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IA+D, NTU
Year 4

Aims of the Project

Throughout human evolution, Nature was the major source of inspiration in creating artificial systems, structures, and complex mechanisms. During the Industrial revolution, where functionality as a priority required mass production techniques, and where craftsmanship started to become increasingly rare, Nature's experience was still light years ahead of human technology, always using the minimum energy required to create its natural systems.

Today, as the rate of building construction increases uncontrollably, humans can hardly distinguish which is a mentally good or bad space for them, simply because they are used to live in artificial concrete jungles, detached from Nature. The aim of this project is to introduce some sustainable design techniques and re-integrate natural elements in the city, helping our mental and physical health by taking an extra step towards a greener future.

'We shape our buildings; thereafter they shape us.'

Winston Churchill



Bees play a vital role in the production of food consumed by humans and other species, as fruits and vegetables require pollination

C o n c e p t

In a world where stress dominates our minds, yoga has never been more useful as a way to control anxiety and wind down. On the other hand, chocolate has always been one of the most pleasurable treats. These two pleasures come together in one design, forming spaces based on the concept of flow, allowing the users to experience an alternative state of mind.

7 C O N D I T I O N S O F F L O W

- 1 knowing what to do
- 2 knowing how to do it
- 3 knowing how well you are doing
- 4 knowing where to go (where navigation is involved)
- 5 perceiving significant challenges
- 6 perceiving significant skills
- 7 being free from distractions

C o n t e n t s

1.0 Introduction

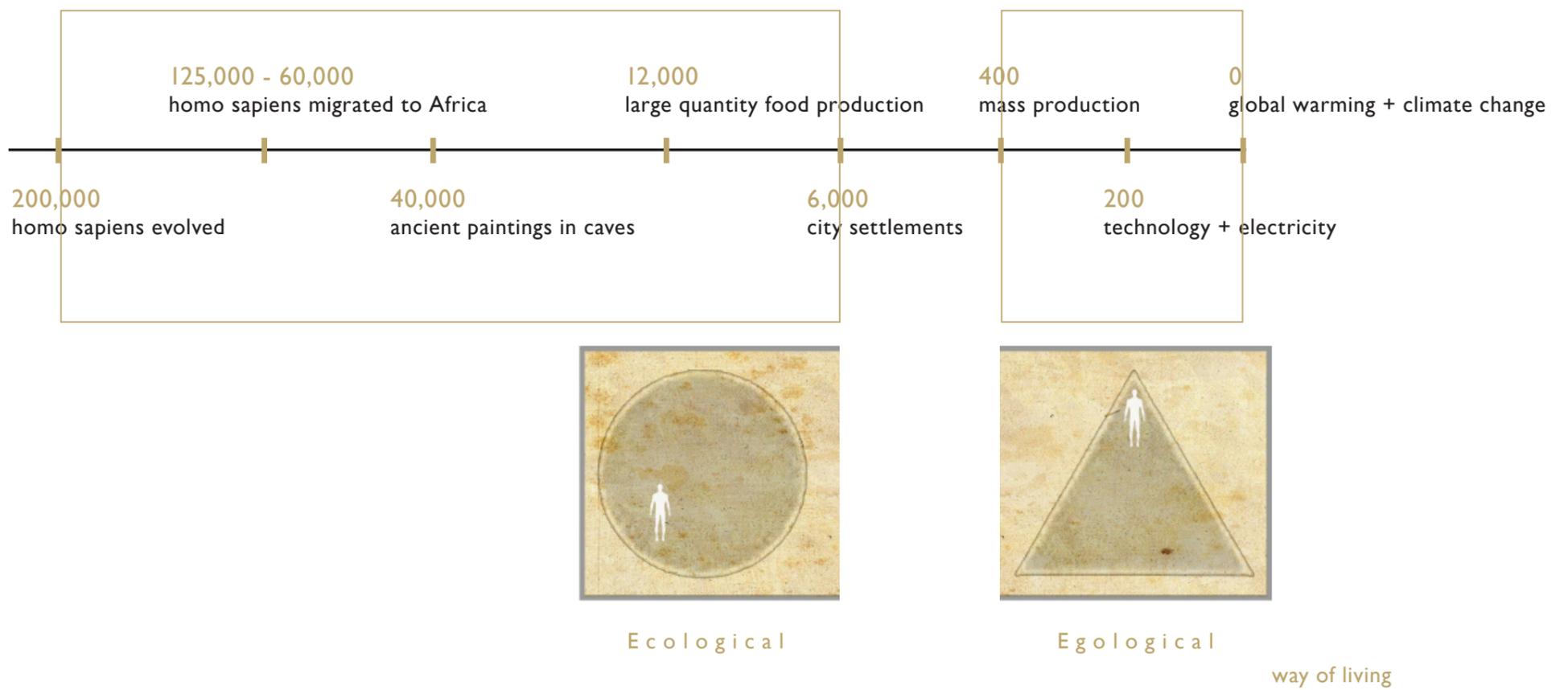
- 1.1 Human Evolution
- 1.2 Client Commonalities
- 1.3 Client Hybridisation + Space Sequence

2.0 The Design Proposal

- 2.1 Site plan - 1:1250
- 2.2 Contextual Elevation
- 2.3 External visual
- 2.4 Building use
- 2.5 Area of focus-Internal visual
- 2.6 Contextual Isometric
- 2.7 Ground Floor plan
- 2.8 Basement plan
- 2.9 First + Second Floor plan
- 2.10 Yoga Studio-Internal visual
- 2.11 Short Section
- 2.12 Area of Focus-Internal Visual
- 2.13 Pre-yoga spaces-Internal Visual
- 2.14 Chocolate production space-Internal visual
- 2.15 Long Section

1.0 INTRODUCTION

1.1 Human Evolution

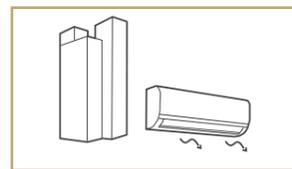


Acknowledgement

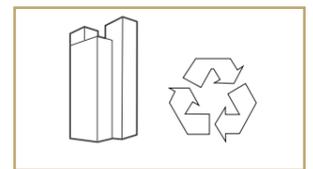
- Human dependence on Nature
- Dependence on phenomenological presence of the natural environment

Today's Cities

- Climate change
- Poor Air quality
- Lack of natural environment



vs



+

MATERIAL CONSIDERATIONS



vs



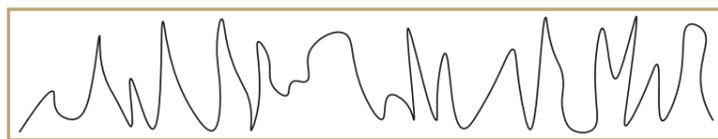
LUISA'S VEGAN CHOCOLATES

Design Response

- Integrate nature in our cities and buildings
- Consider how materials can be reused or biodegraded after use
- Consider how materials can be used in a way that minimizes energy use for heating and ventilating spaces

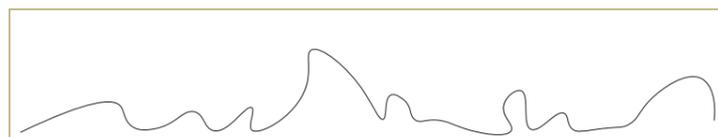
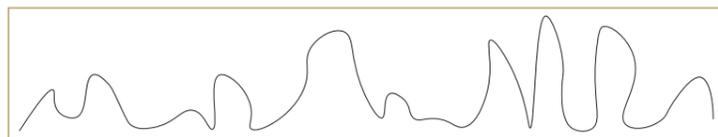
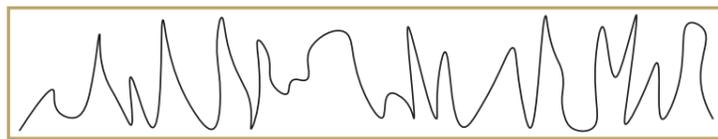
1.2 Client Commonalities

Bahia Yoga



MONOPHASIC

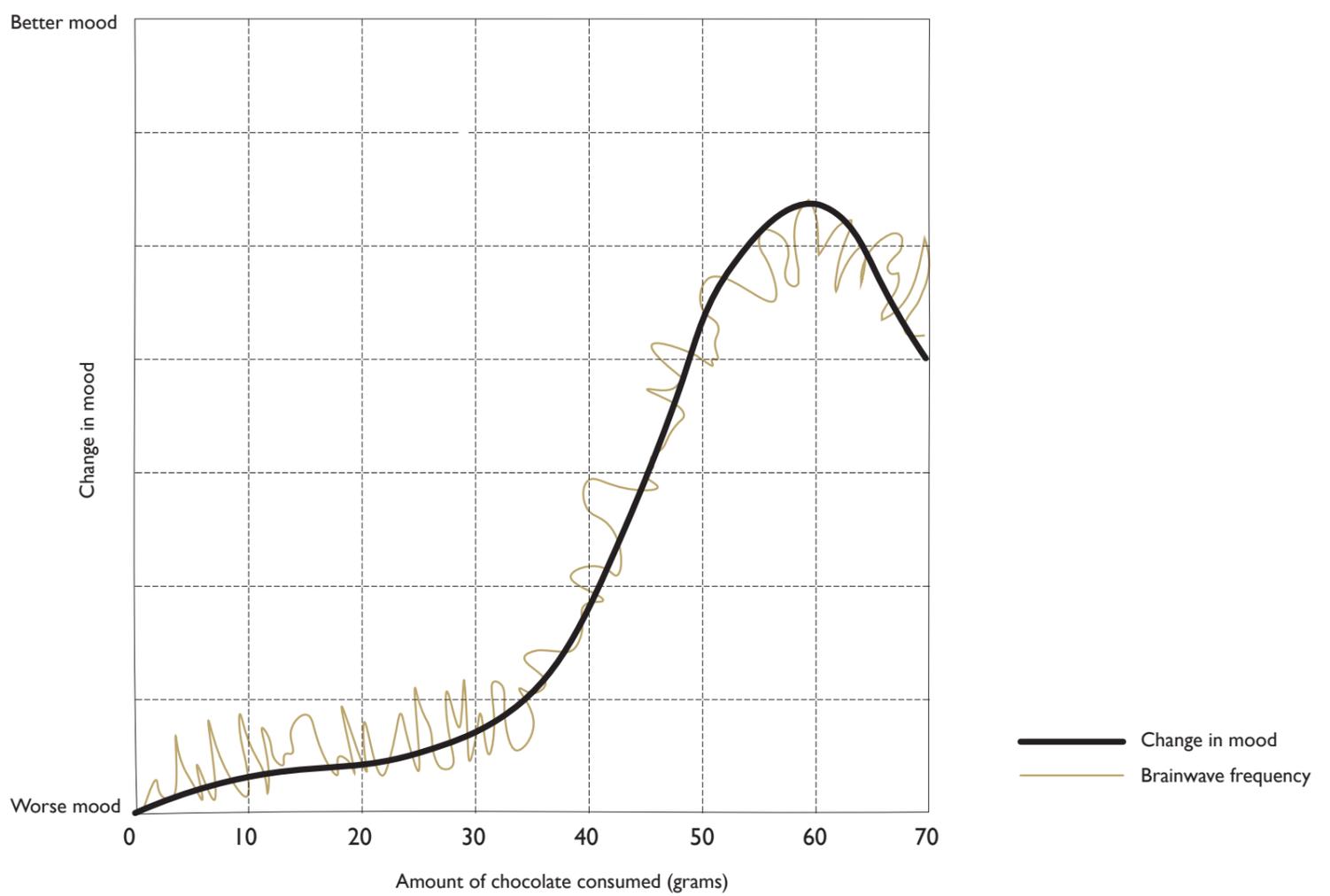
vs



POLYPHASIC

- Our society is used to operate in one brainwave frequency as stress dominates our minds
- Yoga helps oneself to achieve different states of mind by stimulating more than one brainwave frequency

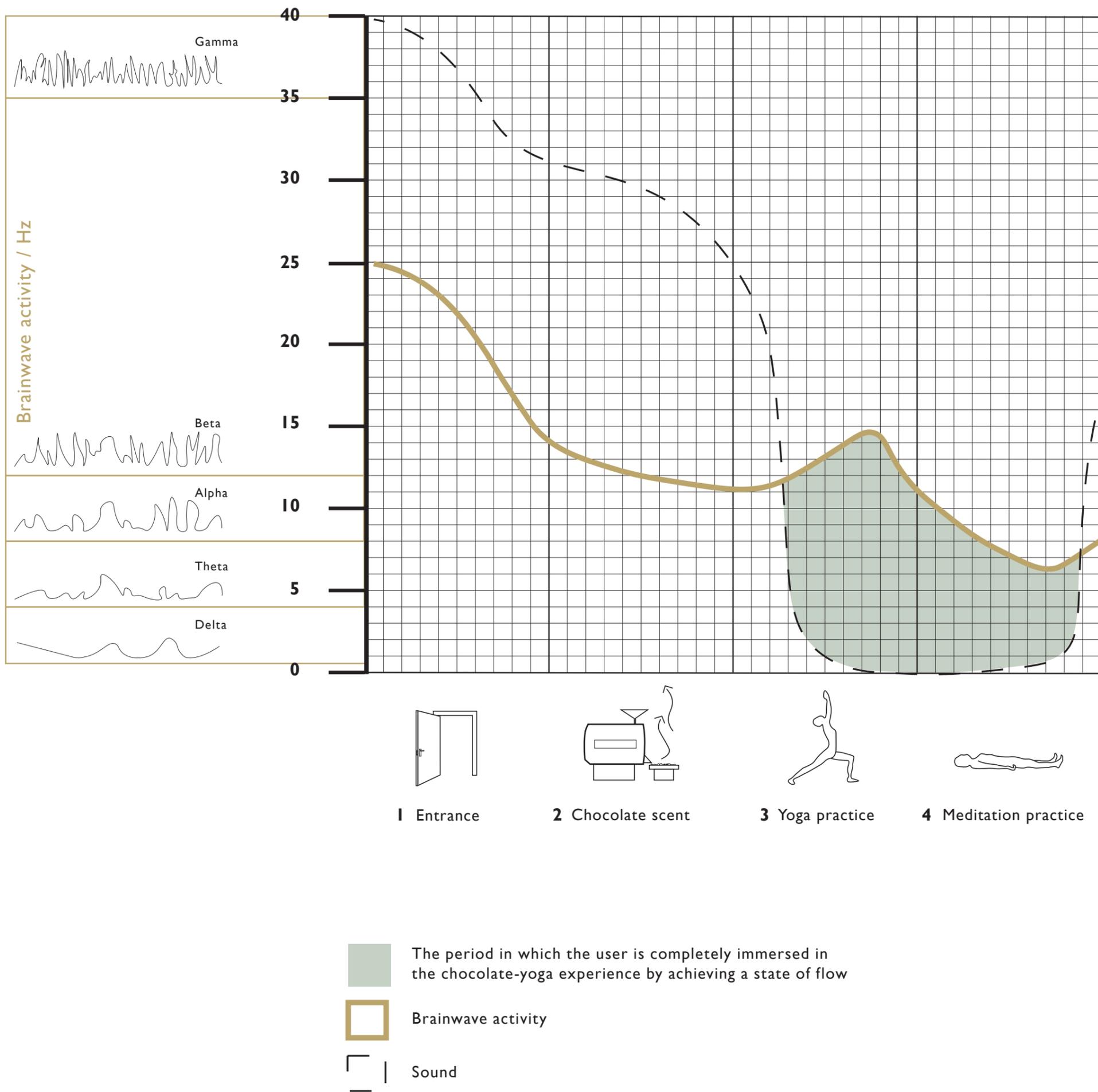
Luisa`s vegan Chocolates

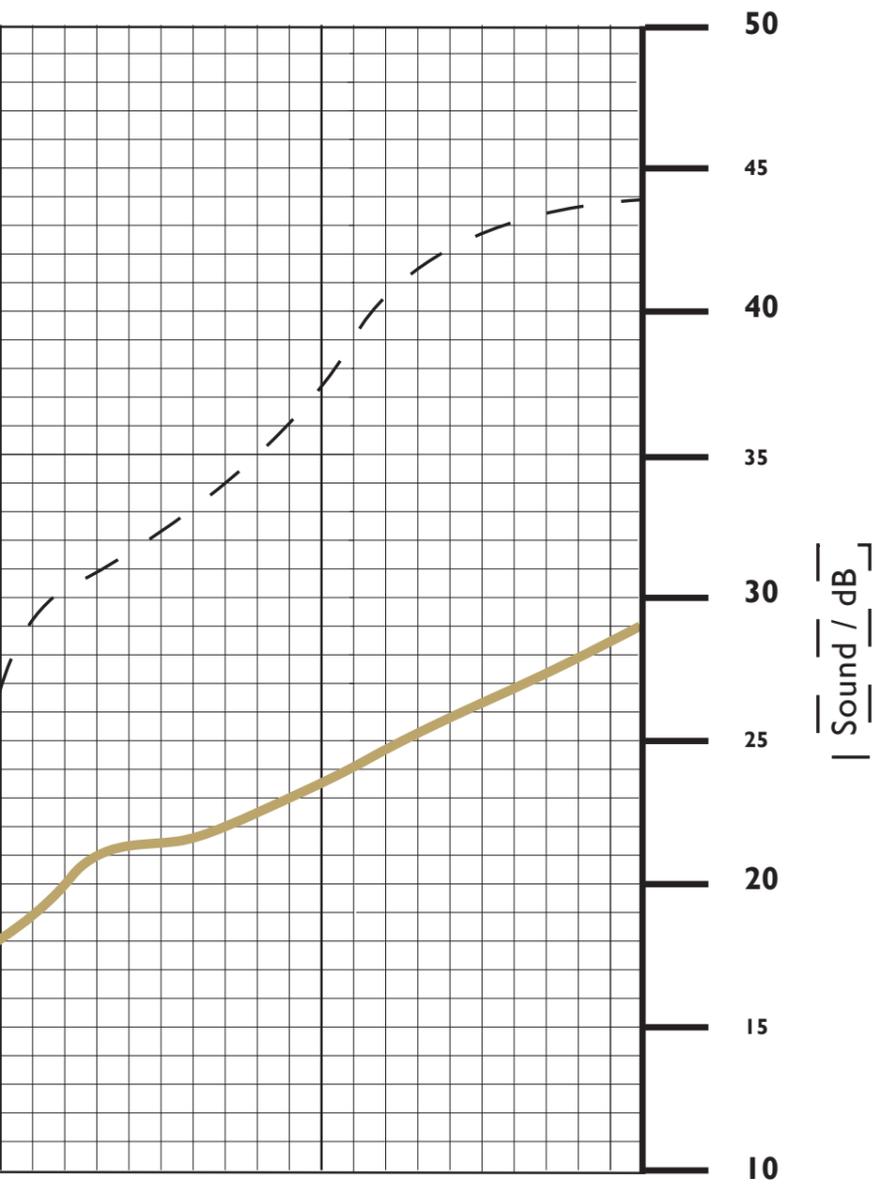


- Consuming 30-60 g of chocolate per day seems to improve our mood by stimulating Alpha brainwaves which operate at a lower frequency
- More that 30-60 g leads to overconsumption, reversing the desired brainwave stimulation

1.3 Client Hybridisation + Space Sequence

BAHIA YOGA + LUISA'S VEGAN CHOCOLATES



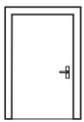


KEY

- 1** transition from outside to inside through the yoga entrance
- higher brainwave frequency to lower - **higher dB**
- 2** scenting chocolate while moving upstairs
- brainwave frequency starts to decrease - **lower dB**
- 3** during yoga practice
- brainwave activity fluctuates - **dB kept to minimum**
- 4** during meditation practice
- brainwave frequency is significantly decreased - **dB kept to minimum**
- 5** tasting LVC in the yoga studio
- brainwave frequency increases but is still low - **higher dB**
- 6** transition from inside to outside
- lower brainwave frequency to higher - **even higher dB**



5 Chocolate tasting



6 Exit

2.0 THE SITE

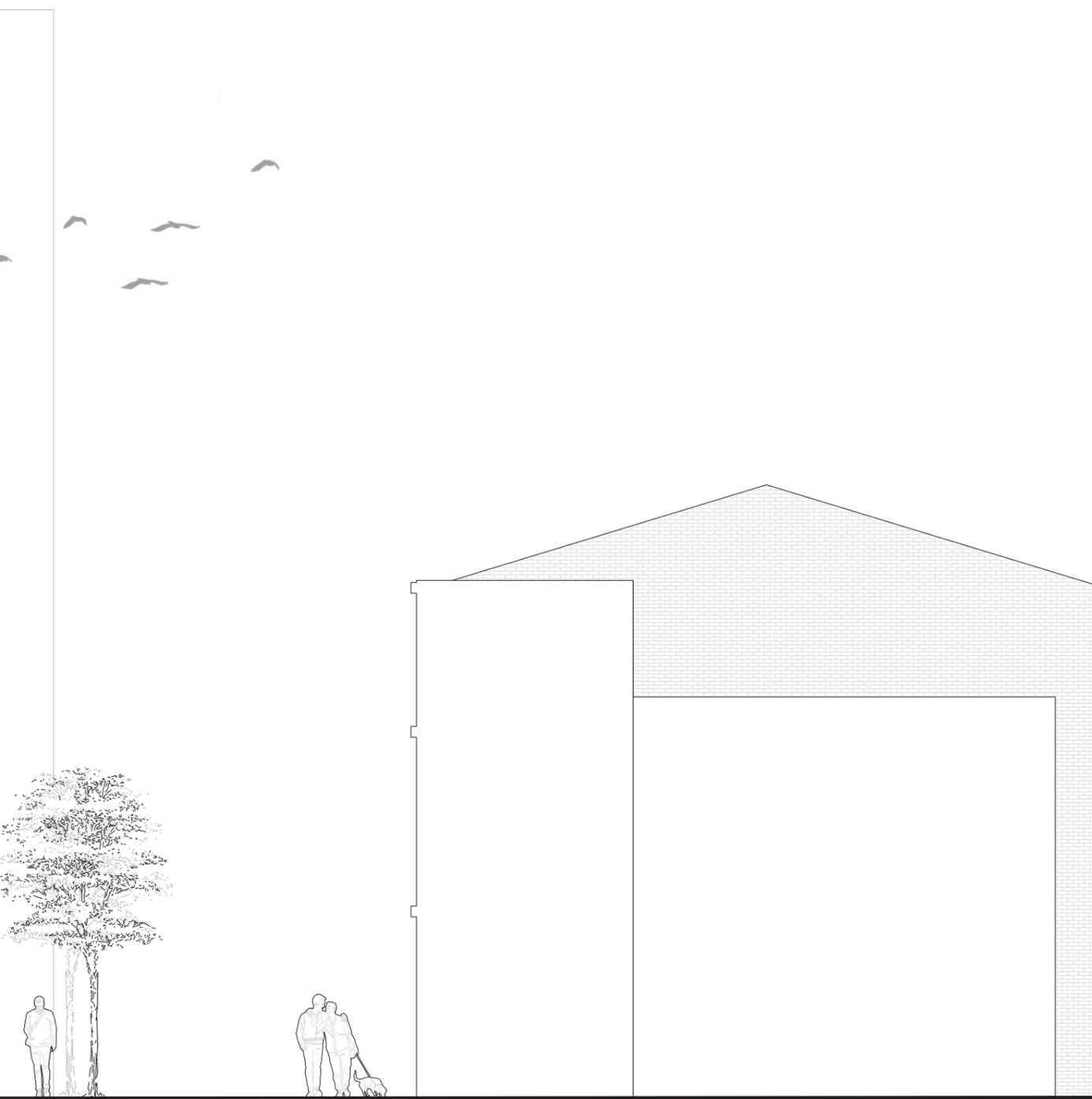
2.1 Site plan 1:1250



0 50 100 150 200 250 300 meters

2.2 Contextual Elevation





new FACADE Materials

- . local Ash cladding + framing
- . Aluminium cladding + framing
- . Glass
- . Okalux glass for diffused illumination

2.3 External Visual





2.3 External Visual



External visual close-up view

- 2 Yoga studio entrance
- 1 Pre-yoga spaces
- 0 Chocolate shop entrance

Area of Focus - as seen from the outside



new FACADE Materials

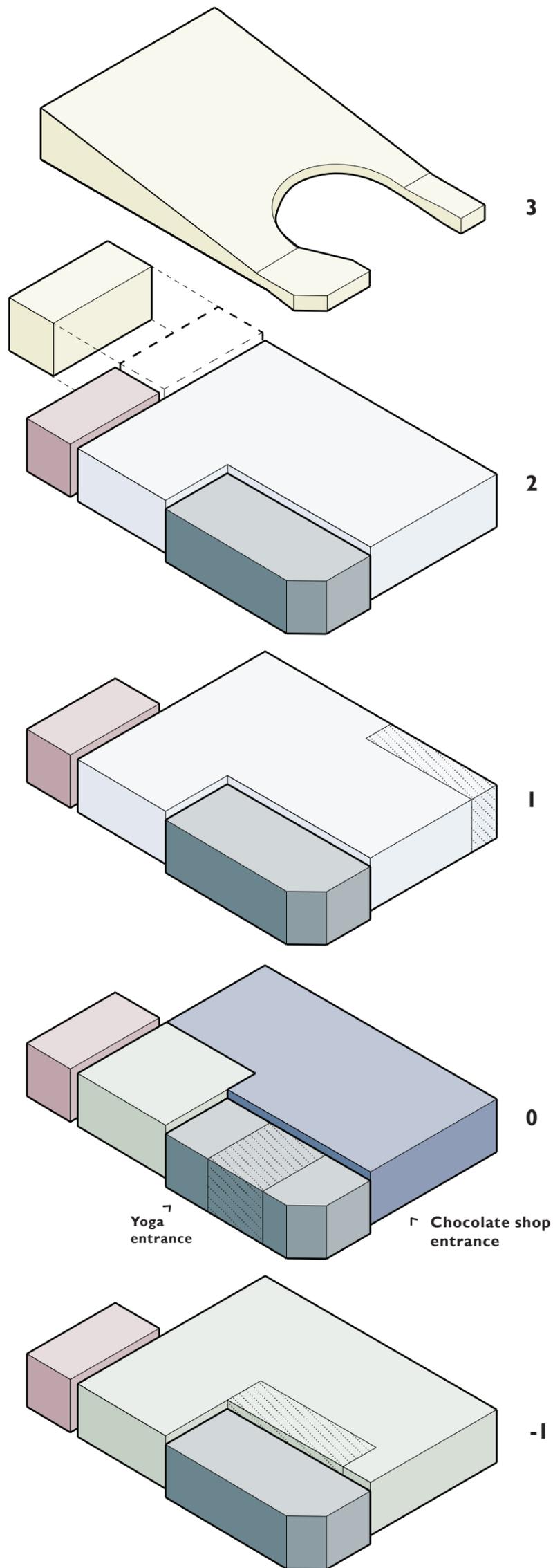
- local Ash cladding + framing
ash has one of the highest growing tree rates in the East midlands
- Aluminium cladding + framing
widely recyclable and lightweight
- Glass
- Okalux glass for diffused illumination

Extensive GREEN ROOF

Green roofs improve air quality and control internal environments. This means that in the summer and winter the internal temperature will be closer to the average comfort level keeping the spaces warmer in winter and cooler in the summer. This will lower the need for heating and ventilating the spaces decreasing energy consumption and GHG emissions

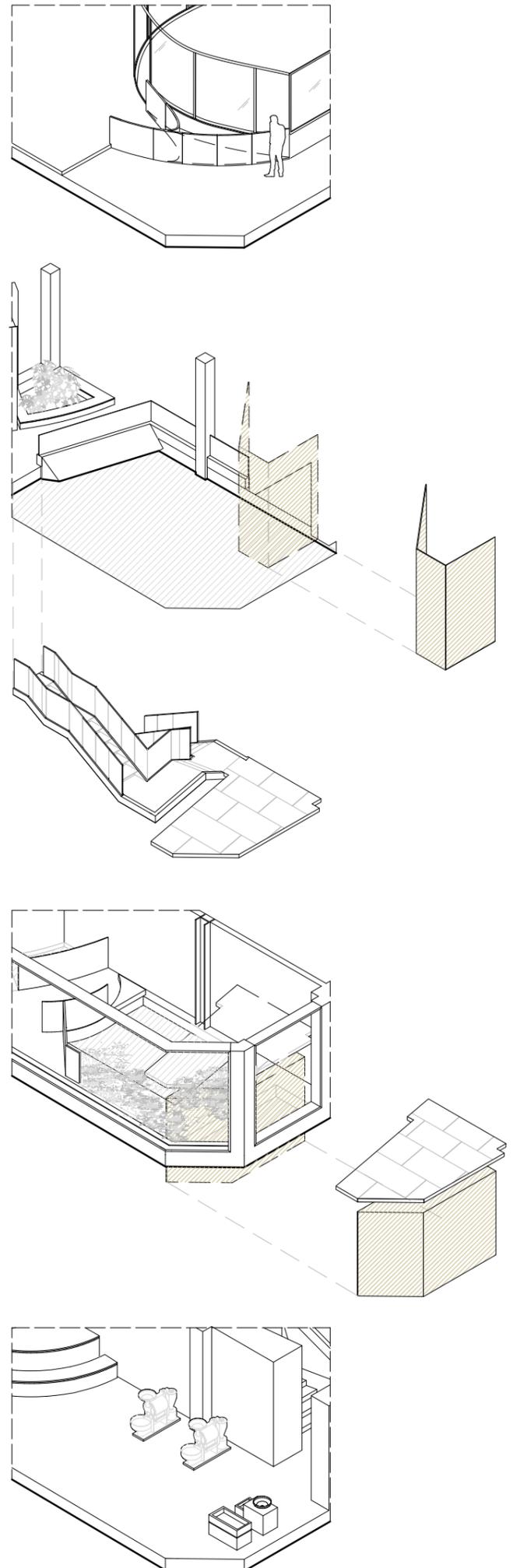
External visual close-up view

- 2 Yoga studio entrance
- 1 Pre-yoga spaces
- 0 Bahia Yoga entrance
- 1 Chocolate Roasting space



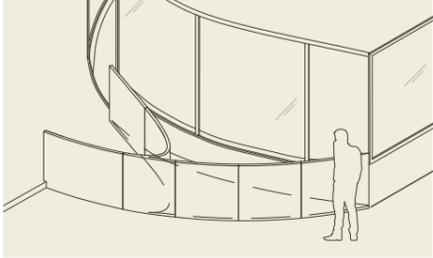
Area of focus

Overlooking through all of the floors including the roasting space. Chocolate aromas travel upwards in the yoga studio, diffusing a discrete scent.



The scent of chocolate aromas produced during roasting travels upwards through all of the four floors stimulating the alpha brainwaves prior to the yoga class

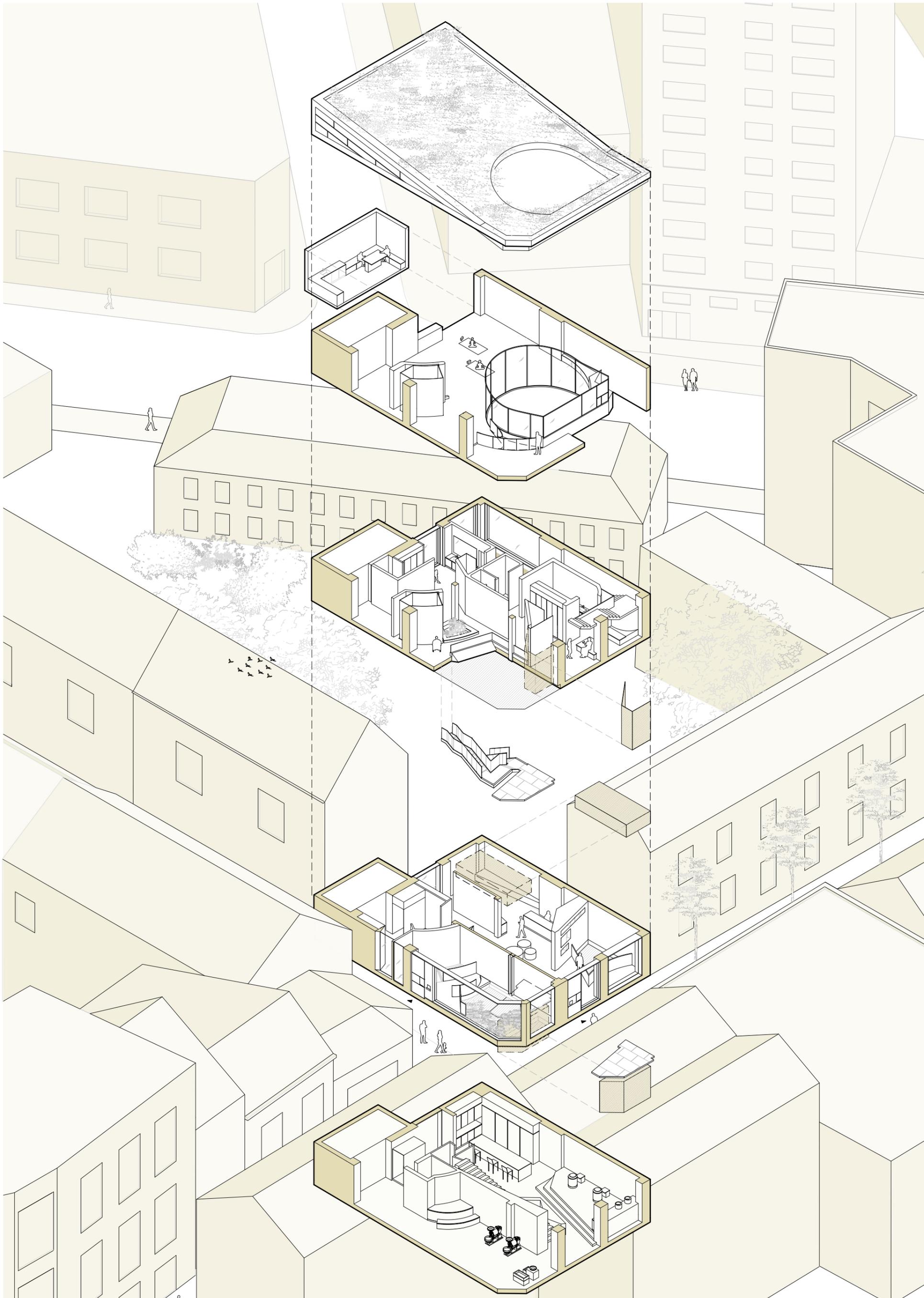
2.5 Area of Focus - Internal Visual

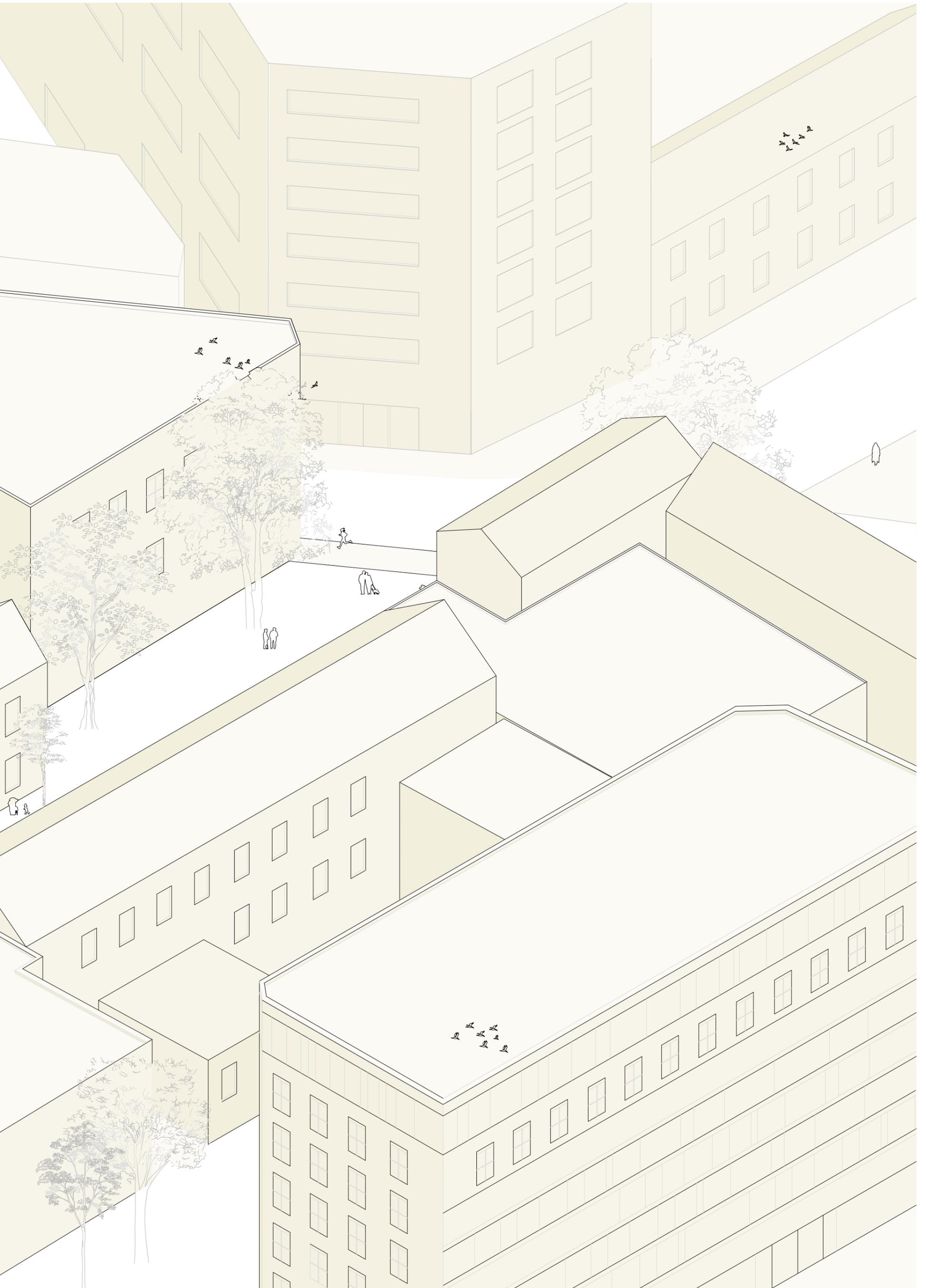


Area of focus - overlooking through all of the floors

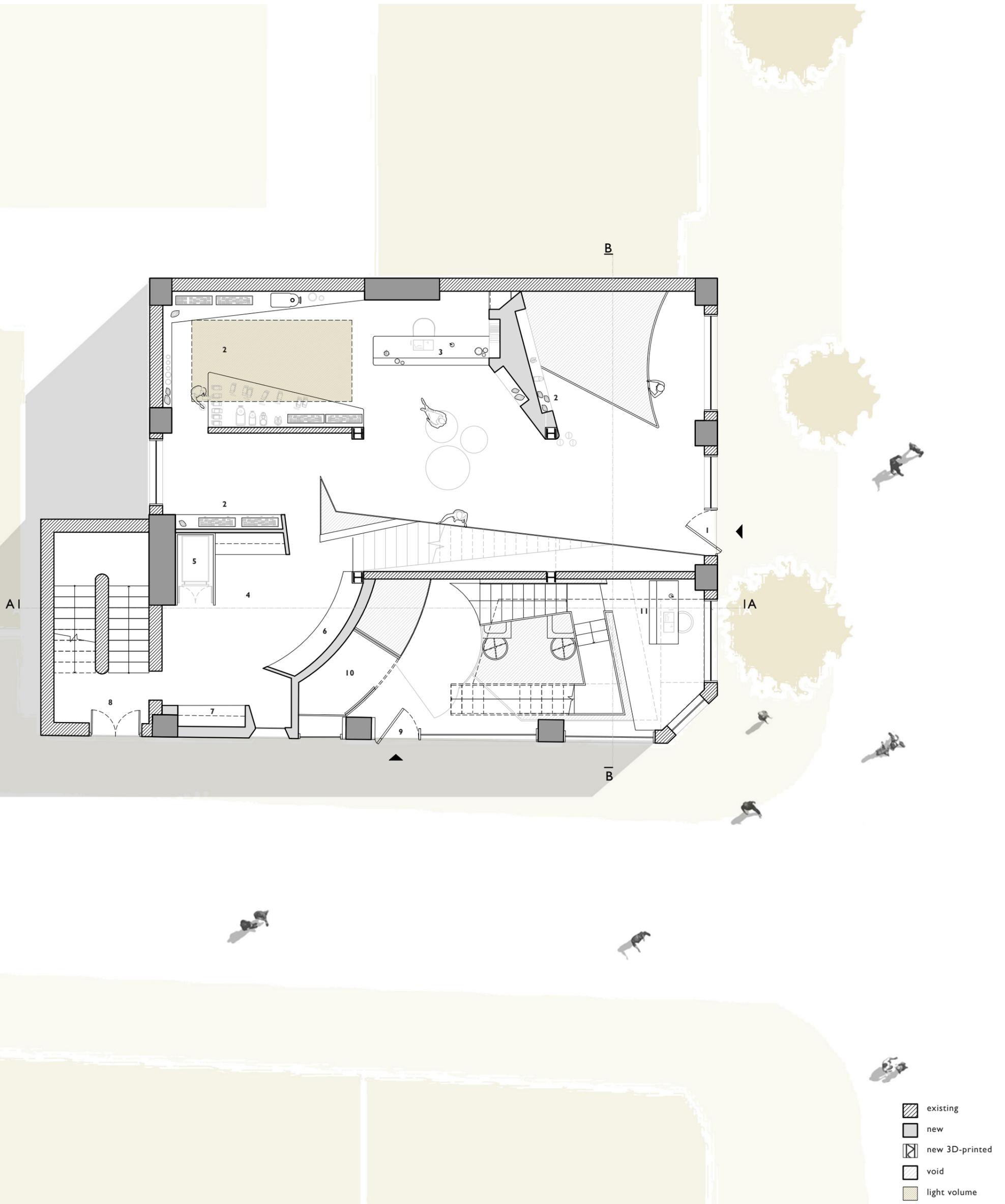
	New additions	
	Area of focus	3 Green roof
	Yoga spaces	2 Yoga Studio
	Chocolate spaces	1 Pre - Yoga spaces
	Vertical circulation	0 Chocolate retail
	Staff access only	-1 Chocolate Production
	Emergency exit	

2.6 Contextual Isometric

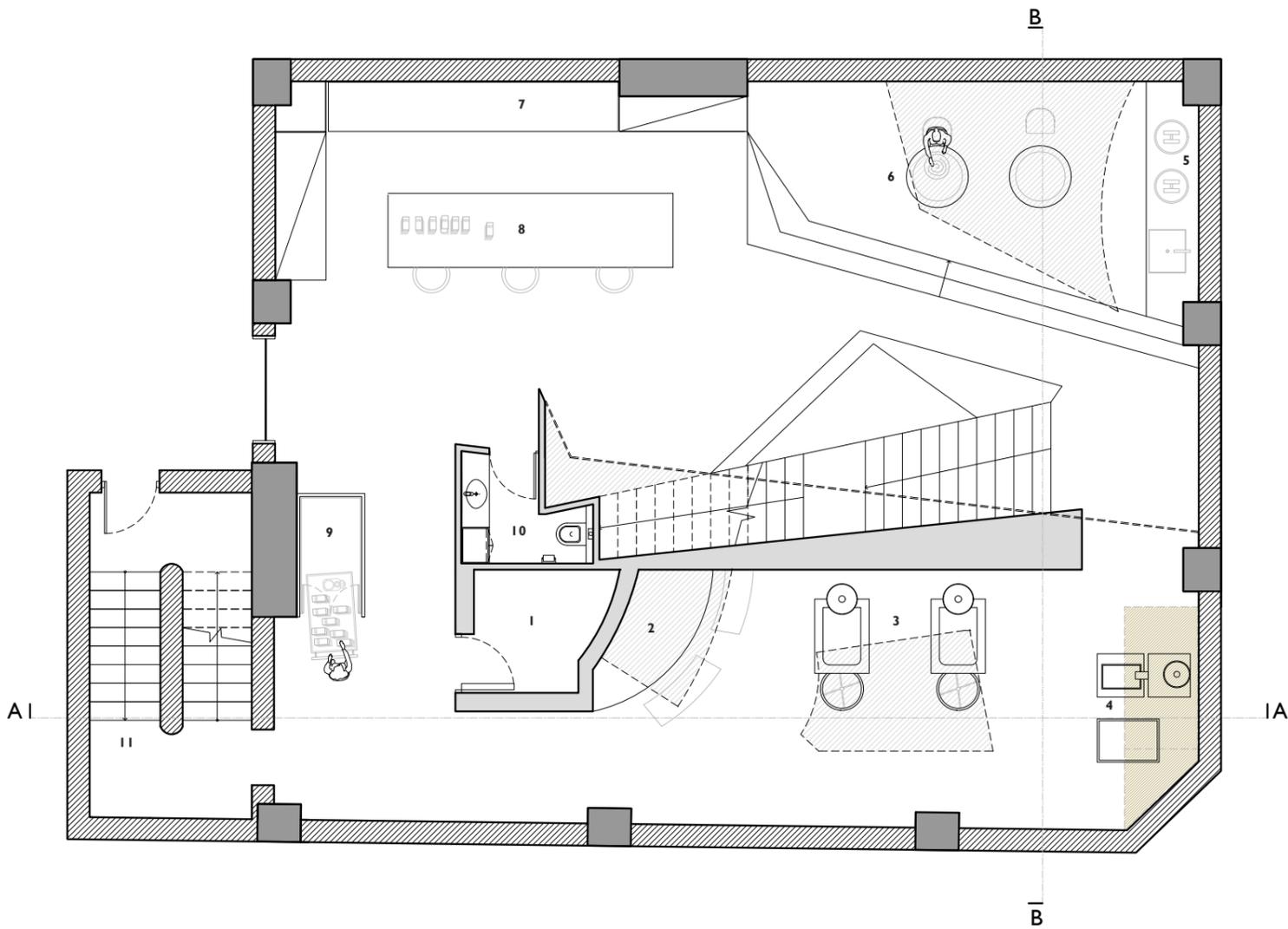




2.7 Ground Floor plan



2.8 Basement plan



Roasting + Tempering

two of the most important stages of chocolate production

Roasting determines the aromas of the chocolate and Tempering determines the final texture

These two processes form a part of the customer experience

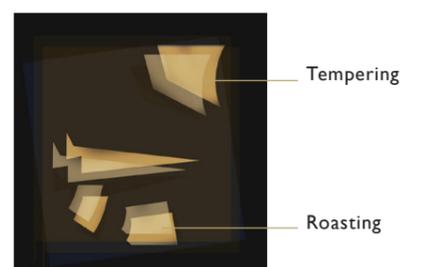
KEY for 0

- 1 Chocolate shop entrance
- 2 Display areas
- 3 Till
- 4 Staff only
- 5 Goods lift
- 6 Chocolate and equipment Storage
- 7 Kitchenette
- 8 Emergency exit
- 9 Bahia Yoga entrance
- 10 Lift
- 11 Bahia yoga Reception

KEY for -1

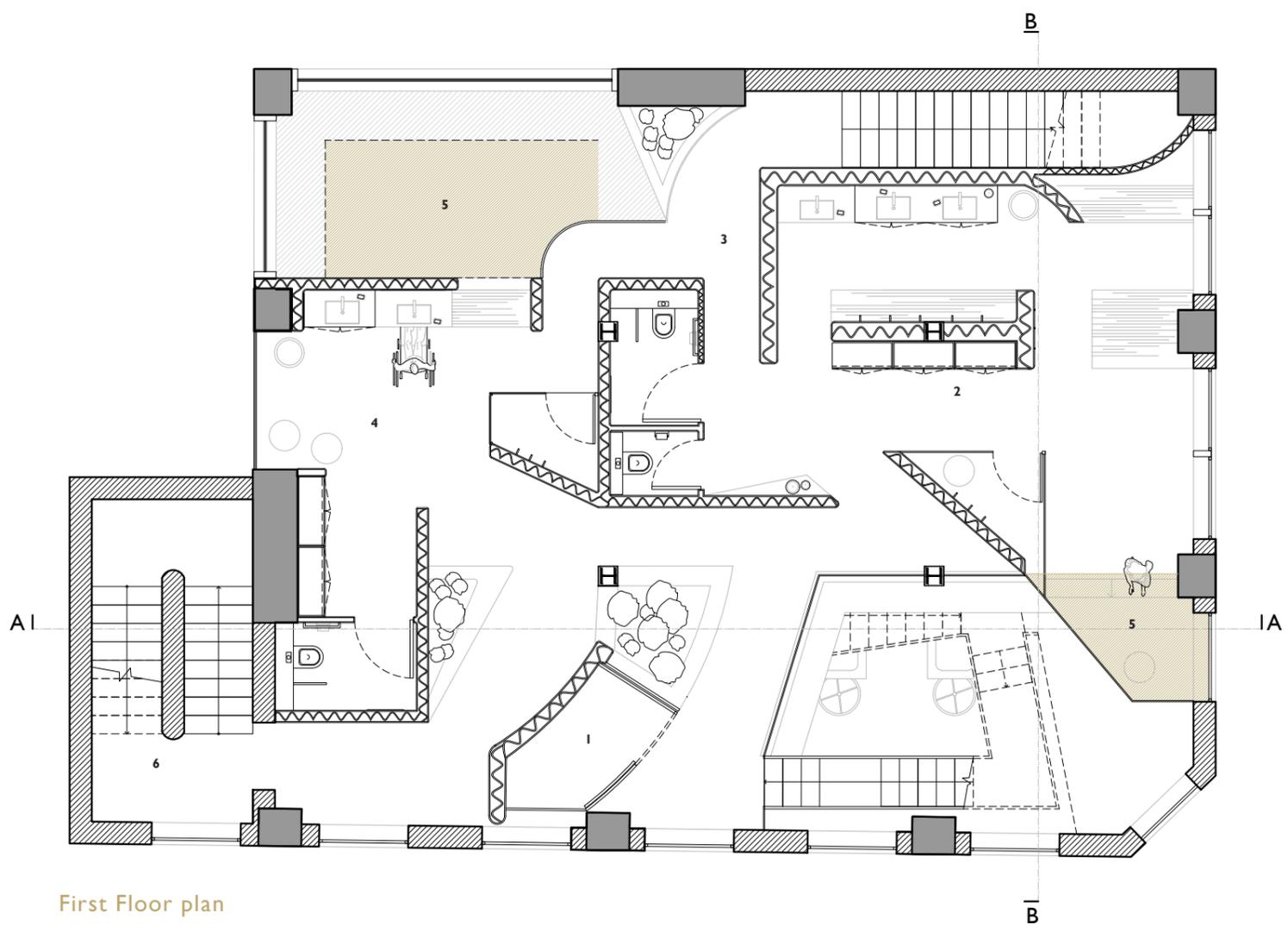
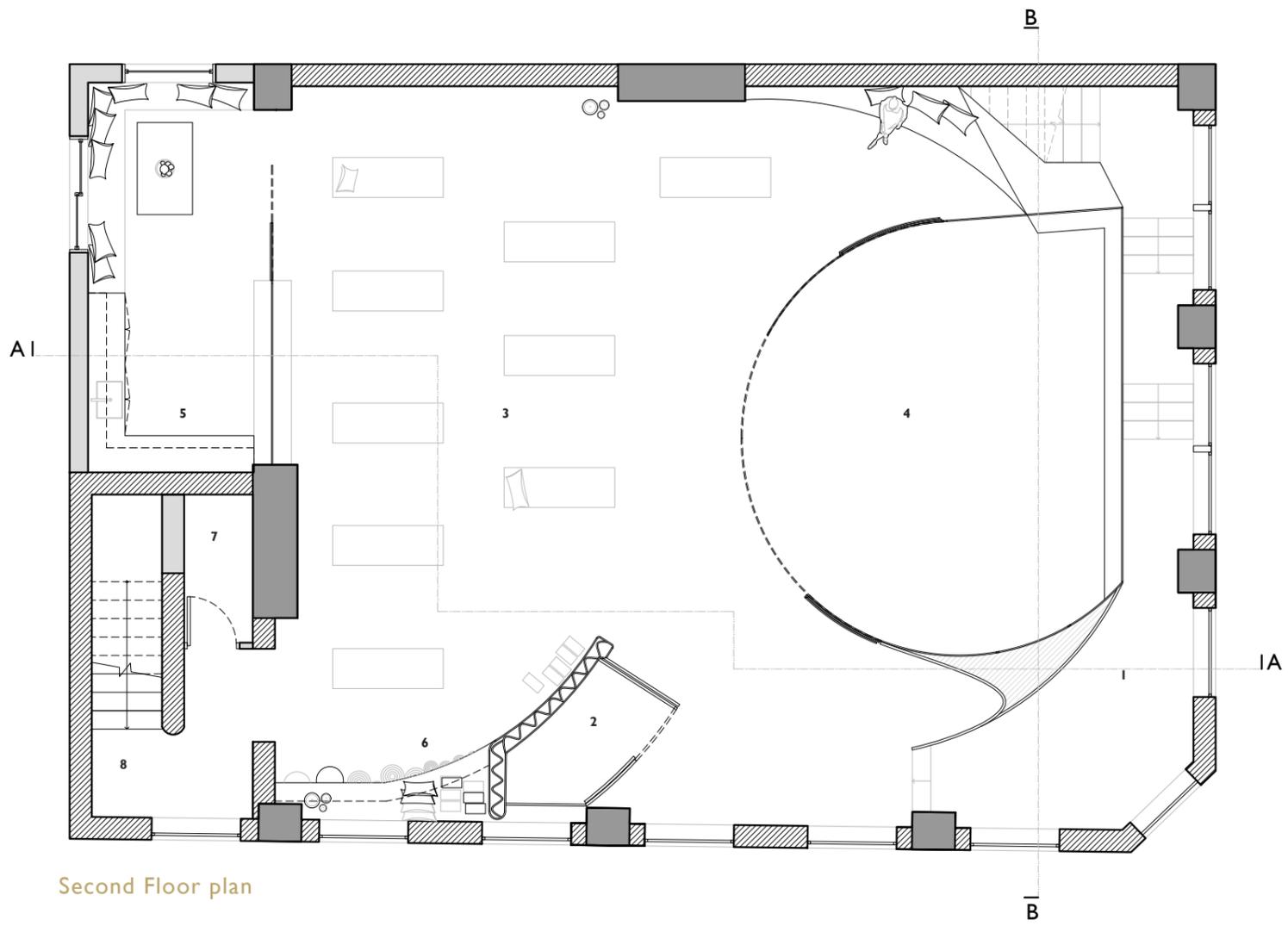
- 1 Dry bean Storage
- 2 Dry bean Analysis
- 3 Roasting
- 4 Cracking + Winnowing
- 5 Conching
- 6 Tempering
- 7 Casting
- 8 Packaging
- 9 Goods Lift
- 10 Toilet
- 11 Emergency exit

GROUND FLOOR OPENINGS



Overlooking the roasting and tempering spaces

2.9 First and Second Floor plans



-  existing
-  new
-  new 3D-printed
-  void
-  light volume

 scale 1:100

2.10 Yoga Studio-Internal Visual



KEY for 1

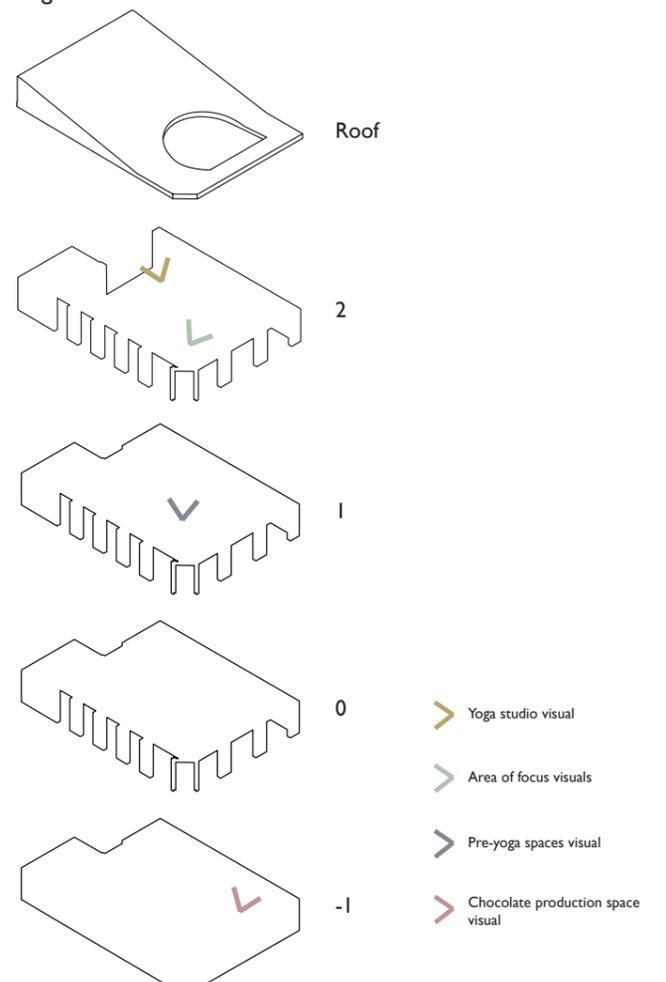
- 1 Lift
- 2 Ladies changing rooms
- 3 Way towards yoga studio
- 4 Men changing rooms
- 5 Light volumes*
- 6 Emergency exit

KEY for 2

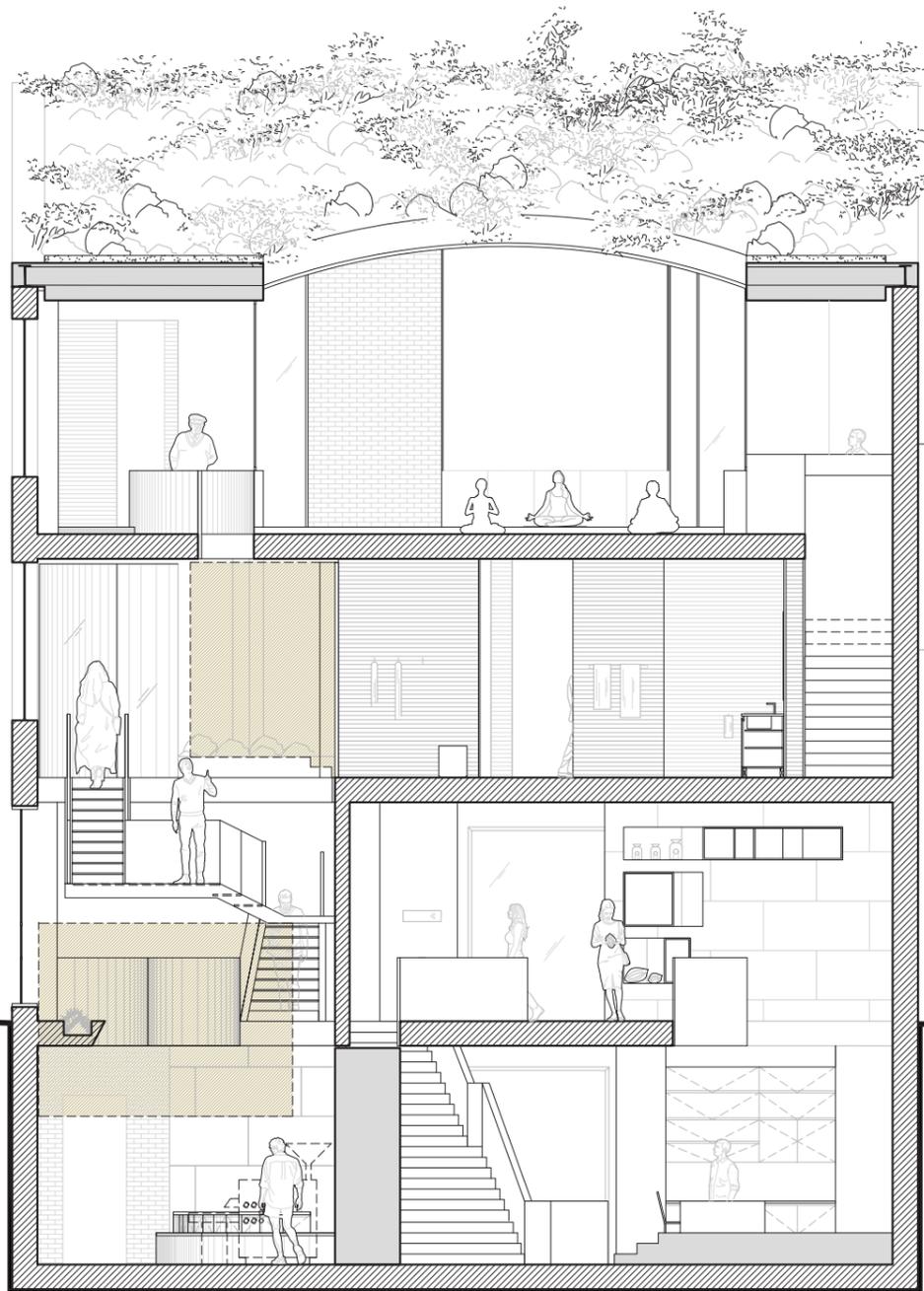
- 1 Yoga studio entrance
- 2 Lift
- 3 Yoga practice space
- 4 Yoga practice space-courtyard
- 5 Kitchen area
- 6 Yoga equipment storage and display area
- 7 Extra equipment storage
- 8 Emergency exit

*Light volumes: Spaces surrounded by Okalux glass which diffuses illumination

view in visuals diagram



2.11 Short Section



Section BB

-  existing
-  new
-  new 3D-printed
-  light volume

scale 1:100

2.12 Area of Focus - Internal Visual

Bespoke Structural Aluminium stringer + Balustrade Detailing



Rectangular Hollow section beam

+



H section beam

=

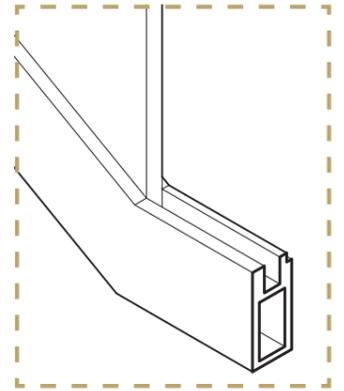


Bespoke aluminium section beam designed to fit the ash balustrade; 100x200mm



Section beam cut-in; to accommodate the ash steps

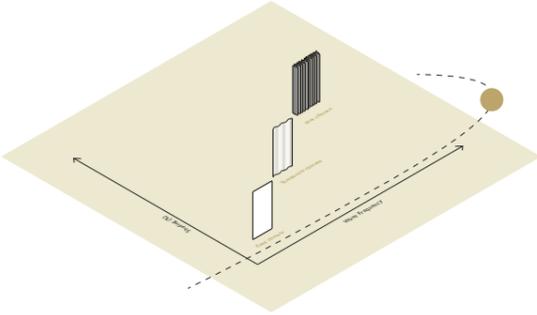
Bespoke aluminium section beam designed to fit the ash balustrade and steps; 100x200mm



2.13 Pre-Yoga Spaces - Internal night Visual



Material selection



3D PRINTING

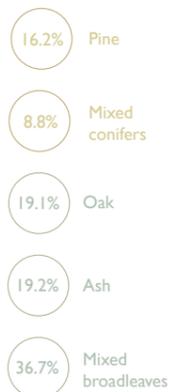
A robotic arm is used to 3D-print local clay. This technique is a hybrid of vernacularism and technology.

Considering Nottingham's cold climate, the surfaces of the 3D-printed clay are smooth to increase solar gain as shown in the diagram above.

LOCAL WOOD SPECIES

Ash is one of the most abundant wood species in the East Midlands and has one of the highest growing rates of up to 60cm a year.

Considering the availability of local and abundant materials in the nearest areas of Nottingham, ash is used as an interior and facade finish.



RECLAIMED CONCRETE TILES

Concrete found in the existing building is crushed near the site and reclaimed to produce 50mm thick concrete tiles for flooring.

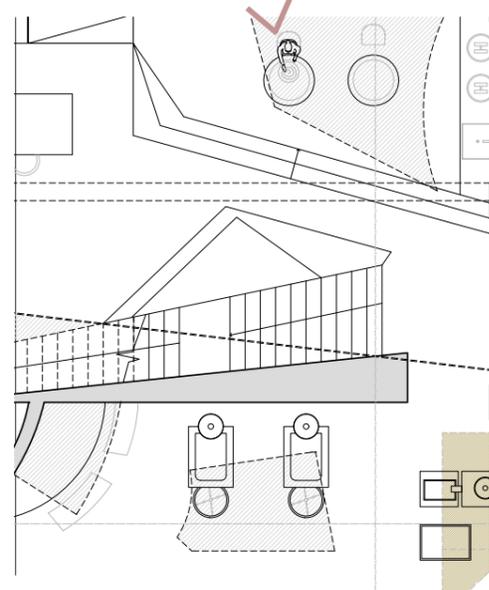
2.14 Chocolate Production Space - Internal Visual





GROUND FLOOR-BASEMENT
connections

Point of view in the visual



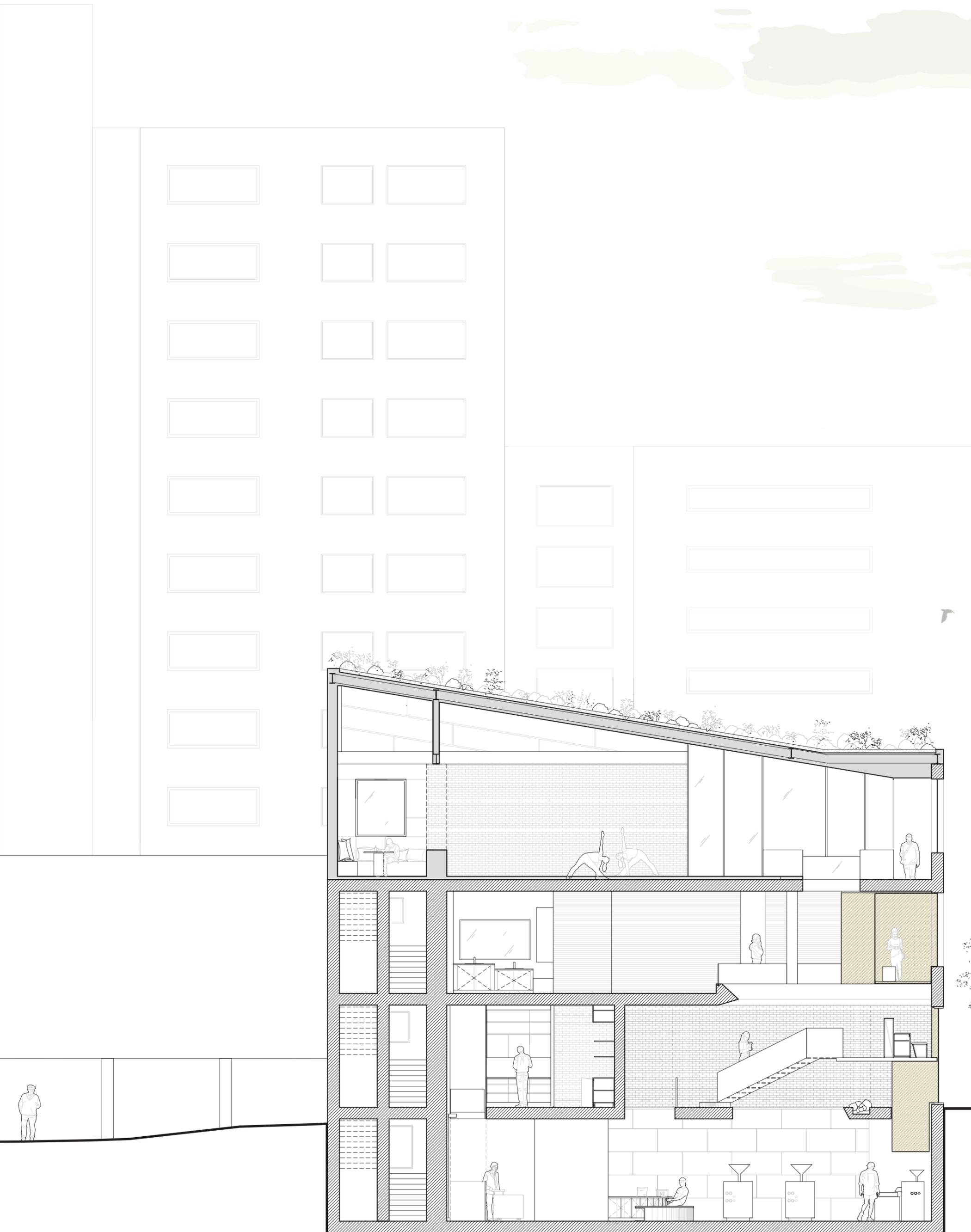
TEMPERING SPACE

Floor openings allow customers to engage with one of the most important chocolate production stages and allow natural light access in the basement.

TEMPERING SPACE flooring

Timber oak from the existing roof is reclaimed and used as oak flooring in the basement tempering area.

2.15 Long Section





-  existing
-  new
-  new 3D-printed
-  light volume

Section AA

scale 1:100