

GRADUATION THESIS: *THE APIARIUM*

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CHAIR OF

METHODS OF ANALYSIS & IMAGINATION

THE
APIARIUM
GARDEN

HOW *to* LIVE WITH NATURE

LINDA KRONMÜLLER

PLAN DE NEIGHBORHOOD BELGRADE

Ville forte avec un Bon Chateau, de la Province de Serbie Située au Conflant du Danube et de la Save Sur une Coline Elle Fut Prise Sur les Hongrois Par le Sultan Soliman 2^e Empereur des Turcs, en 1521 les Allemands S'en Rendirent Maistre à Vive Force en 1688. et Elle Fut Repris Par les Turcs en 1690, qui l'ont Garde jusques a Present Elle est a 7^{1/2} Lieues au dessous de Viennes

1 KILOMETER ~ 1 THOUSAND METERS

10³ meters



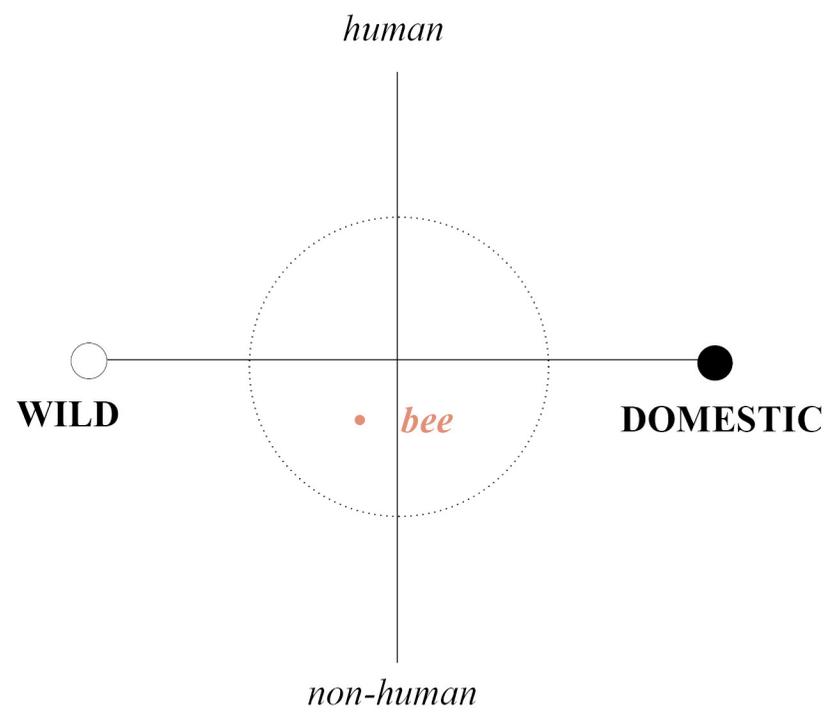
DANUBE

SAVE

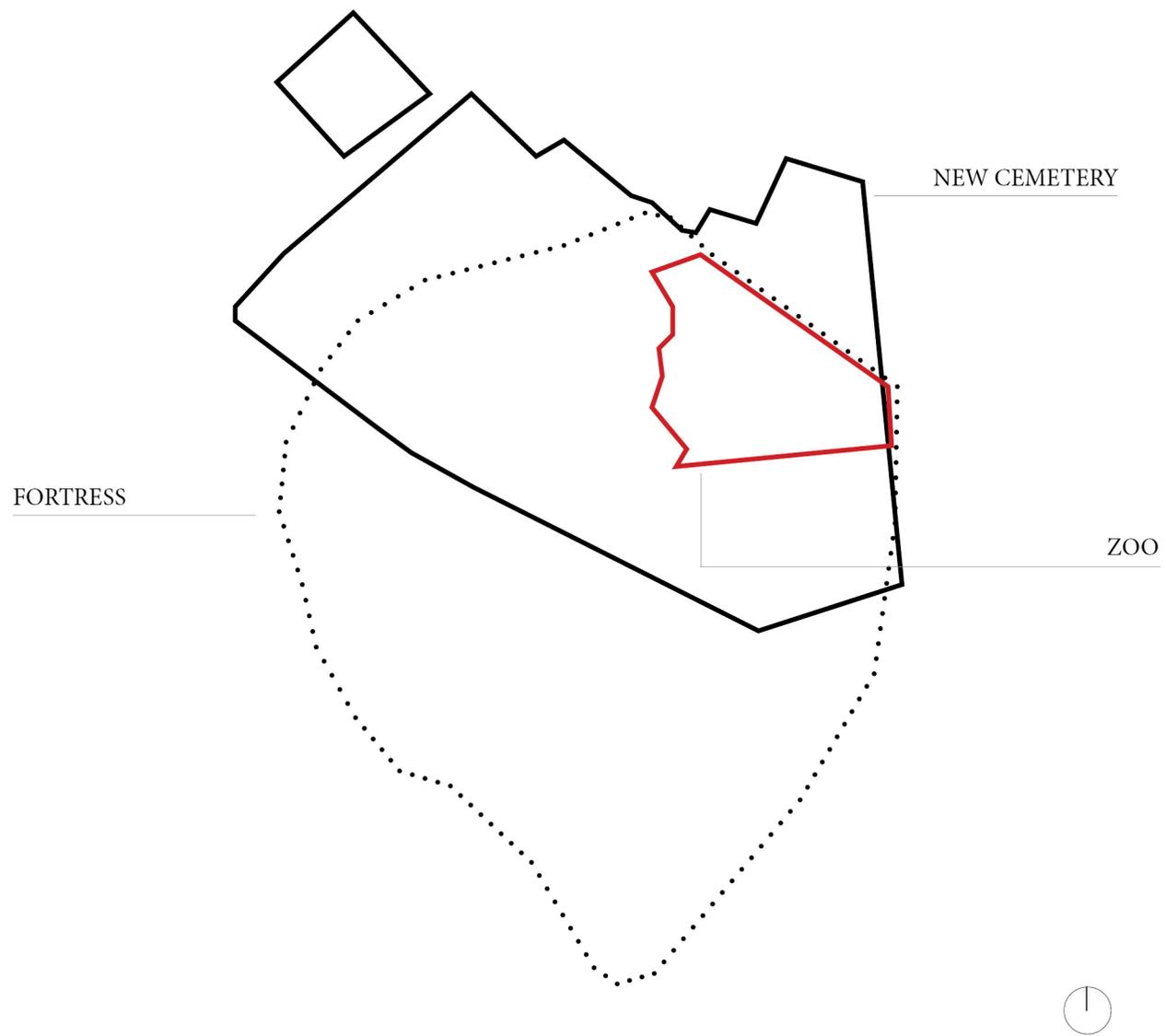
BELGRADE

'Historic map (ca. 1600)





MULTI SCALE: TOWARDS A CO-HABITION IN BALANCE
A tool for architects to design for a multi species encounter?



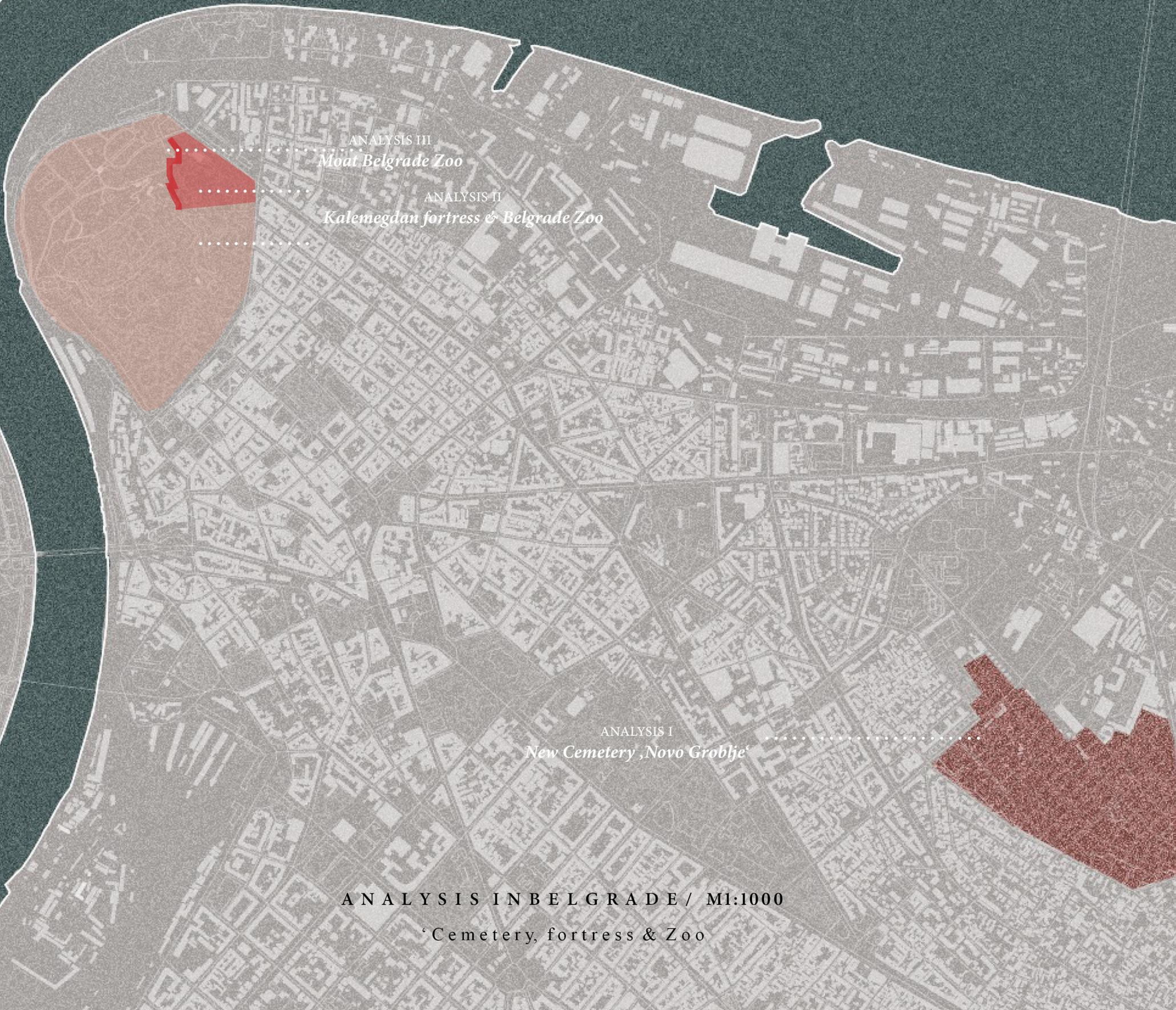
R E V I E W

‘Cemetery, fortress & Zoo

DOWNTON

10 KILOMETERS ~ 6 MILES

10⁴ meters



ANALYSIS III
Moat Belgrade Zoo

ANALYSIS II
Kalemegdan fortress & Belgrade Zoo

ANALYSIS I
New Cemetery, Novo Groblje

ANALYSIS IN BELGRADE / M1:1000
'Cemetery, fortress & Zoo



KALEMEGDAN FORTRESS / ZOO

‘The Garden of Good Hope’

PART ONE

Animal Encounter

FOR WHOM?

Apiarium

01

Animal Encounter

02

Scale

03

Site

04

9 sizes of scale

05

Manifesto

Apiarium, the

(Pcelinjak)

(/APIÁRIUM/ I Subject (lat.))

An Apiary (also known as a bee yard) is a location (initially: house) where beehives of honey bees are kept. Apiaries come in many sizes and can be rural or urban depending on the honey production operation. Furthermore, an apiary may refer to a hobbyist's hives or those used for commercial or educational usage.



EXPLANATION

Apiarium

PART TWO

Scale

How?

Downton_10⁴

Neighborhood_10³

Park_10²

Artifacts_10¹

Arm_10⁰

Hand_10⁻¹

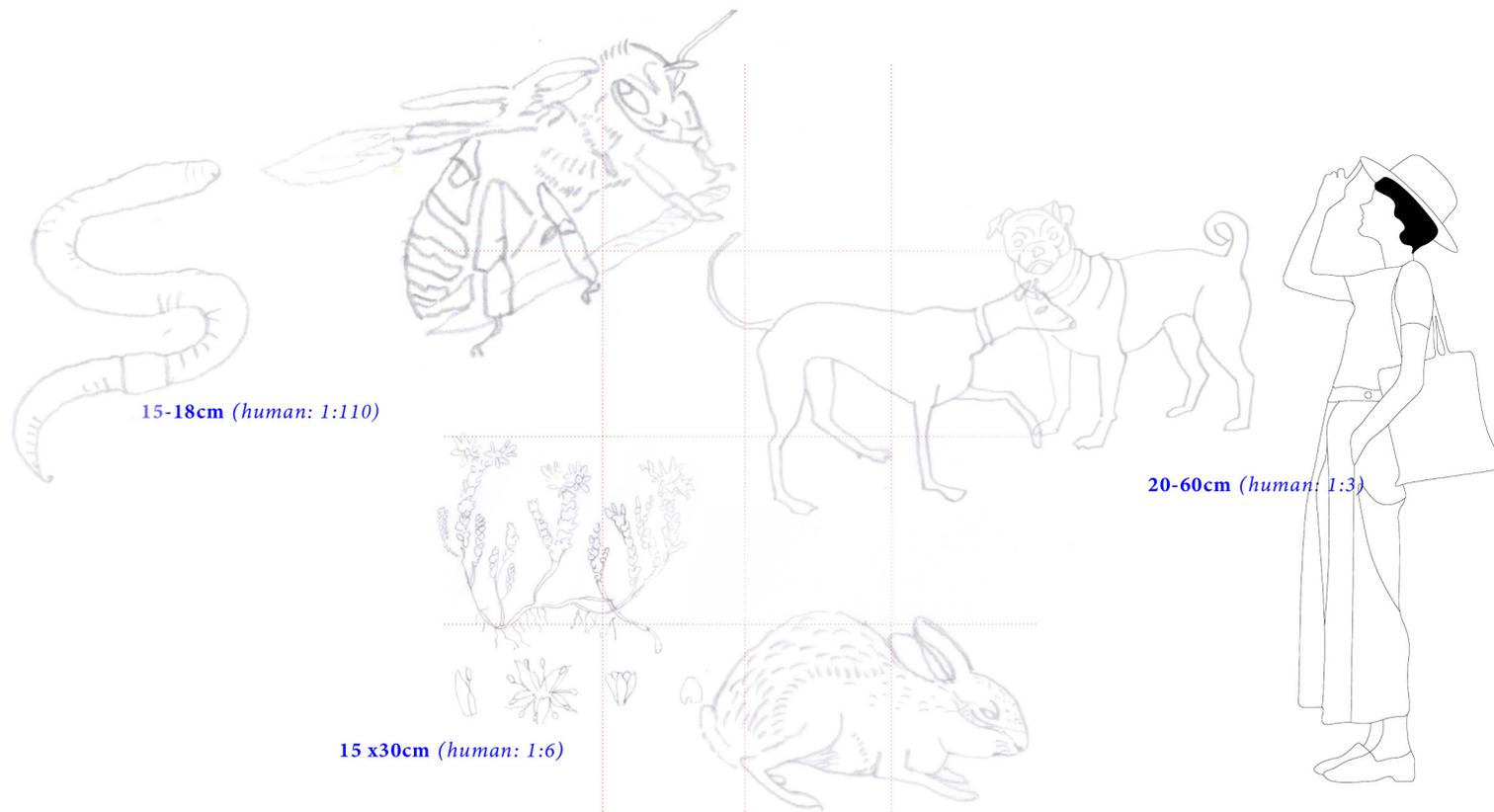
Thumbnail_10⁻²

Edge of vision_10⁻³

Microscope_10⁻⁴

1. Principle: 10 is multiplied by itself, the exponent tells how many times. The negative exponent means a division by 10 a certain times. For example:
 - $10 \times 10 = 10^2$ (100); and $10 \times 10 \times 10 = 10^3$ (1000, one thousand).
 - $1^0 = 1$; and $10^{-1} = 1/10$ (0.1, one tenth).

2. Rules: One meter = 1 arm's length.
The (start-) image is one meter wide and the starting point for the linear way along the scale. The factor tens brings a change to both, the size of a step and the viewpoints on this journey.

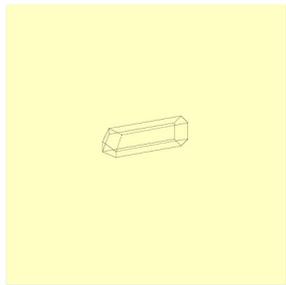


Mason bee (*Osmia Cornuta*, 15mm) / human (170cm) / Dog (50cm) / Sedum-Plant (5cm)

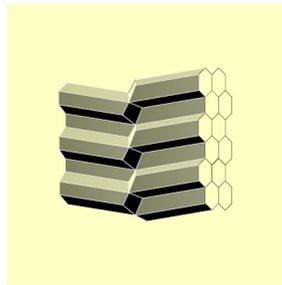
MULTI-SPECIES DESIGN- SCALE FIGURES

Flora, Fauna & Human

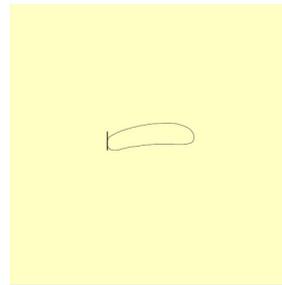
FROM LARV TO SWARM + NATURAL ENEMIES



A



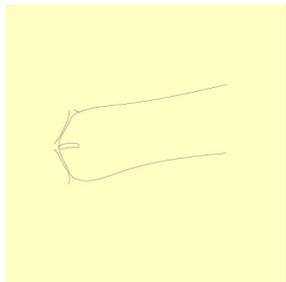
B



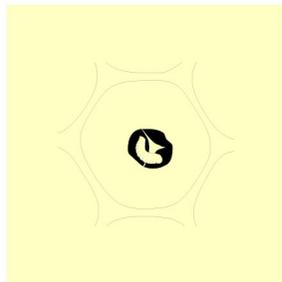
C



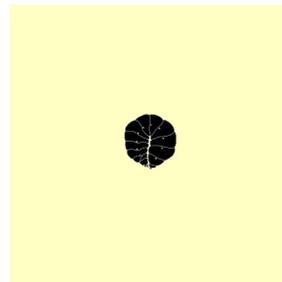
C



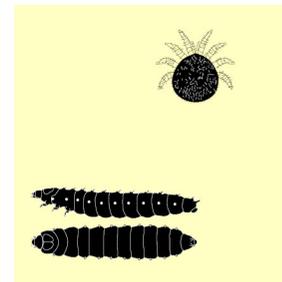
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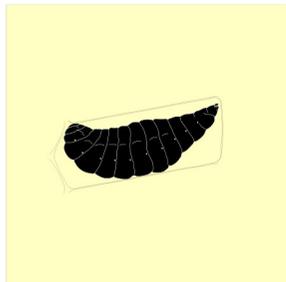
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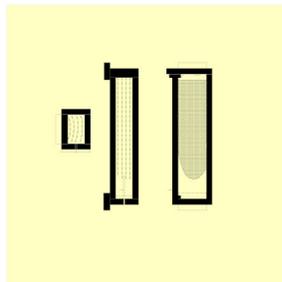
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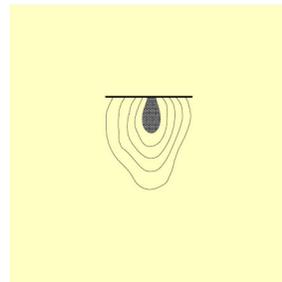
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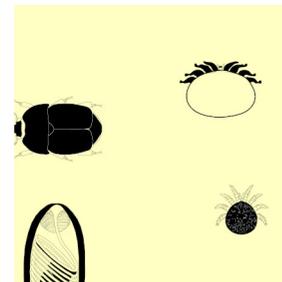
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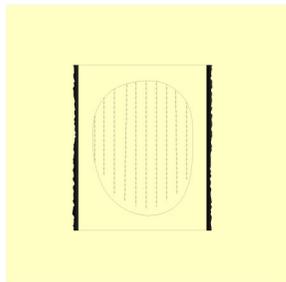
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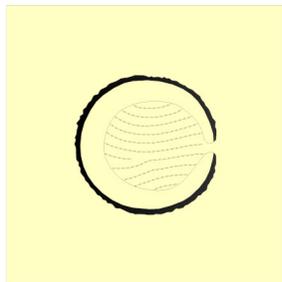
I



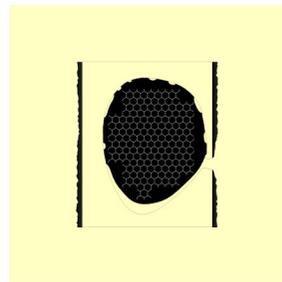
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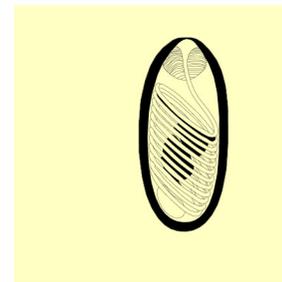
A



B



C



C

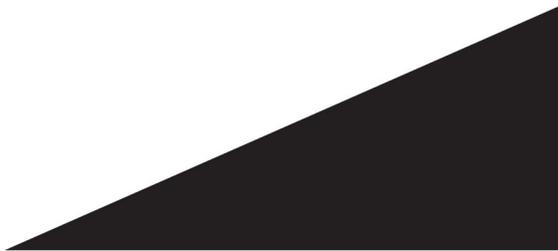
HONEYBEE
Cycle of life/year

(BASIC-) ARCHITECTONIC ELEMENTS

SHELF (collecting)



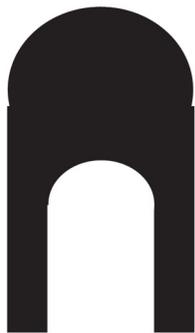
STAIR (passing)



SIT (resting)



DOOR (transferring)



WALL (protecting)



TABLE (providing)



SITE

Present (designed) elements

PART THREE

Site

What?



KALEMEGDAN FORTRESS

‘Existing Situation’

Past

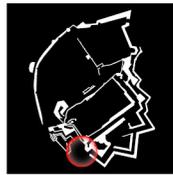


Enclosure 'defense'

Present



Concerts and festivals



Location



Abstraction

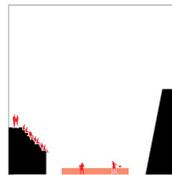
Events



Basketball and tennis



Location

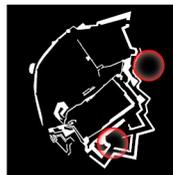


Abstraction

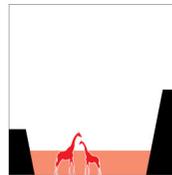
Sports



Zoo and dinosaur park



Location

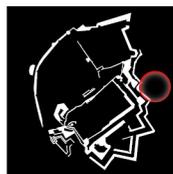


Abstraction

Attractions



Parking space

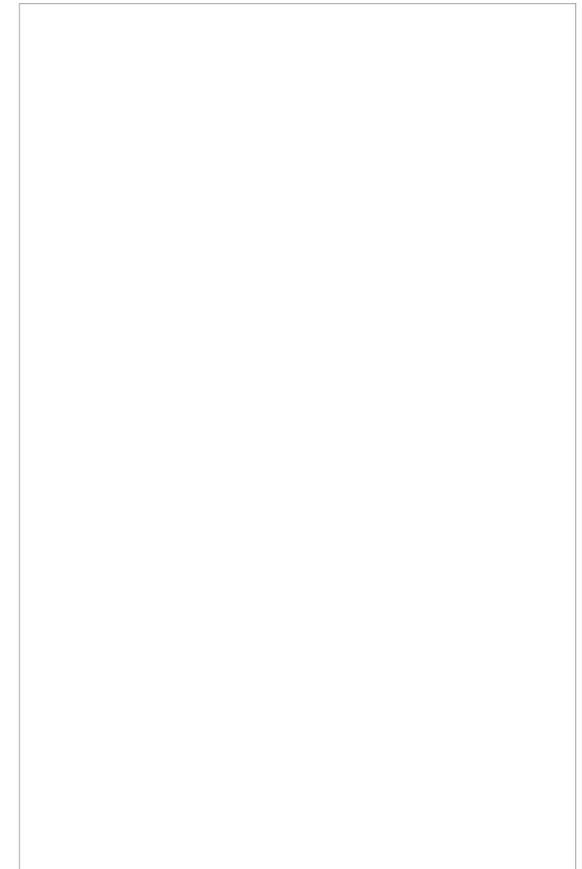


Location



Abstraction

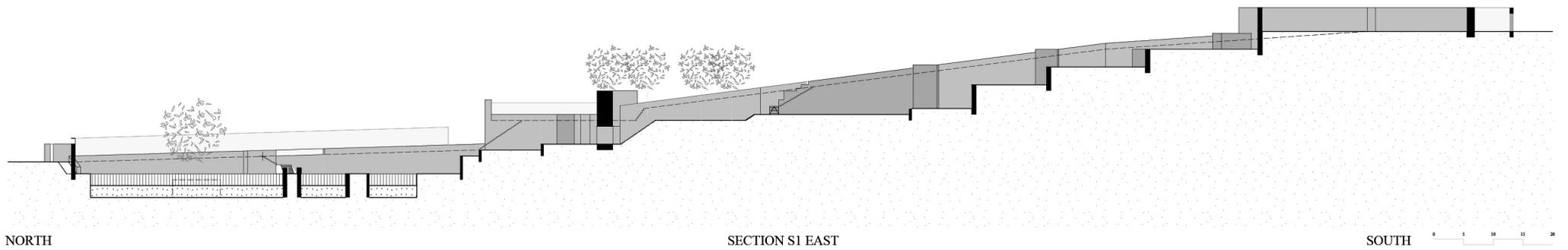
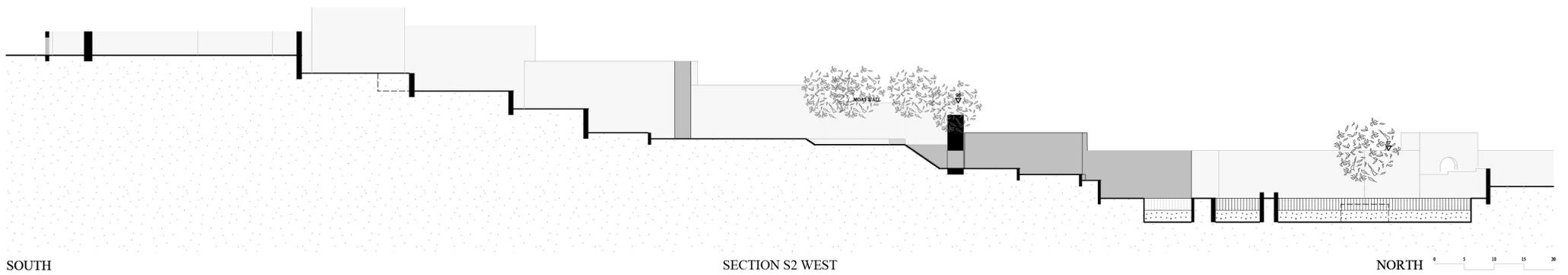
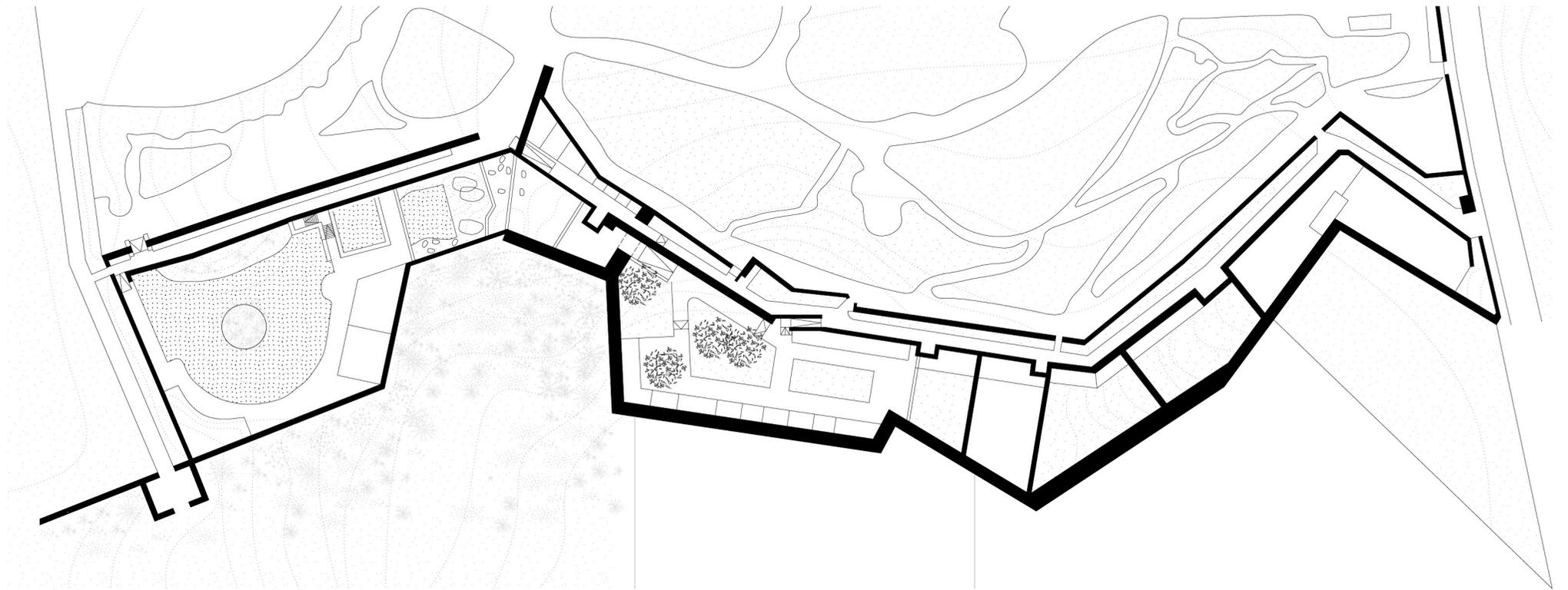
Infrastructure



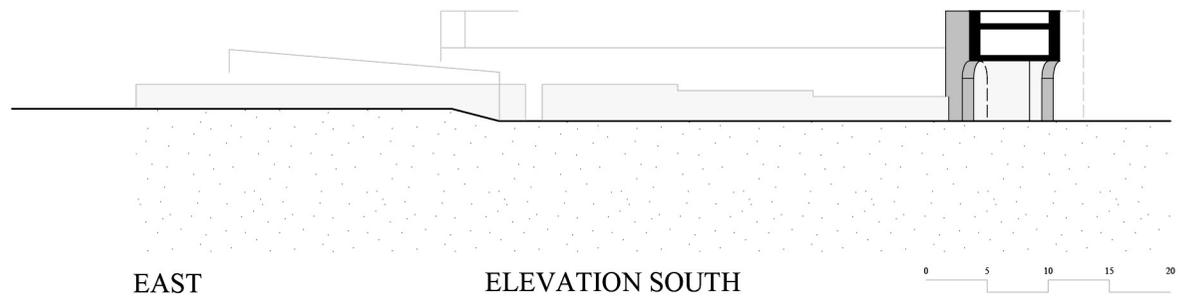
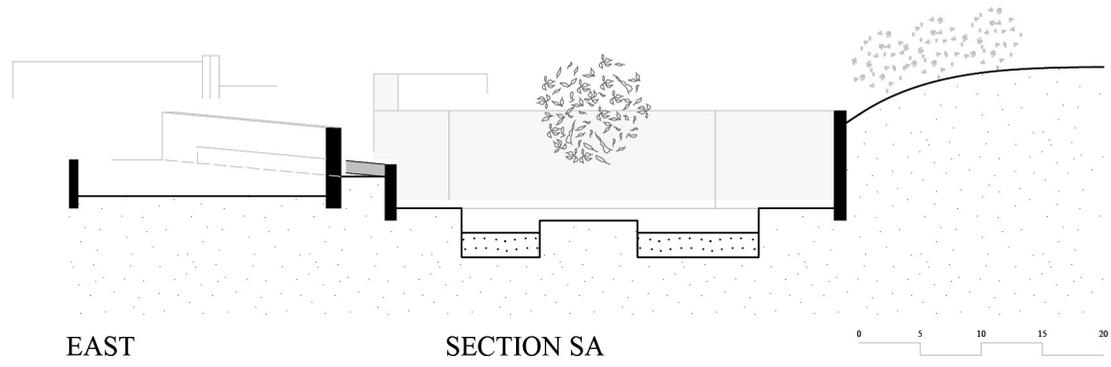
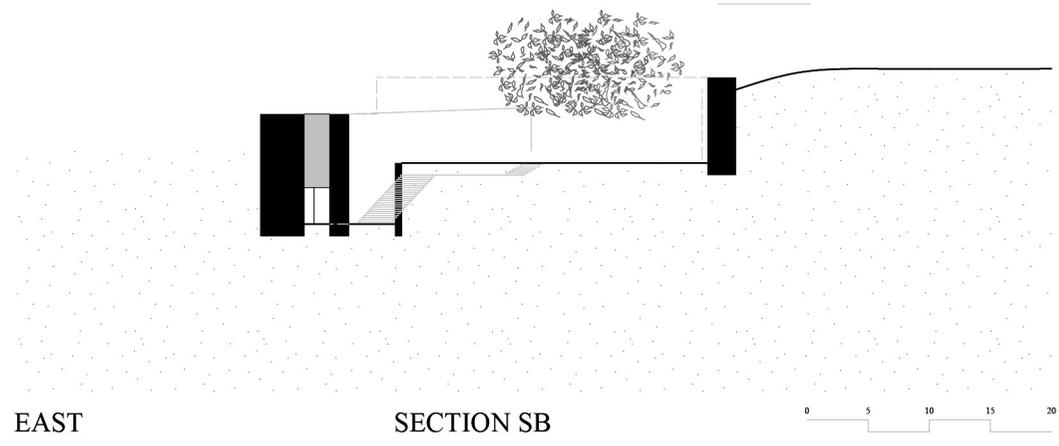
Enable 'Unesco-heritage'

KALEMEGDAN FORTRESS

'Past, presence & future'



MOAT IN THE KALEMEGDAN FORTRESS
 'Existing Situation'

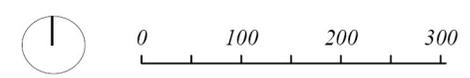


MOAT IN THE KALEMEGDAN FORTRESS
 'Existing Situation'



Infrastructure: Fortress (red line)
Planning area (grey filling)

KALEMEGDAN FORTRESS
 'Existing Situation'





ZOO IN THE KALEMEGDAN FORTRESS

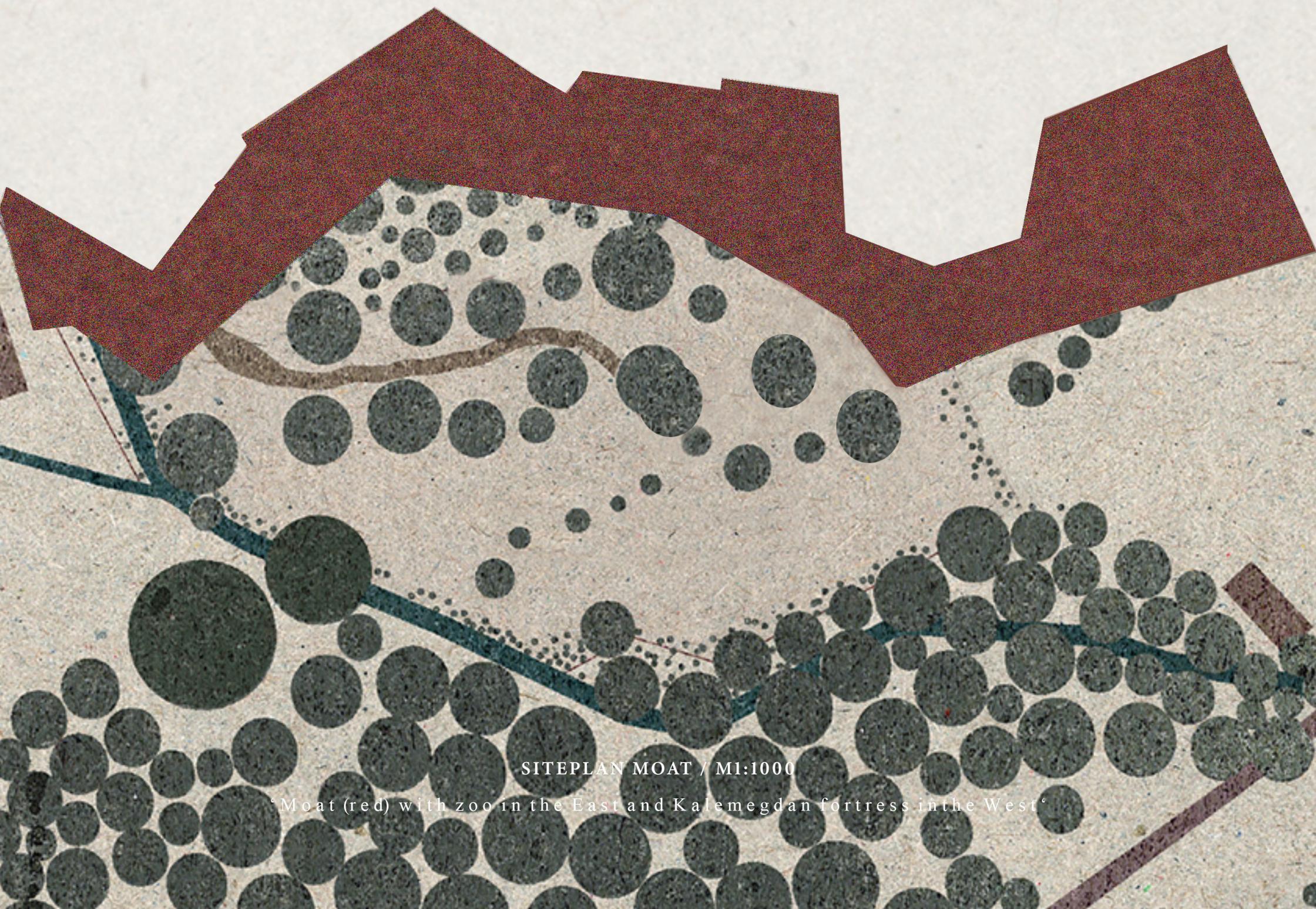
‘Existing Situation’



NEIGHBORHOOD

1 KILOMETER ~ 1 THOUSAND METERS

10³ meters



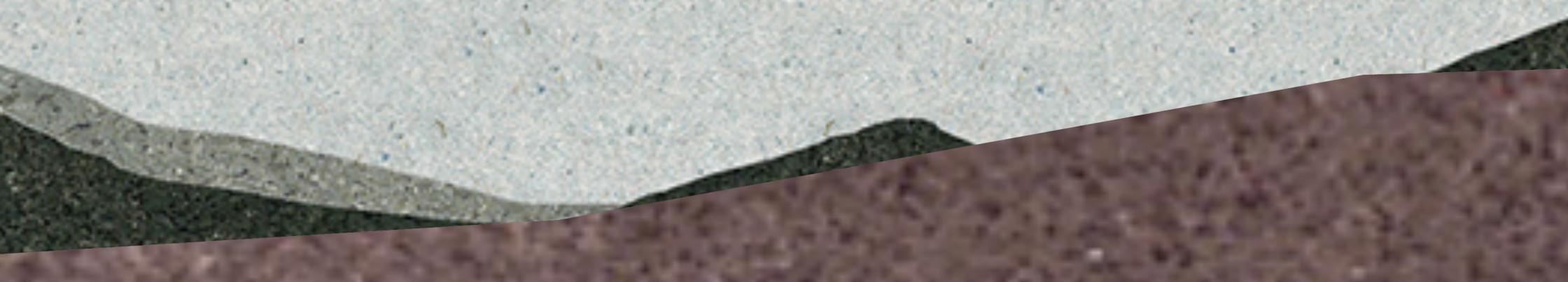
SITEPLAN MOAT / M1:1000

'Moat (red) with zoo in the East and Kalemegdan fortress in the West'

NEIGHBORHOOD

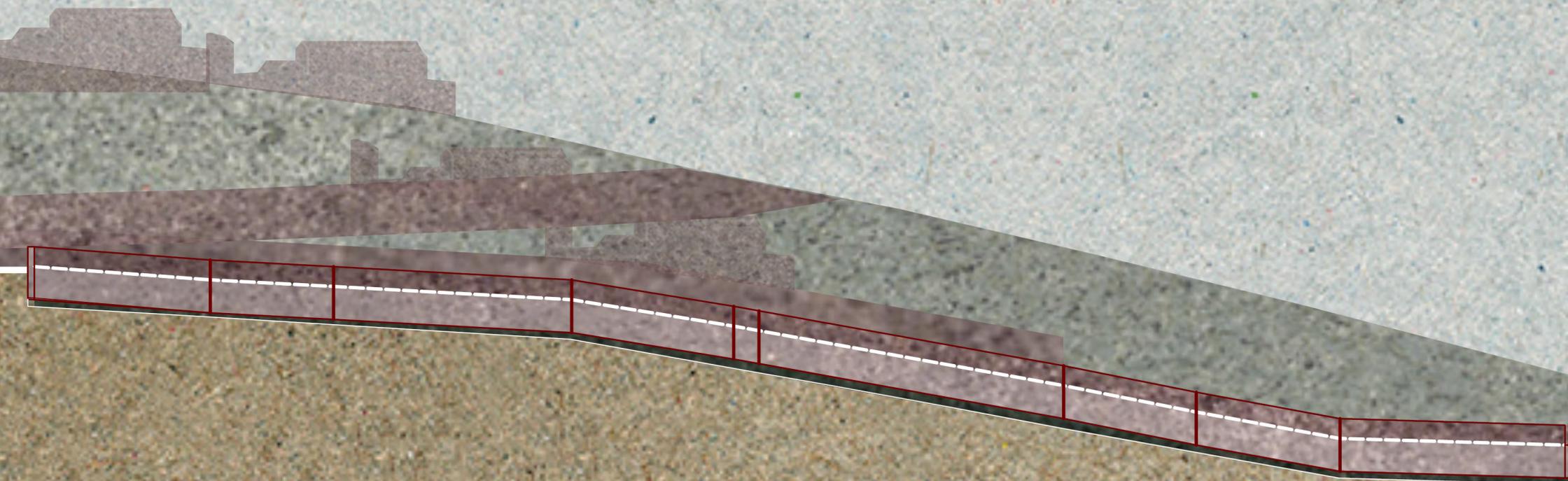
1 KILOMETER ~ 1 THOUSAND METERS

10³ meters



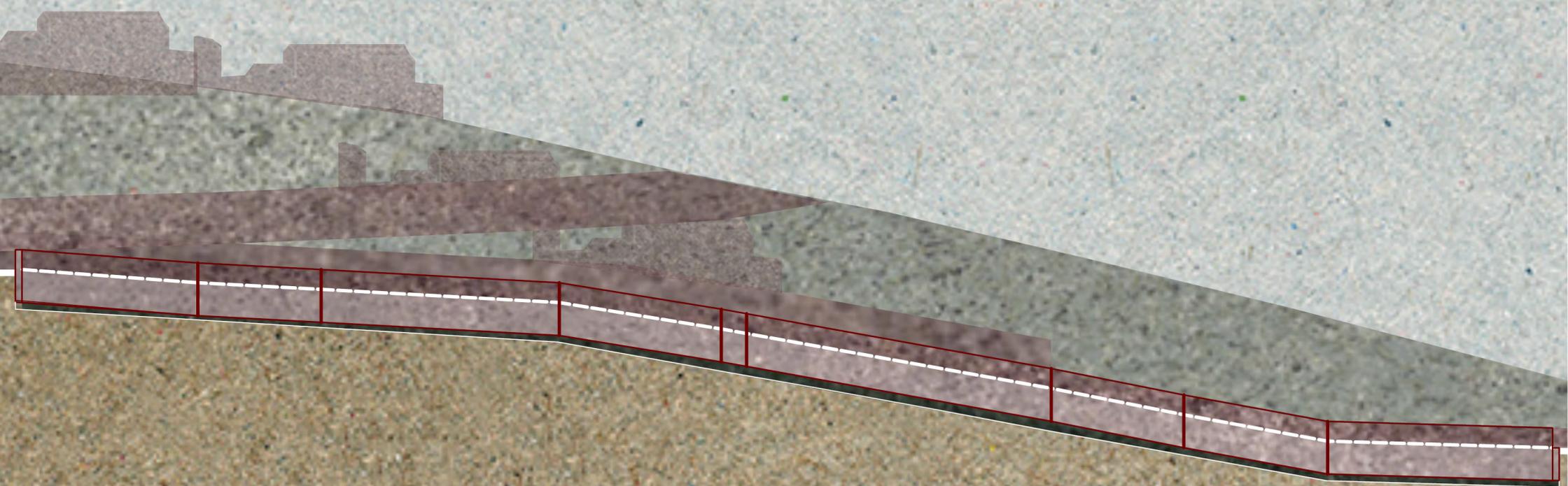
LONG-SECTION EAST / M1:1000

‘Direction Zoo’



LONG-SECTION WEST / M1:1000

‘Direction Fortress’



LONG-SECTION WEST / M1:1000

‘Direction Fortress’



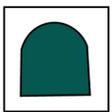
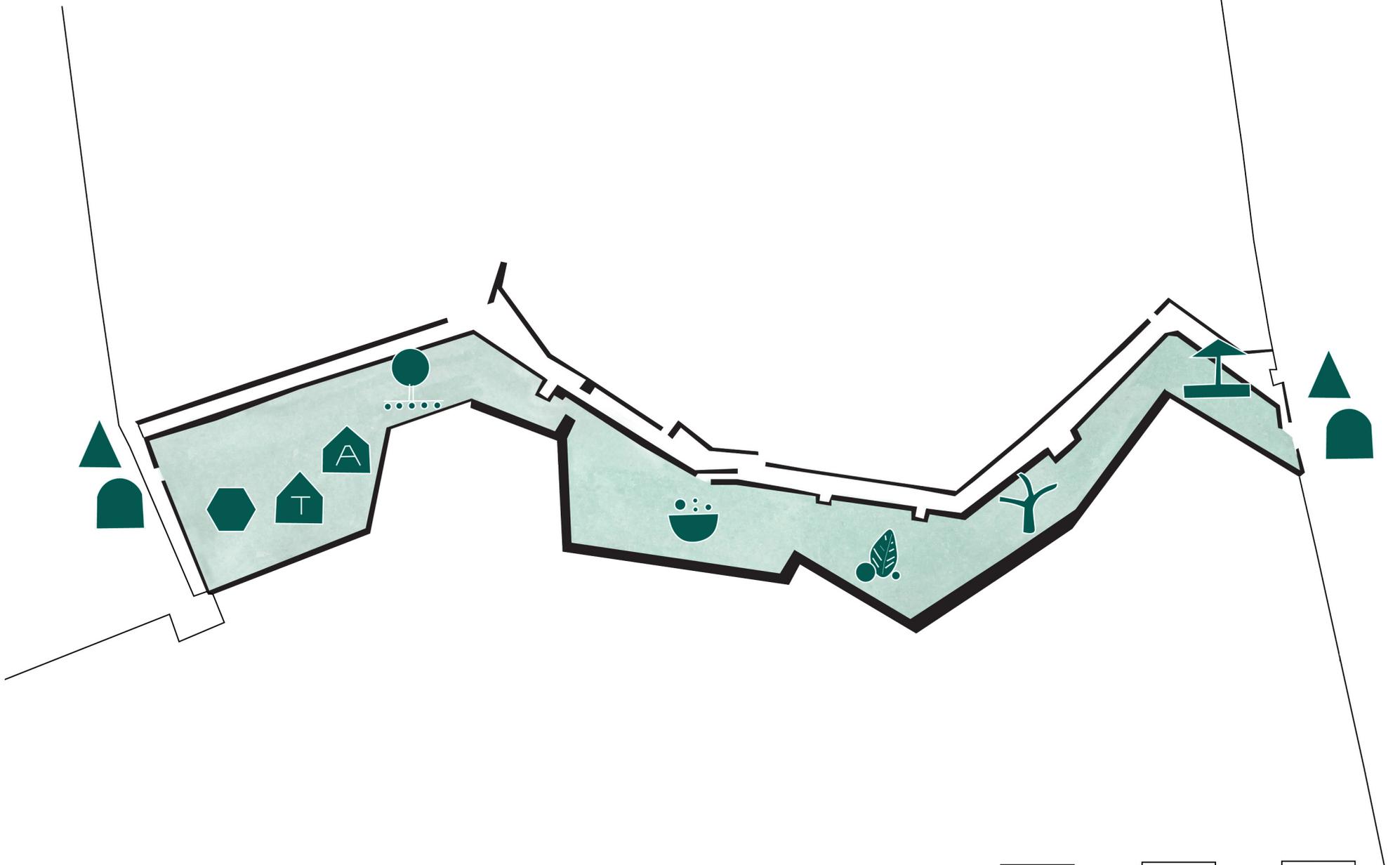
SHORT-SECTION SOUTH / M1:1000

Fortress left side



SHORT SECTION FROM NORTH / M1:1000

'Zoo on the left side



Entrance



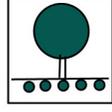
Apiarium



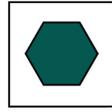
Picnic



Market



Kitchen garden



Beehives



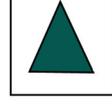
Stone garden



Sandarium



Taberna



North/ South Gate

SITE PLAN / M1:750

Attractions in the park

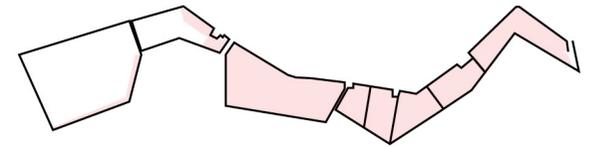
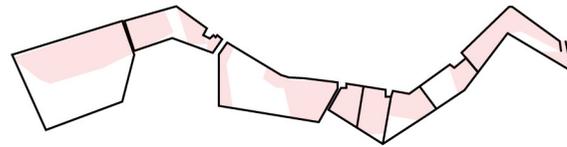
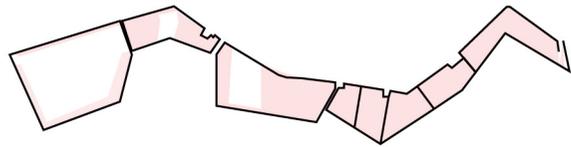
21.03. 2020

21.06. 2020

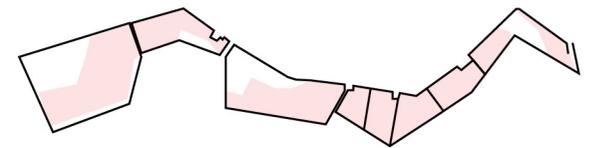
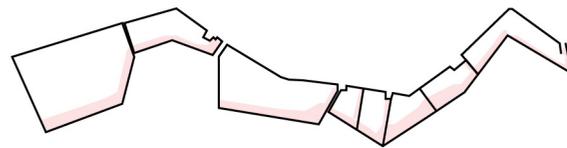
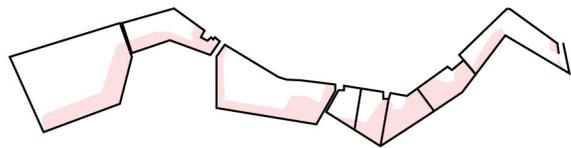
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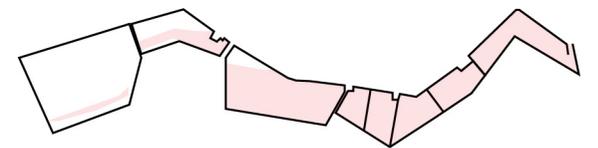
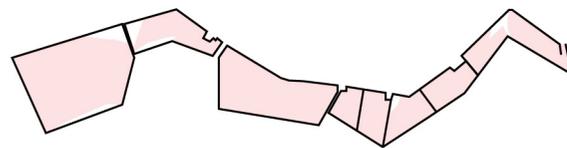
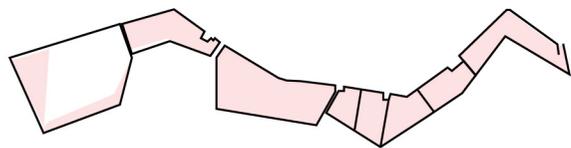
06.00 AM



13.15 PM

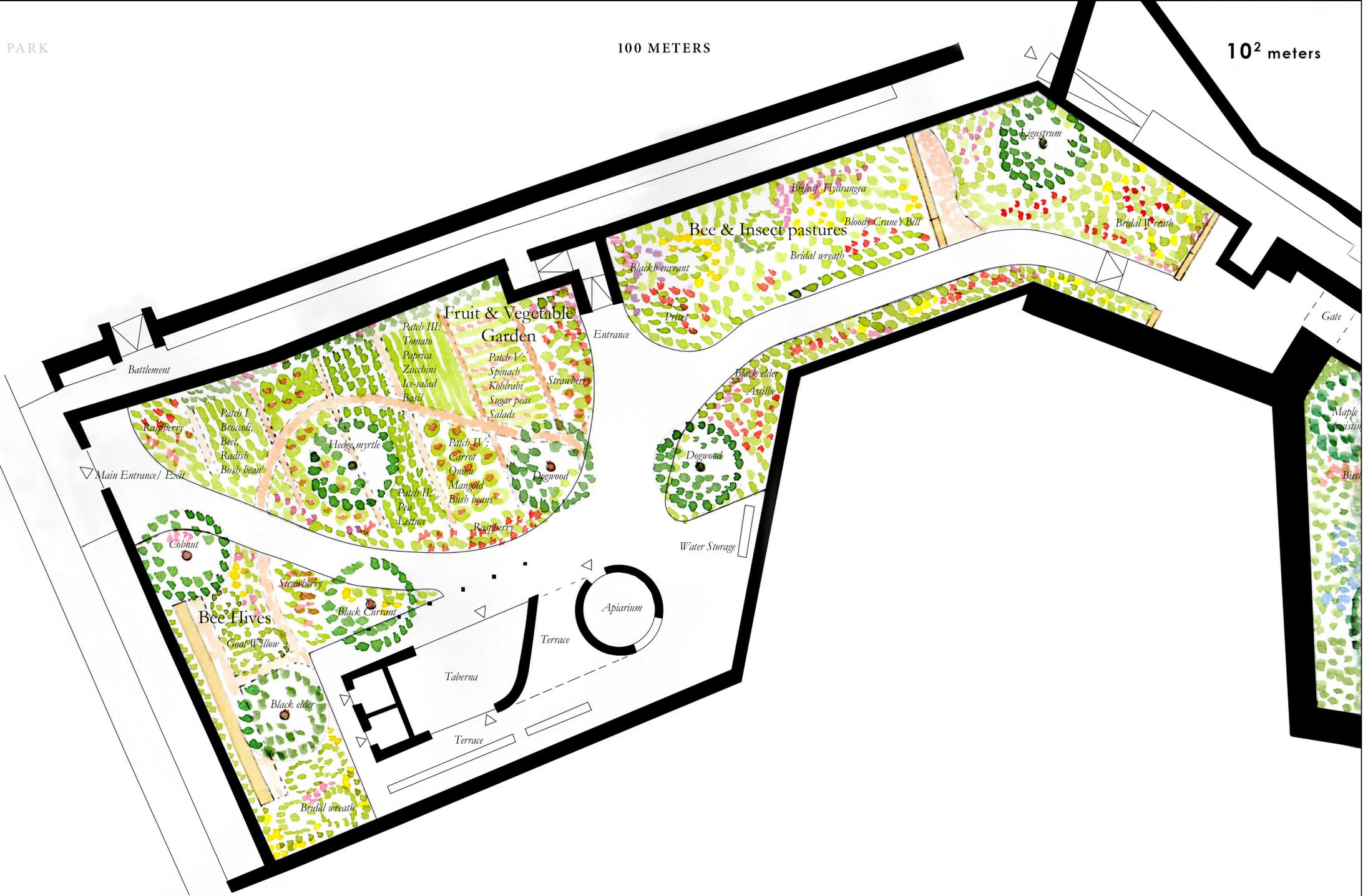


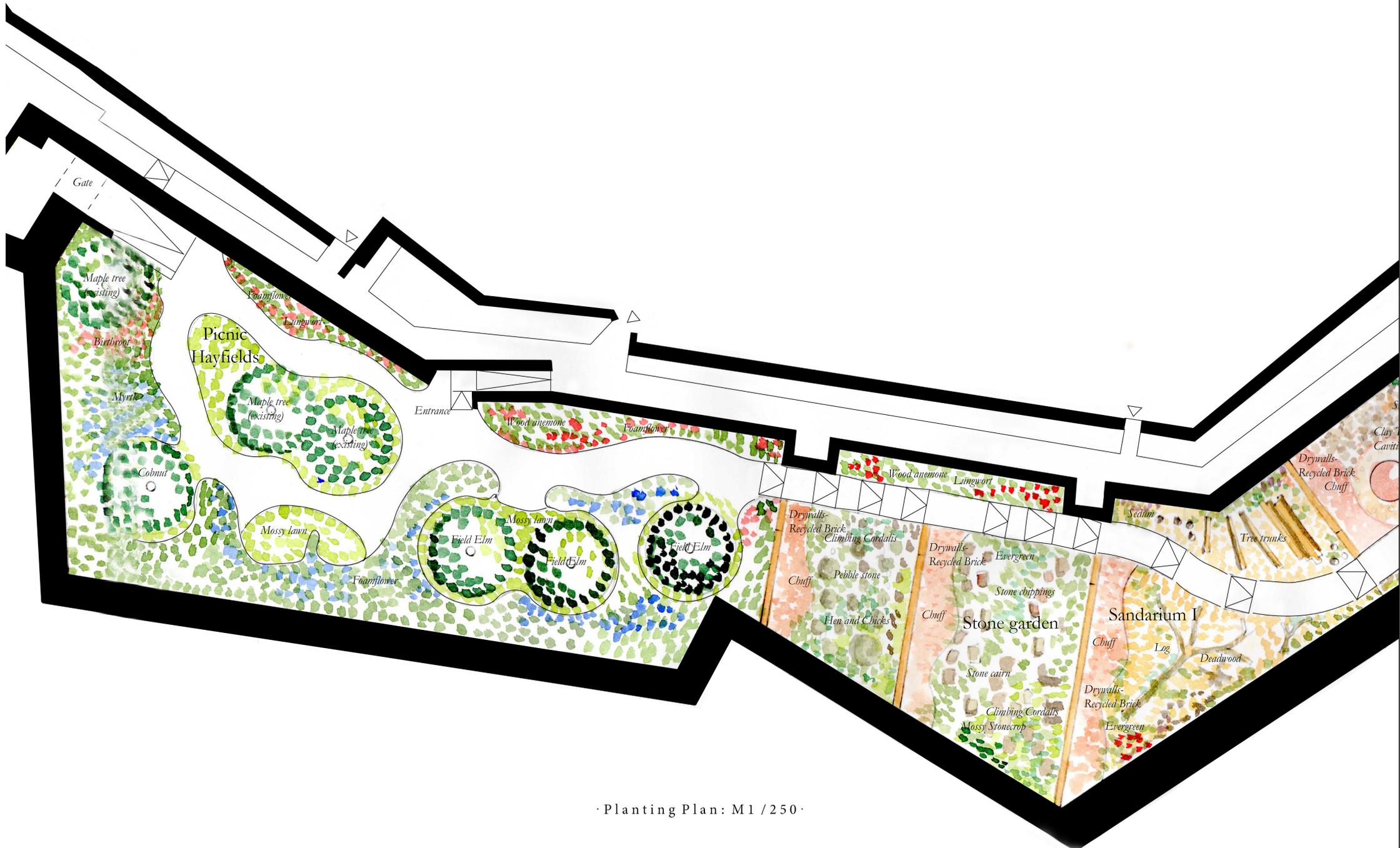
18.00 PM



CLIMATE

Shadow studies





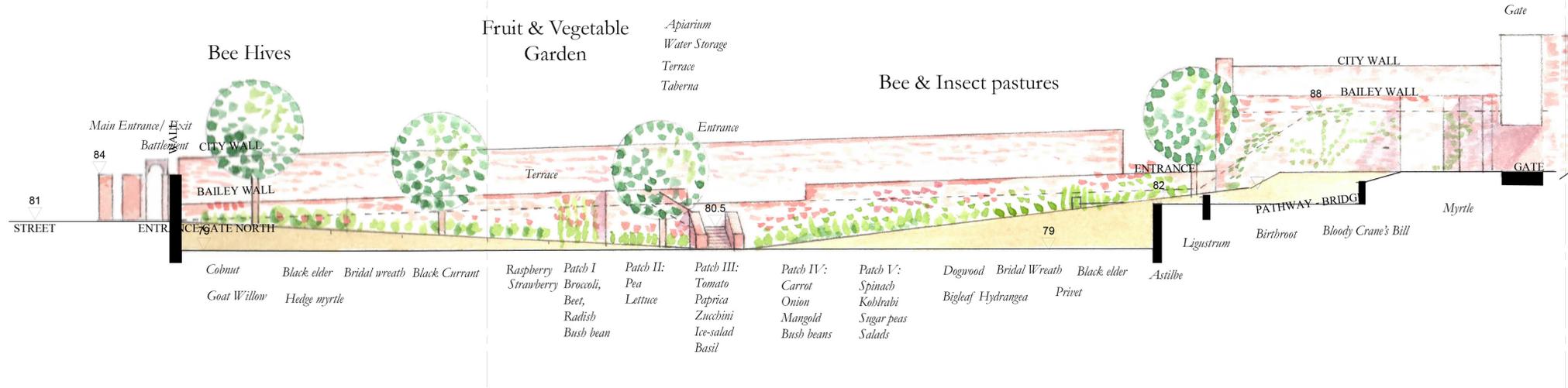


· Planting Plan: M1 / 250 ·

110
105
100
105
90
85
80
75
70

SECTION SA

SECTION SB



Bee Hives

Fruit & Vegetable Garden

Apiarium
Water Storage
Terrace
Taberna

Bee & Insect pastures

CITY WALL
88 BAILEY WALL

Gate

Main Entrance/Exit

Battlement

CITY WALL

BAILEY WALL

GATE NORTH

Entrance

Terrace

ENTRANCE

PATHWAY-BRIDGE

GATE

81 STREET

84

80.5

79

82

Ligustrum

Birchroot

Bloody Crane's Bill

Myrtle

Cobnut
Goat Willow
Black elder
Hedge myrtle
Bridal wreath
Black Currant

Raspberry
Strawberry
Patch I
Broccoli,
Beet,
Radish
Bush bean

Patch II:
Pea
Lettuce

Patch III:
Tomato
Paprika
Zucchini
Ice-salad
Basil

Patch IV:
Carrot
Onion
Mangold
Bush beans

Patch V:
Spinach
Kohlrabi
Sugar peas
Salads

Dogwood
Bridal Wreath
Bigleaf Hydrangea
Black elder
Privet

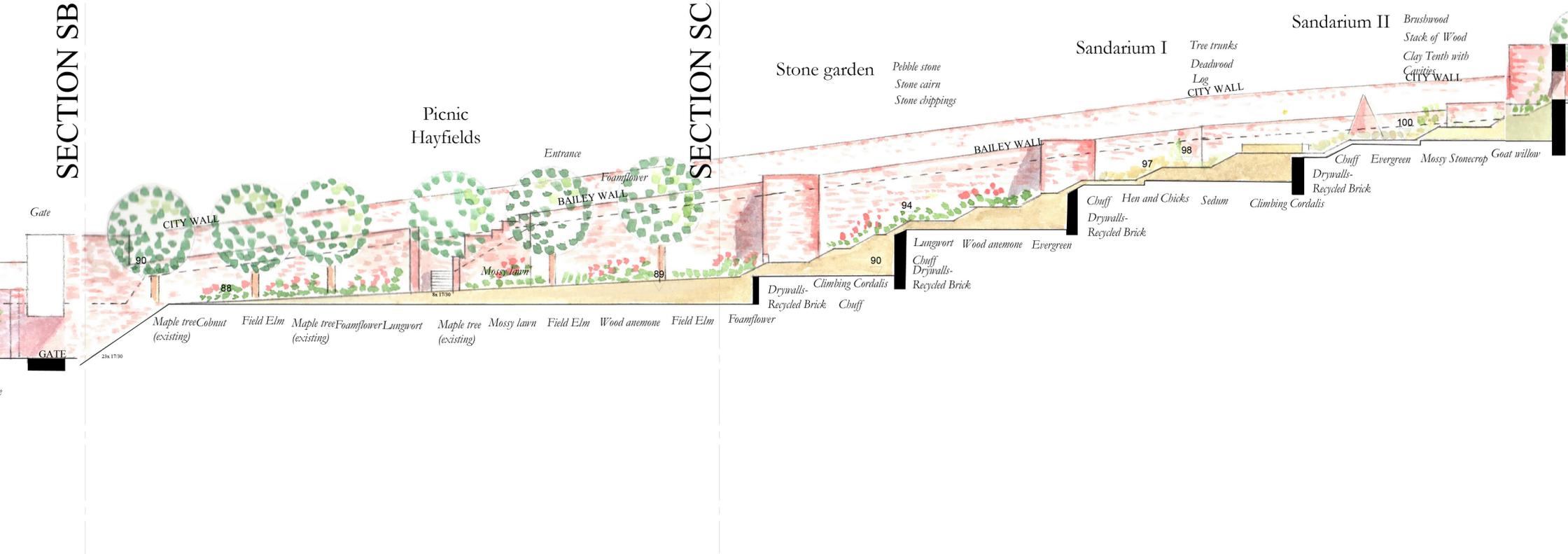
Astilbe

NORTH

·Long Section East (Zoo) M1 / 250·

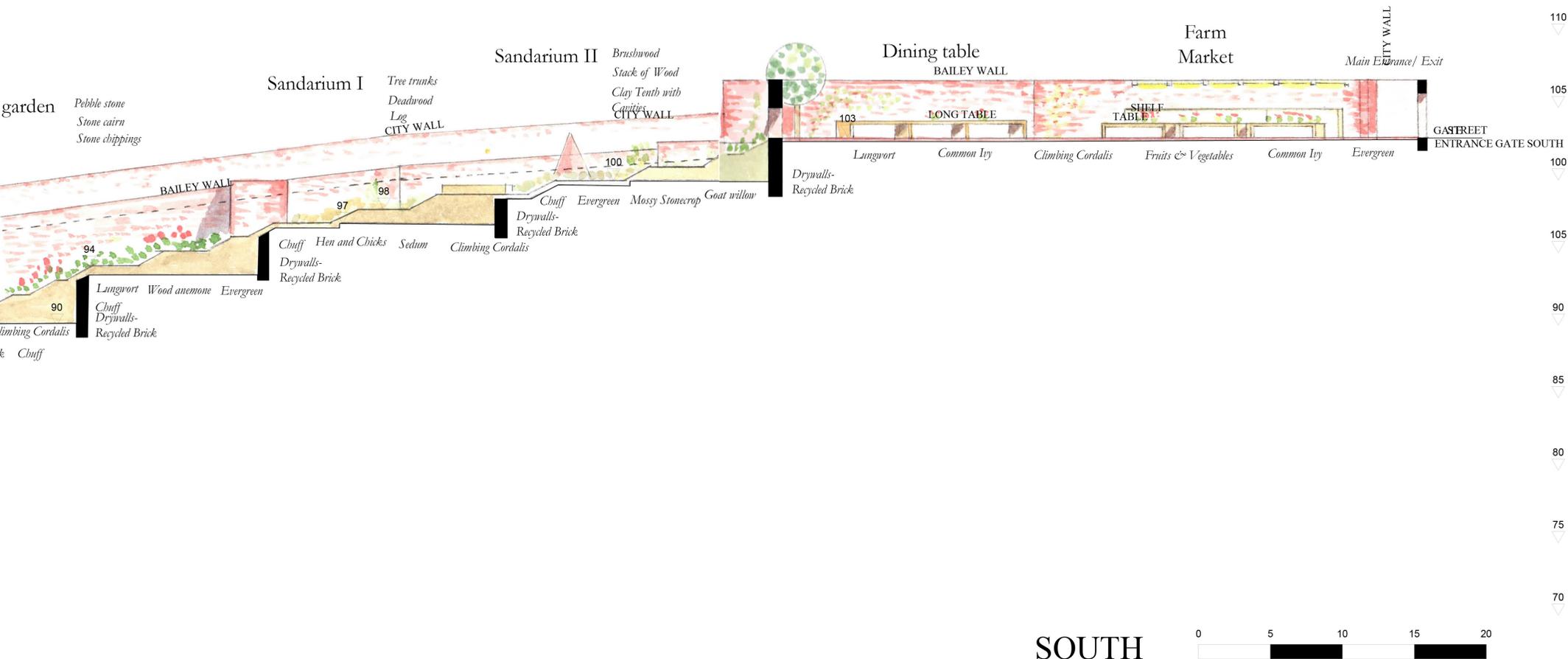
SECTION SB

SECTION SC

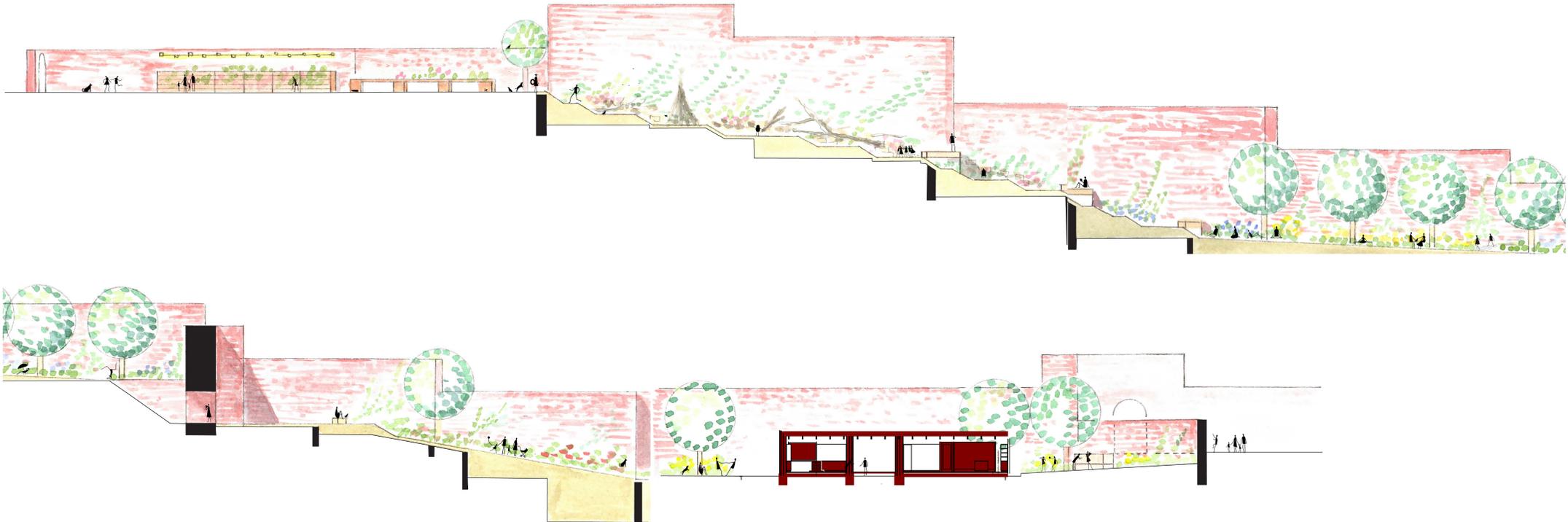


SECTION S1 EAST

·Long Section East (Zoo) M1 / 250·



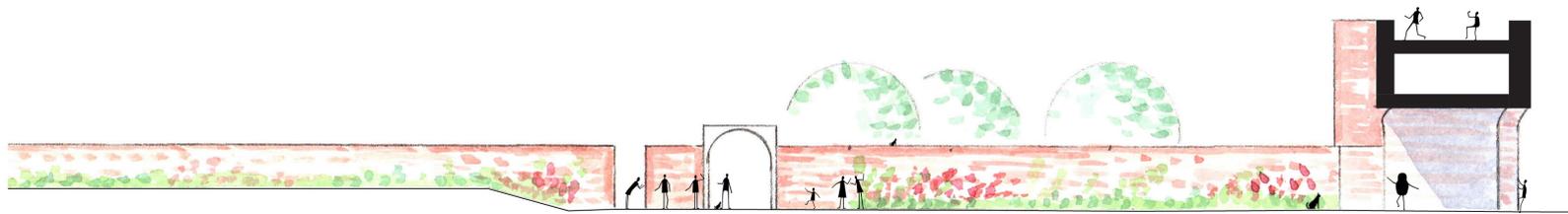
·Long Section East (Zoo) M1 / 250·



·Long Section West (fortress) M1 / 250·



· Short Section S-B & S-C: M1 / 25 0



· Short Section S-A & Elevation South Entrance: M1 / 250 ·

10 METERS

CREATURES AND ARTIFACTS

10¹ meters



SCENE I: WALL

· Apiarium & Taberna ·



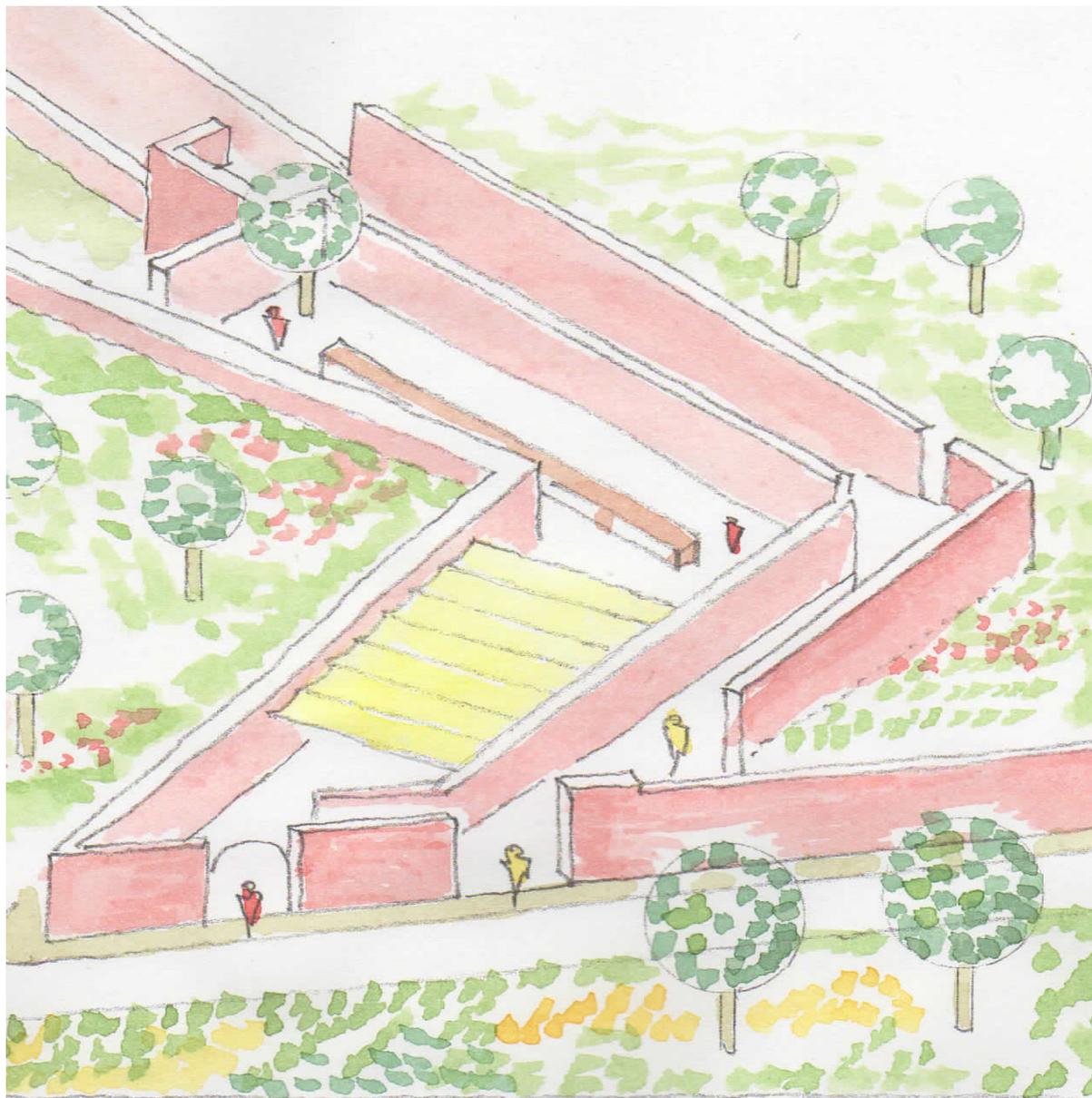
SCENE II : CHAIR

· Picnic ·



SCENE IV: STAIR

· (Animal-) Playground ·



SCENE IV : SHELF & TABLE

· Market & Diner ·



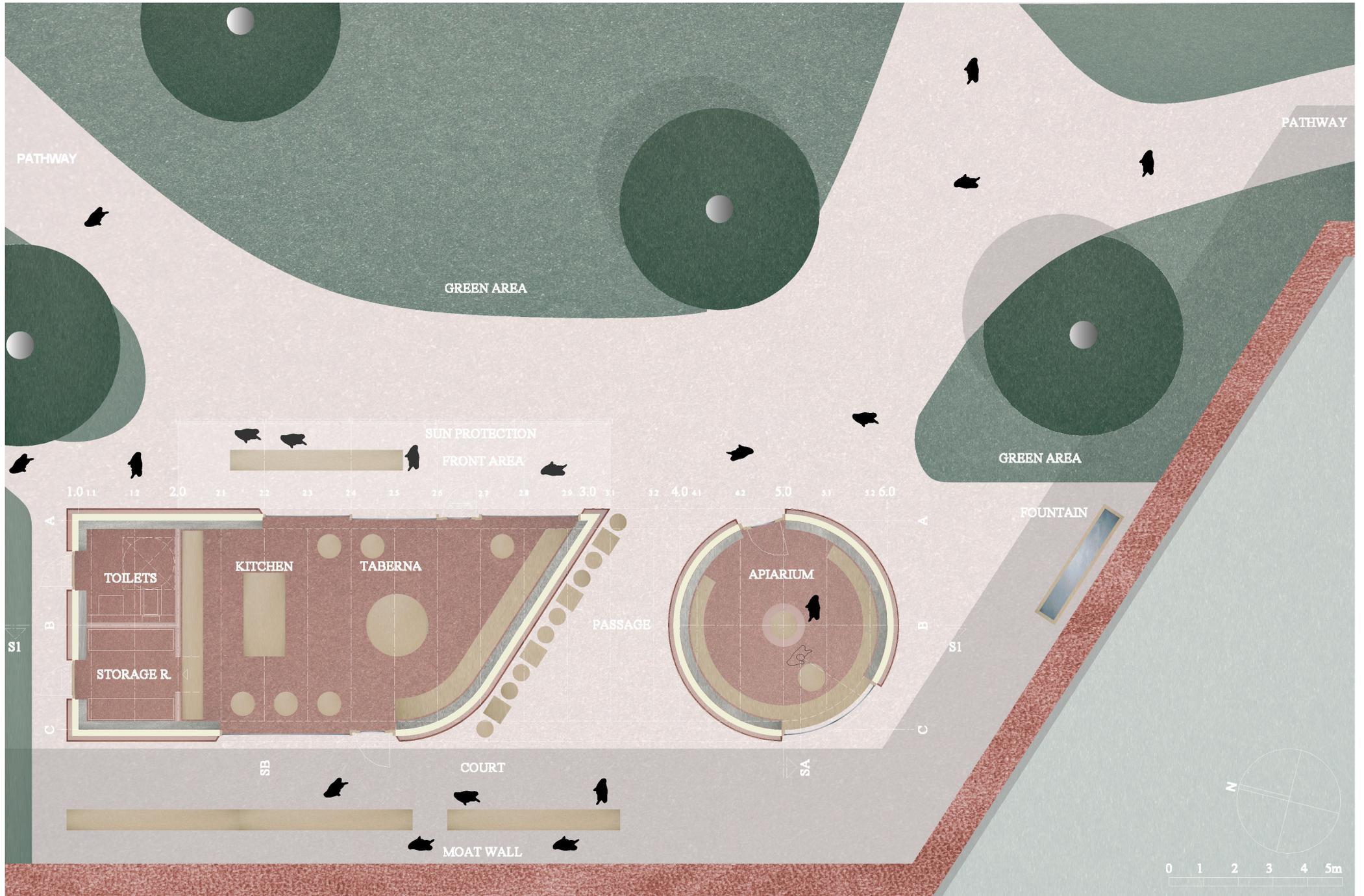
PERSPECTIVE

· Market & Diner ·

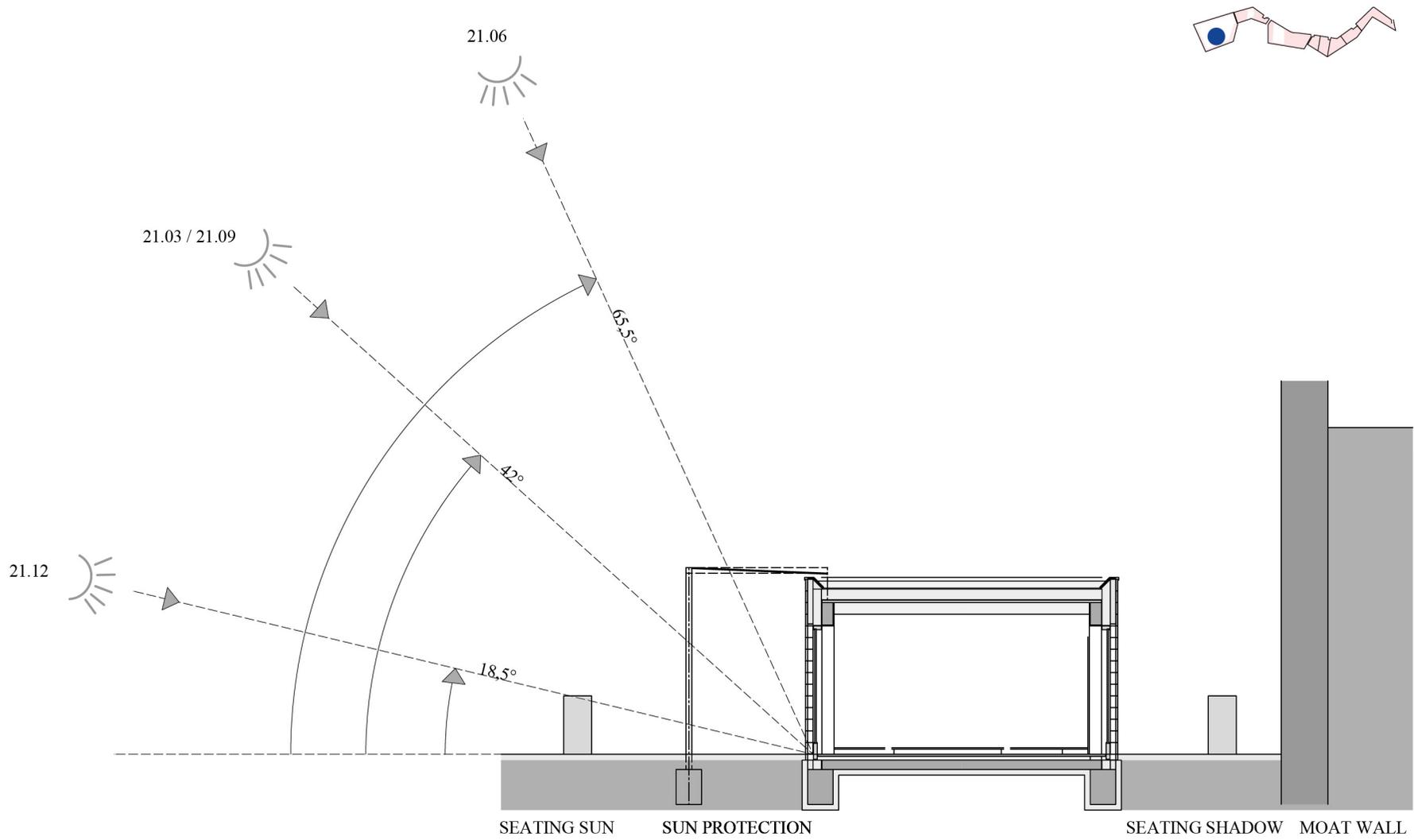
PART FOUR

Sizes of Scale

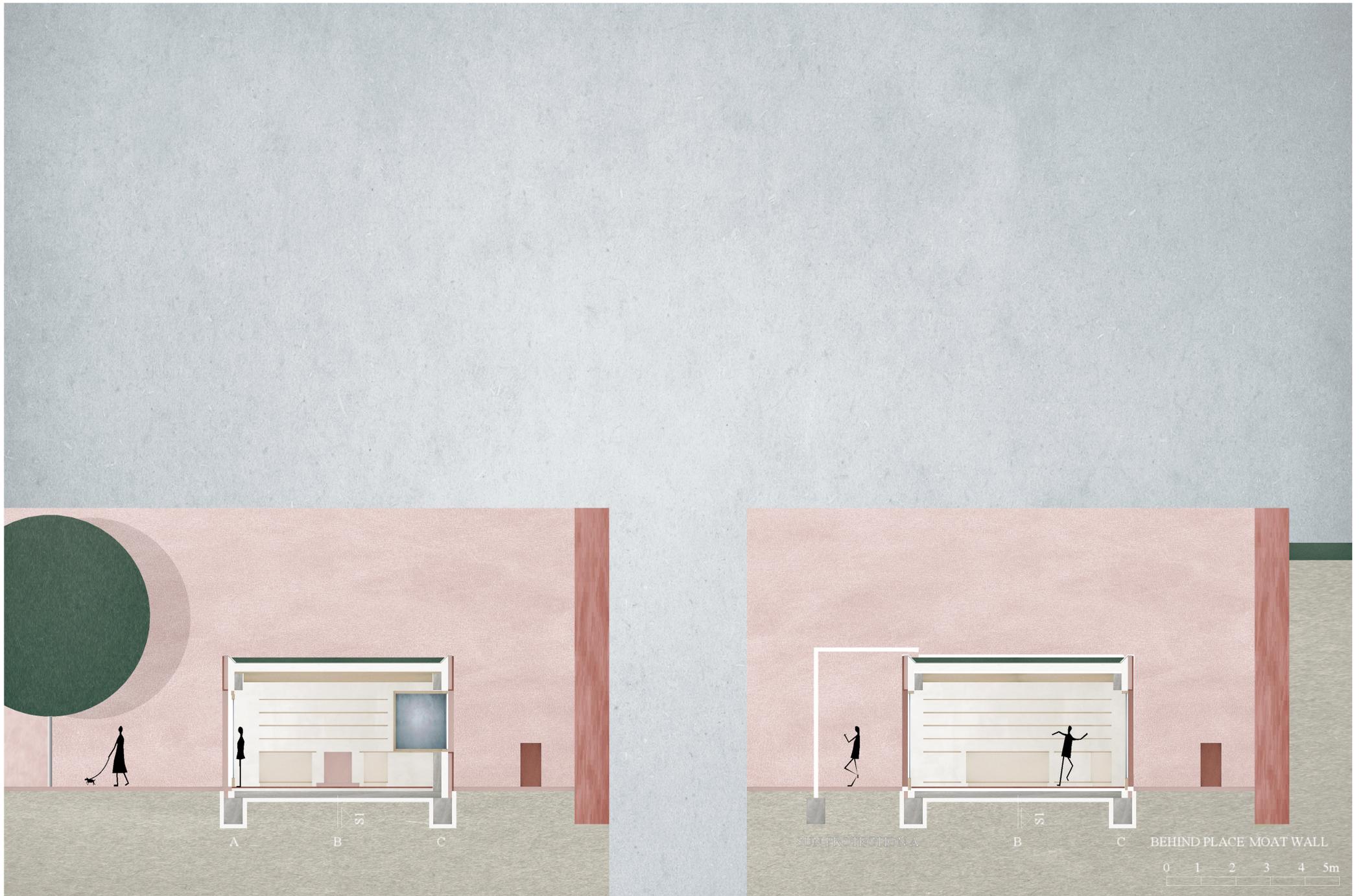
How?



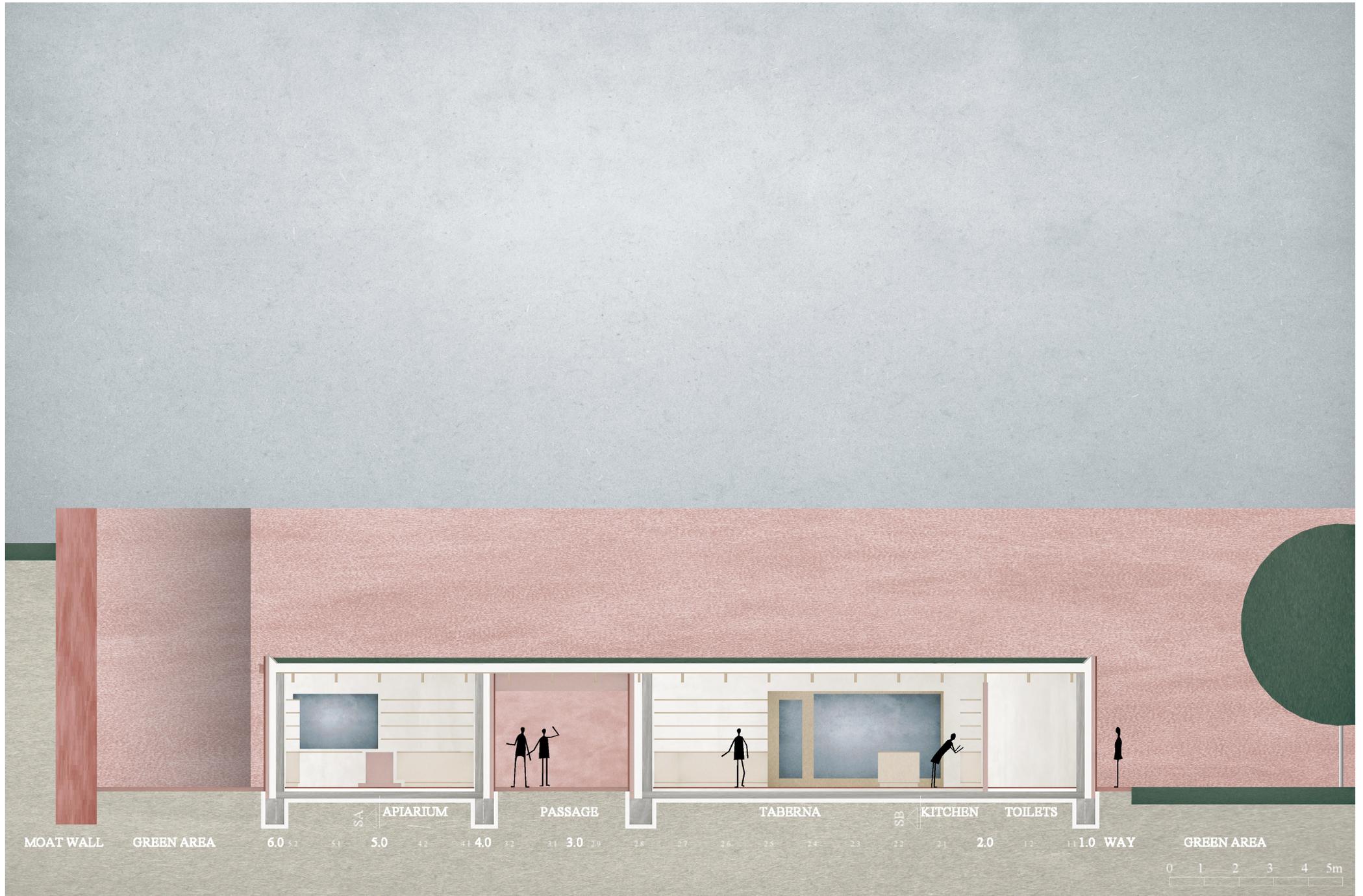
· Floorplan M1 / 100 : Apiarium & Taberna ·



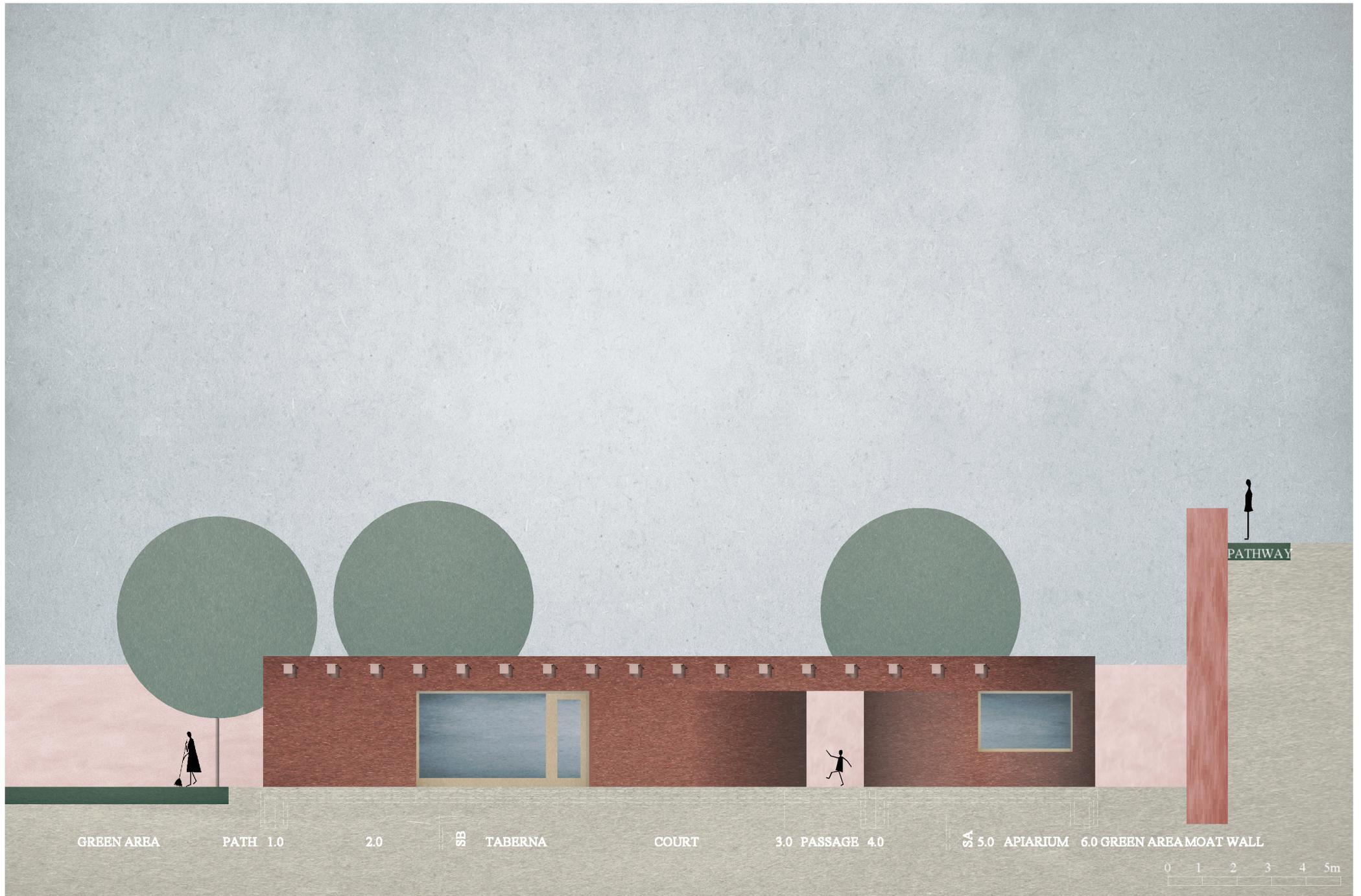
· Conditions Sun & Shadow ·



· Short-section M1 / 100 : Section-A (left) & Section-B(right) ·



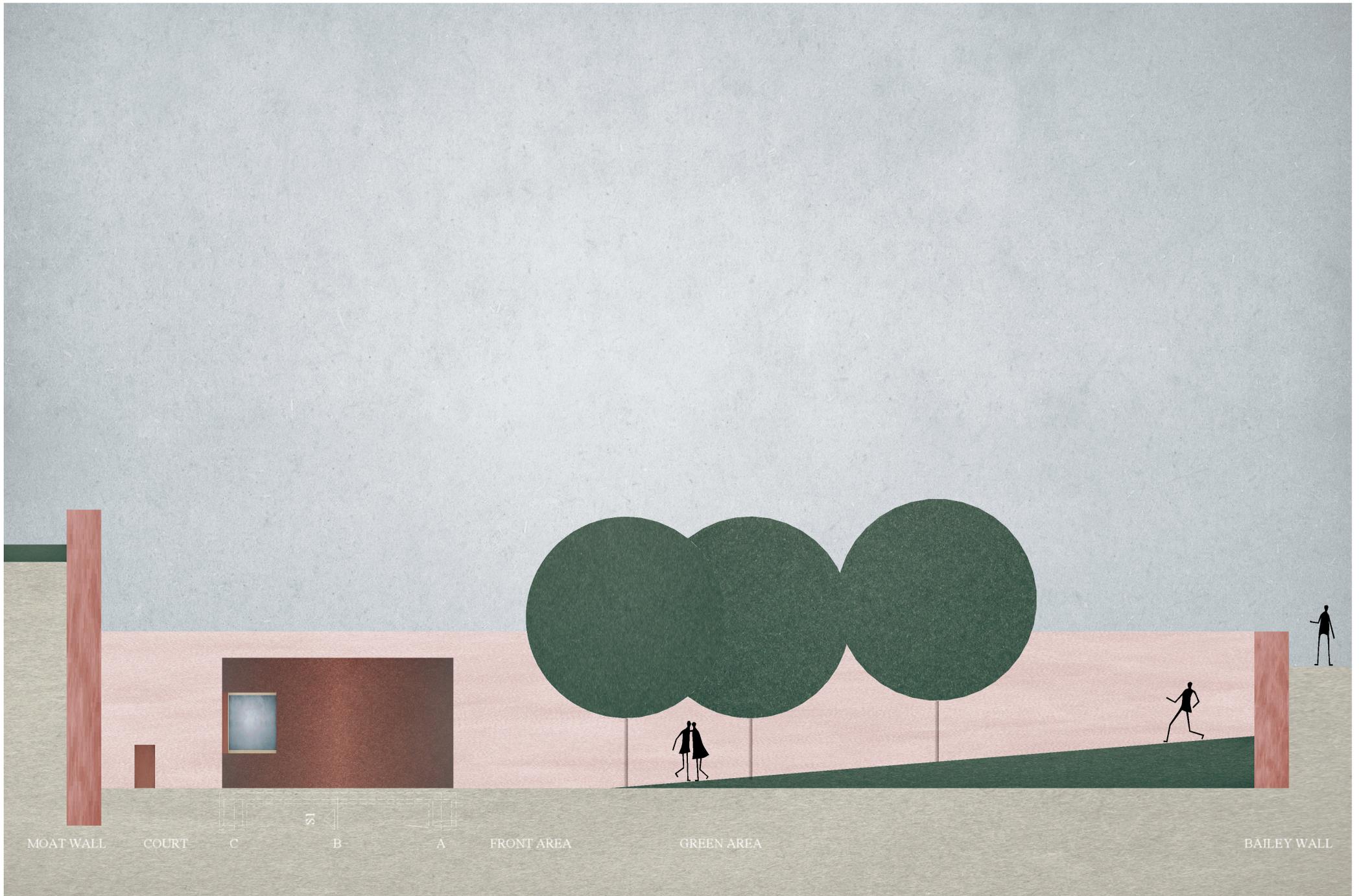
·Long-section M1 / 100 : S1-Apiarium & Taberna·



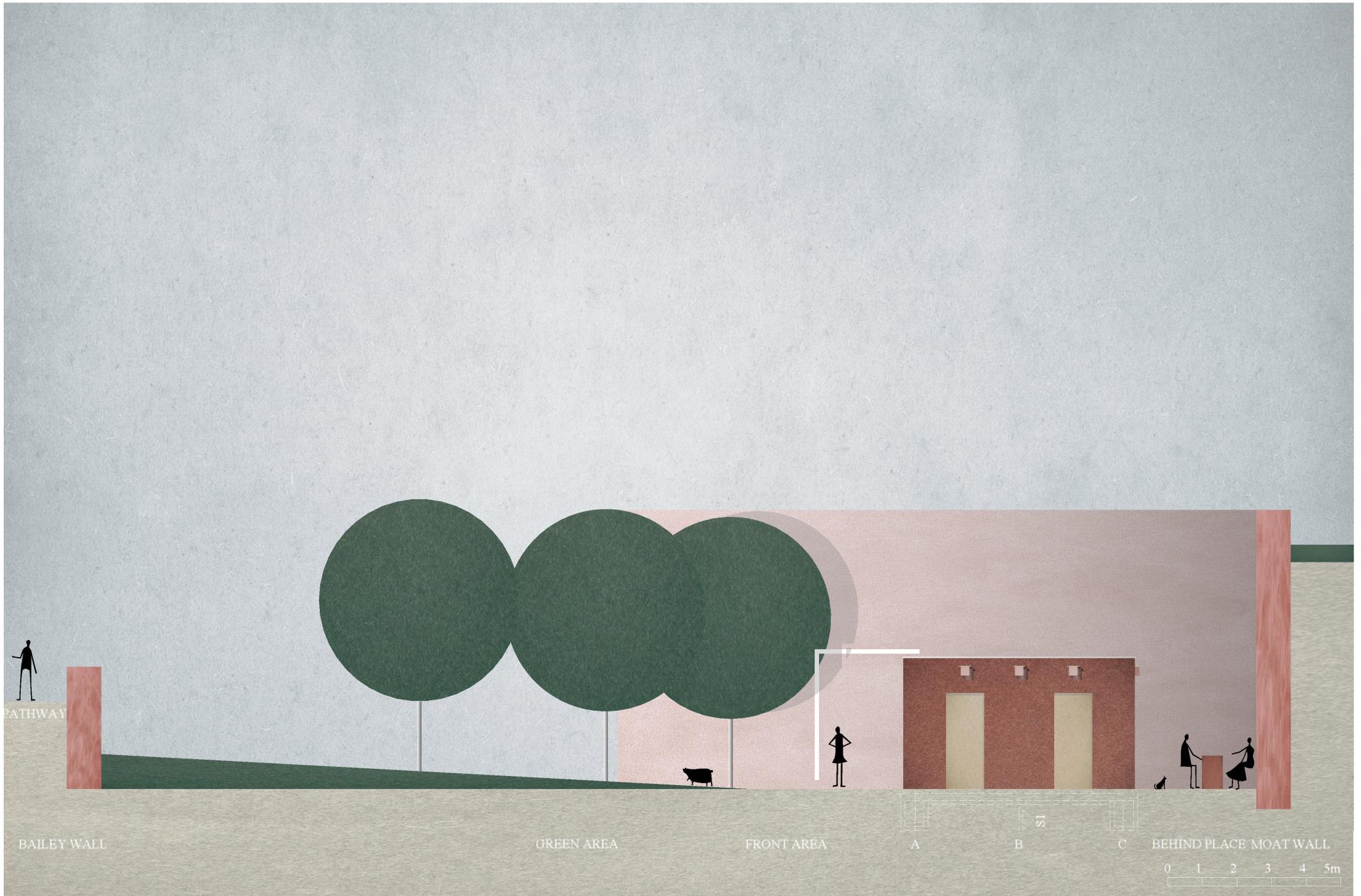
· Elevation M1 / 100 : West ·



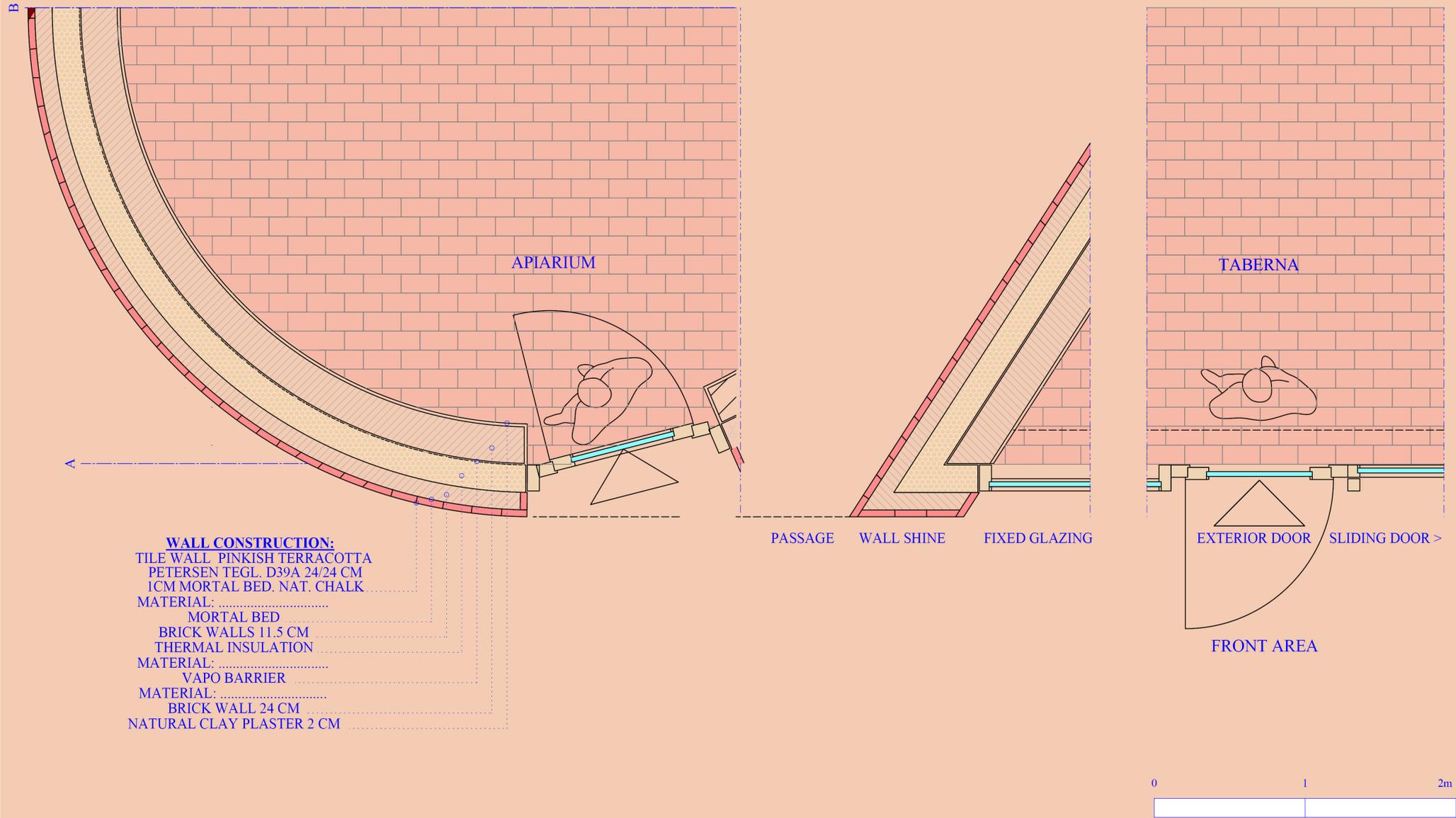
· Elevation M1 / 100 : East-Apiarium & Taberna ·



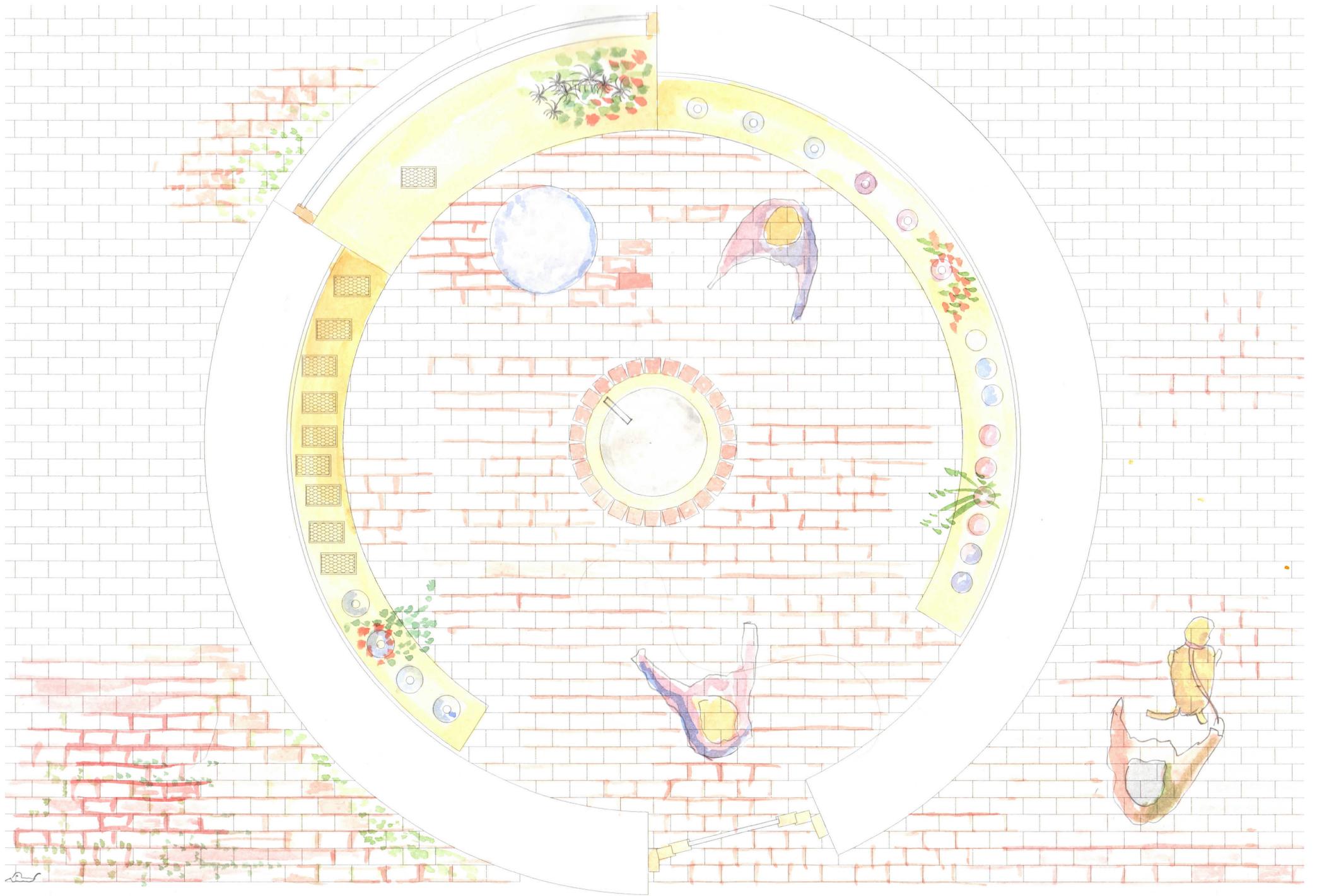
· Elevation M1 / 100 : South ·



·Elevation M1 / 100 : North·



· Floorplan Taberna & Apiarium: M1 / 25 ·



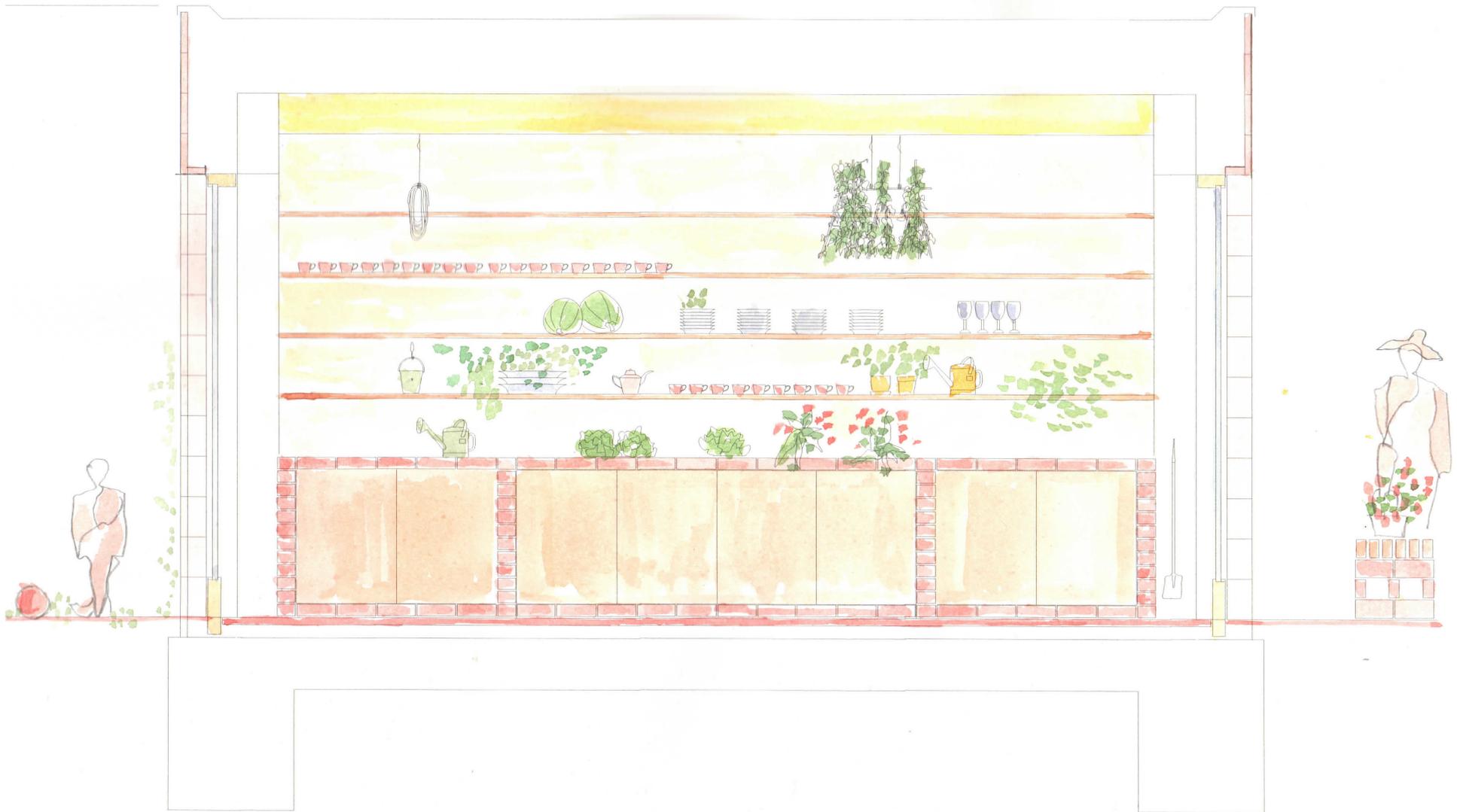
· Interior Floorplan Taberna M1 / 25 ·



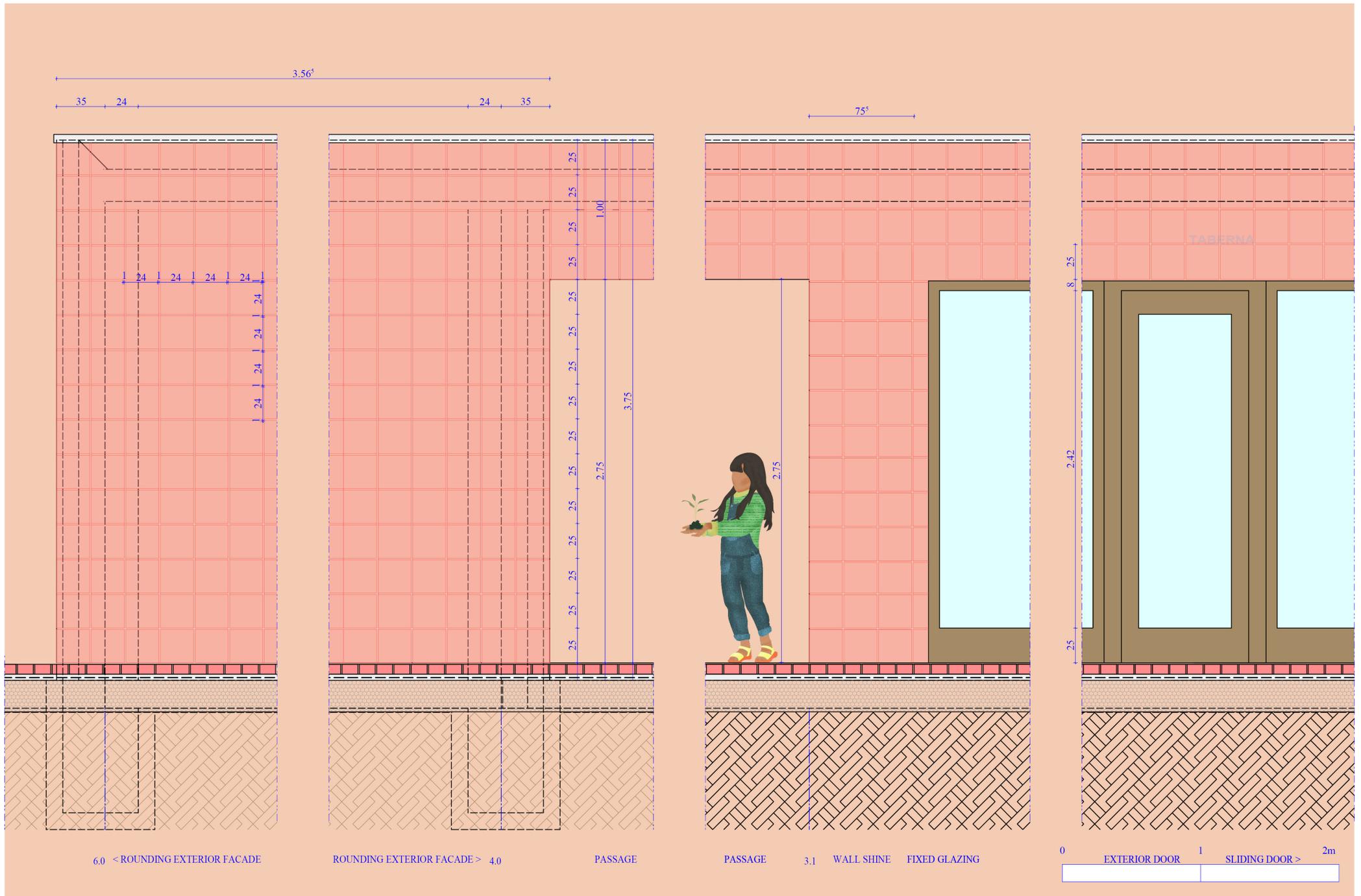
· Interior Elevation Taberna M1 / 25 : North ·



· Interior Floorplan Taberna M1 / 25 : North ·



· Interior Elevation Taberna M1 / 25 : North ·

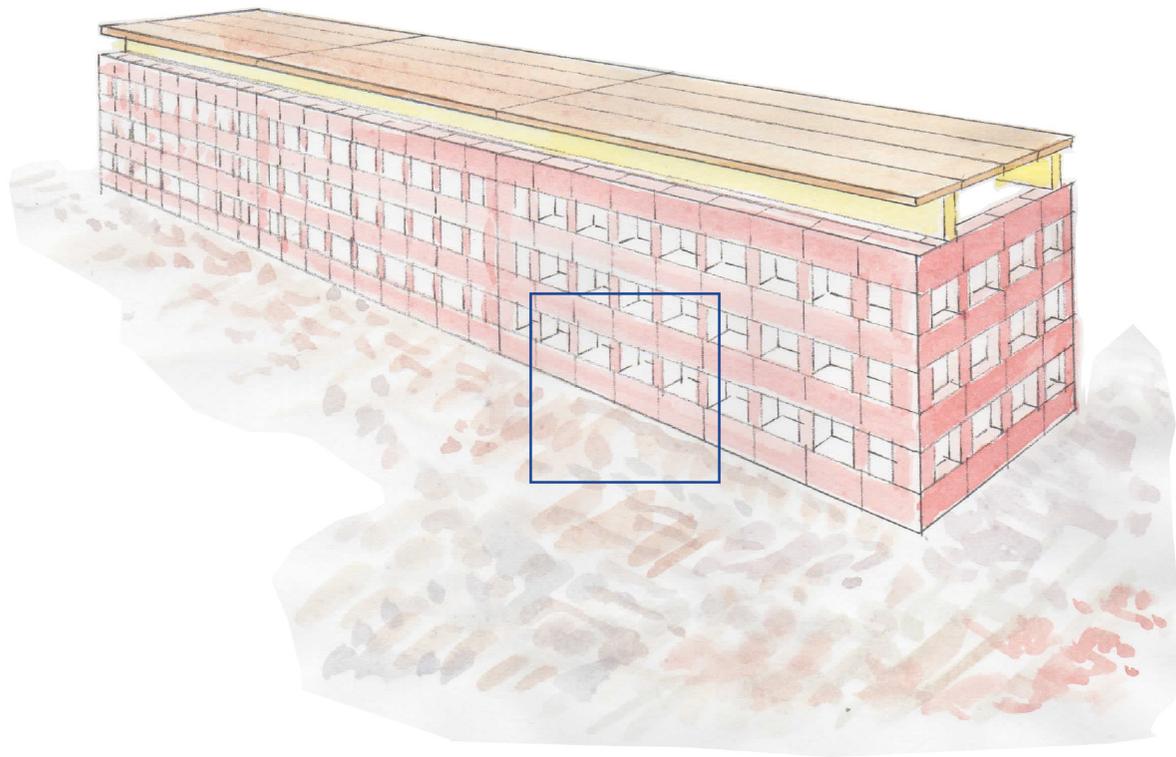


· Elevation Apiarium & Taberna M1 / 25 : East ·

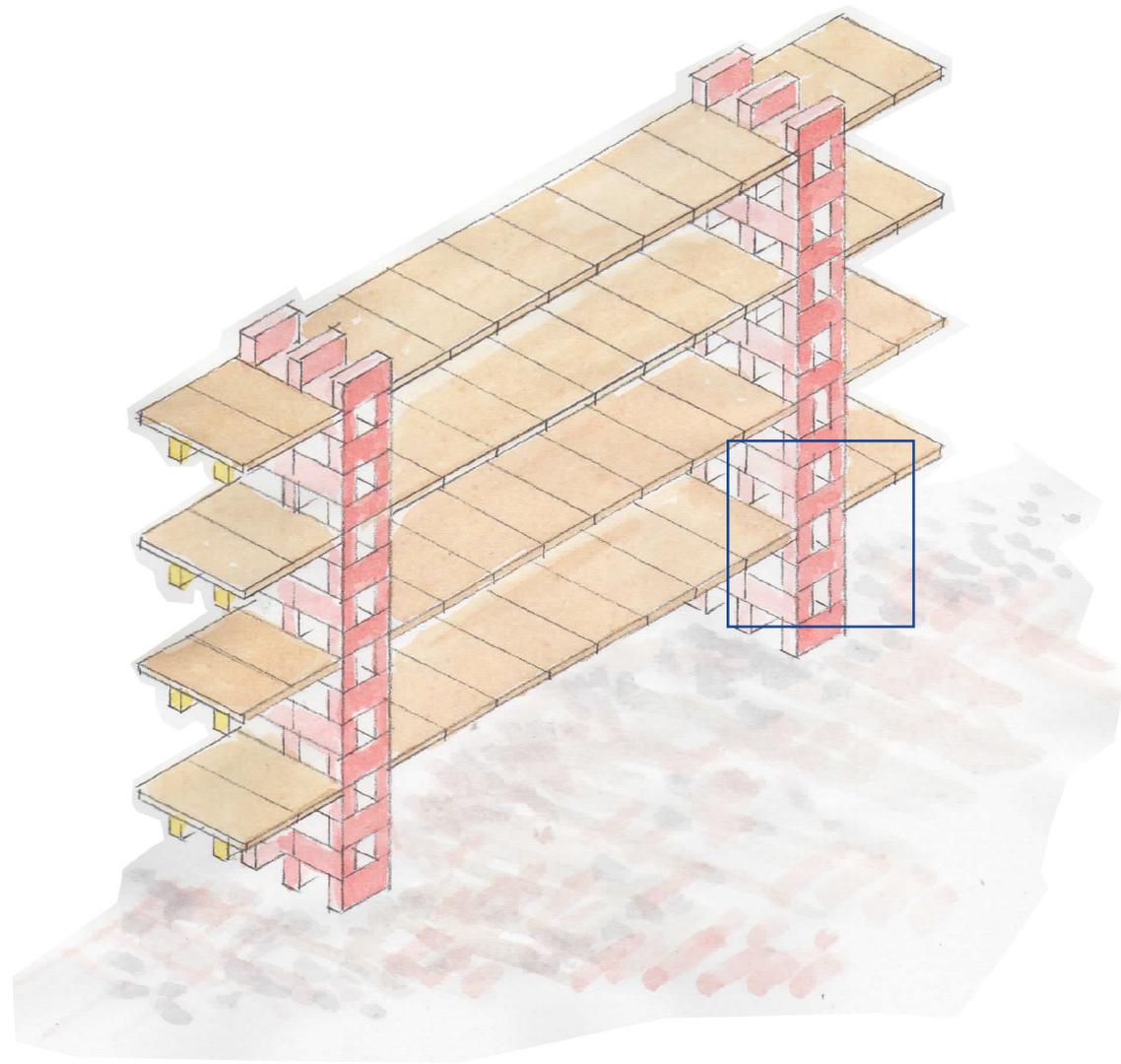
HUMAN ARM

1 METER ~ 1 YARD

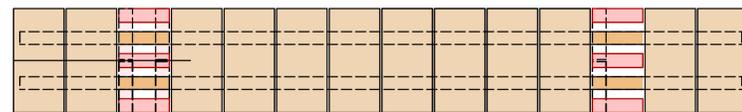
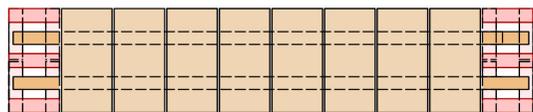
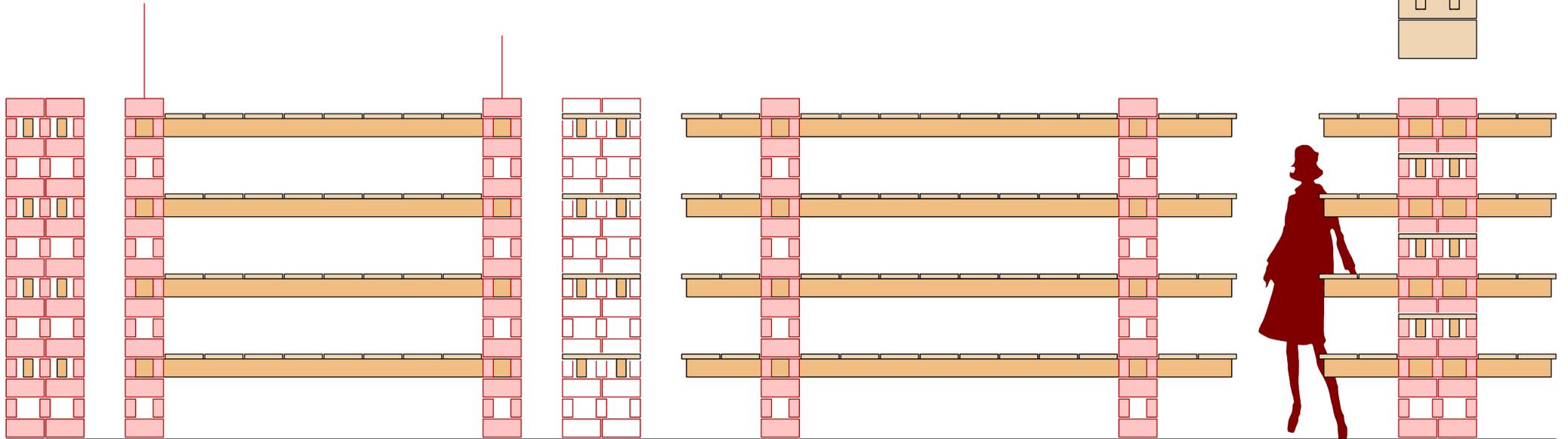
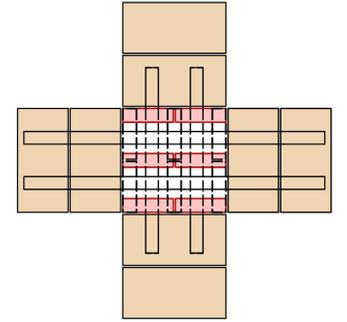
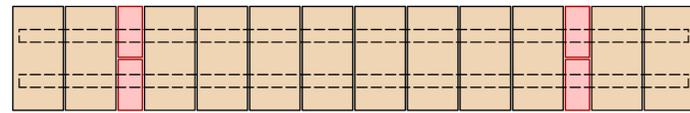
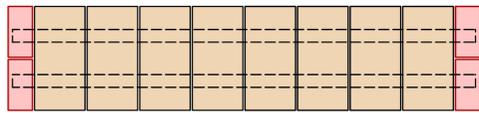
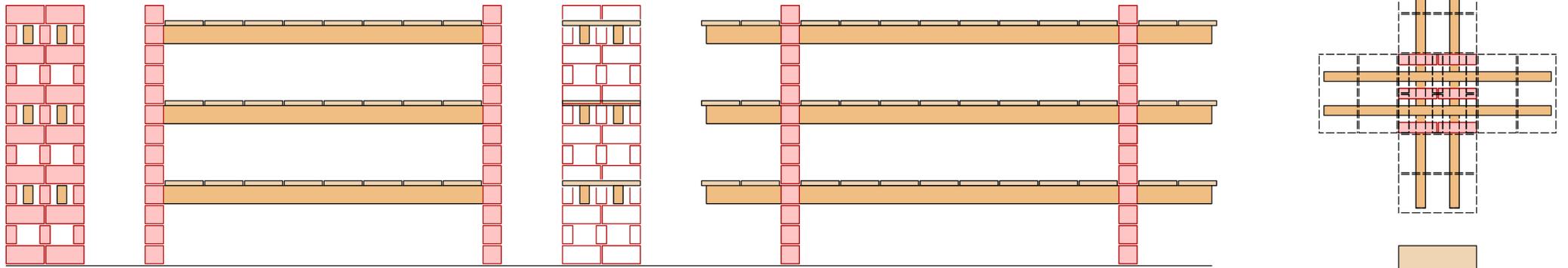
10⁰ meters



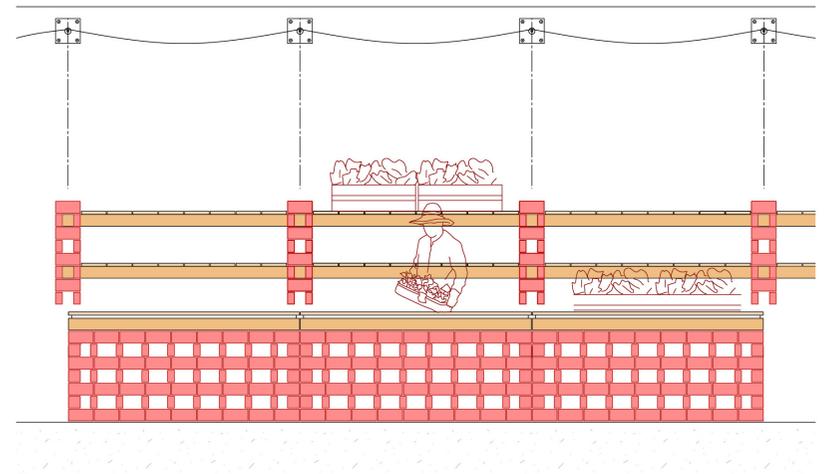
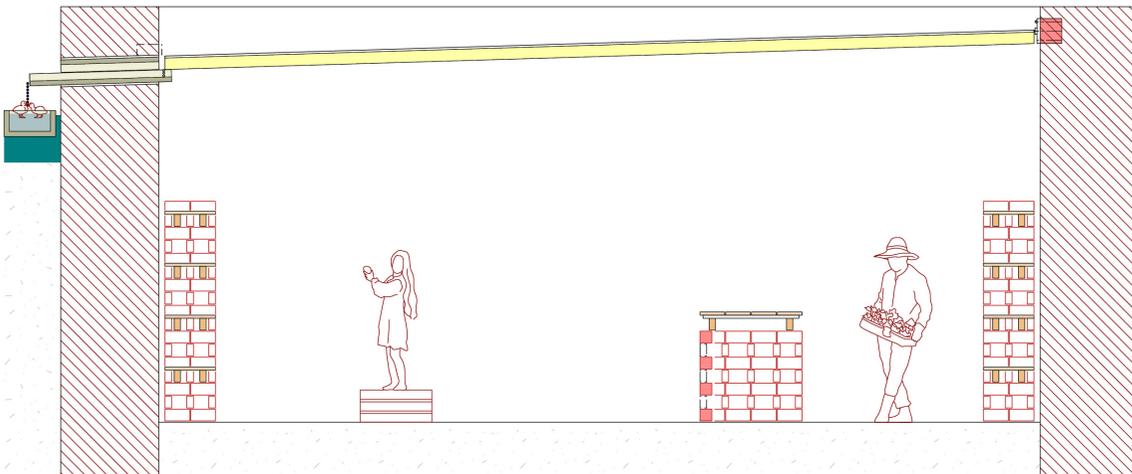
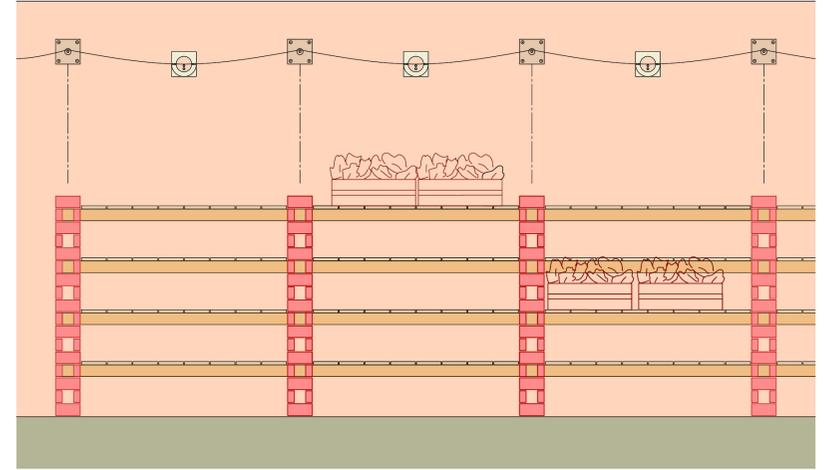
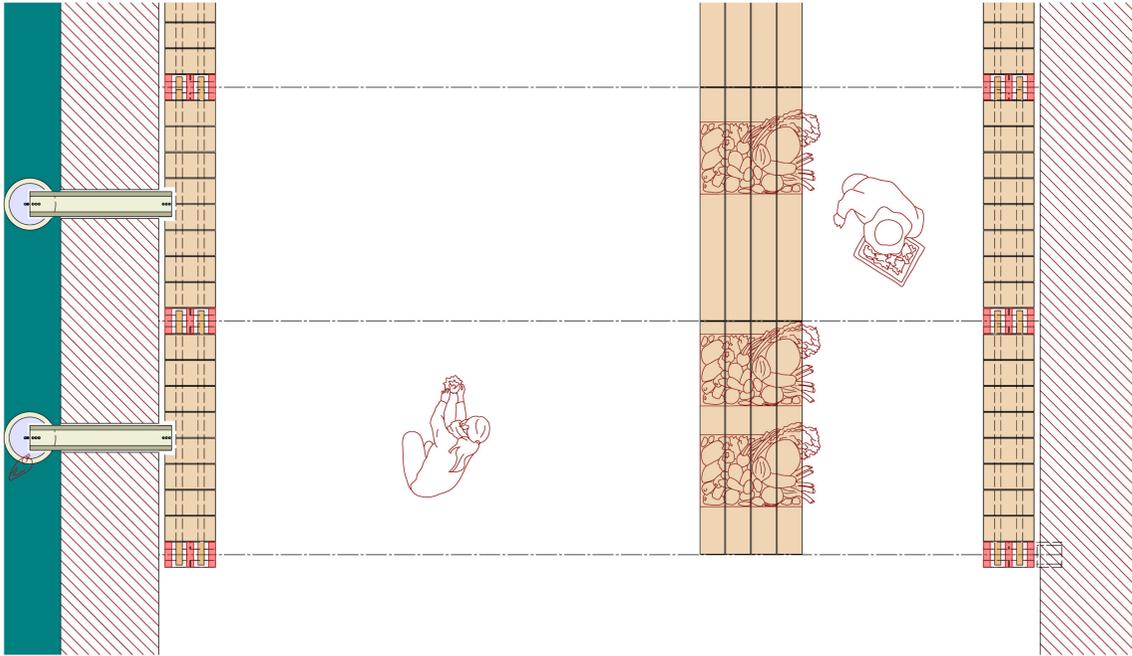
· TABLE (20 / 1.5 m) ·



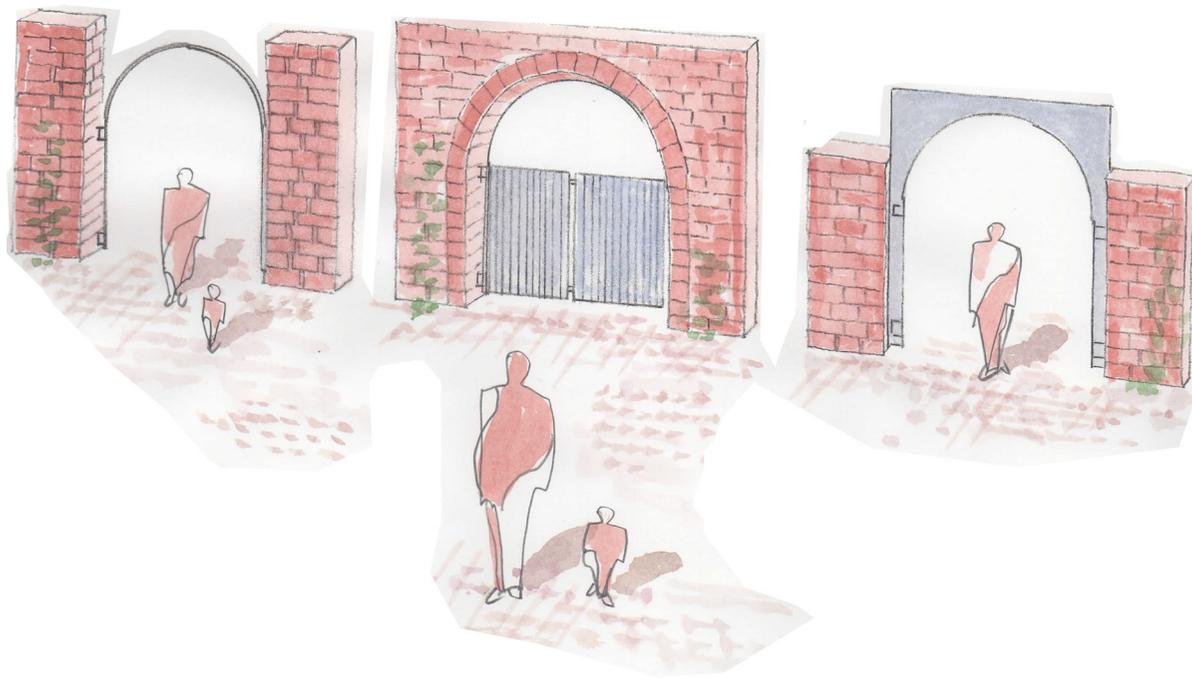
· SHELF ·



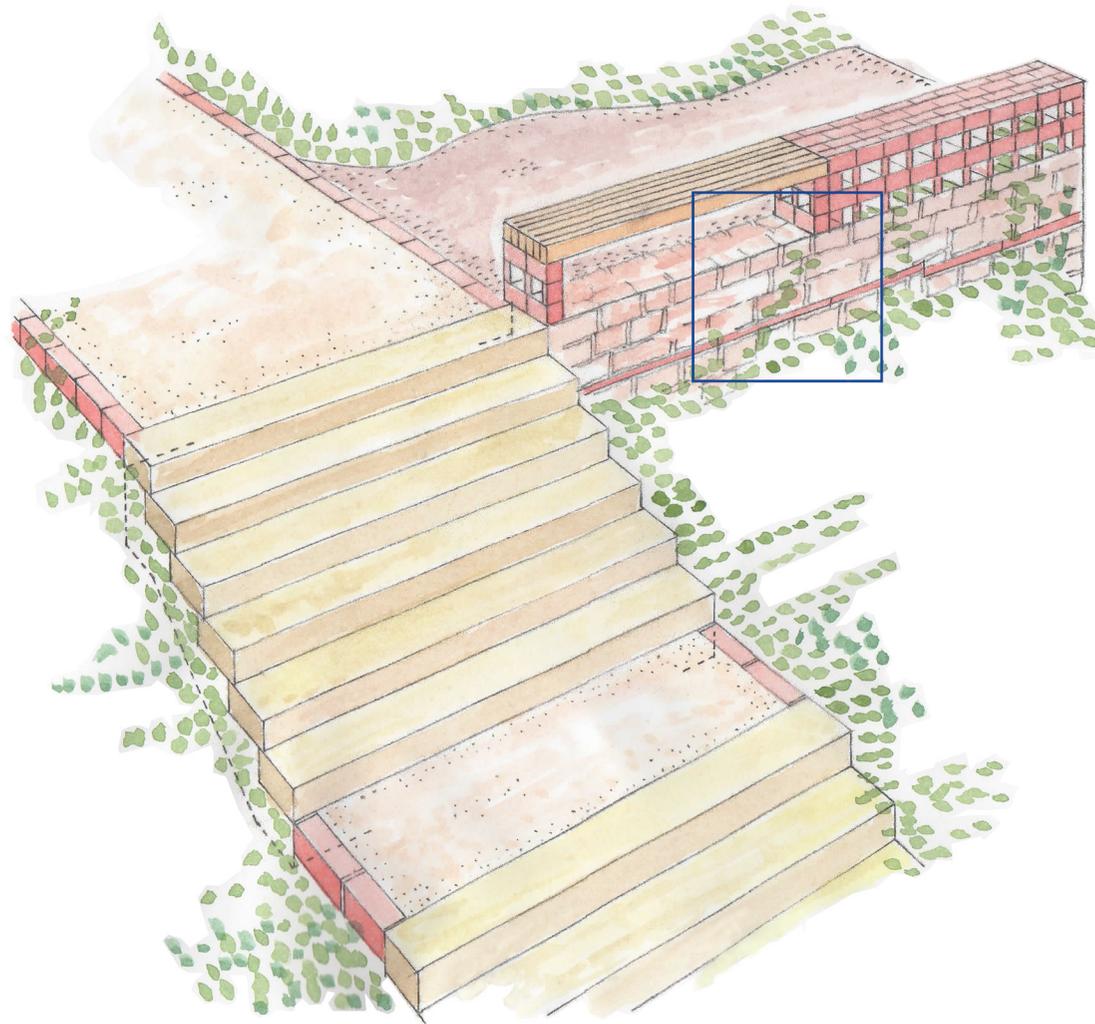
· Elements M1 / 25 (1/ 50) : Brick & Wood ·



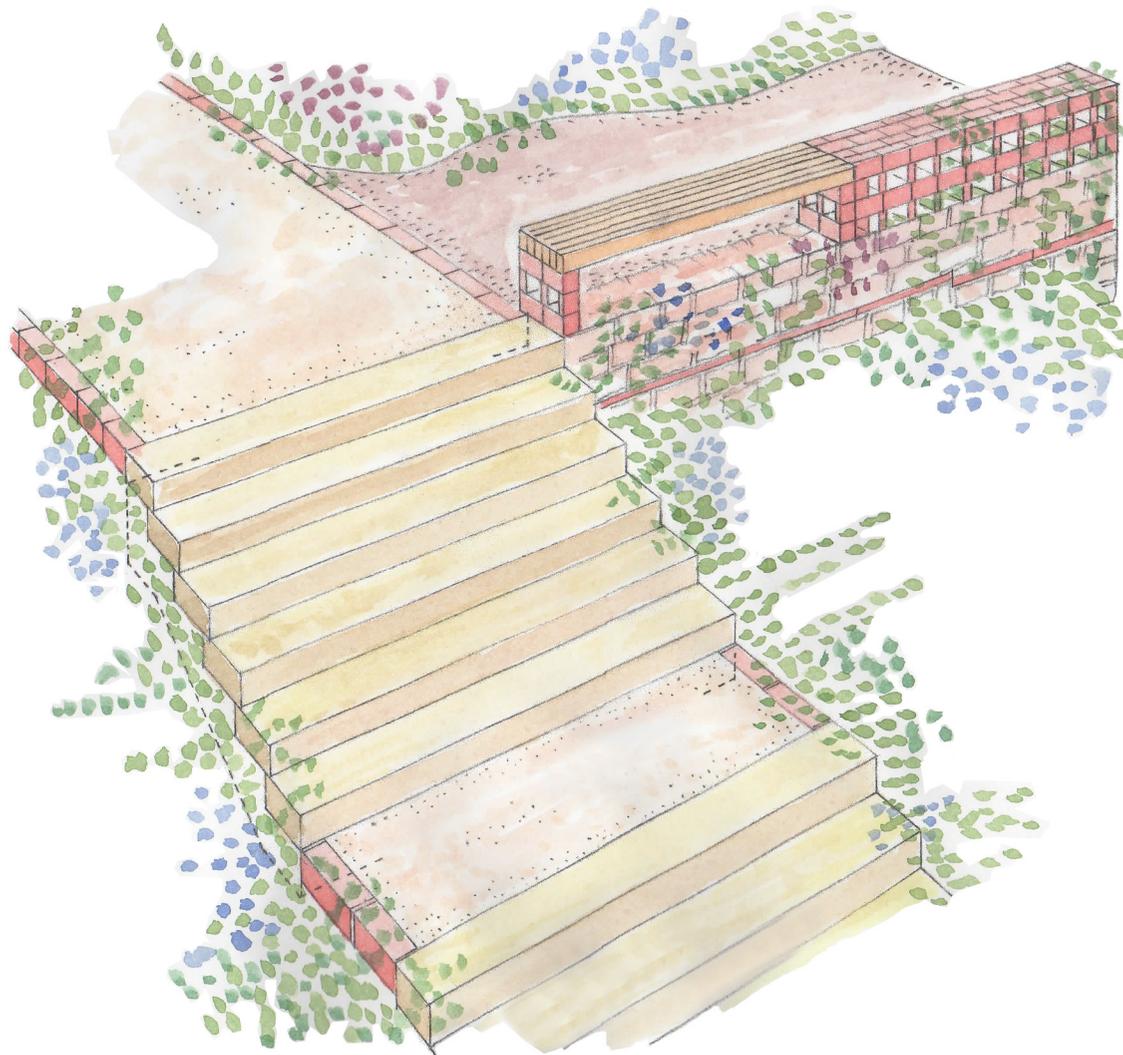
· S H E L F (M A R K E T) : M 1 : 5 0 ·



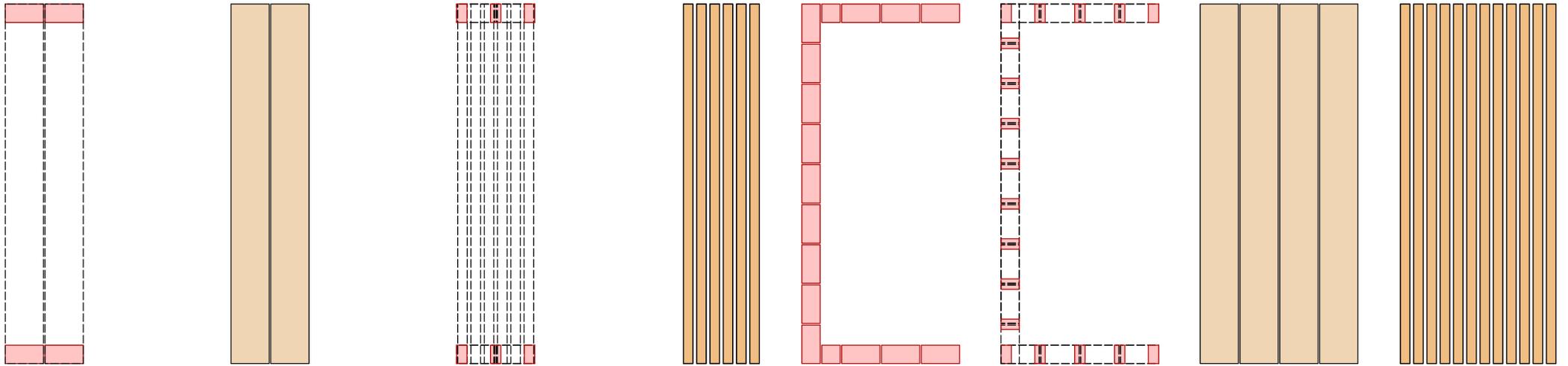
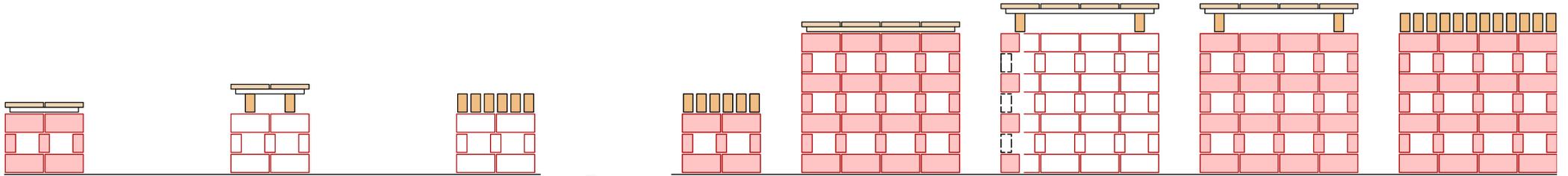
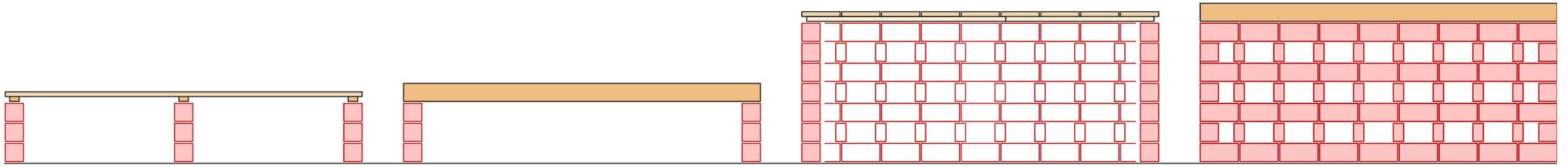
· GATES ·



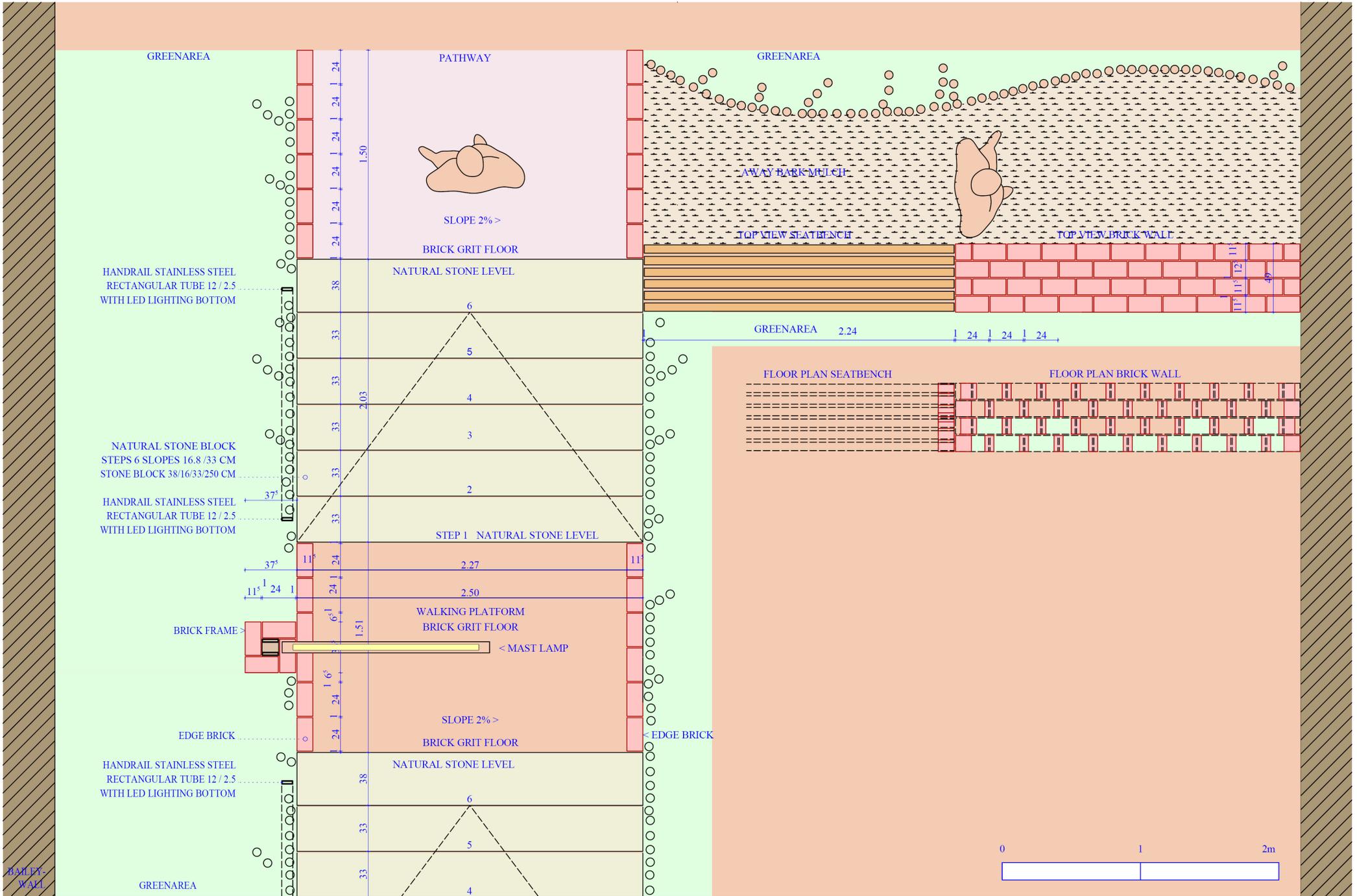
· STAIR & BENCH ·



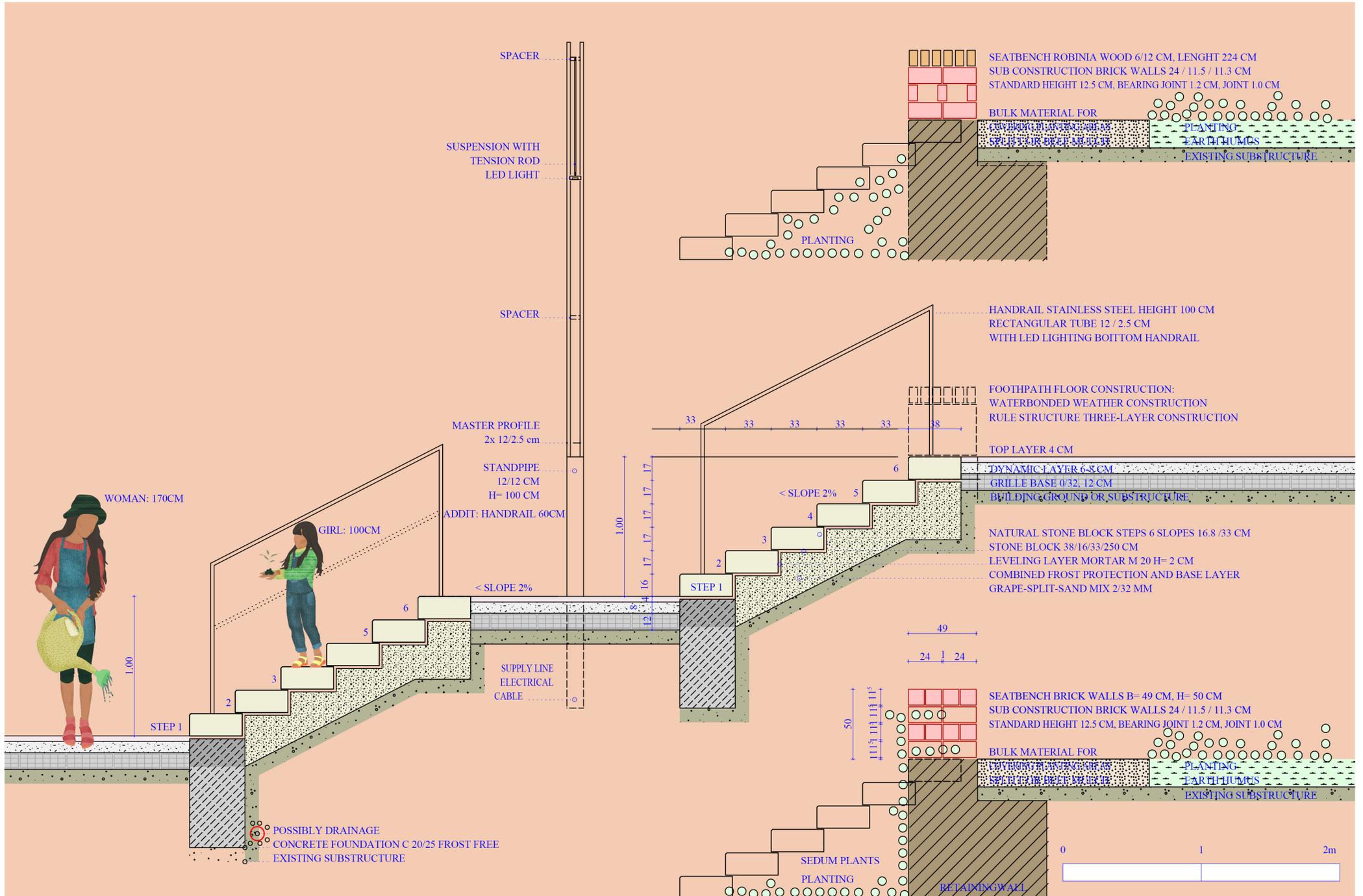
· STAIR & BENCH ·



· Elements M1 / 25 (1/50) : Brick & Wood ·



· Floorplan Stair & Bench M1 / 25 ·

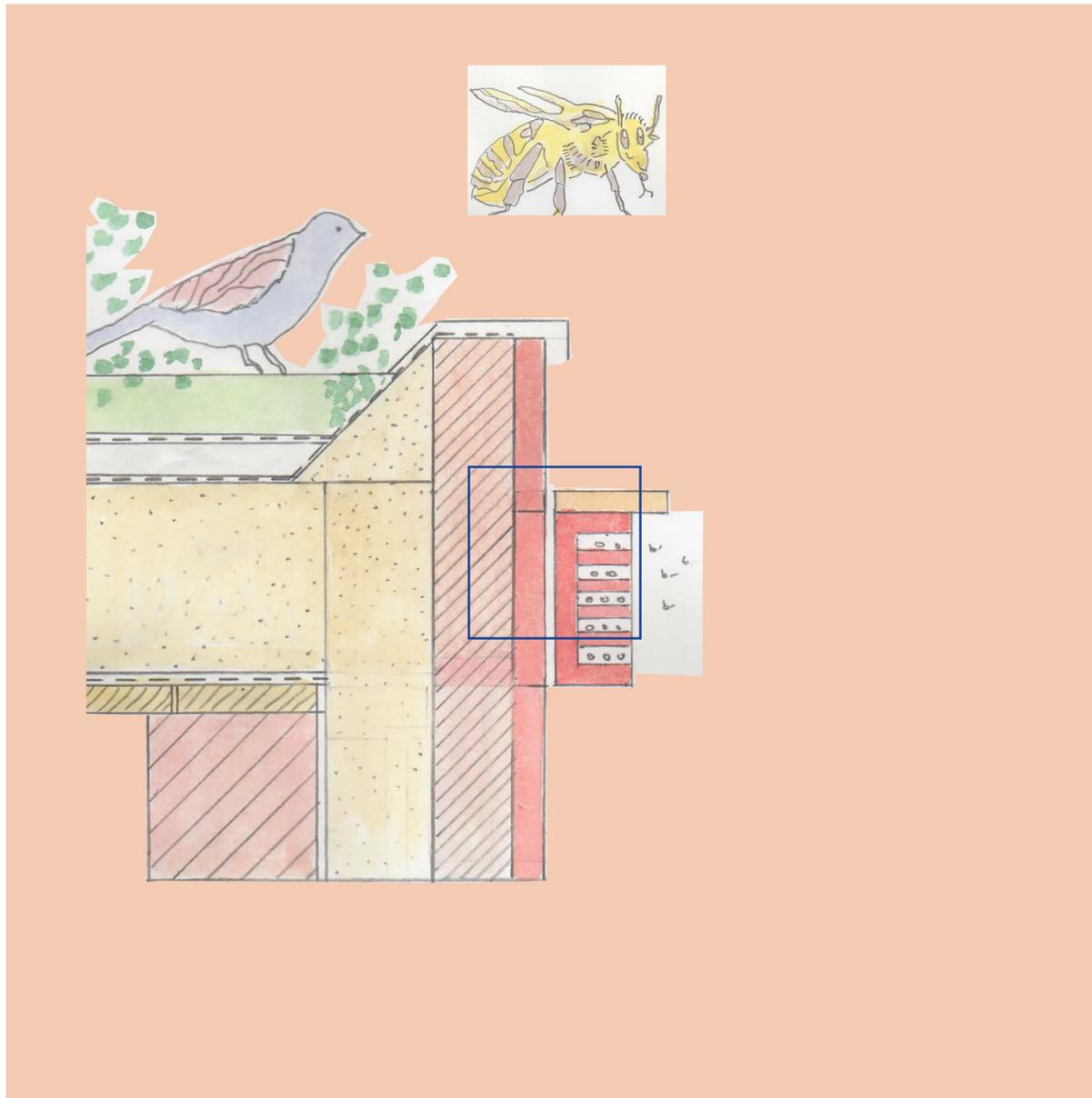


· Section Stair & Bench M1 / 25 ·

1 CENTIMETER

THUMBNAIL

10^{-2} meters



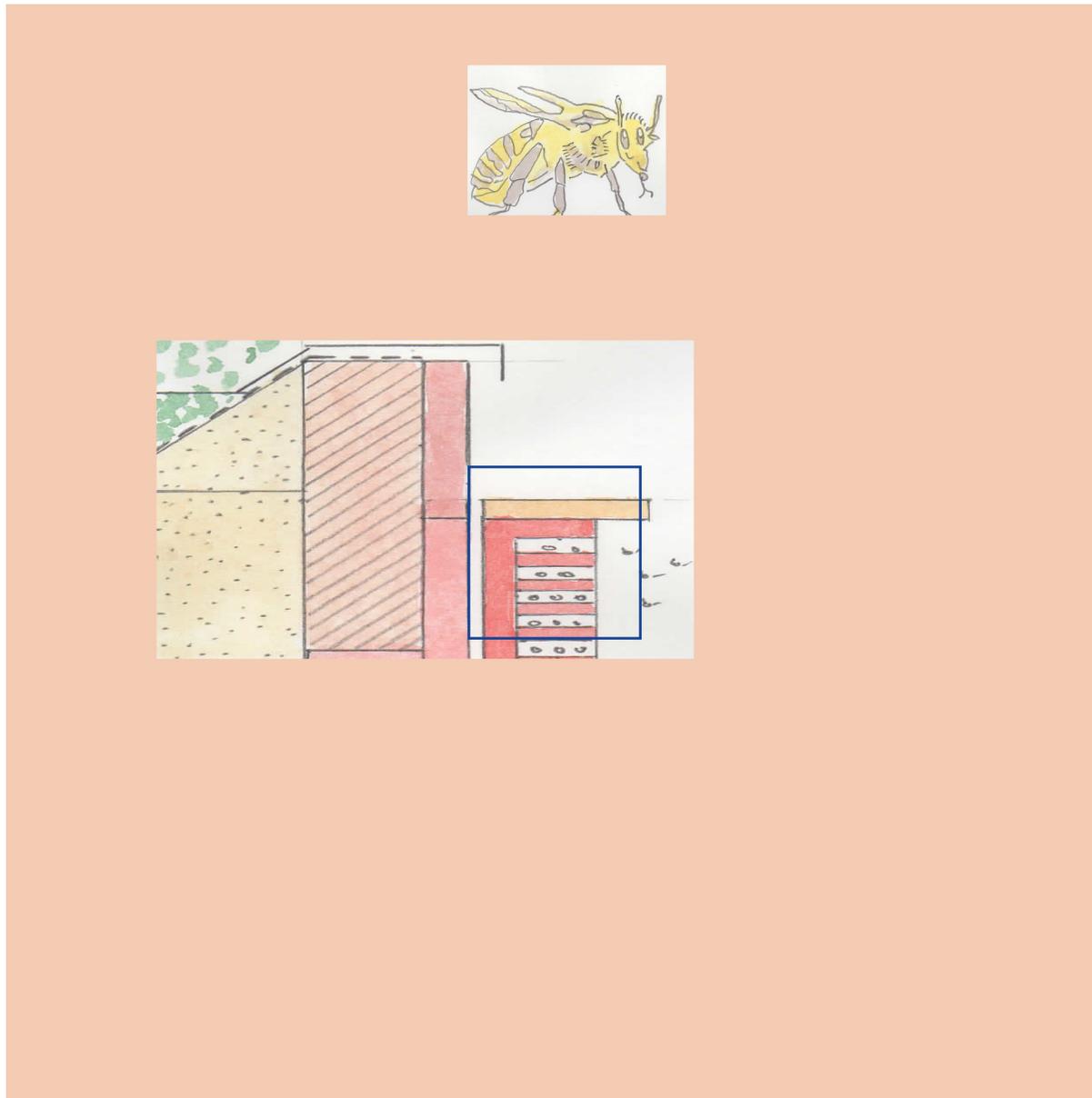
· FACADE TABERNA

Brick for bees ·

0.1 CENTIMETER ~ 1 MILLIMETER

EDGE OF VISION

10⁻³ meters



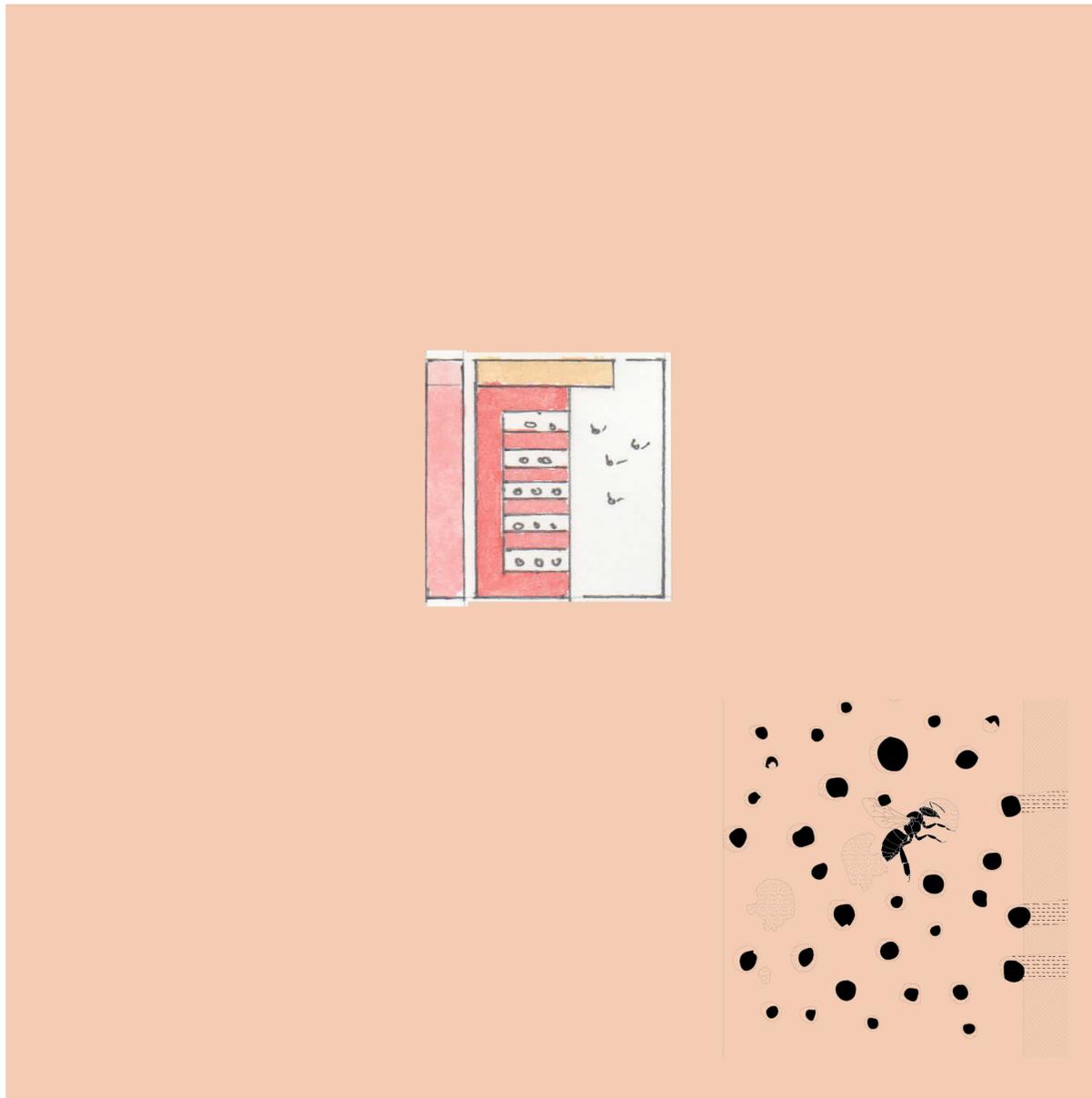
· FACADE TABERNA

Brick for bees ·

0.1 MILLIMETER ~ 100 MICRONS

UNDER THE MICROSCOPE

10^{-4} meters



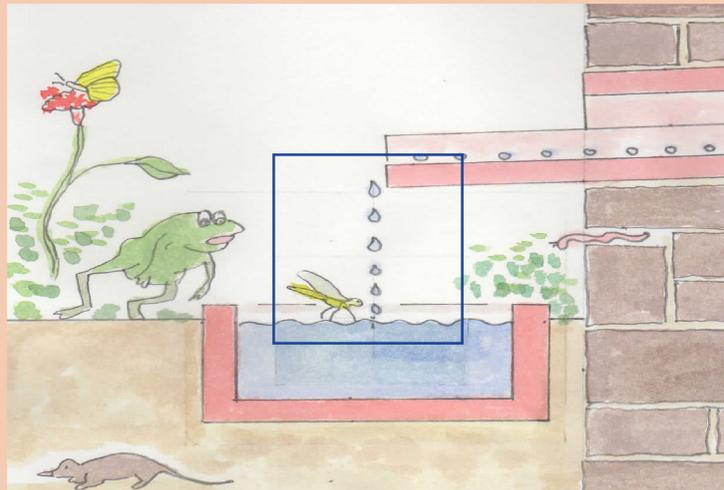
· FACADE TABERNA

Brick for bees ·

1 CENTIMETER

THUMBNAIL

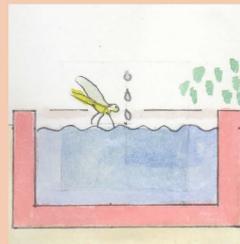
10^{-2} meters



0.1 CENTIMETER ~ 1 MILLIMETER

EDGE OF VISION

10^{-3} meters



· MARKET

Drainage Awning ·

0.1 MILLIMETER ~ 100 MICRONS

UNDER THE MICROSCOPE)

10⁻⁴ meters



· MARKET

Drainage Awning ·

: Manifesto for multi-species design:

(CURRENT STATE)

1. *Material: choice*

Envisioning materials that don't harm species (wherever possible).
Elements that integrate, the "future ruins."

2. *canon of architecture : systems*

If we extend the canon of what is architecture - the shift
between natural (nature) and artificial design- will disappear over
time.

3. *un-design : non-supreme*

"No single life-form or member of one species alone could ever
colonise space." No hierarchies or supremacies. Nature requires
space for biodiversity. Space to grow, but also just to exist.

4. *beauty in decay : change*

The built architecture is not for the architect himself- Appreciate the
change of one's own design and its decay.

4. *Scale : multi*

Another scale of architecture.

„To see architecture not as a shelter (only), but as the embodied environment itself.“

JUNYA ISHIGAMI



THANK YOU FOR YOUR COMING AND ATTENTION.
QUESTIONS?