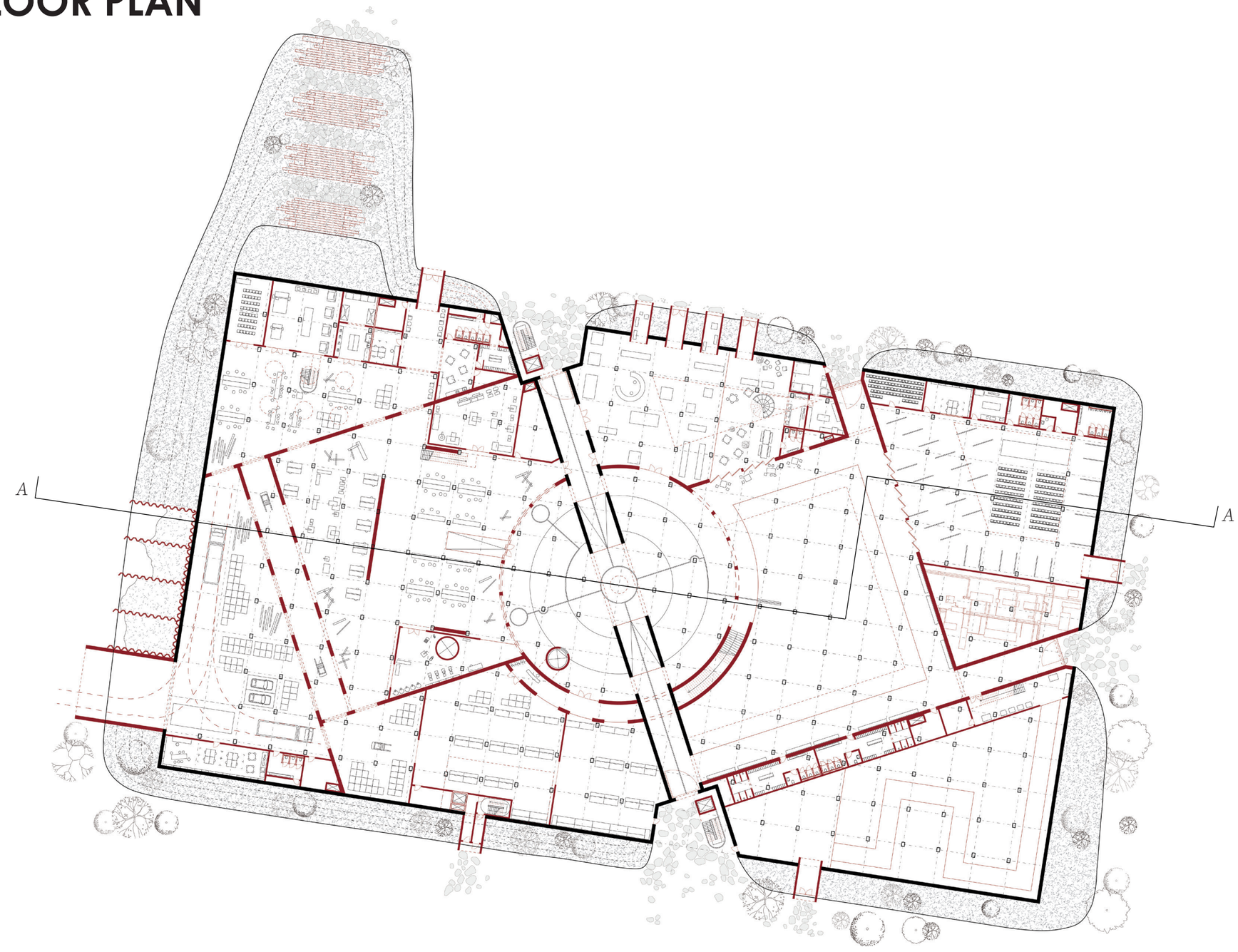
SCALE 1:500



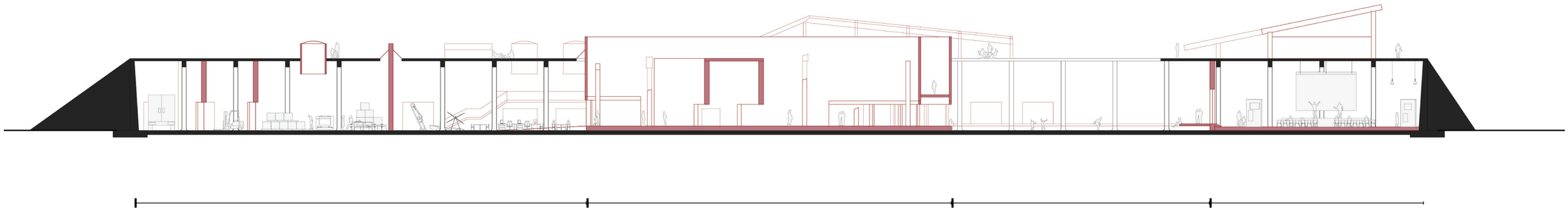
Outdoor
Sheltered
Enclosed
Box in Box
Climate Controlled
Mechanical Room

GROUND FLOOR PLAN

PHASE 3

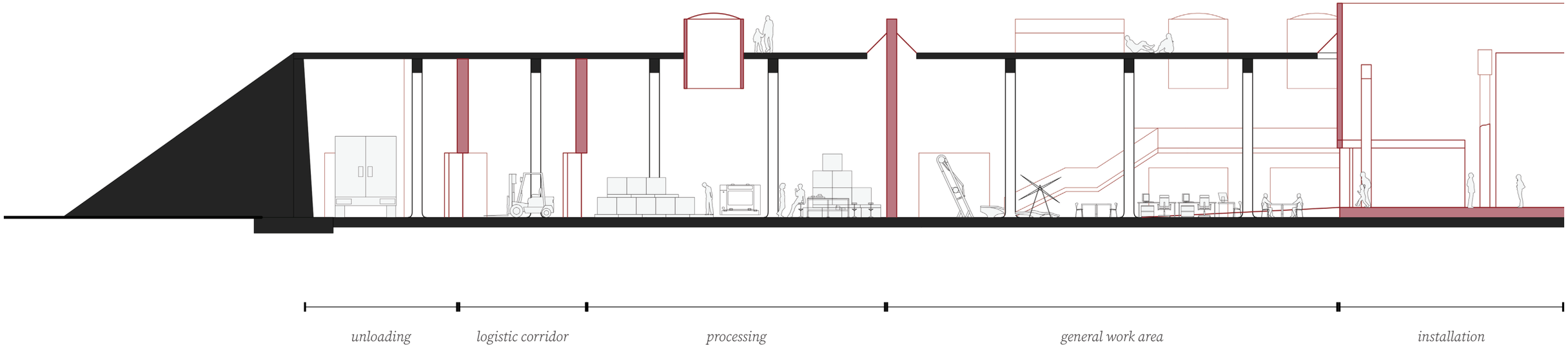


SECTION A-A
PHASE 3 1:200



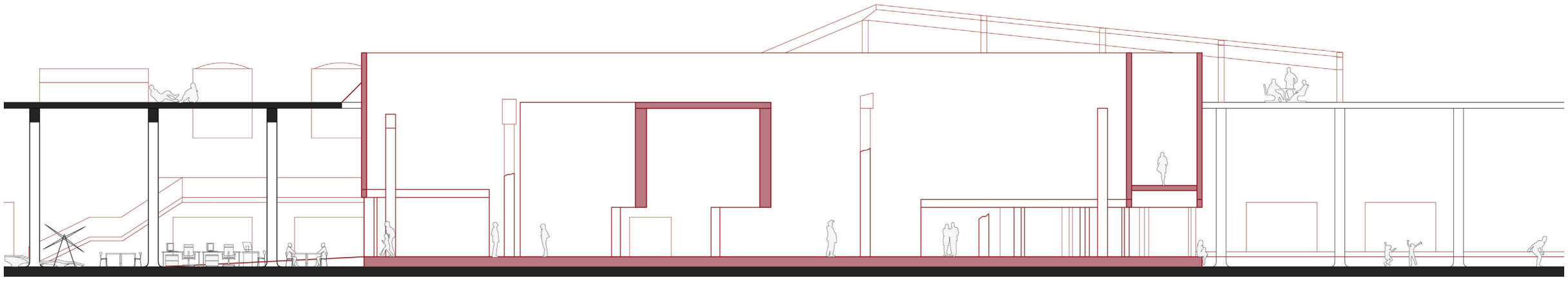
SECTION A-A (DEPOT)

PHASE 3 1:200



SECTION A-A (DEPOT)

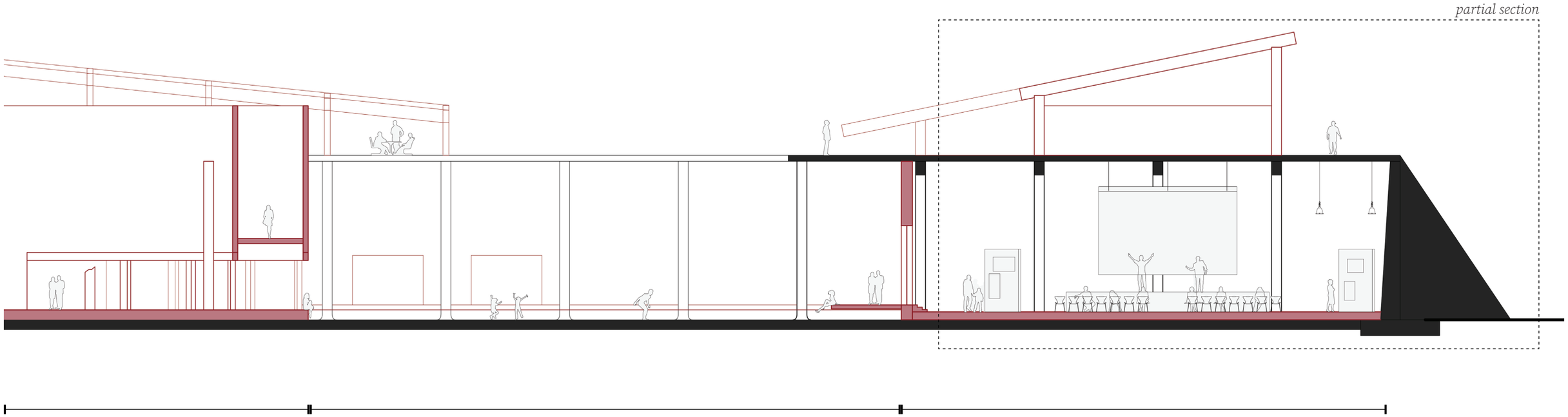
PHASE 3 1:200



general work area *installation* *entrance tunnel* *installing* *vertical* *shallow pool*

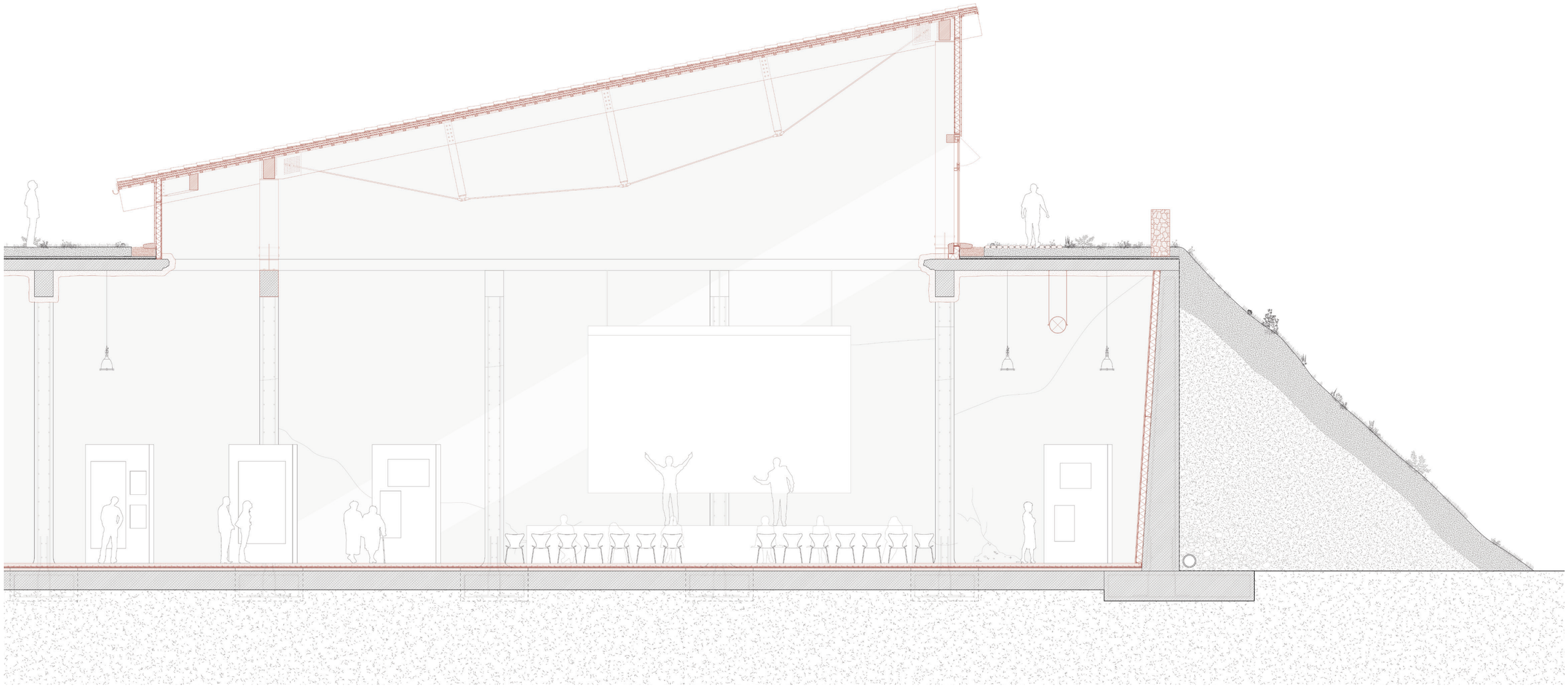
SECTION A-A (DEPOT)

PHASE 3 1:200

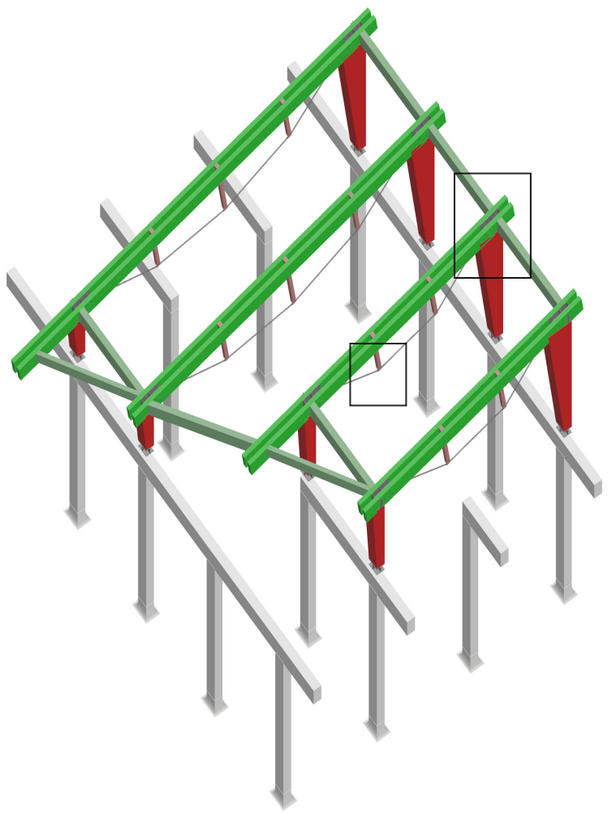


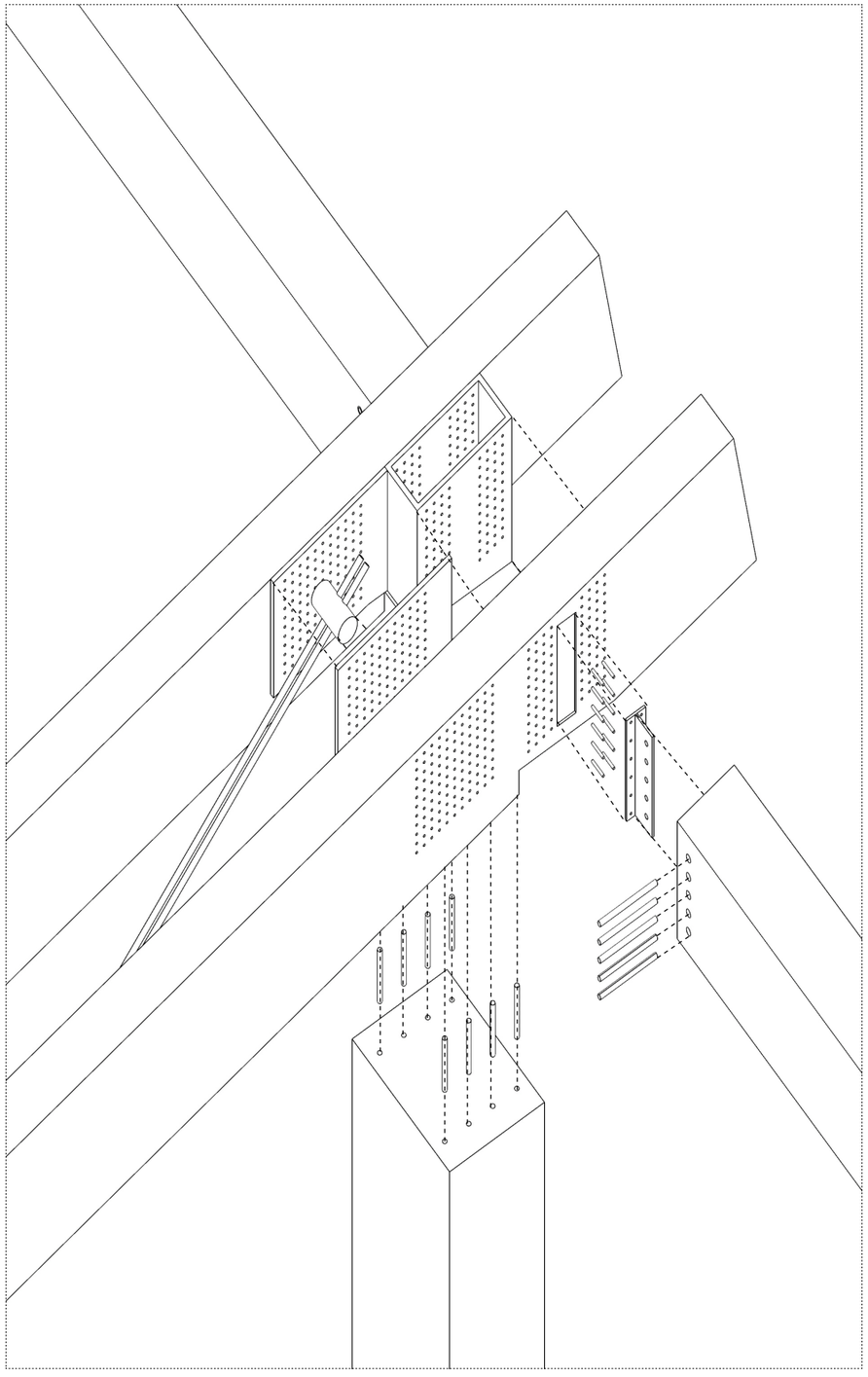
AUDITORIUM/FLEXIBLE SPACE

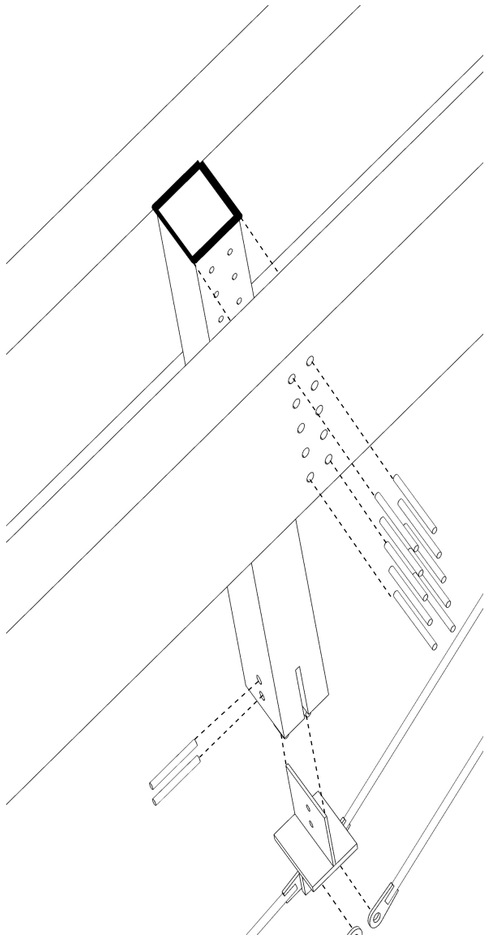
PARTIAL SECTION 1:50



STRUCTURAL DESIGN
TIMBER & STEEL CONNECTIONS





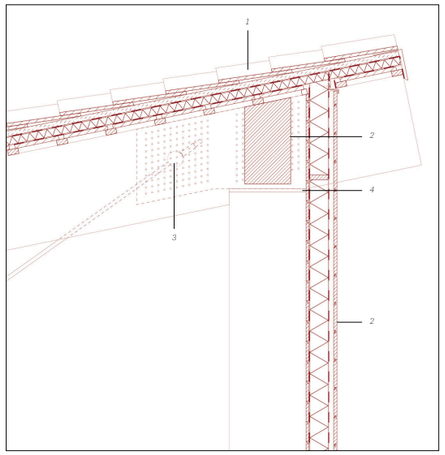


AUDITORIUM/FLEXIBLE SPACE

DETAIL 1:10

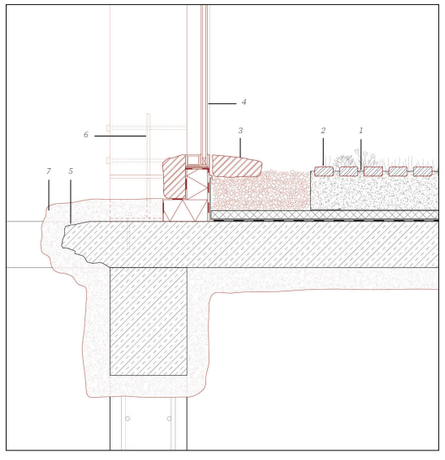
B3. Timber Roof Detail 1:20

1. *Roof system: tiled roof (reclaimed) with mortar on 40 mm lightweight concrete 50 mm thermal insulation sealing layer, moisture diffusing 290/145/25 mm clay plain tile 70/35 mm timber purlins 210/80 mm rafters*
2. *inverted king post truss: T-Shaped metal joint with metal internal nail plate (column-beam connection)*
3. *hinge pin welded to reinforced nail plate.*
4. *glulam Timber beam and column*
5. *Wall system: 22 mm tongue and groove boarding, Metal Framing, 30mm cavity, waterproof-barrier, 30/125 timber sections, between them cellulose thermal insulation; vapour barrier; 18 mm tongue and groove boarding, 200/200 timber substructure wall bracing*



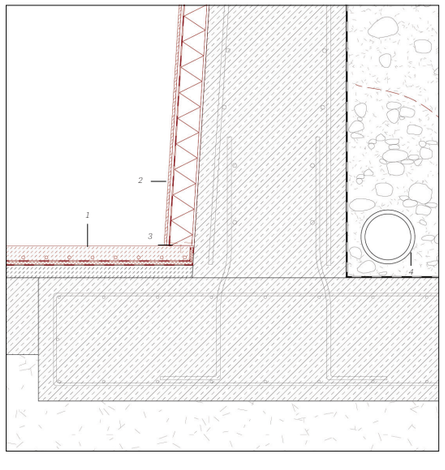
B2. Canopy Floor Connection Detail 1:20

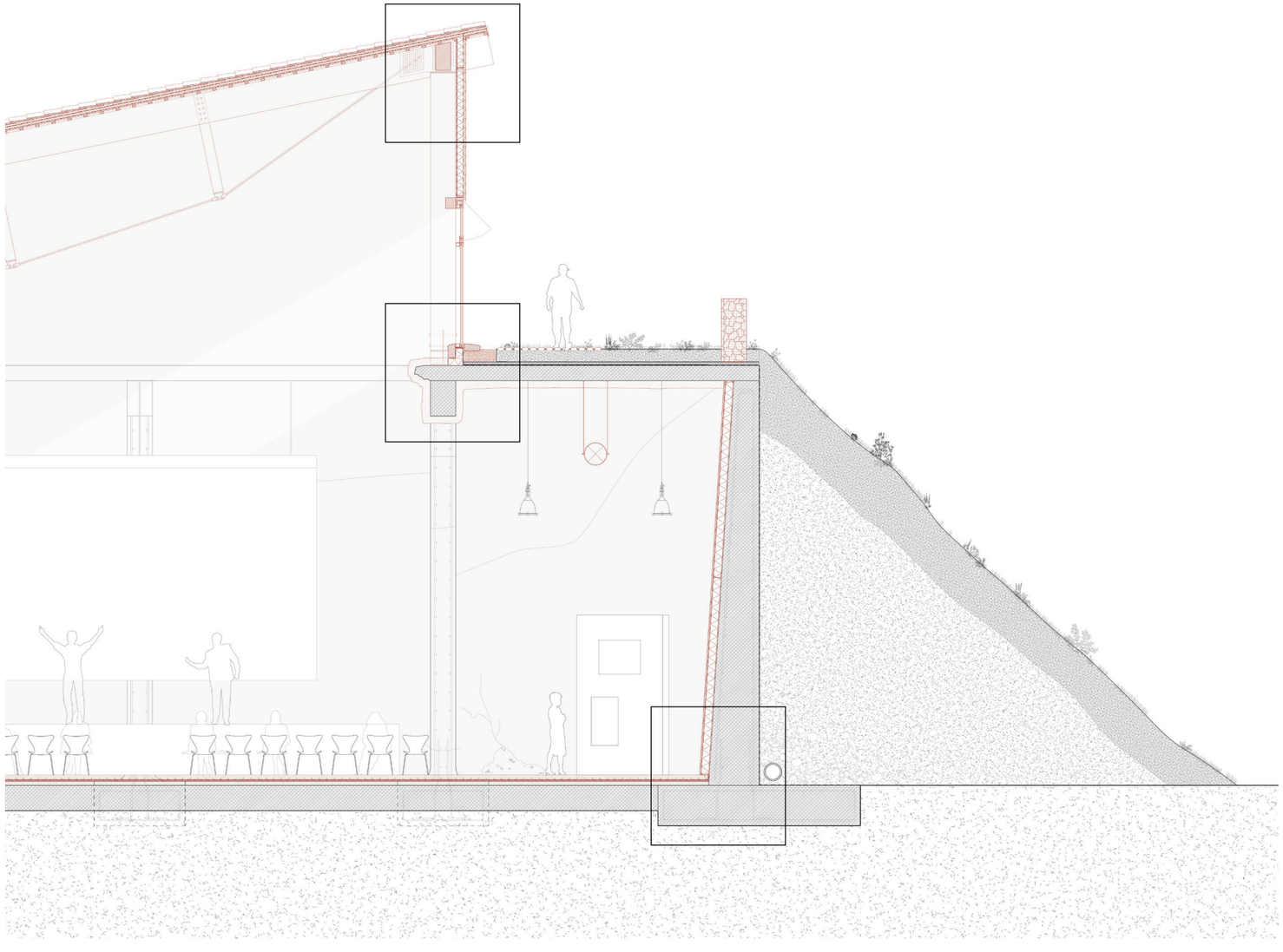
1. *Floor system: Plant Community, 250 mm intensive substrate layer; filter fleece; 50 mm drainage layer, Protection Layer, Roof Waterproofing (root-resistant), 300m r.c. Slab (existing)*
2. *60/120 reclaimed roadwork granite paving blocks*
3. *reclaimed decorative granite block sill*
4. *8 mm float glass + 15 mm cavity + 8 mm lam. safety glass in steel section frame*
5. *Closed-Cell 150mm Spray-Applied Thermal Insulation (grey tinted)*
6. *concrete-steel-timber column knife plate connection*
7. *existing slab (demolished in aritifical ruination)*



B1. Concrete retaining wall detail 1:20

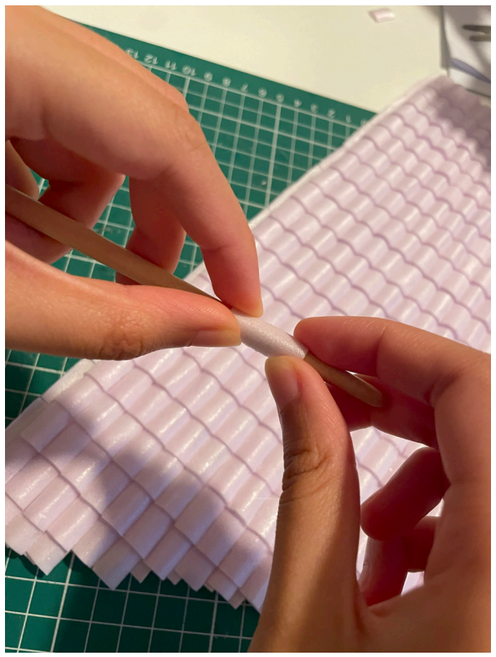
1. *Floor system: 100 mm heating screed, separating layer, 20 mm EPS thermal insulation, vapour barrier, screed (existing), 500 mm r. c. slab (existing), Fine Grandulated Sand, Course Gravel, Earth*
2. *Internal wall system: 16mm White Plaster Finish, 15mm Fire-Shield Gypsum Board, Vapour Barrier, 150mm Hemp Insulation between steel studs, 15mm Fire-Shield Gypsum Board*
3. *Flexible Sealant Mechanically fasten track for steel stud wall construction*
4. *PVC Manifold Drain, geotextile, gravel filler (larger diamater below and smaller above), intensive substrate, plant community*





RECLAIMED ROOF TILES
EXPOSING WEAR







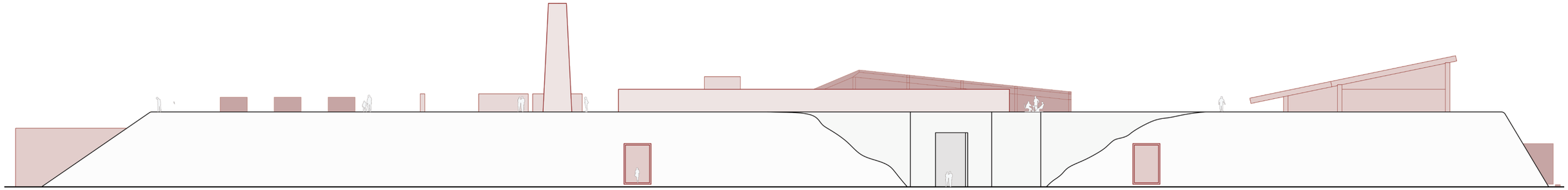
ROOF EXTENSION
TEXTURES OF ROOF





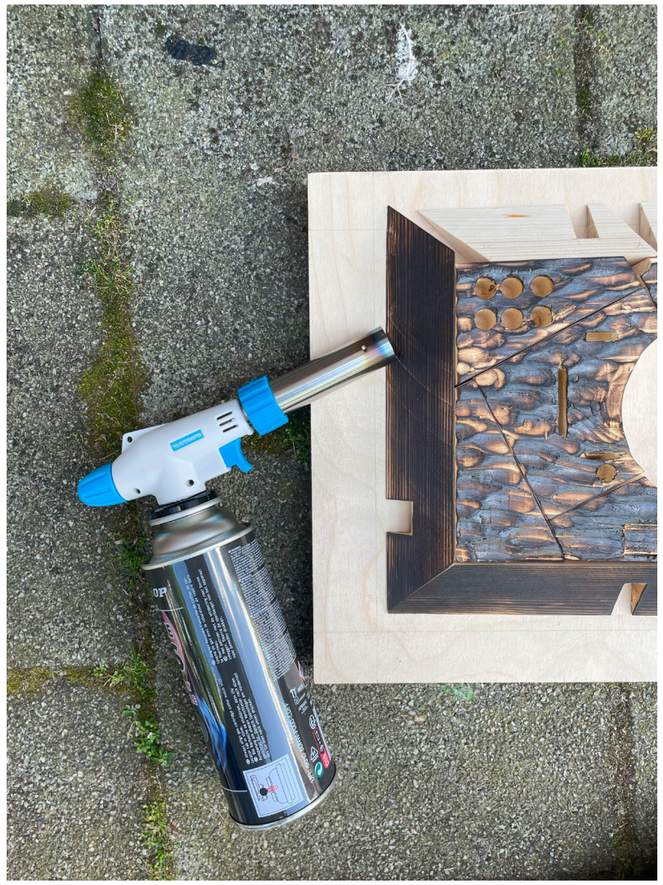


SOUTH ELEVATION
1:200





WEATHERING MATERIALS
EXPLORING PATINA AND INTENTIONAL AGING





WEATHERING MATERIALS

EXPLORING PATINA AND INTENTIONAL AGING

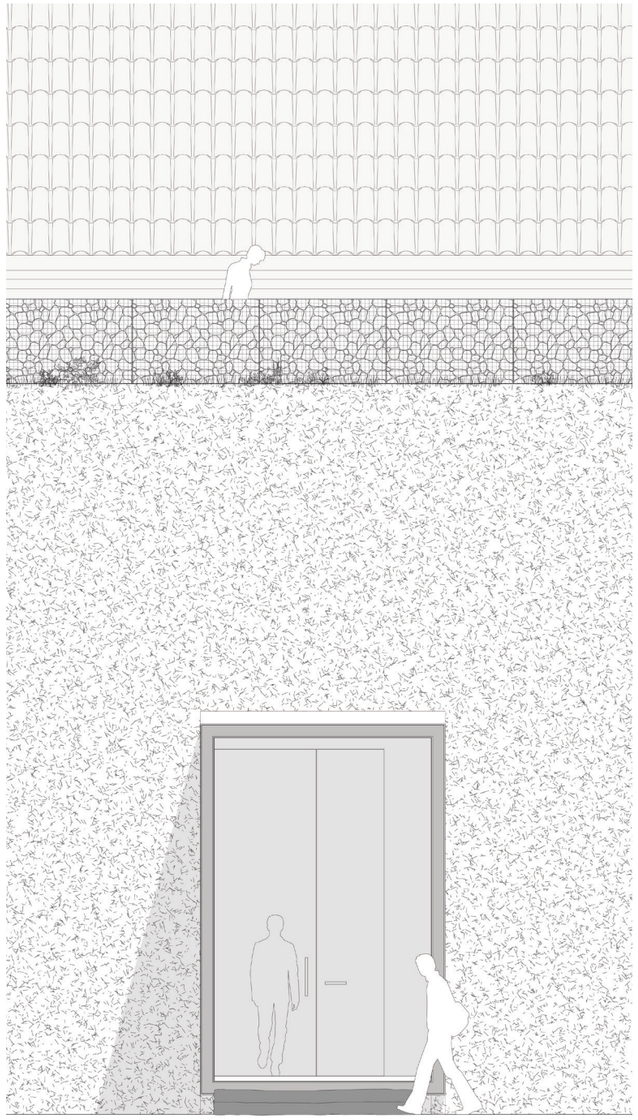


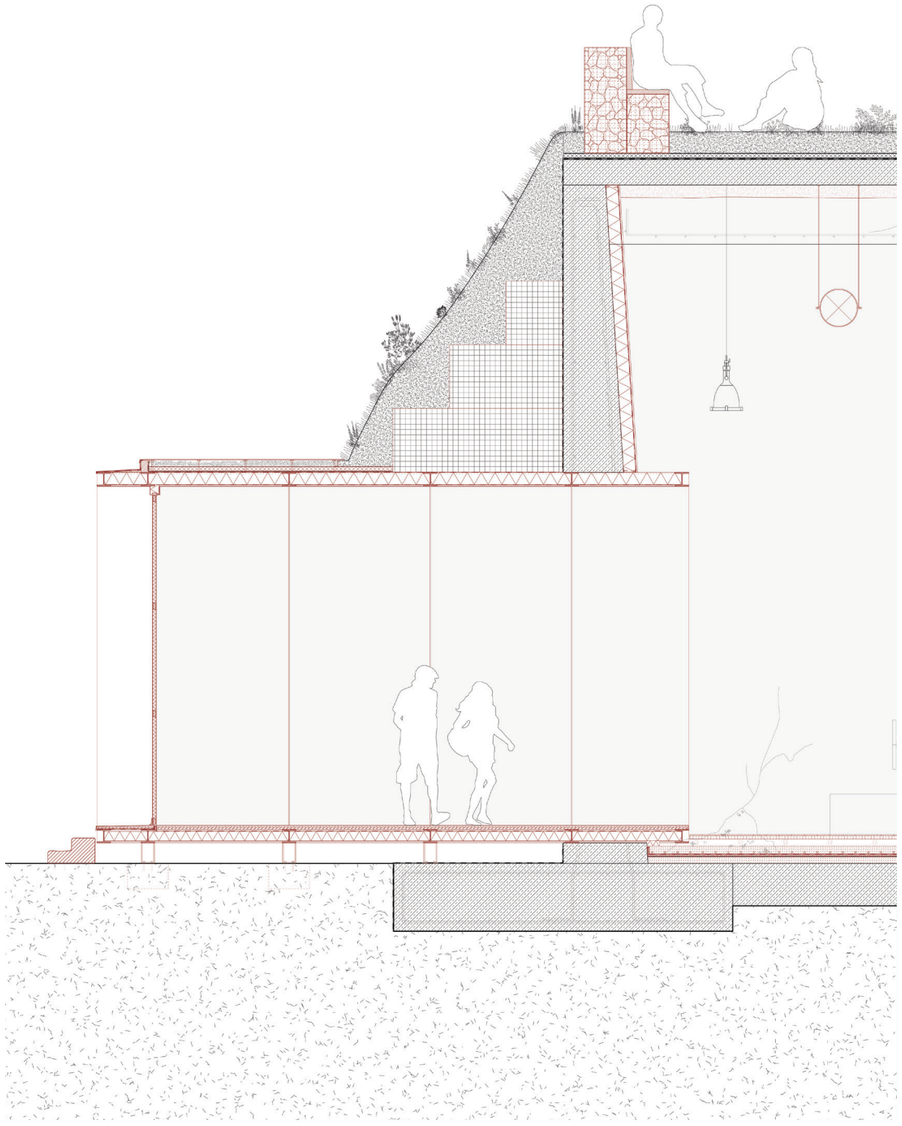


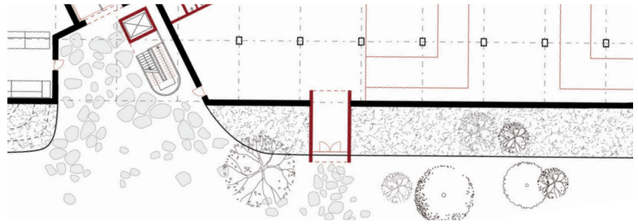


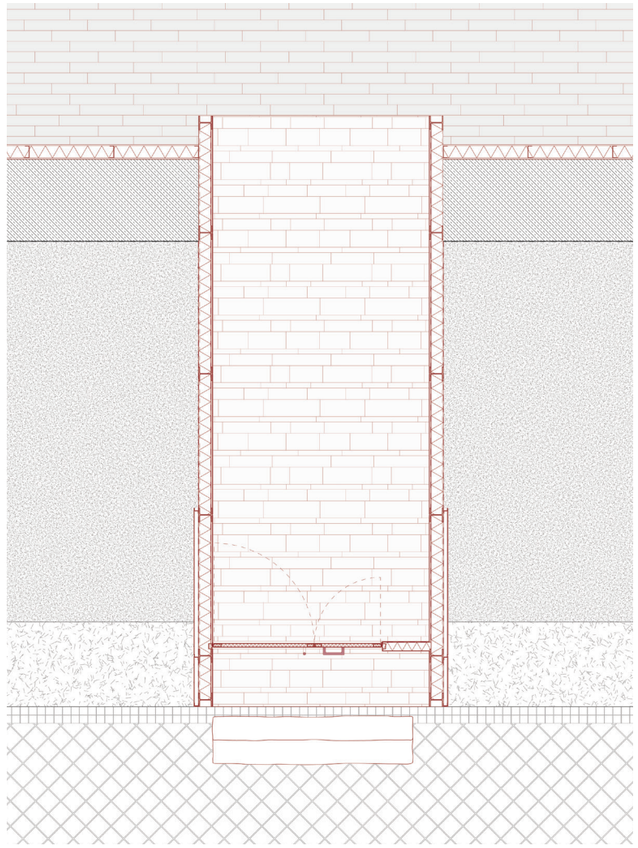
ENTRANCE CONDITION

PARTIAL SECTION 1:50



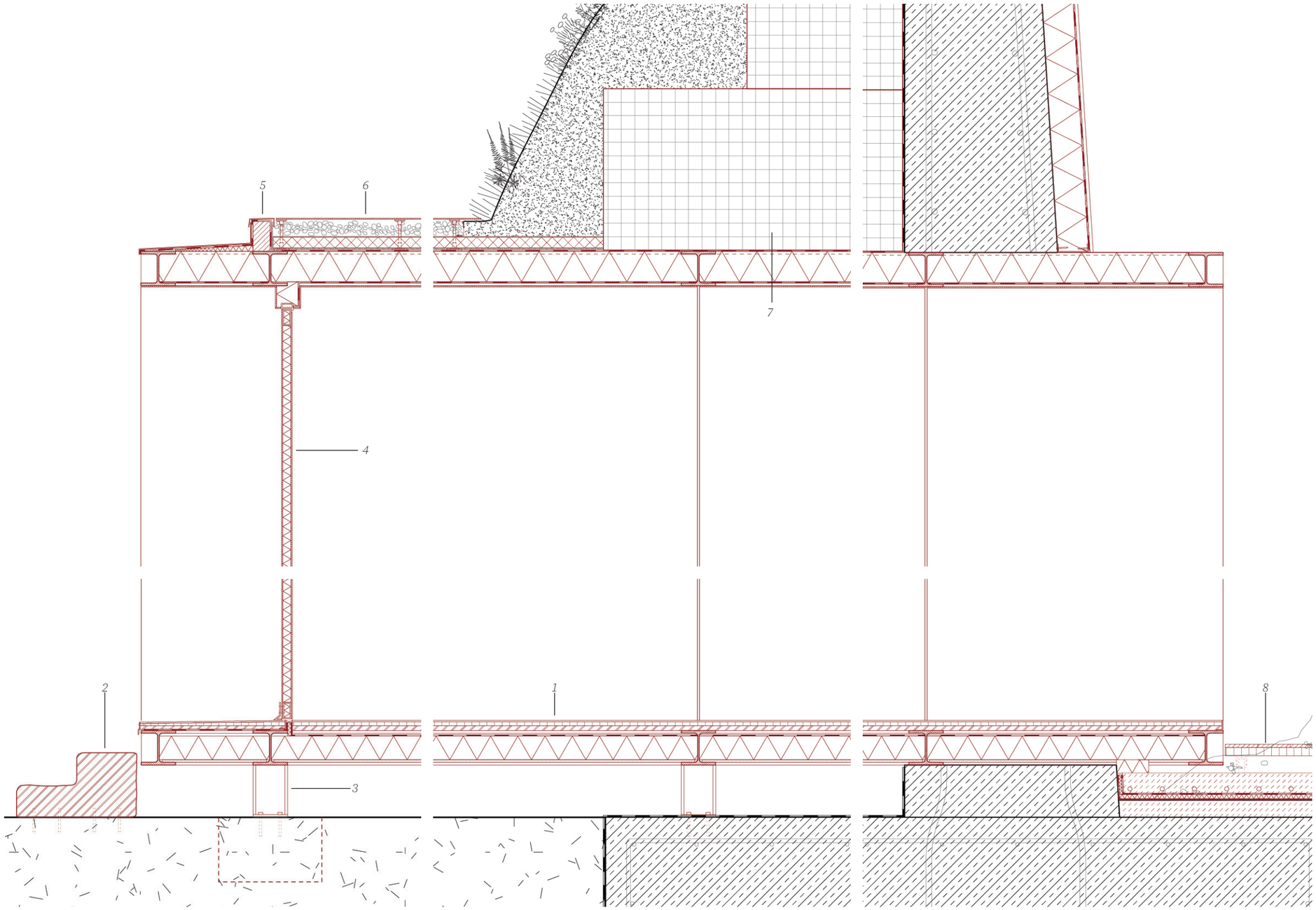






ENTRANCE DETAIL

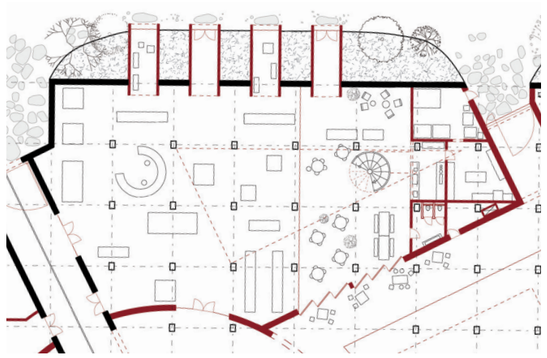
DETAIL 1:10



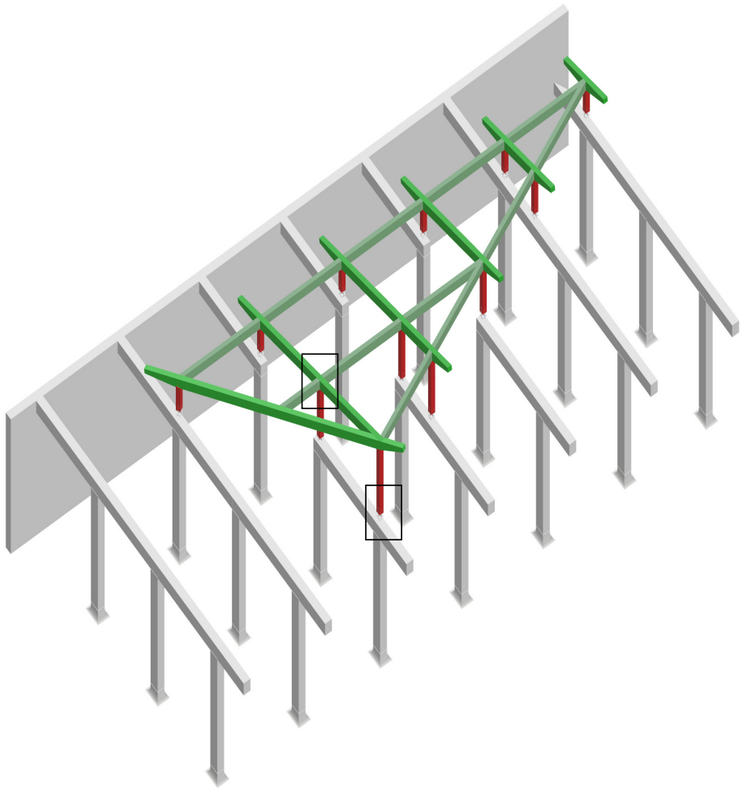
Entrance Detail 1:20

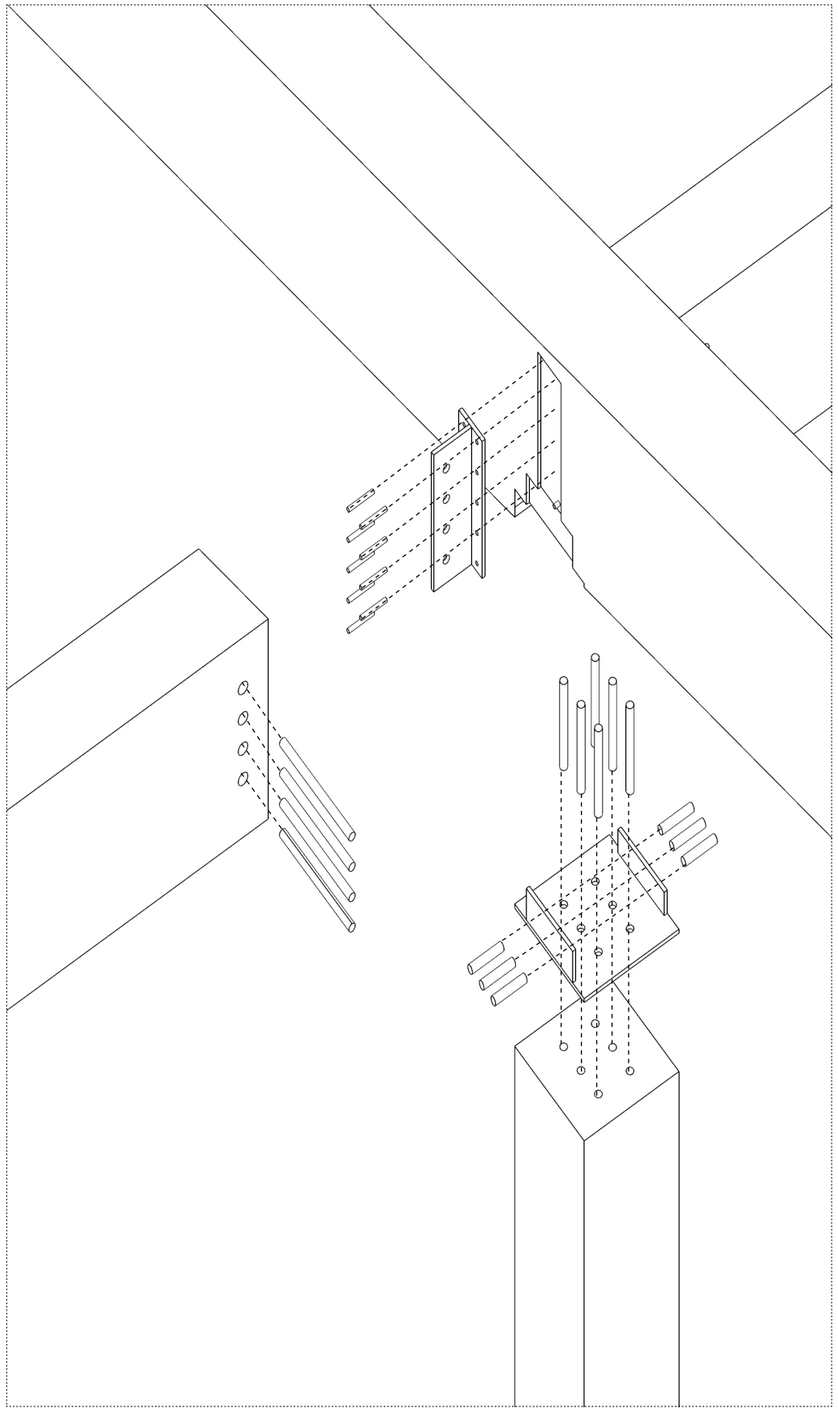
1. *Floor system: 6 mm Corten-steel sheeting flooring, 10mm impact-sound insulation, 20mm OSB,100 mm thermal insulation between steel I-beams, 12 mm damp-proof slab*
2. *detached granite entrance steps*
3. *Foundation: steel I-Column to concrete foundation*
4. *Hinge door: 6mm corten-steel sheet, inlaid 40mm mineral wool thermal insulation, 6mm corten-steel sheet*
5. *Roof edge: Parapet Capping, Sheet Metal Clip, Synthetic Waterproong, Insulation*
6. *Roof system: 6mm corten-steel sheeting, aluminium framing, raised floor pedestals, loose gravel, filter fleece; 50 mm drainage layer, Protection Layer, Roof Waterproofing, 100 mm expanded polyurethane thermal insulation between steel I-beams, vapour barrier, 6mm corten-steel sheet*
7. *geofoam retaining wall backfill*
8. *Interior floor system: 27mm silver fir strip floor, flooring sleepers, 38 mm particle board, 78 mm raised floor beam / post 100 mm heating screed, separating layer, 20 mm EPS thermal insulation, vapour barrier, screed (existing), 500 mm r. c. slab (existing), Fine Grandulated Sand, Course Gravel, Earth*

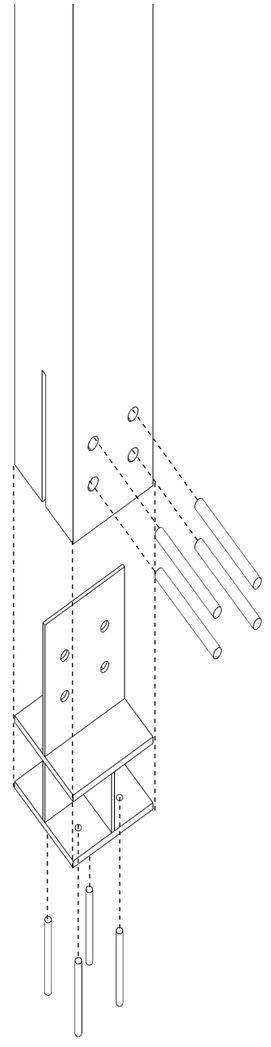
CAFE/STORE
PARTIAL SECTION 1:50



STRUCTURAL DESIGN
TIMBER & STEEL CONNECTIONS



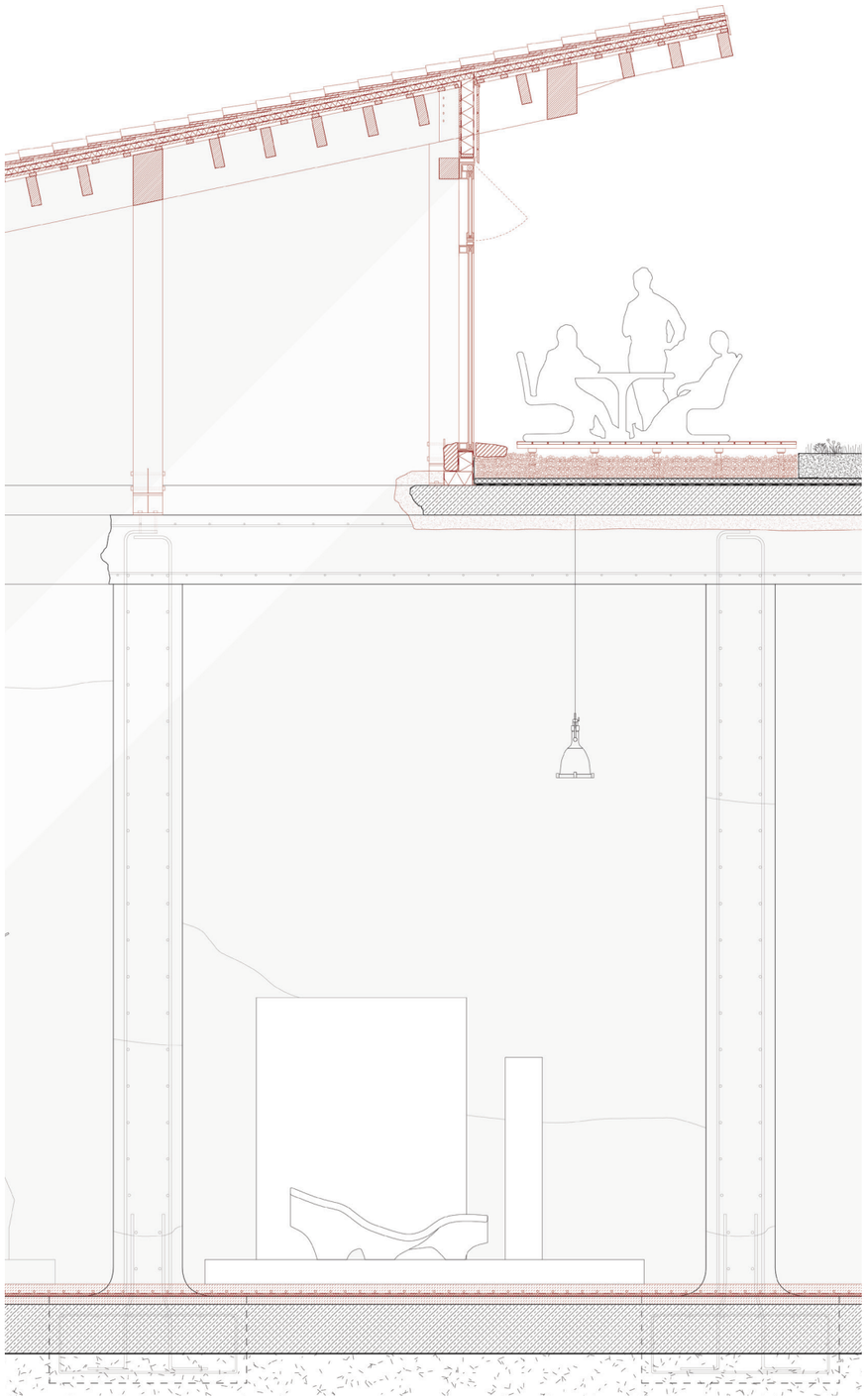


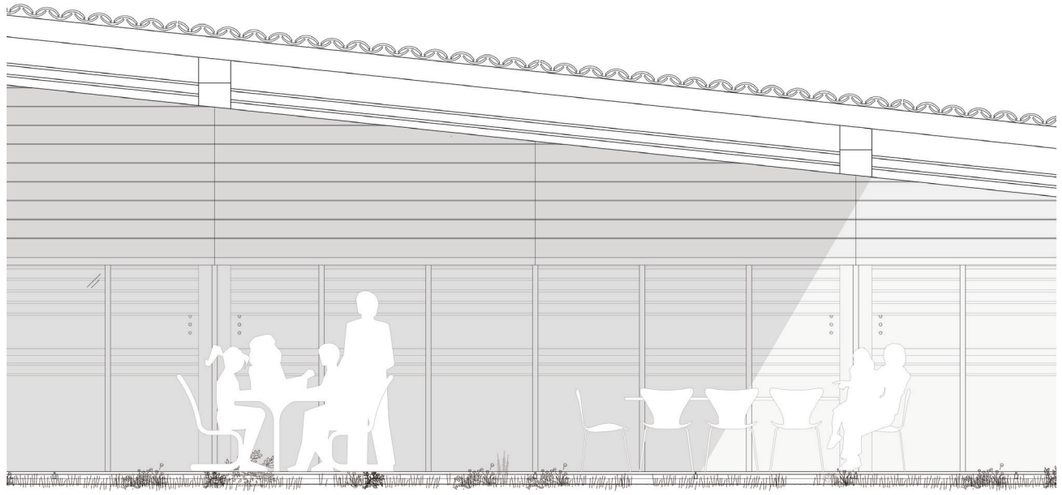


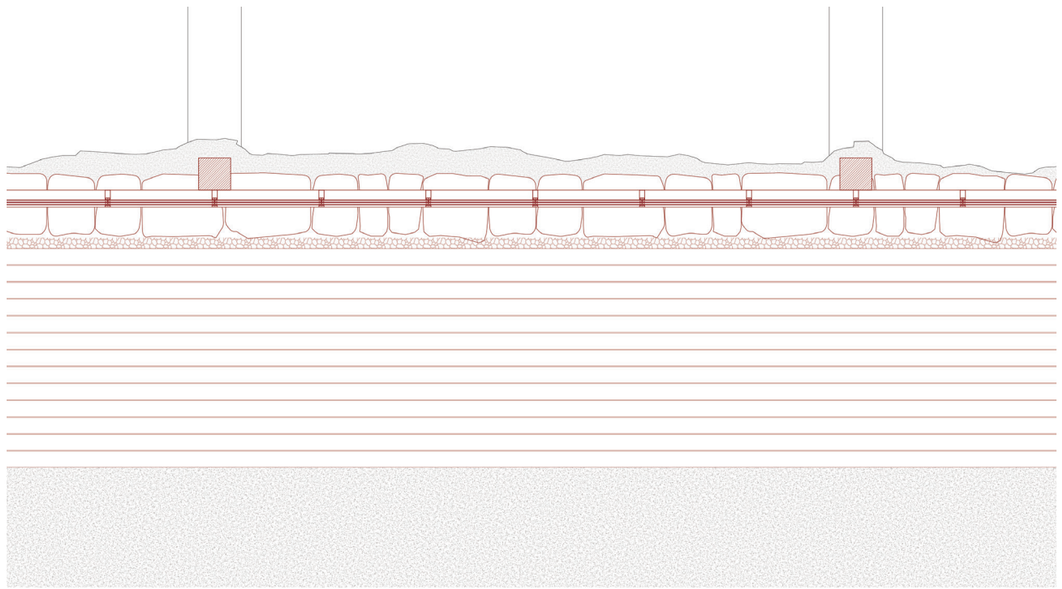
A CYCLICAL SYSTEM
PARTITION WALL AS MICROCOSM

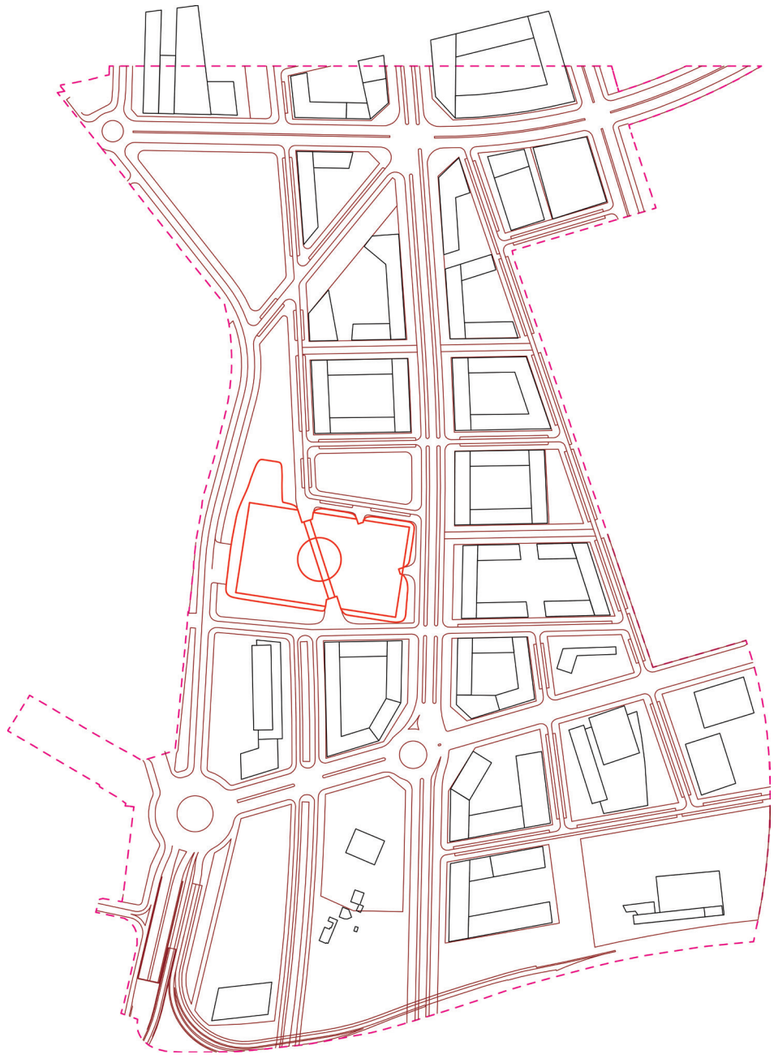


CAFE/STORE
PARTIAL SECTION 1:50







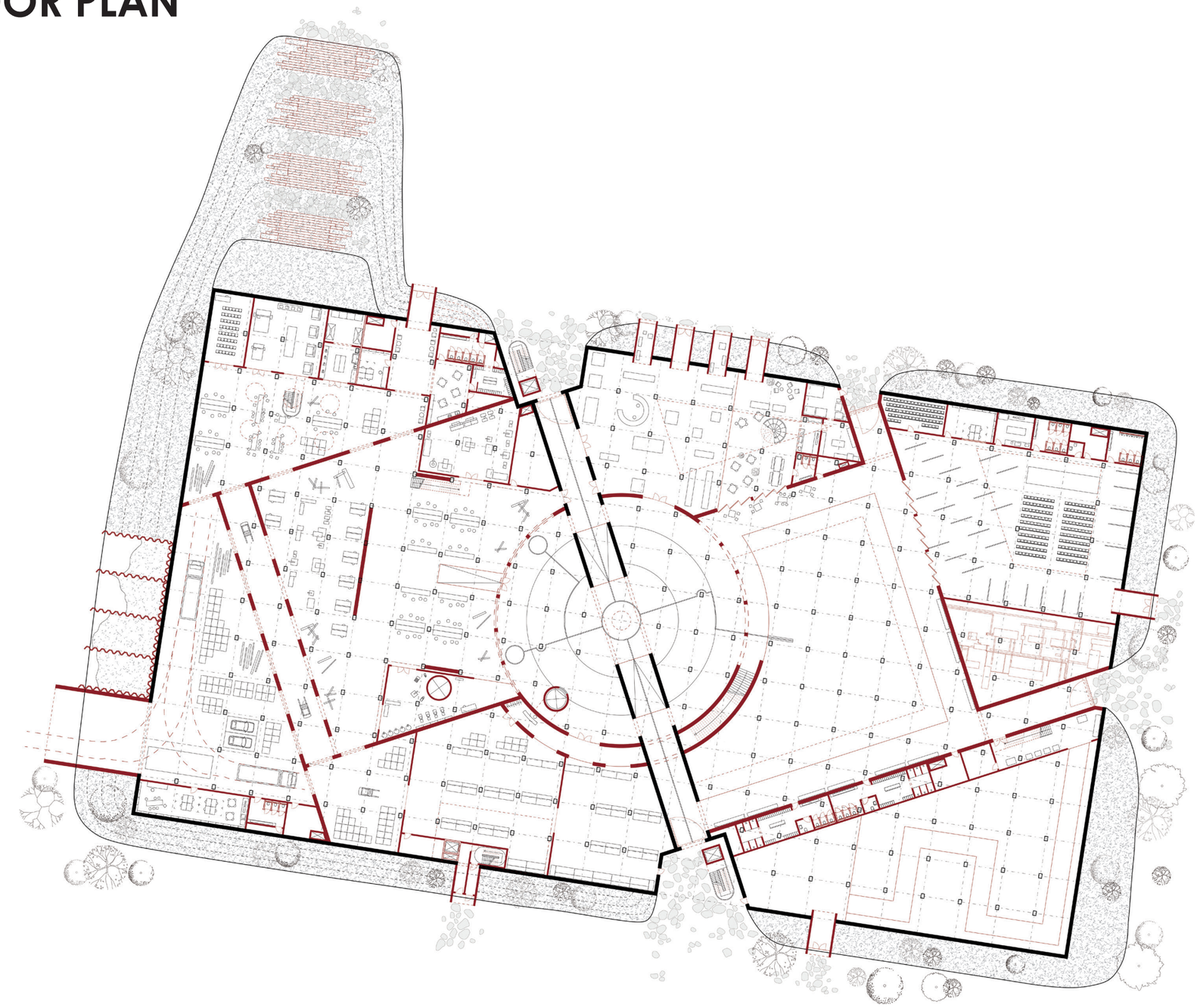


PHASE 4

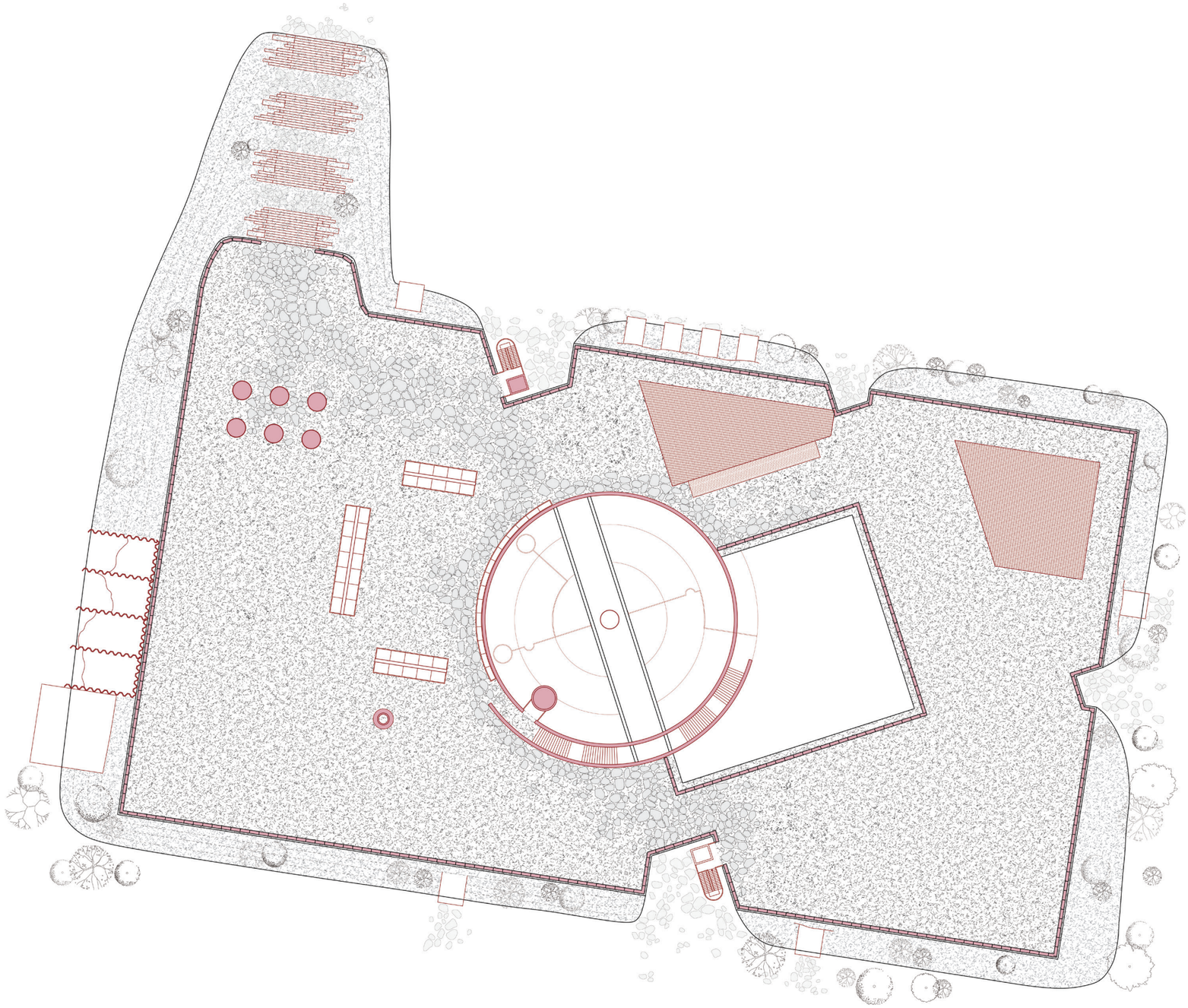
beyond

GROUND FLOOR PLAN

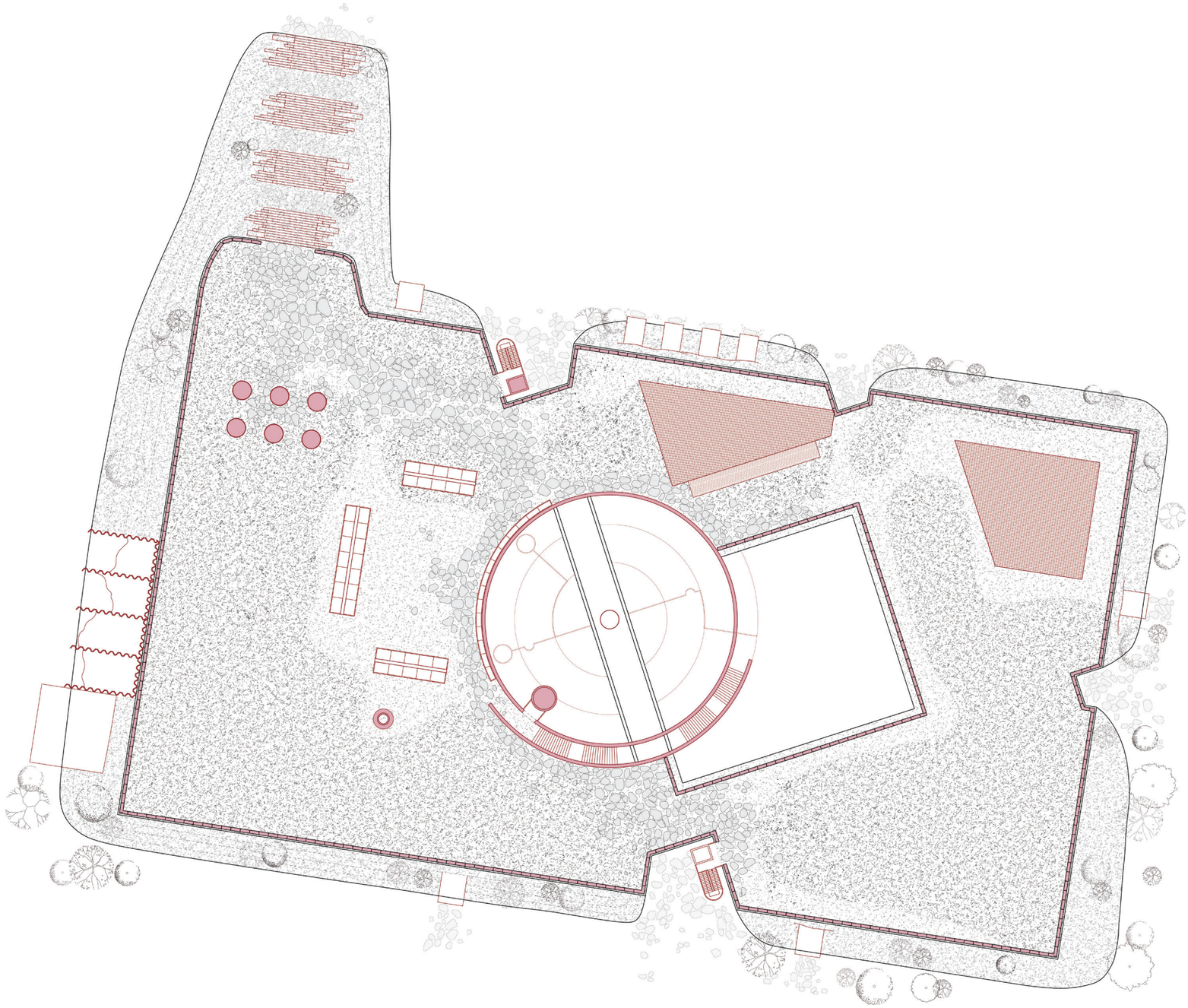
PHASE 3



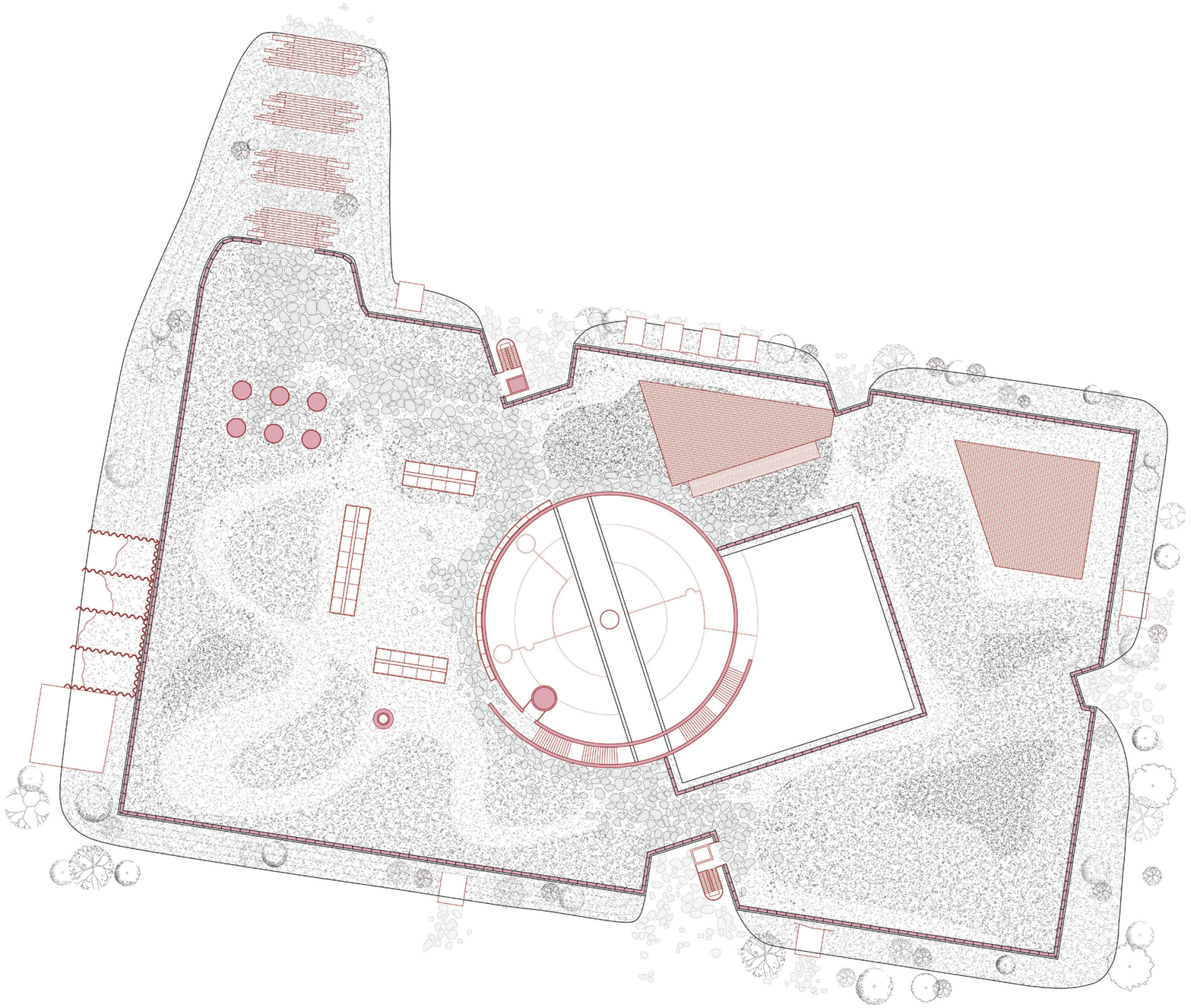
ROOF PLAN
PHASE 4



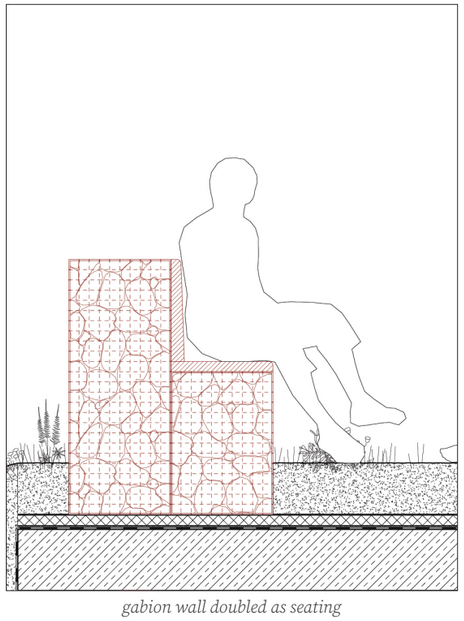
ROOF PLAN
PHASE 4



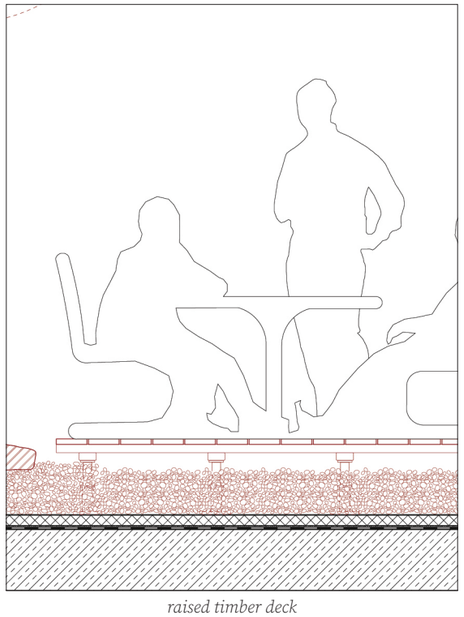
ROOF PLAN
PHASE 4



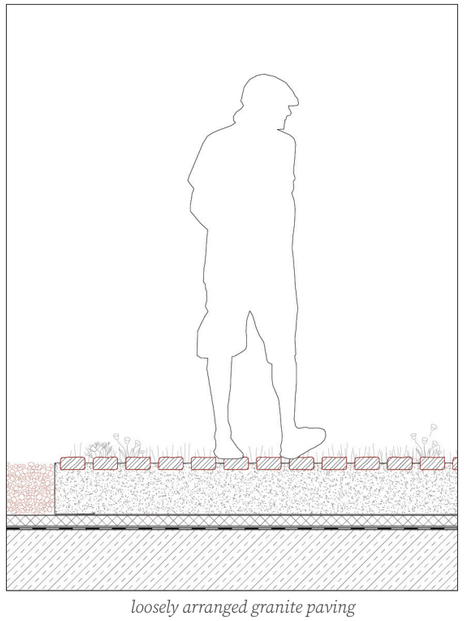
ROOF PLAN
PHASE 4



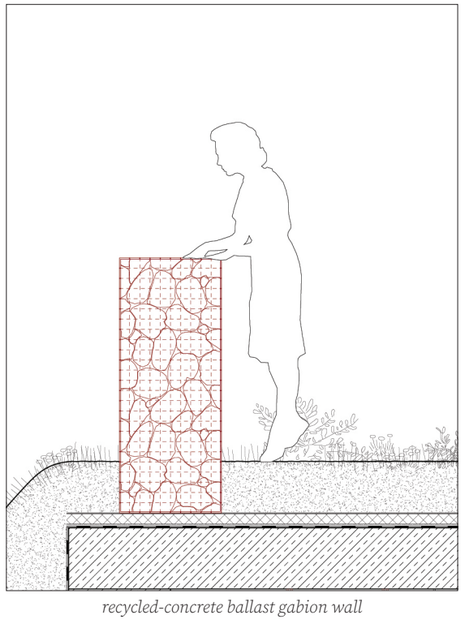
gabion wall doubled as seating



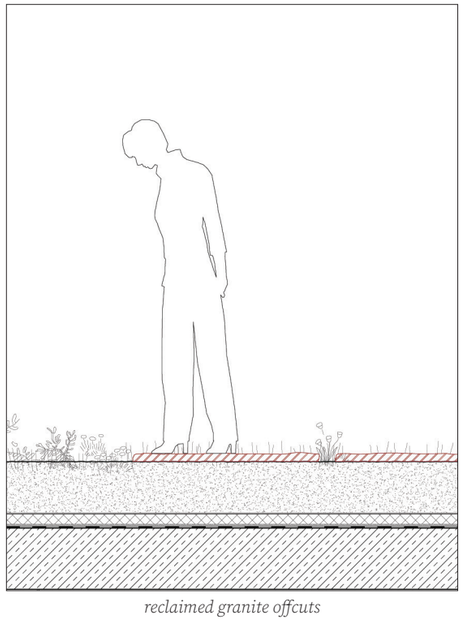
raised timber deck



loosely arranged granite paving

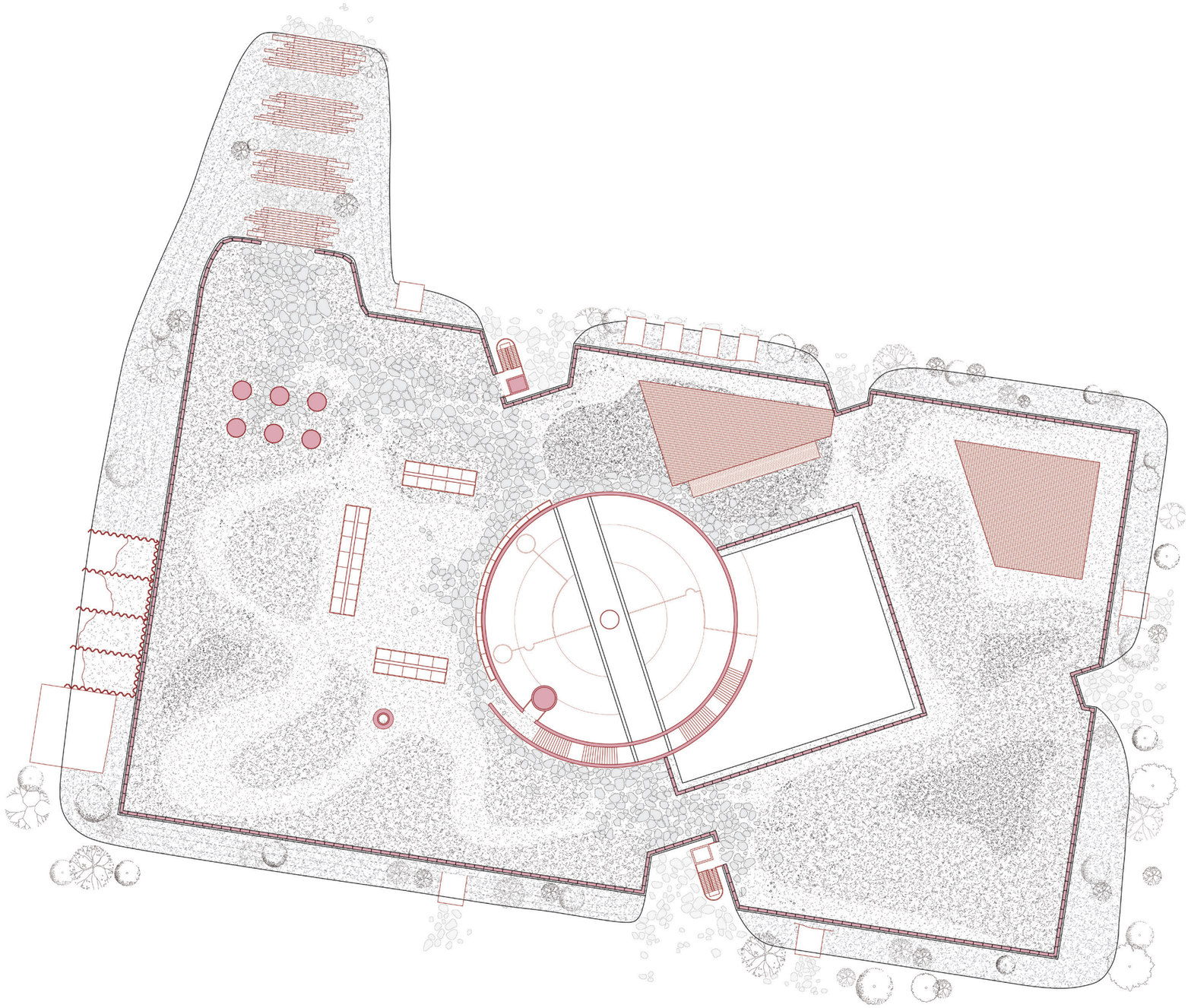


recycled-concrete ballast gabion wall

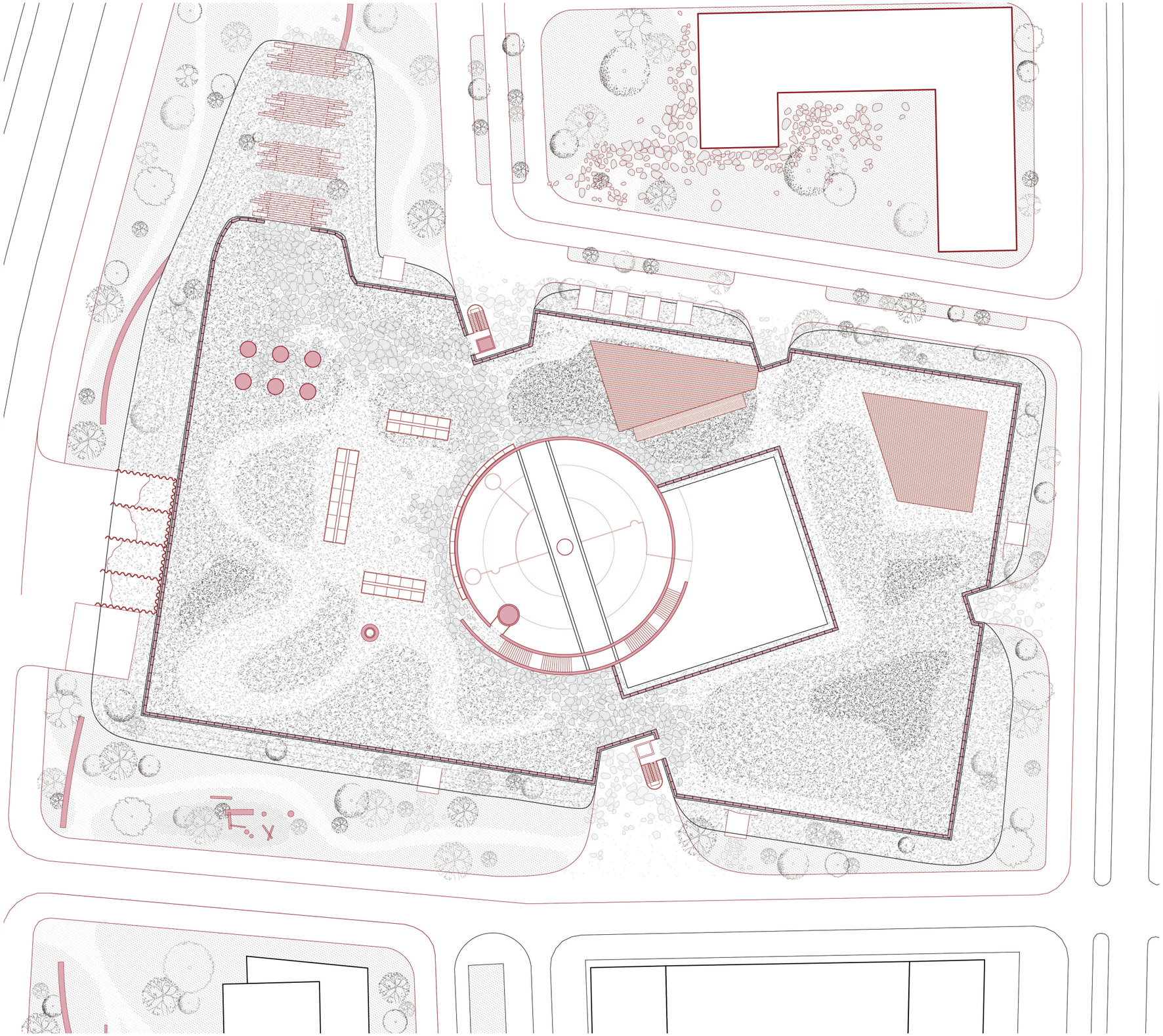


reclaimed granite offcuts

ROOF PLAN
PHASE 4



ROOF PLAN
PHASE 4

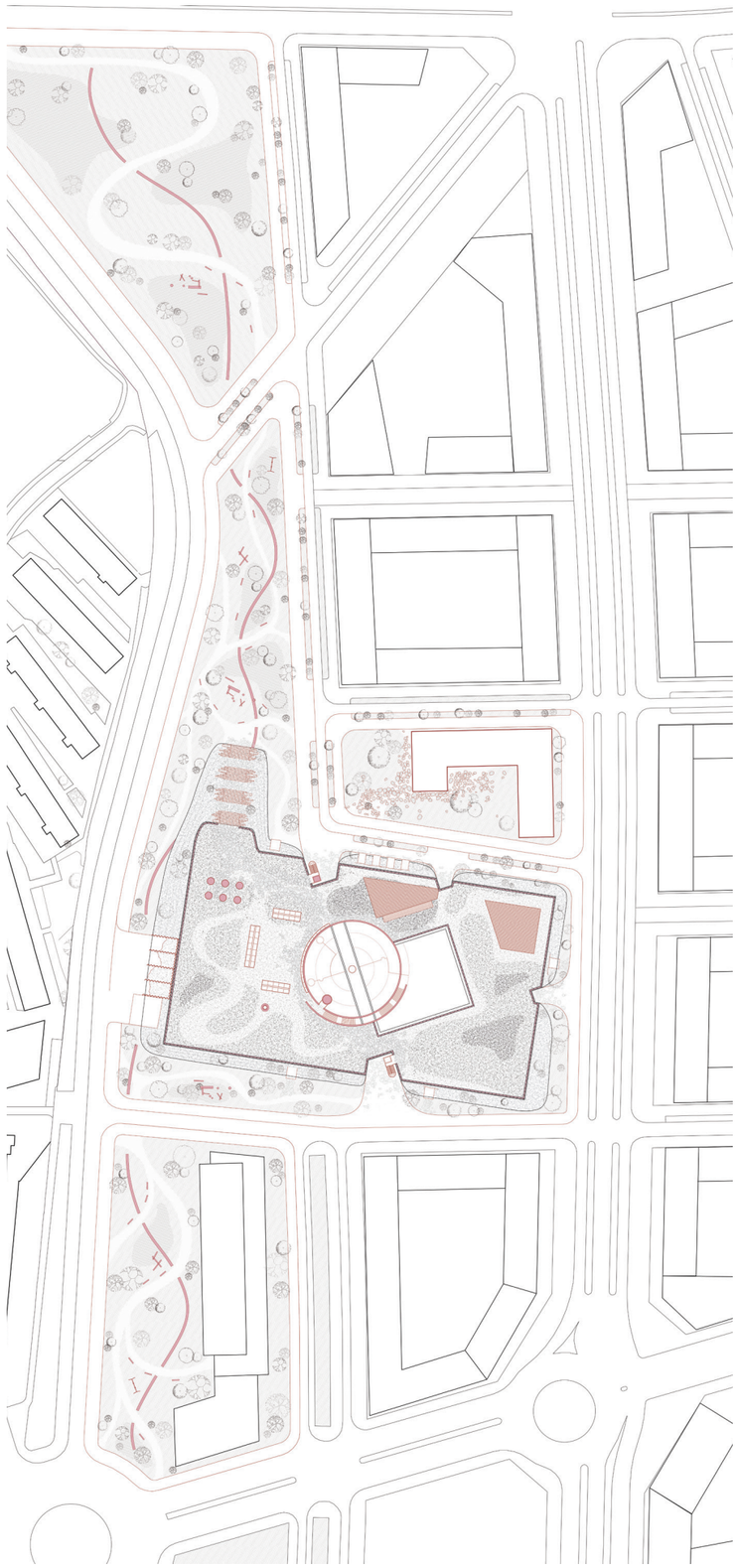


ROOF PLAN
PHASE 4

*In embracing an a**rchitectural expression of aging at various scales**, that begins with craftsmen, to crafters of various specialties.*

*which **proliferates into everyday ritual** and culture*

*Synthesizing various knowledge domains towards a collective niche and network, **an urban commons of skilled crafters in material wear***




THANK YOU