

EUNOIA

Wellness Centre

Centre for Women and Children

eunoia

[yoo-noy-uh] • Greek

(n.) a pure and well-balanced mind, good spirit, Beautiful thinking.

Problem Statement

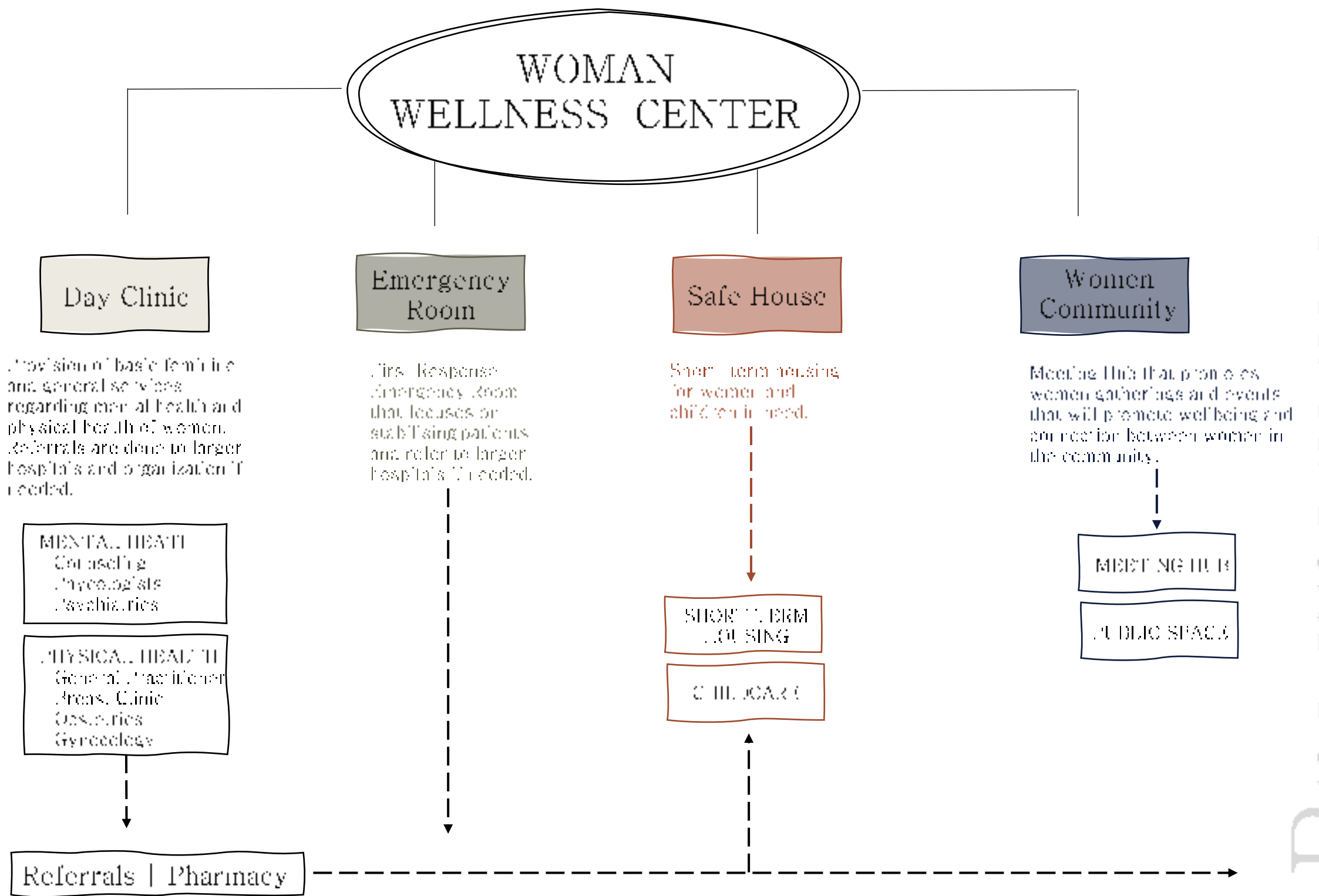
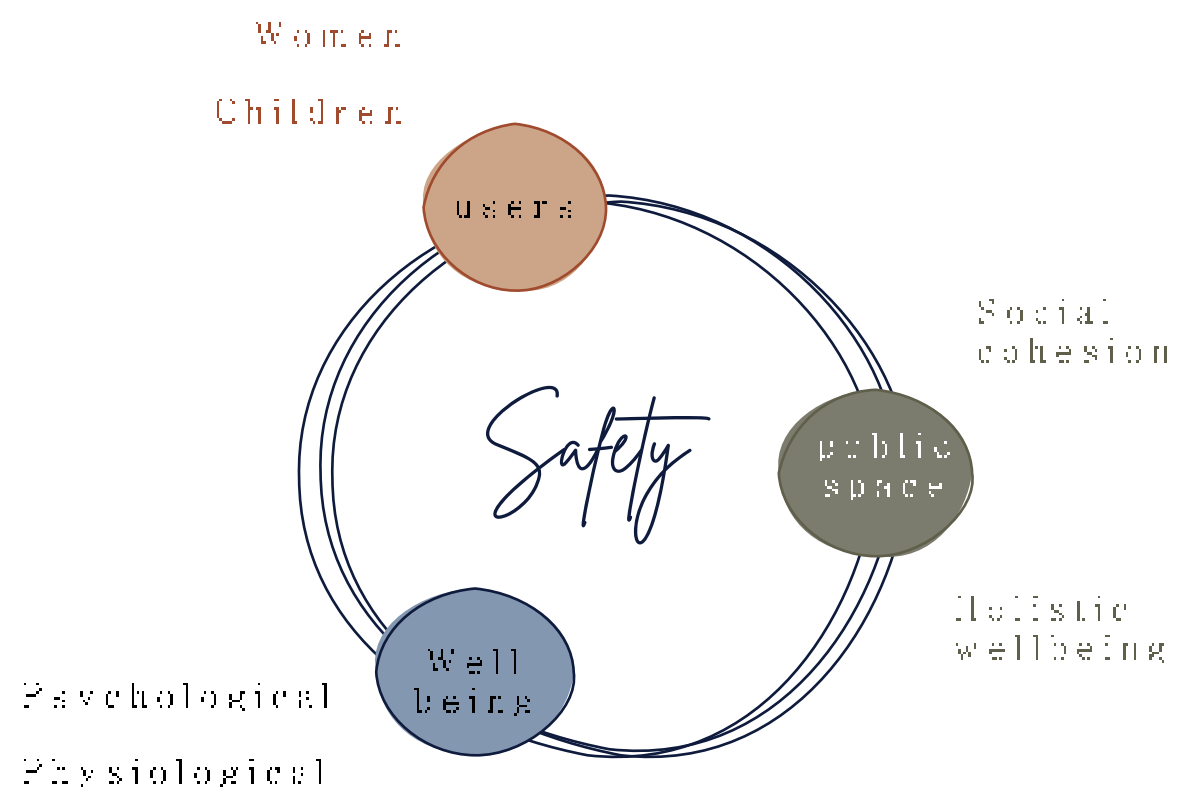
Design significantly impacts people's well-being. Reiling (2006) notes that physical environments signal safety and performance, with Ulrich and Zimring's study (cited in Reiling, 2006) supporting this. The design of spaces can shape user behavior (Kleeman, cited in Reiling, 2006). This project focuses on designing a safe public interface for women and children within Tshwane. Architecture is used as an interface within the public realm to encourage a safety climate for women and children in the city. Arzahan, Ismail, and Yasin (2022) define safety climate as users' perception of safety in an environment.

Global concerns about violence against women and children underscore the need for safety in public spaces (García-Moreno et al., 2015). This project introduces Architecture's role within public space, and how a building within public space can foster a safety climate and ultimate social-cohesion within the larger cityscape. The role of Architecture in the project is to create an interface for rehabilitation and ultimately re-connection and social inclusion of users within their communities. Following a holistic approach to the overall health and well-being of communities, design itself should promote these objectives.



Design Question

How can architecture promote the health and well-being of communities, and establish a strong narrative safety and inclusion within public spaces, enhances the overall safety climate within cities?



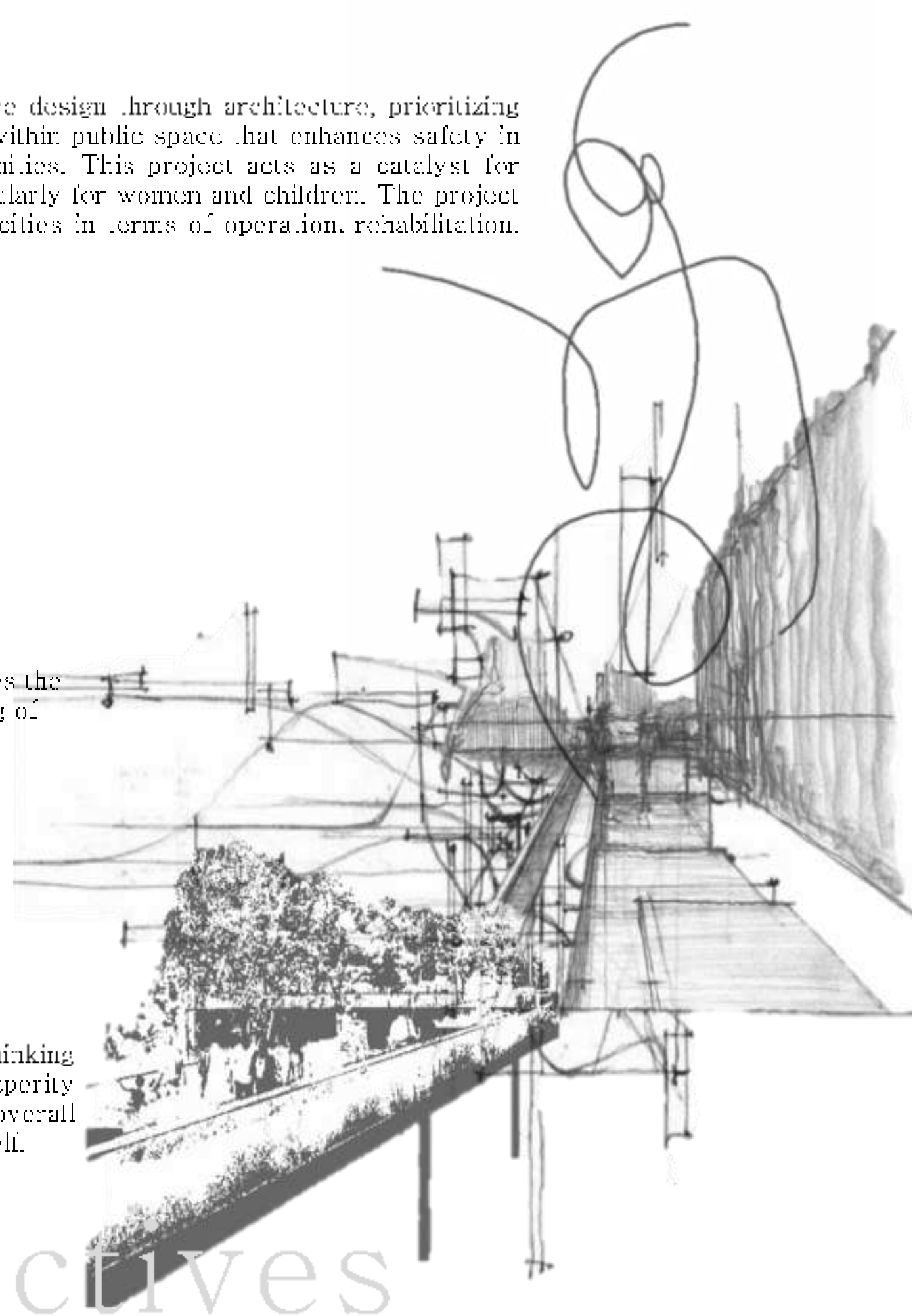
Programme

Project Vision

Revitalizing a disused city site promotes regenerative design through architecture, prioritizing user well-being. The goal is to establish a building within public space that enhances safety in the city, fostering safer and healthier urban communities. This project acts as a catalyst for improving public spaces and urban well-being, particularly for women and children. The project envisions architecture that supports users and their cities in terms of operation, rehabilitation, and connection.

PROJECT INTRODUCTION

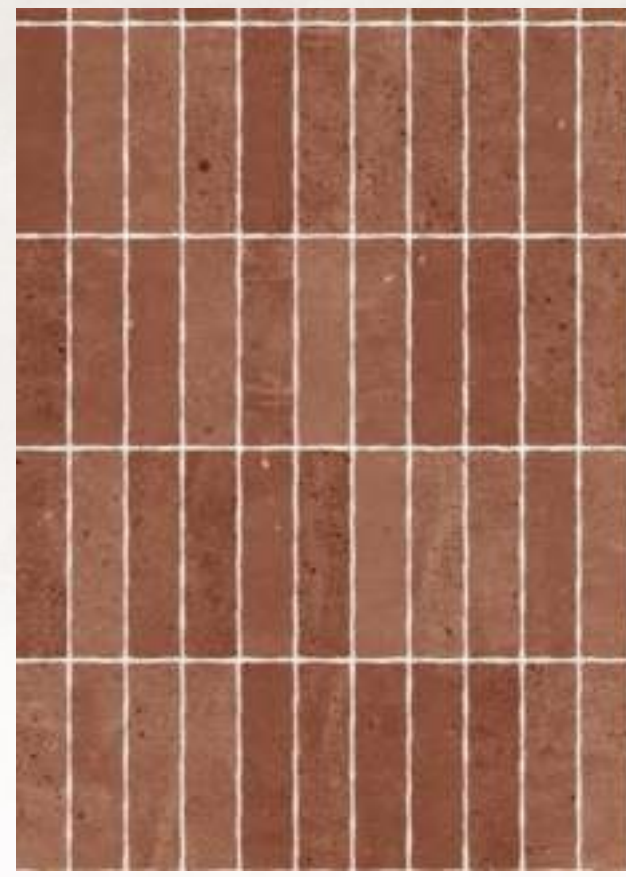
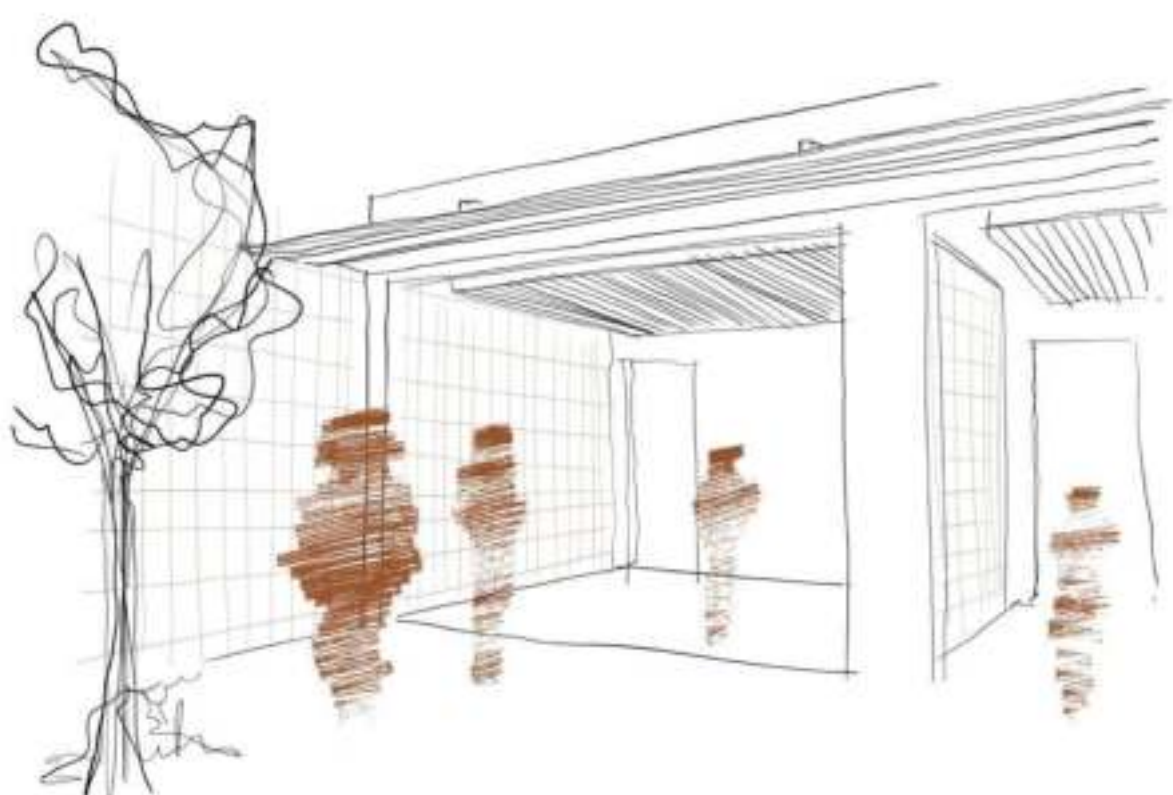
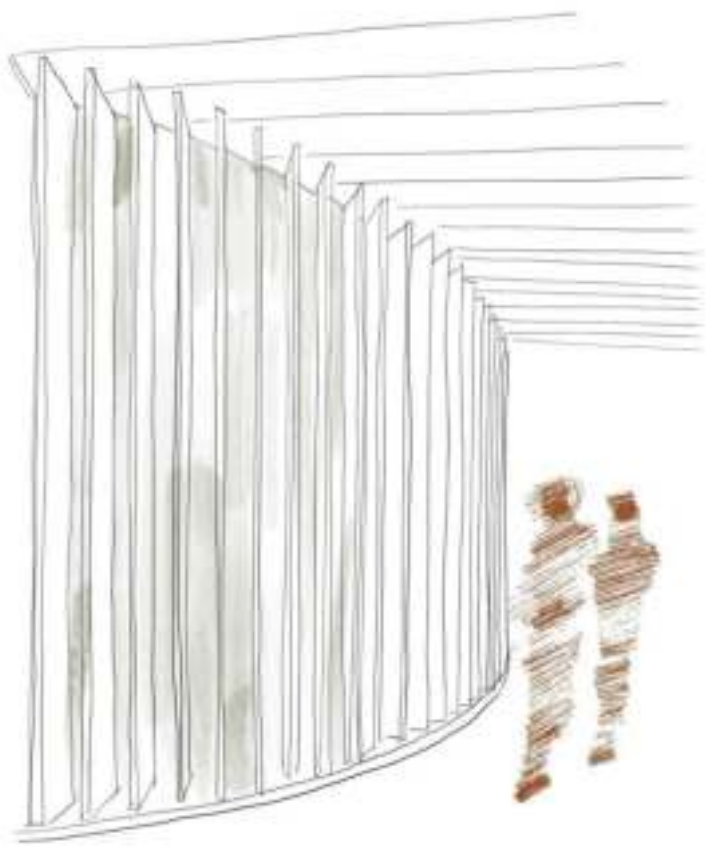
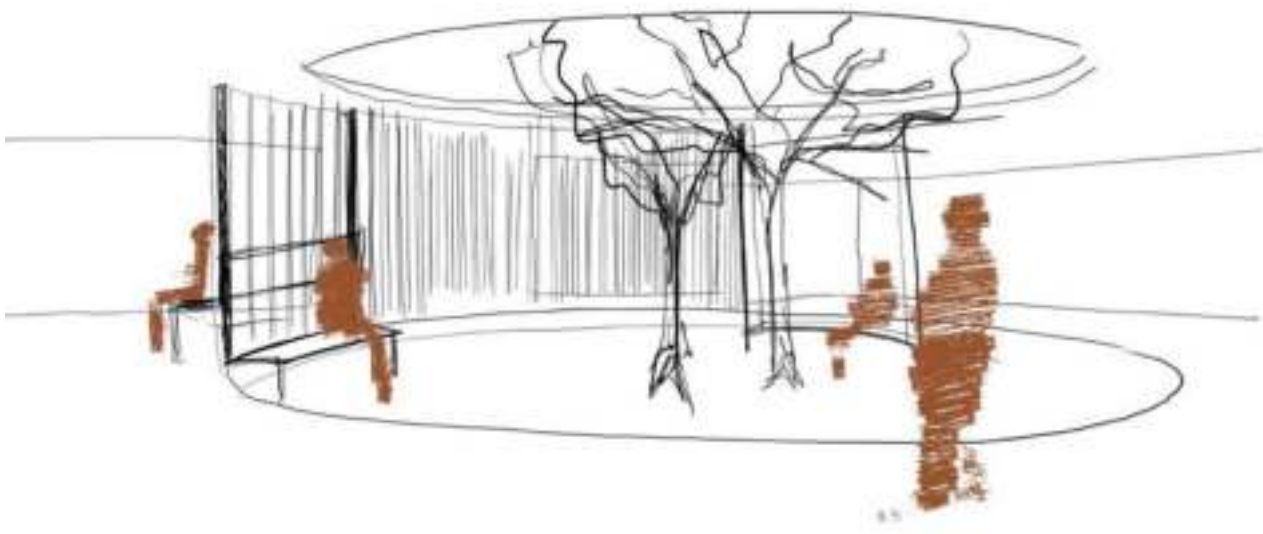
- 1 Enhance Social Cohesion within the community, by introducing asset-based community development
- 2 Establishing a Public Interface that promotes the health and well-being of women and children.
- 3 Enhancing the safety climate in the current cityscape.
- 1 Sustainable design, thinking promotes the prosperity and longevity of the overall health of the city itself.



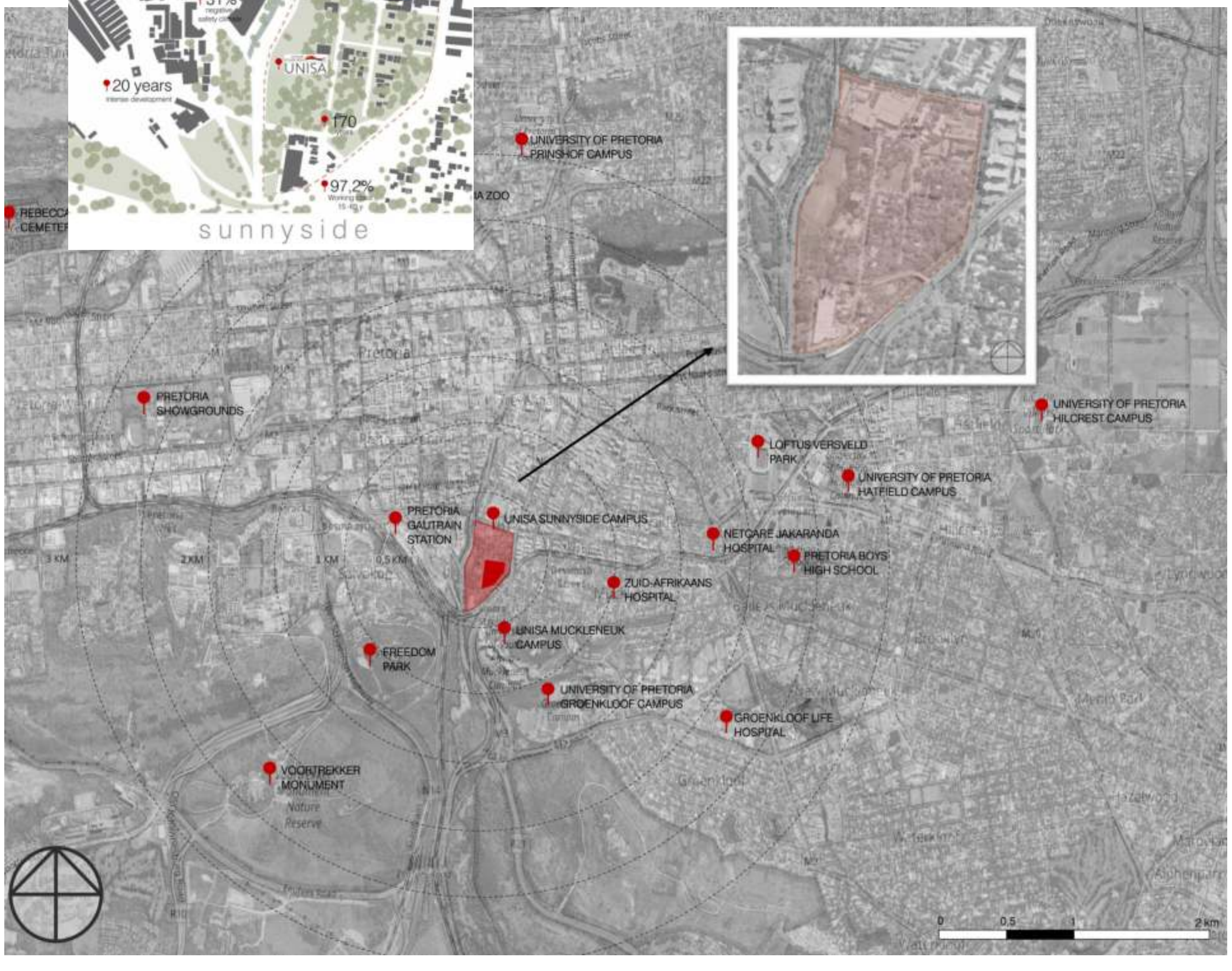
Objectives

ABSTRACT

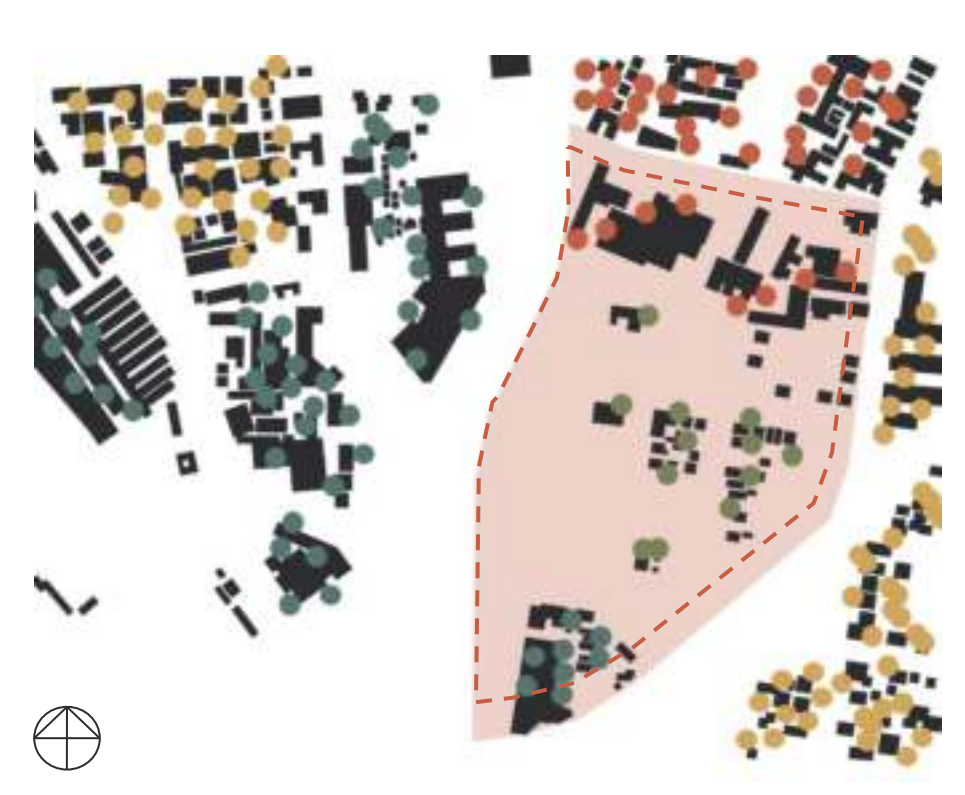
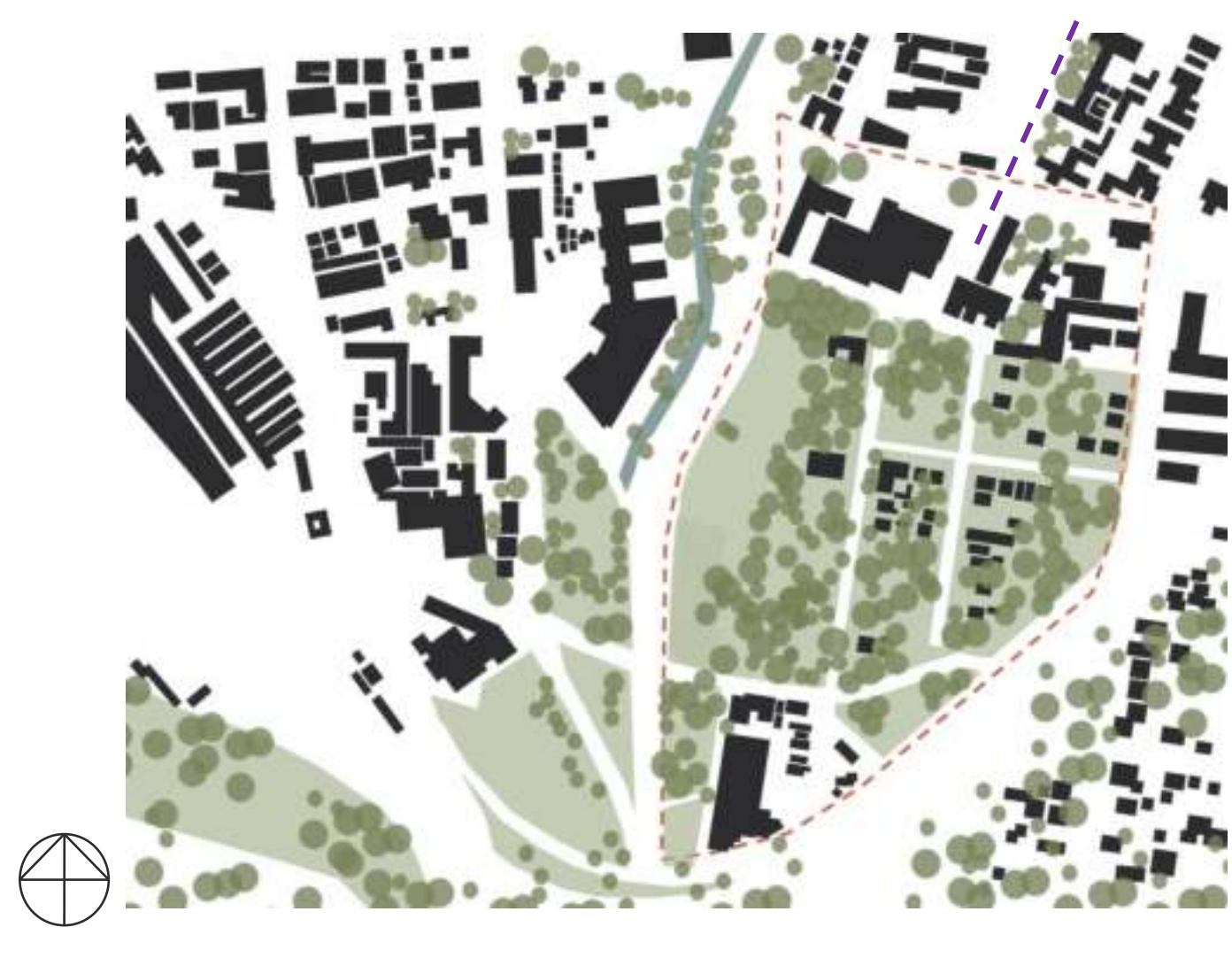
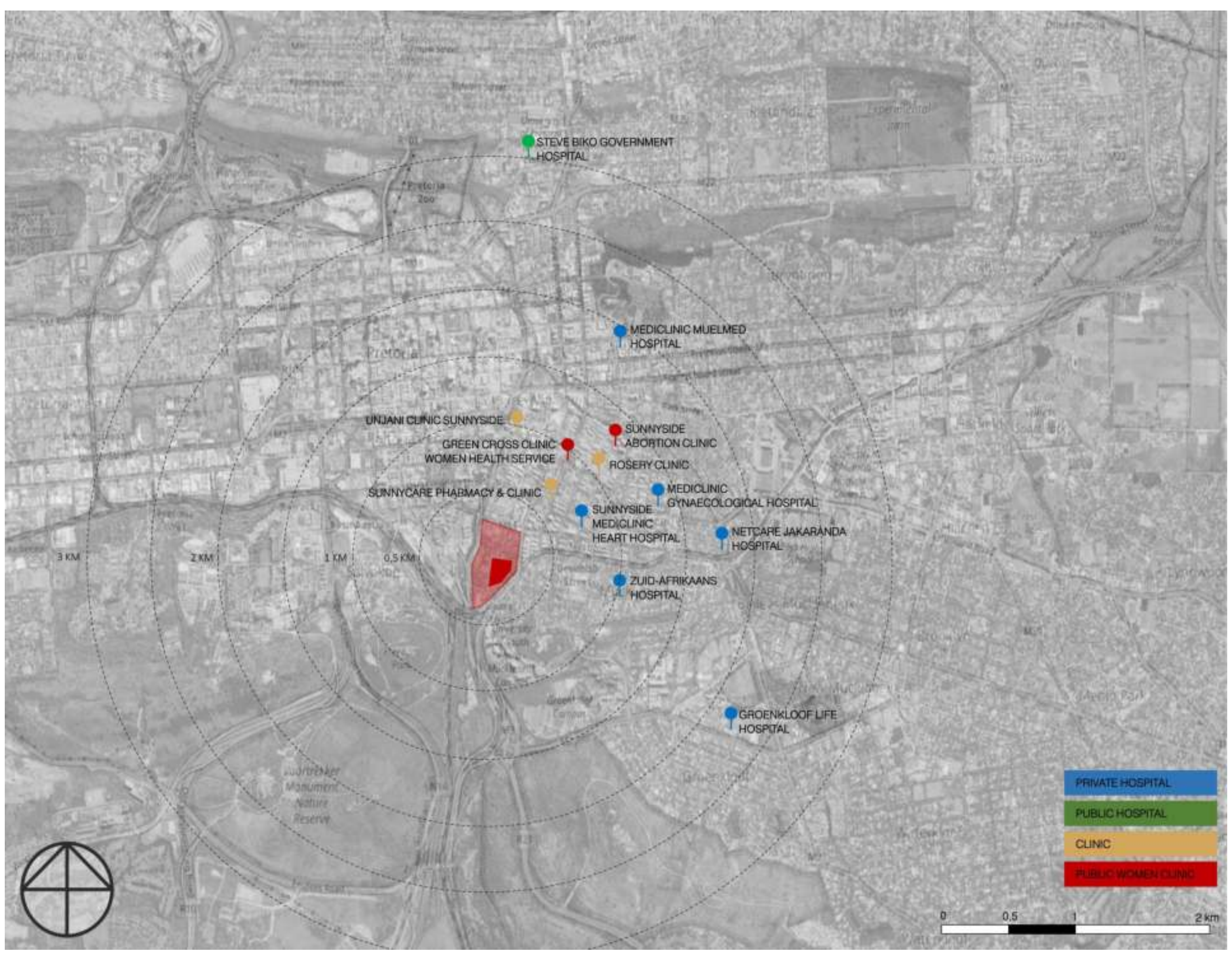
Eunoia Wellness Centre is a wellness center for women and children. The redevelopment of a former redundant site in Sunnyside, Pretoria, promotes the holistic wellbeing of its community by introducing a wellness center that will act as an architectural interface promoting a *safety climate* in the public realm of Pretoria. The vision of this design would be architecture that enables *operation, rehabilitation, and connection and inclusion* of women in their communities. This project aims to react against the current place of women and children within the public realm and cityscapes within Tshwane that promotes violence and crime against these women and children. This project is developed through theoretical concepts such as *Biophilic design* and *Feminine placemaking*. These concepts drive the spatial identity of the Wellness Center, a safe haven for women and children in Tshwane. The design captures the encapsulating *safety climate* of feminine placemaking within a rigid masculine cityscape.



Macro Map of Tshwane, indicating the proposed site in Sunnyside



Macro Map of Tshwane, indicating healthcare facilities in Sunnyside

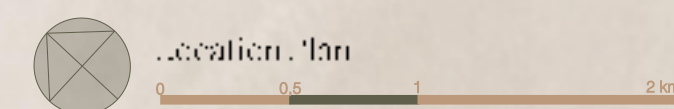


- Transportation Routes
- walking paths
 - suburban car routes
 - main road car routes
 - highway
 - train tracks

- Sectorial Zoning
- residential
 - commercial
 - educational
 - derelict

Project Location *Sunnyside South Campus*

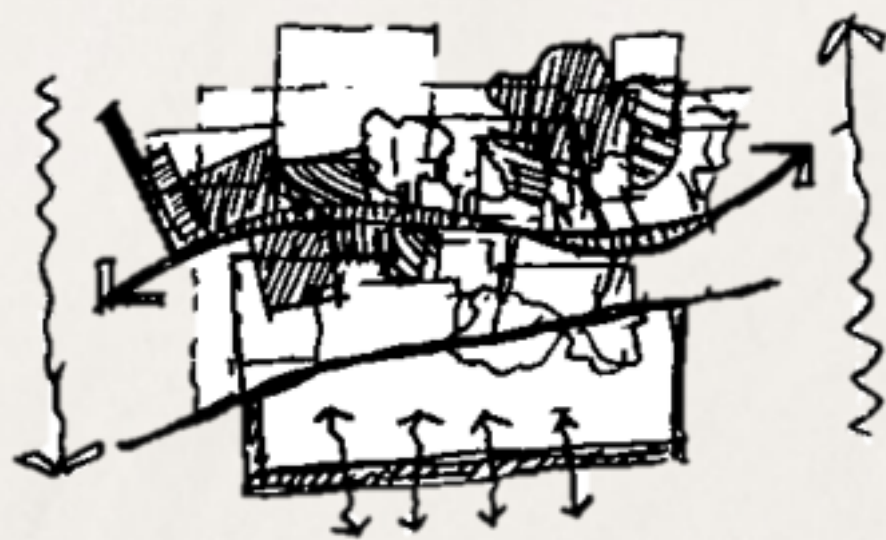
The wellness center is strategically located on the main activity corridor within the precinct, for easy access and visibility by local women. Its healing concept is strongly influenced by its connection to the greenbelt on the western side of Normal Street, offering a balance between public engagement and private well-being. Additionally, its proximity to the Willow Street accessibility node ensures convenient access to the center, including its emergency unit and safe house for women in crisis.



Socio-ecological analysis

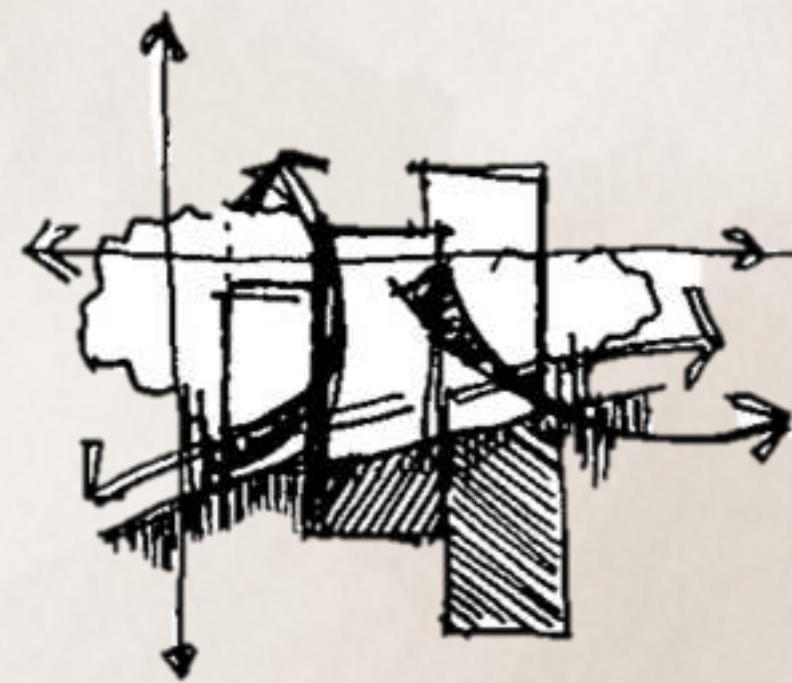
Reaction to the discourse of sustainability.

SITE INTRODUCTION



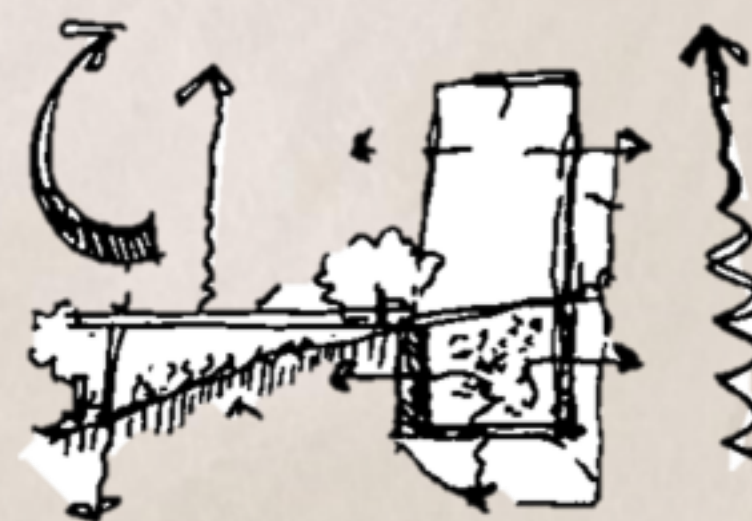
CLIMATE RESILIENCE ADAPTATION

The project should aim to establish adaptive reuse of current dilapidated site in the city. The decayed site has the potential to act as regenerative acupuncture point within the city, with the aim to establish climate resilience adaptation techniques that can be infiltrated into the larger city.



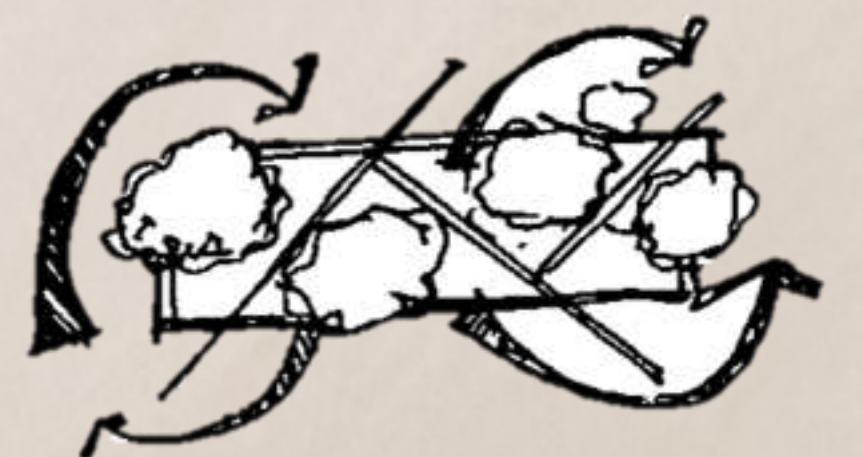
RESPONSE TO NATURE

The massing should aim to sit within the natural landscape and typology, allowing for adaptation and inhabitation of existing typologies. The project should morph into its natural typology by creating a continuum in the sequence of the site narrative, establishing an open system, symbiosis between nature, users and building.



REGENERATIVE POTENTIAL

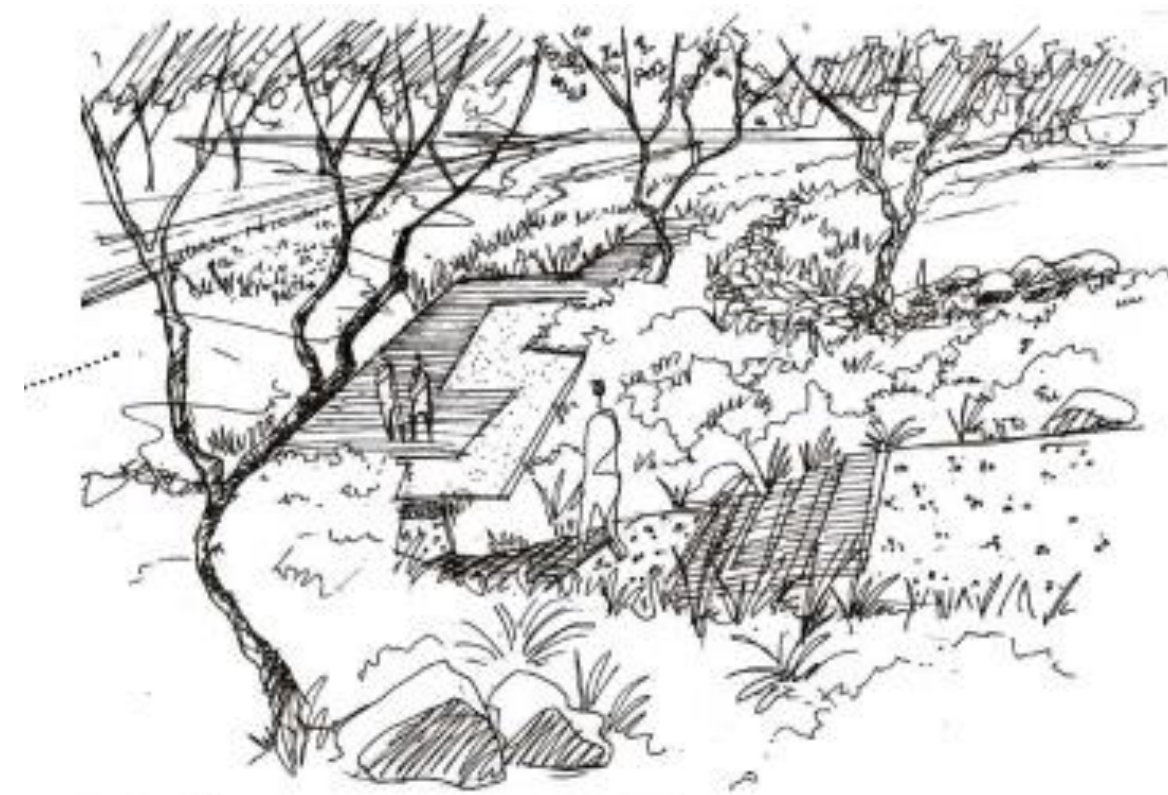
The decayed site has the potential to act as regenerative acupuncture point within the city, with the aim to establish climate resilience adaptation techniques that can be infiltrated into the larger city, regenerating the city from the inside-out, going beyond sustainability.



INDIGENOUS THINKING TYPOLOGY

The site has an existing indigenous typology, with rich vegetation, that has established itself over the last 40+ years. The vegetation has started infiltrating the infrastructure and became an informant to rethinking the design, to design in collaboration and parallel to the existing typology, cultivating indigenous richness of the site.

Precinct Development Urban Development Framework



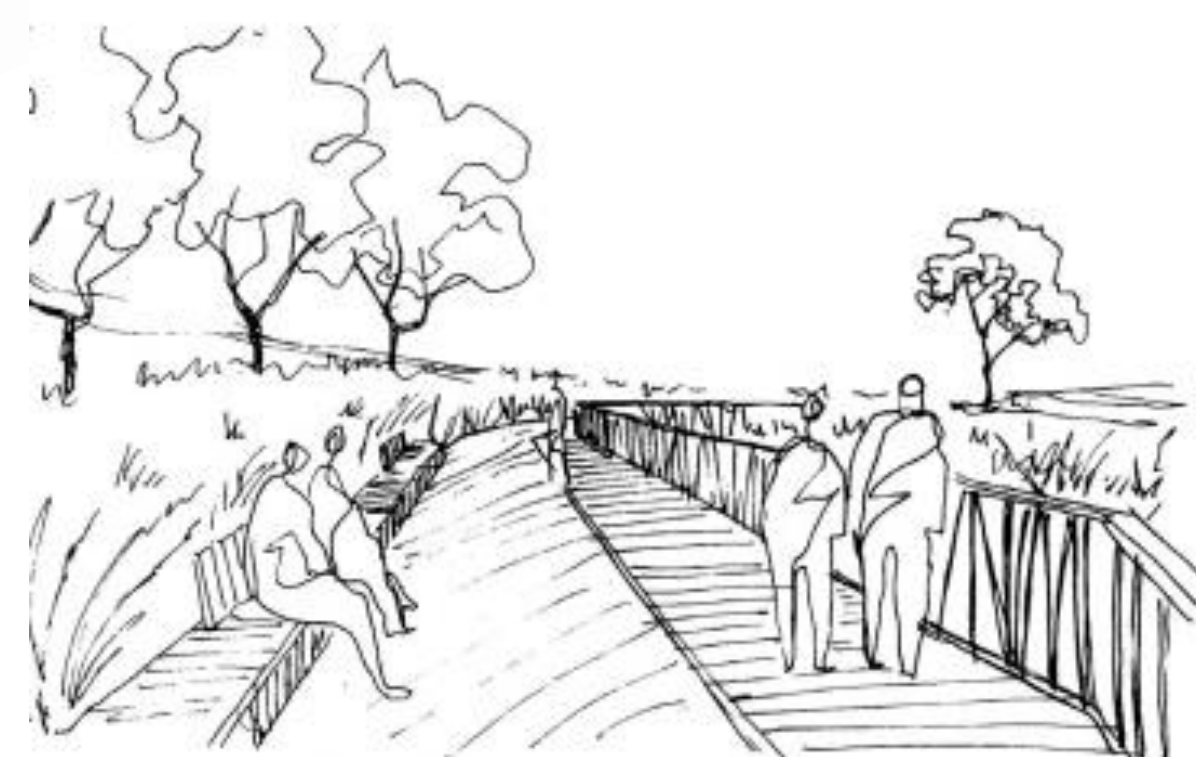
FLOODPLAINS

Sketch by Du Plessis, group framework 2023.



VEGETATED EDGES ENGAGEMENT PLATFORMS

Sketch by Du Plessis, group framework 2023.



INTERACTION WITH WETLAND

Sketch by Du Plessis, group framework 2023.



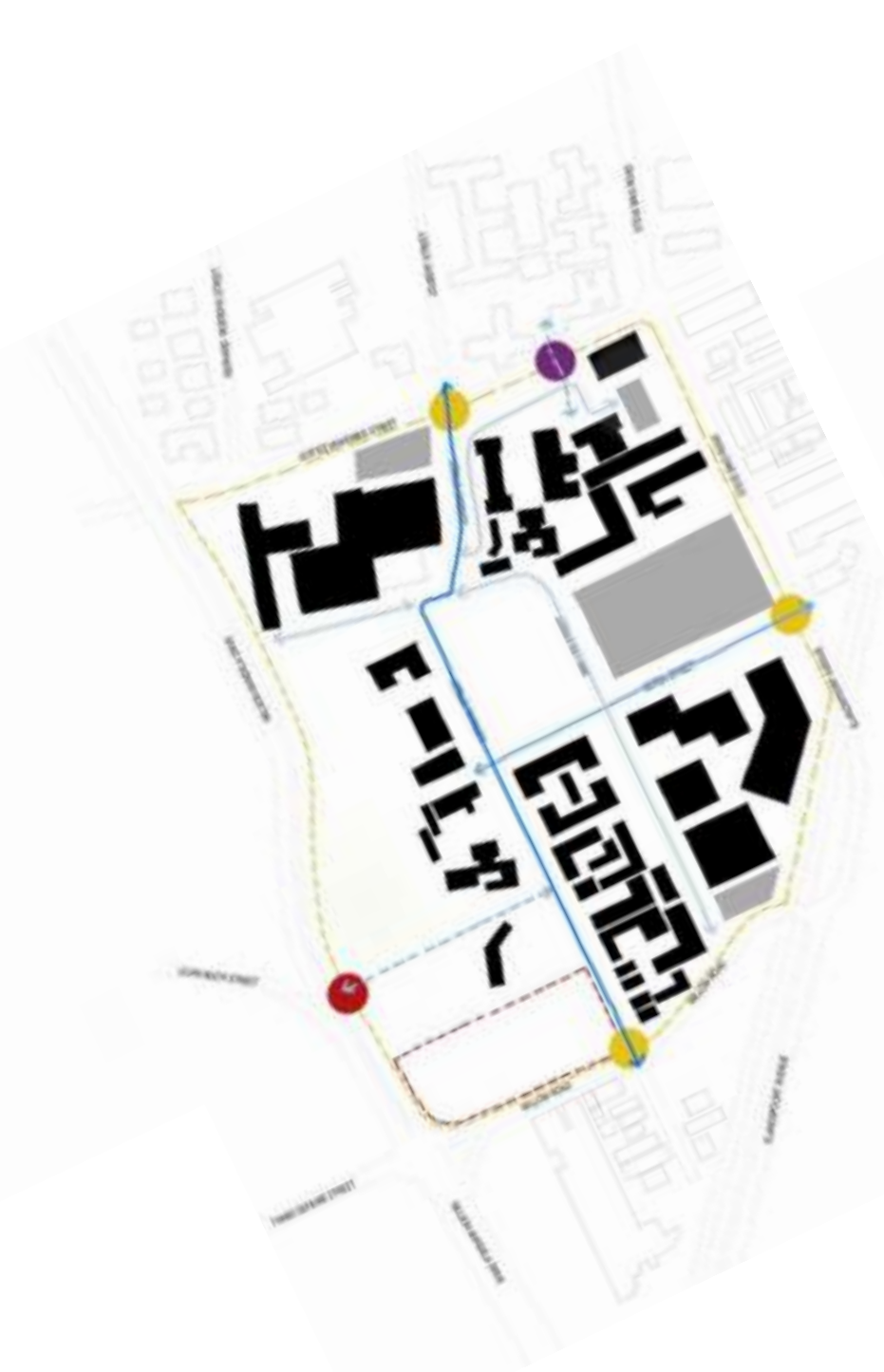
ECOSYSTEM SERVICES

A newly constructed wetland and park follows the site's slope, connecting with the adjacent greenbelt along Apies River. This extends the wetland, offering healing gardens and paths, aligning with wellness initiatives.



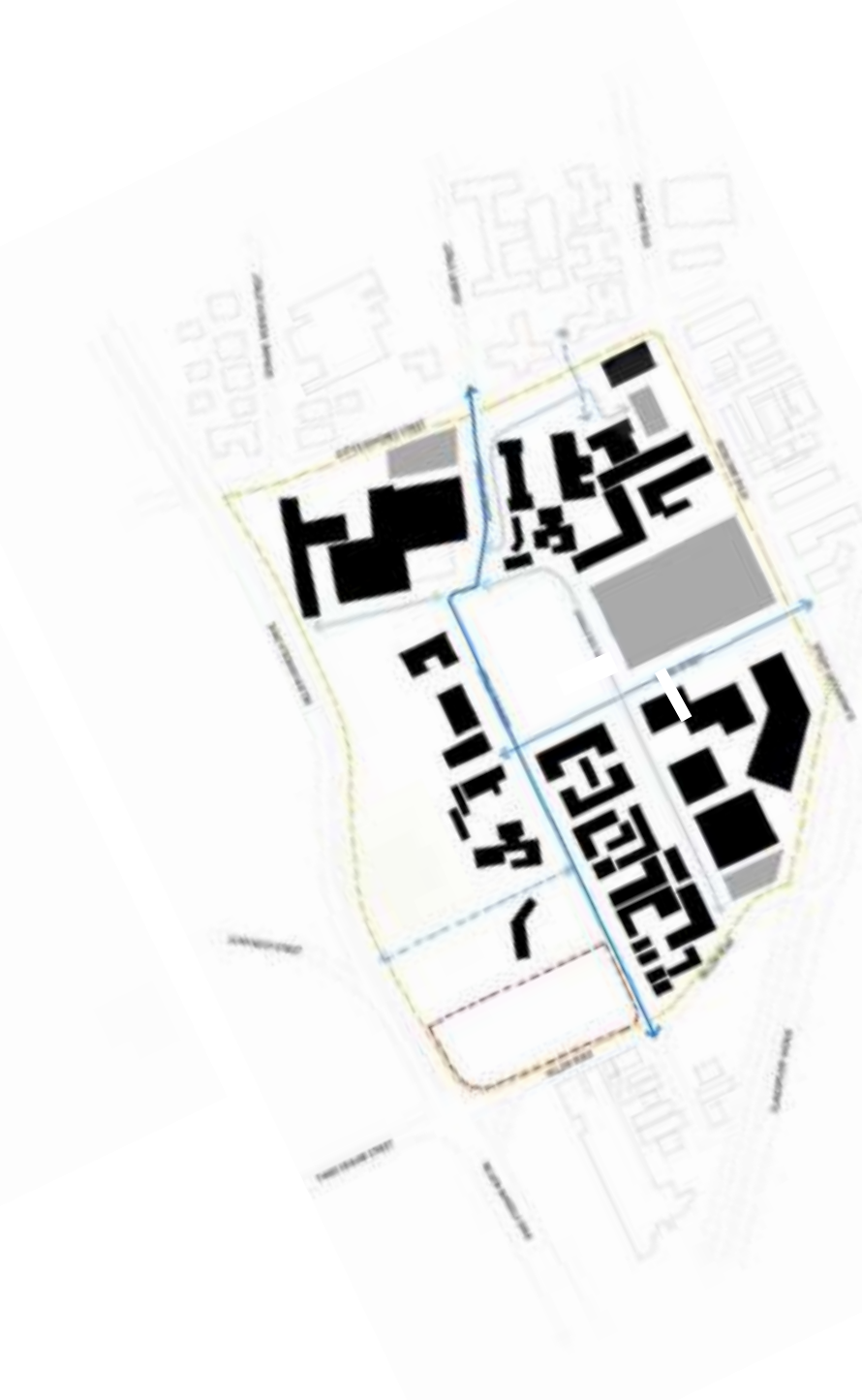
OCCUPANCY DENSITY

Normal Street acts as the main movement corridor with dense occupation, featuring market spaces, community centers, and a wellness center.



ACCESS & MOBILITY

Access nodes in Justice Mohamed Street and Elandsport Drive encourage walking. A new accessibility node is introduced in the precinct development, to connect users from the city, and large transport nodes such as the Gautrain station, directly with the site.

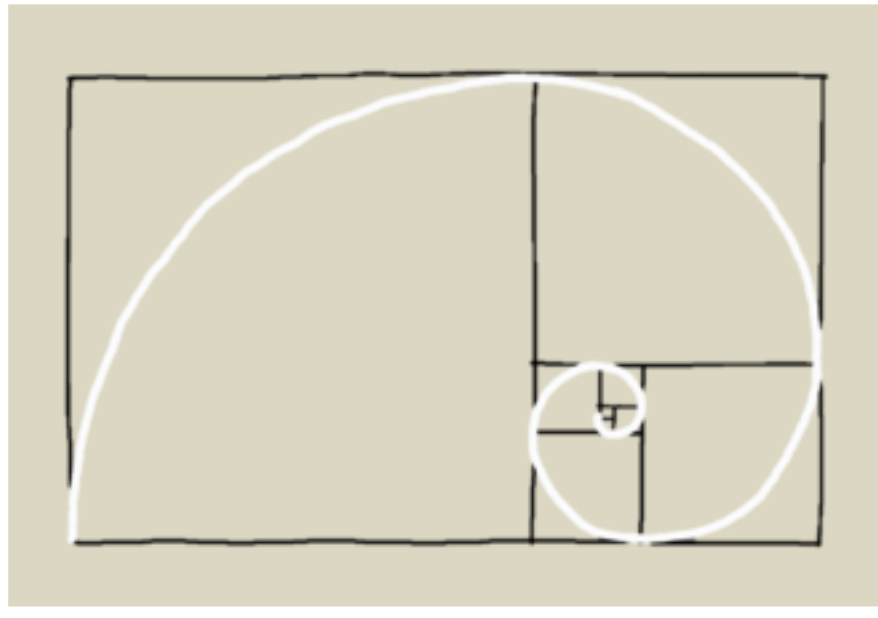


MOVEMENT

Promoting a holistic wellness approach, limiting parking reduces vehicular traffic, encouraging walking. A new accessibility node connects the site to the city, linking users with walking paths.

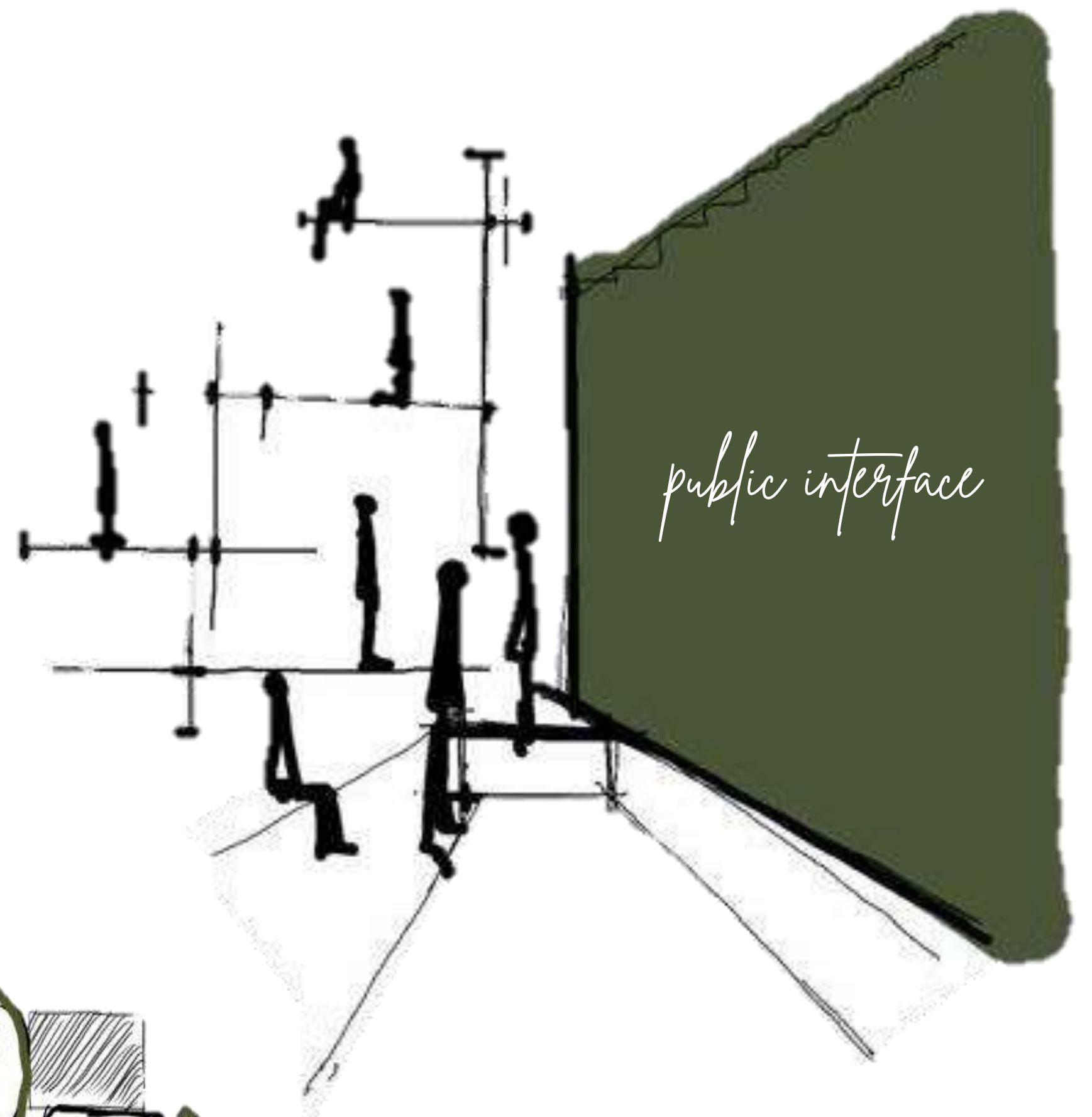
Spatial Concept

Healing cities holistically through architecture.



Relationship and connection. Relationship between feminine and masculine space-making.

The cityscape is structured with strong geometry reflecting the masculine form of architecture. This current cityscape leaves little room for femininity, organic movement, and natural flow between spaces, softening the transitional language of public and private spaces throughout the city. The city center uses biophilic design principles and feminine space making to for a public interface that enhances the movement and connection between user and architecture.



Concept

Creating feminine spaces is a deliberate design decision to carefully design and consider the physical infrastructure. Feminine spaces have a critical alliance to social implications and behaviour (Cosgrave, 2019). Feminine spaces has a strong *safety climate*. This leads us to the question of how architecture and design can ensure safety for women? There is a large debate whether these spaces should be crowded or not-crowded, each with a long list of pros and cons, but neither in entirety is the answer. The essence of good feminine spaces allows for mobility and opportunities, and the freedom to choose the type of space you would have a greater sense of personal safety (Cosgrave, 2019). Having a good integration of feminine activity in public spaces raises the need of designing transformative public spaces within the city (Cosgrave, 2019).



Diagram of in-between space defining movement.

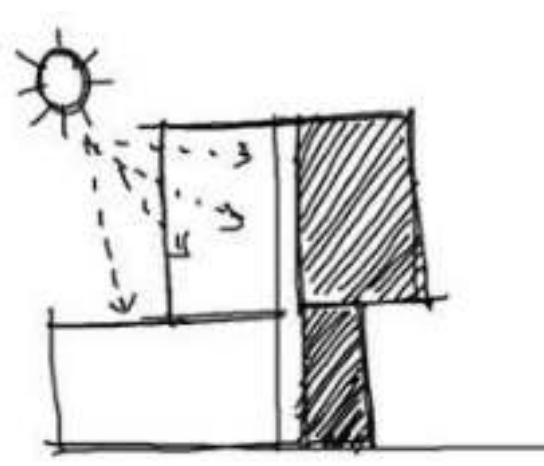
Healing through spatial intervention

BIOPHILIC DESIGN & FEMININE SPACES

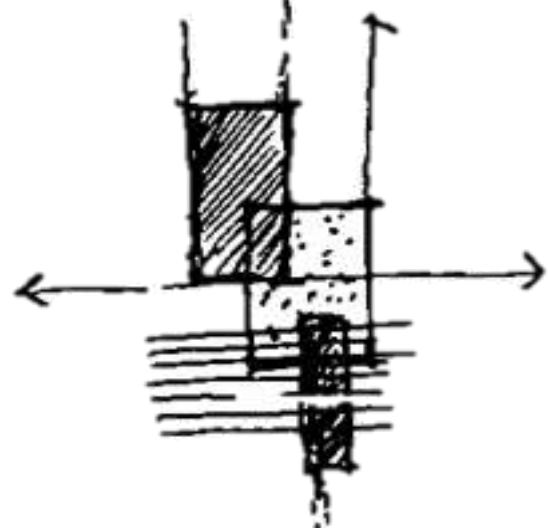
Design Approach

Healing through spatial intervention

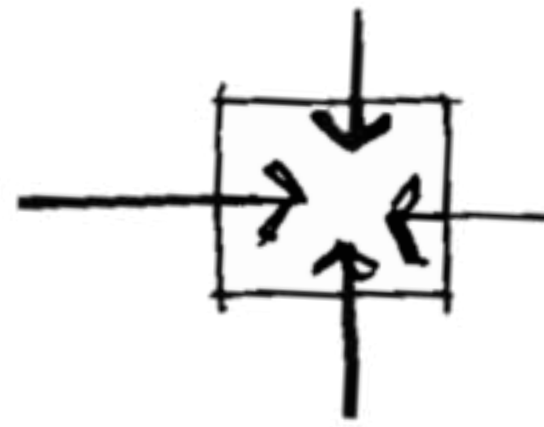
1 Using biophilic design to heal body, mind and soul



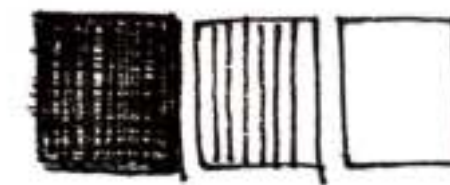
Daylight



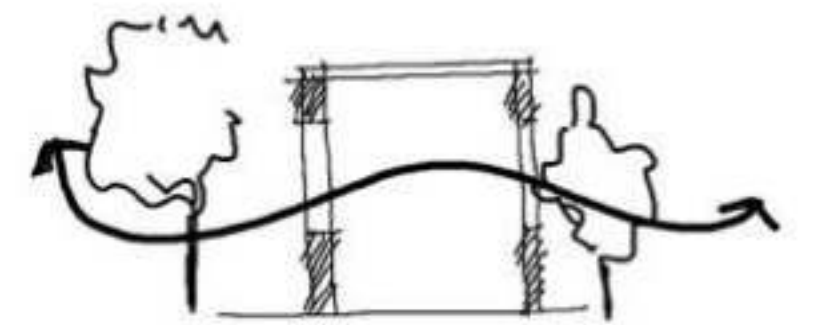
Texture & Elements



Opportunities for Interaction



Space-making through light manipulation

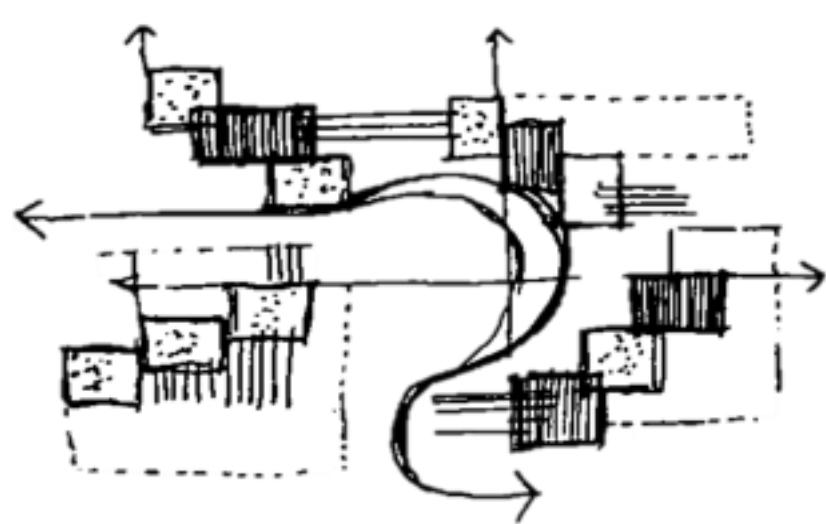


Natural Ventilation

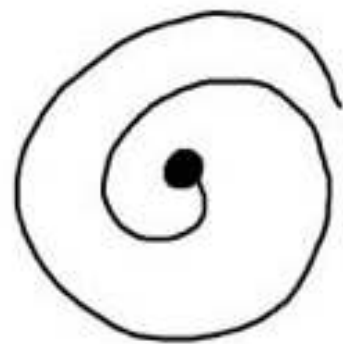
Biophilic design celebrates life and the human connection to living systems (Yen, 2012). It emphasizes the interplay between people, nature, and buildings, enabling architecture to narrate stories of place and contribute to placekeeping. Given that people spend nearly 90% of their time indoors (UGREENUS, 2021), there's a design opportunity to bridge the gap between indoor and outdoor spaces, making indigenous architecture place-specific and in harmony with the environment.

Biophilic design also influences how buildings shape communities. In addition to blurring indoor-outdoor boundaries, biophilic design also addresses the delicate balance between prospect (connection and visibility) and refuge (safety and security) (Sturgeon, 2019).

2 Feminine Spaces



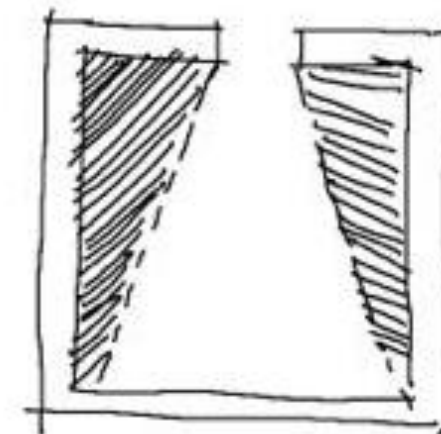
Connection, Integration. Inclusive, Togetherness



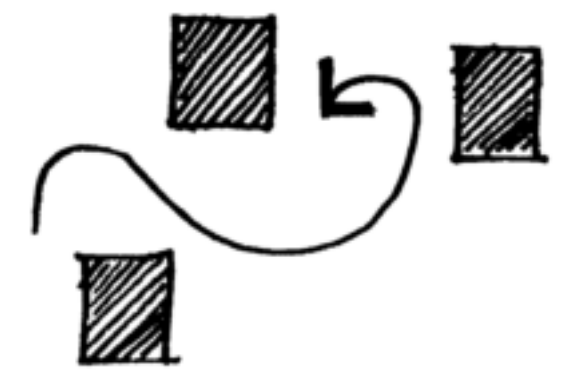
Safety



Accessibility & organic movement.

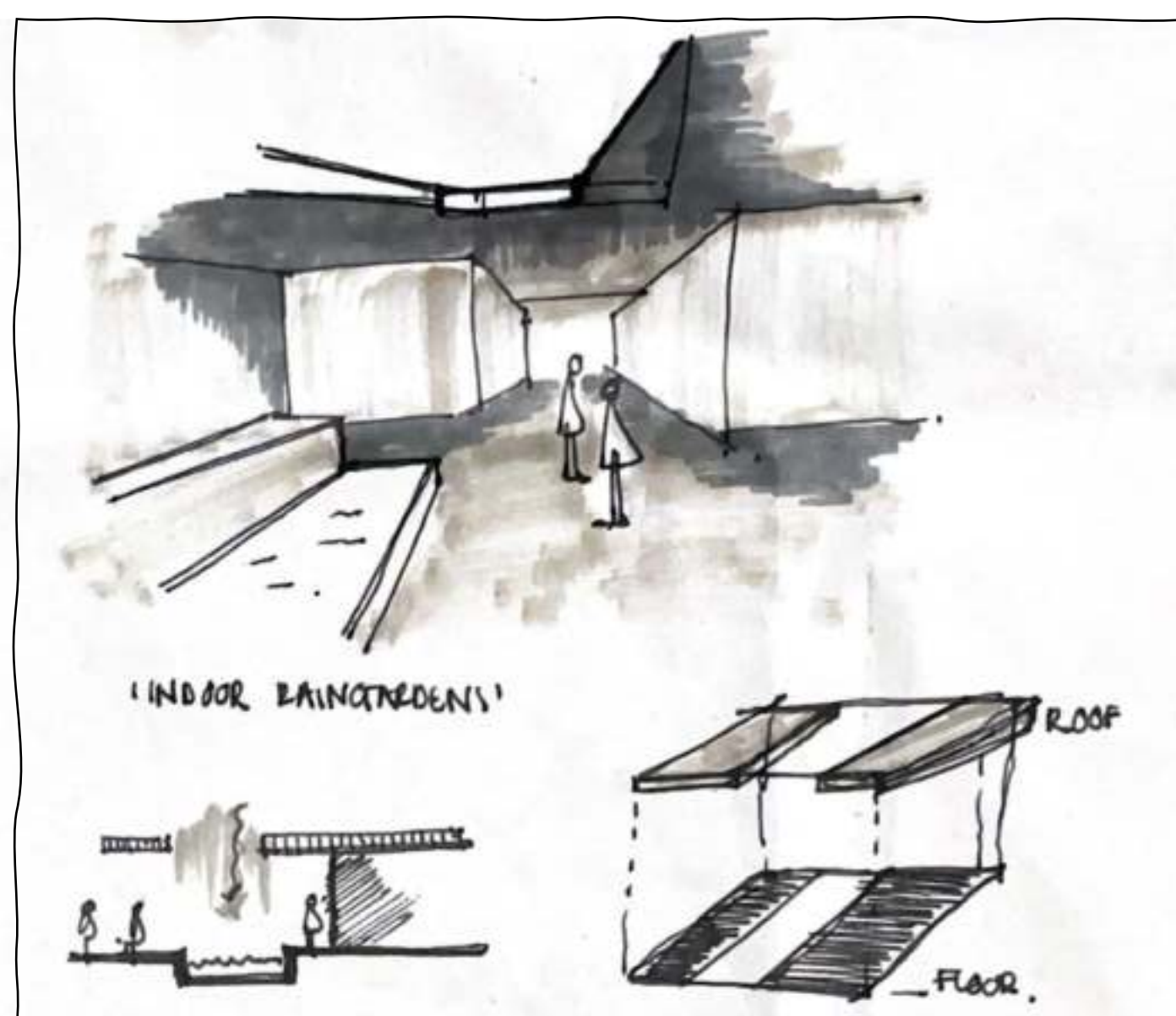
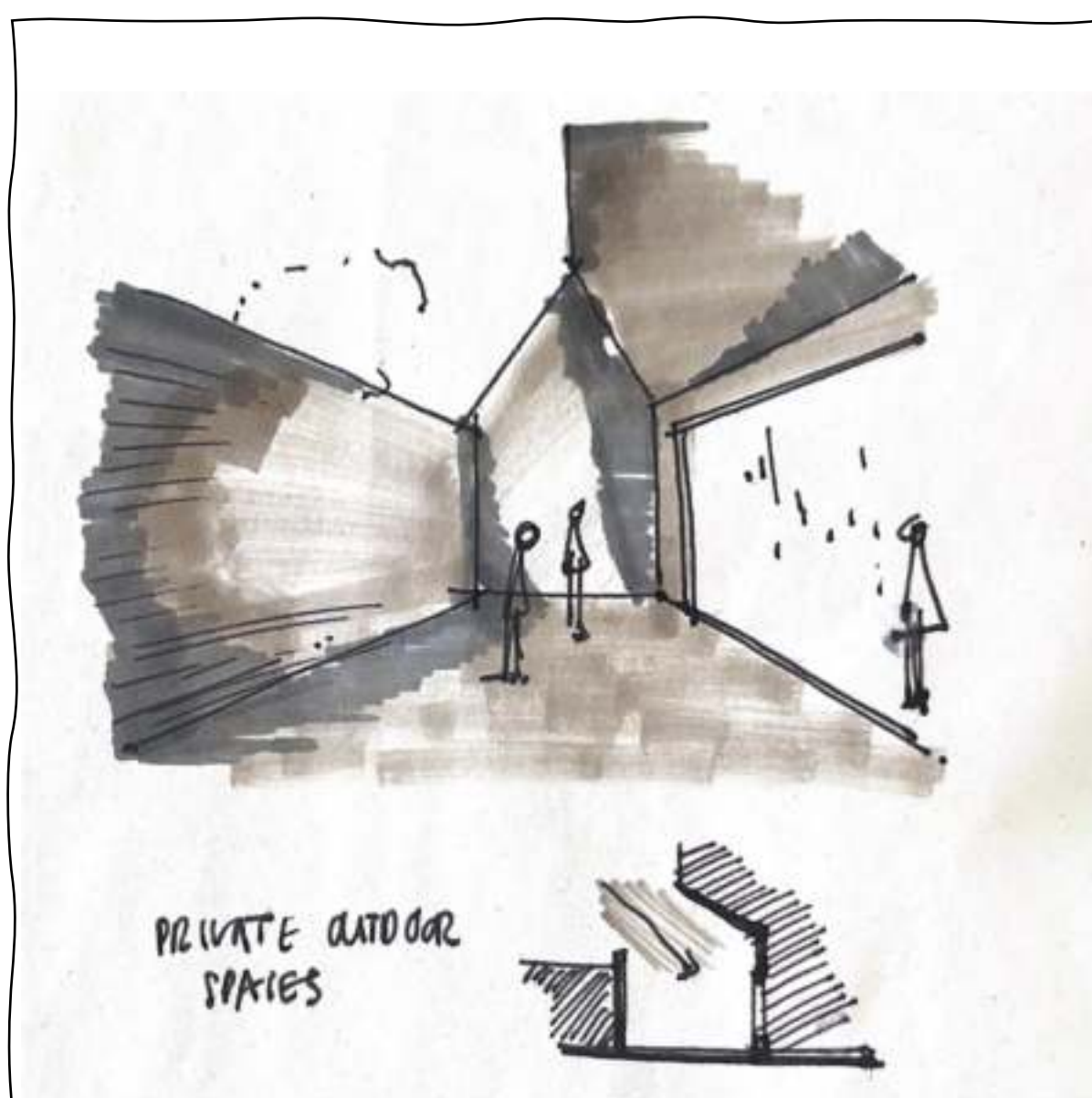


Light

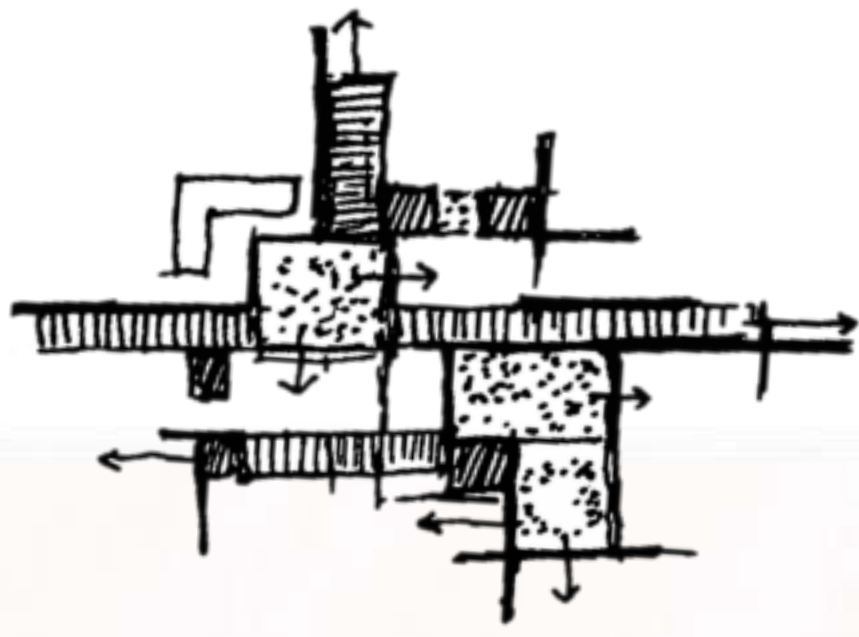


Programme & activation

CONCEPT DEVELOPMENT

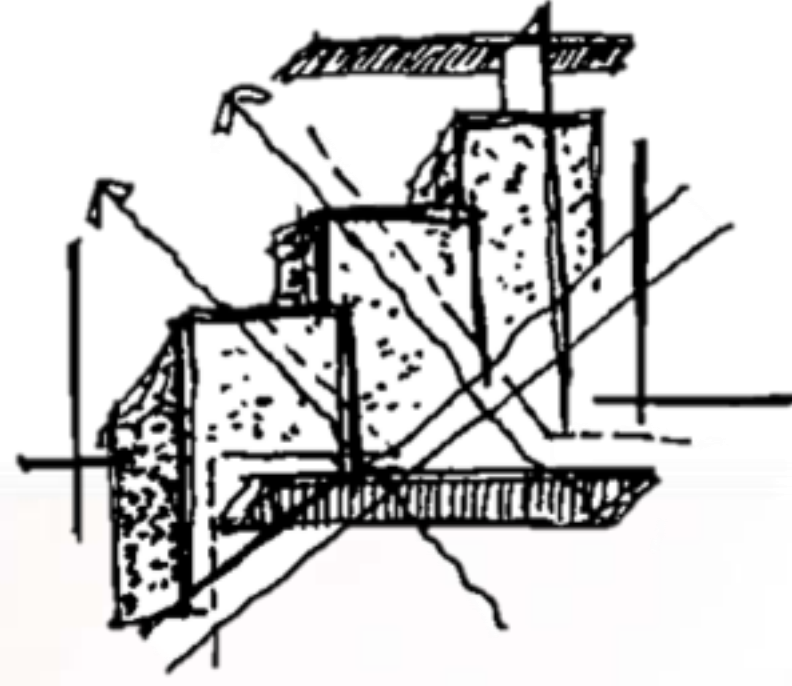


Technical Concept
Structure promoting honesty, stability & connection.



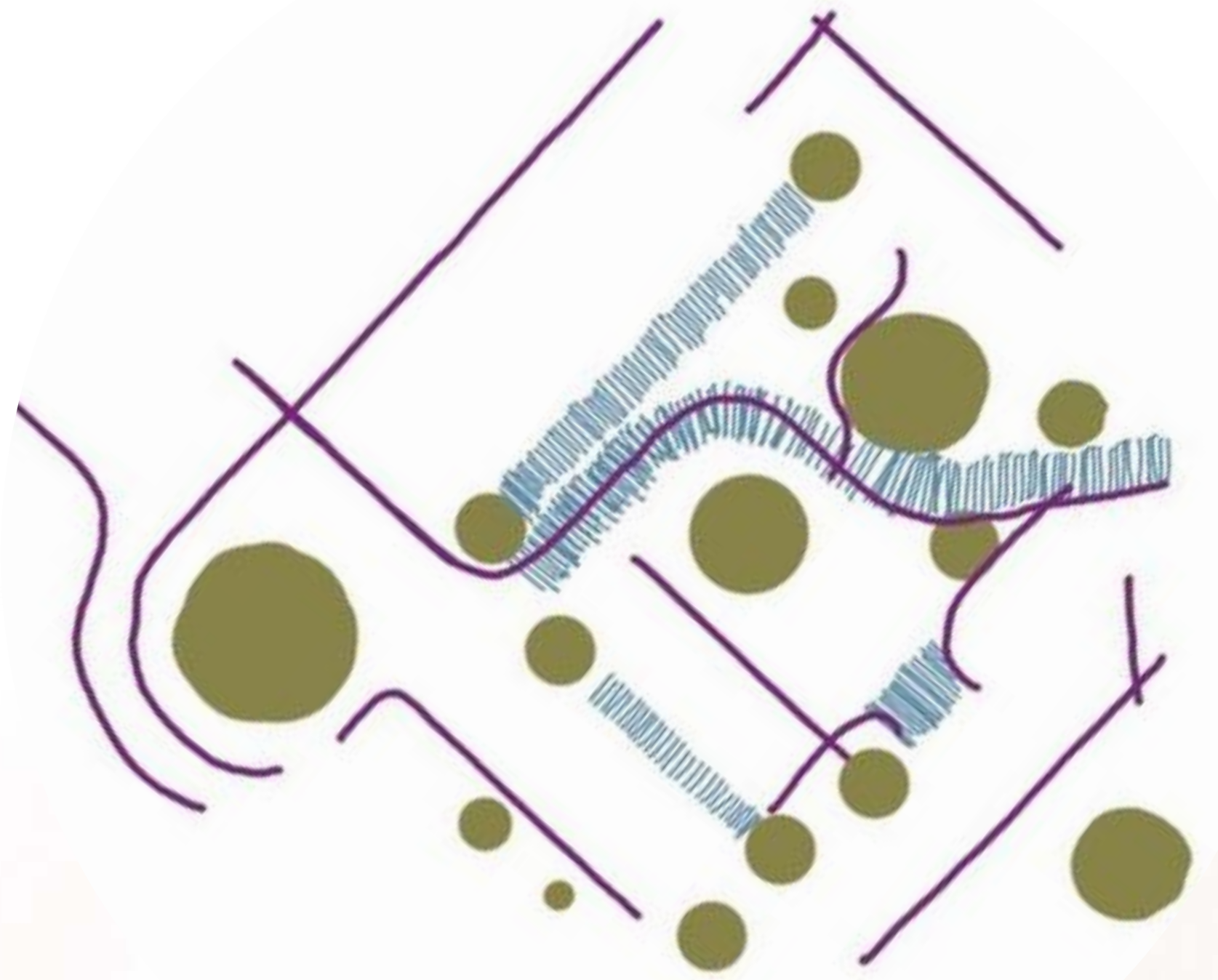
COURTYARD CONCEPT

The connection between vertical planes, horizontal planes and existing nature creates the opportunity for courtyard spaces. This concept aims to react to the existing typology and carefully inserting tectonics for space-making.



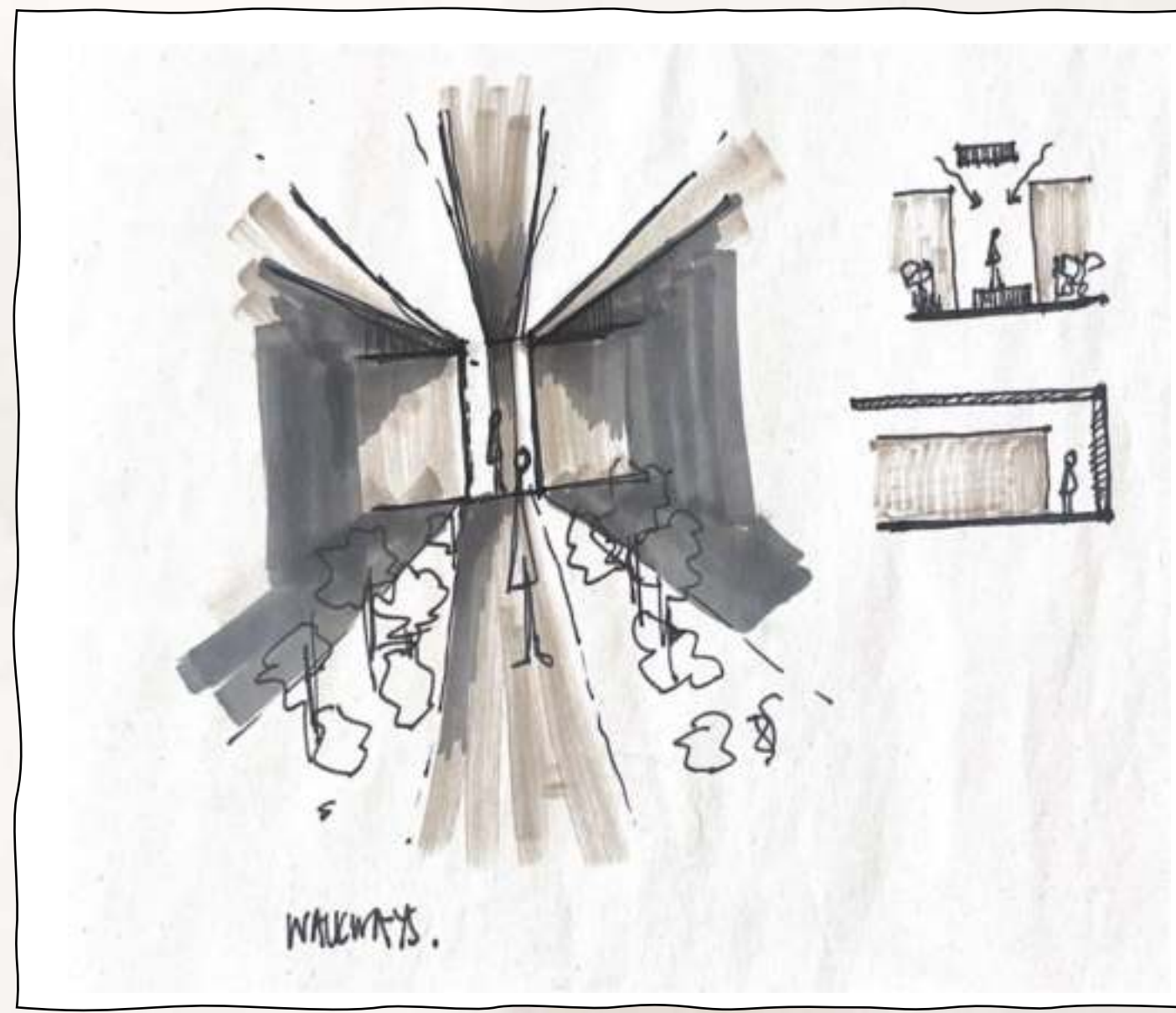
VISUAL TECTONICS

Visual tectonic should aim to create distinction in the programmed of the site, acting a visual aid to enhance the legibility of the site. Tectonics should inform movement and programmed, allowing accessibility to the narrative of the design, place, occupants or building.



Concept diagram identifying the connection between structural systems, vertical planes, horizontal planes and nature

CONCEPT DEVELOPMENT



Structural System

Structure promoting honesty, stability & connection.

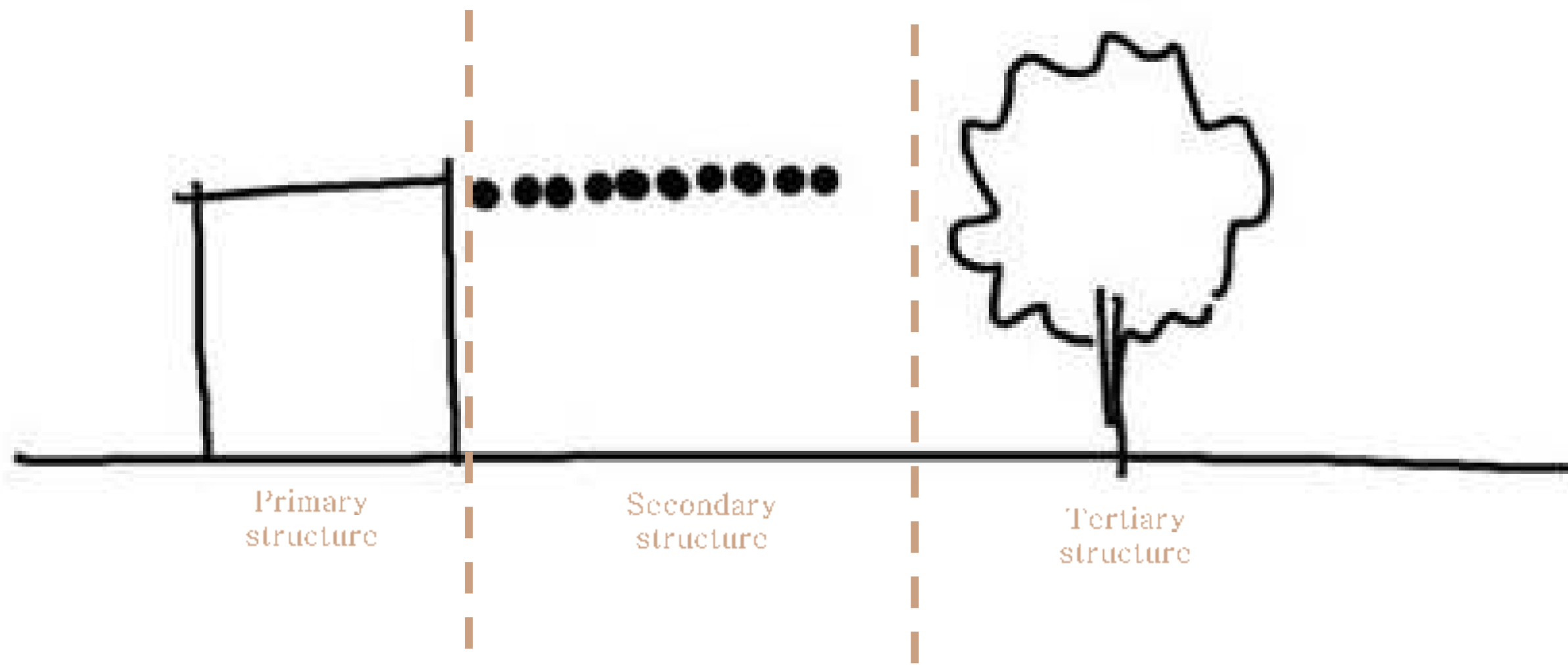


Diagram of Structural System.

The structural system can be read horizontally throughout the building. The connection between the primary, secondary and tertiary structure creates an emphasis on the layering of spaces to create threshold, aiding users through the building and creating a spatial identity throughout the building. Just like the layering of these structures creates thresholds to different spaces, they also introduce a narrative between public and private spaces throughout the building. The assigned materials reflect this concept, enhancing the transition between different structural systems.

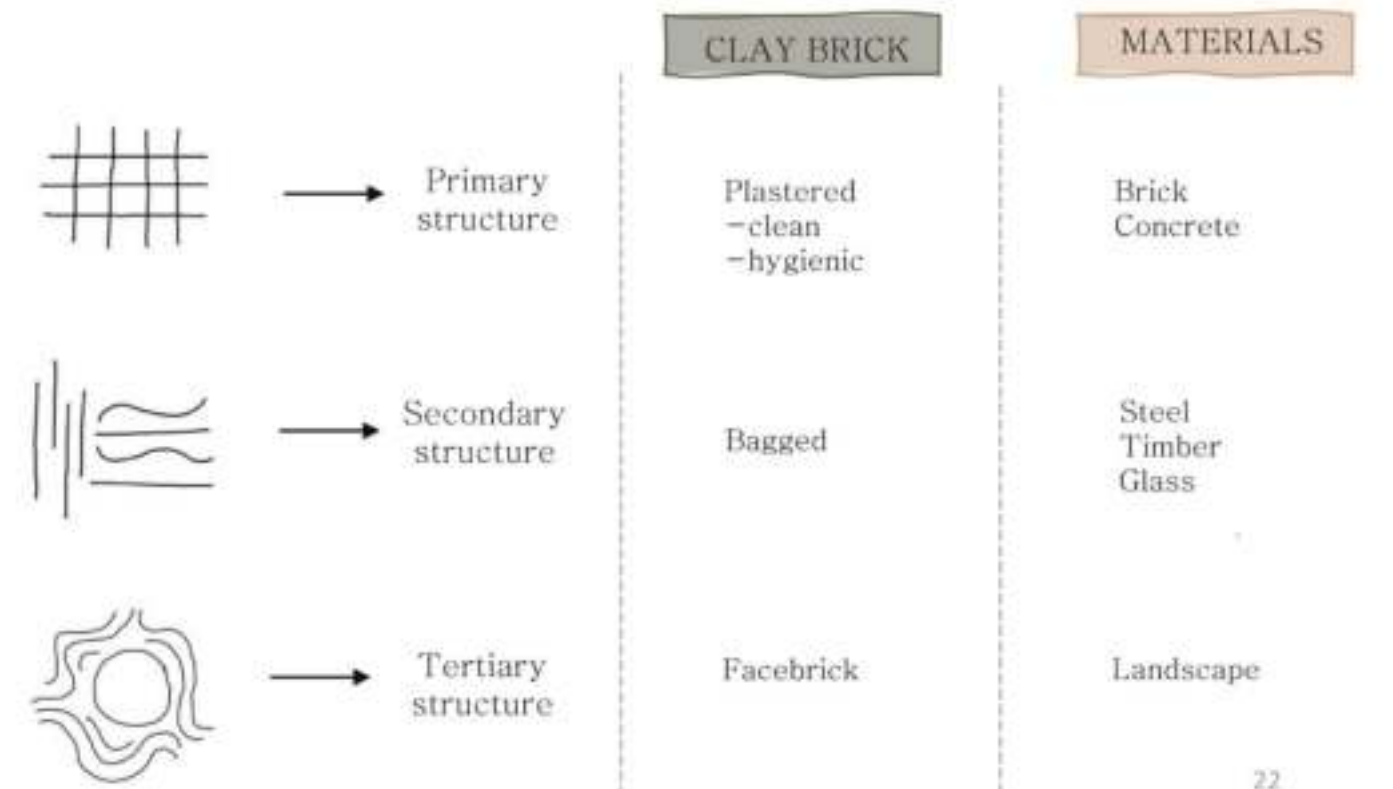


Fig. 12. Diagram of Structural System Materials.

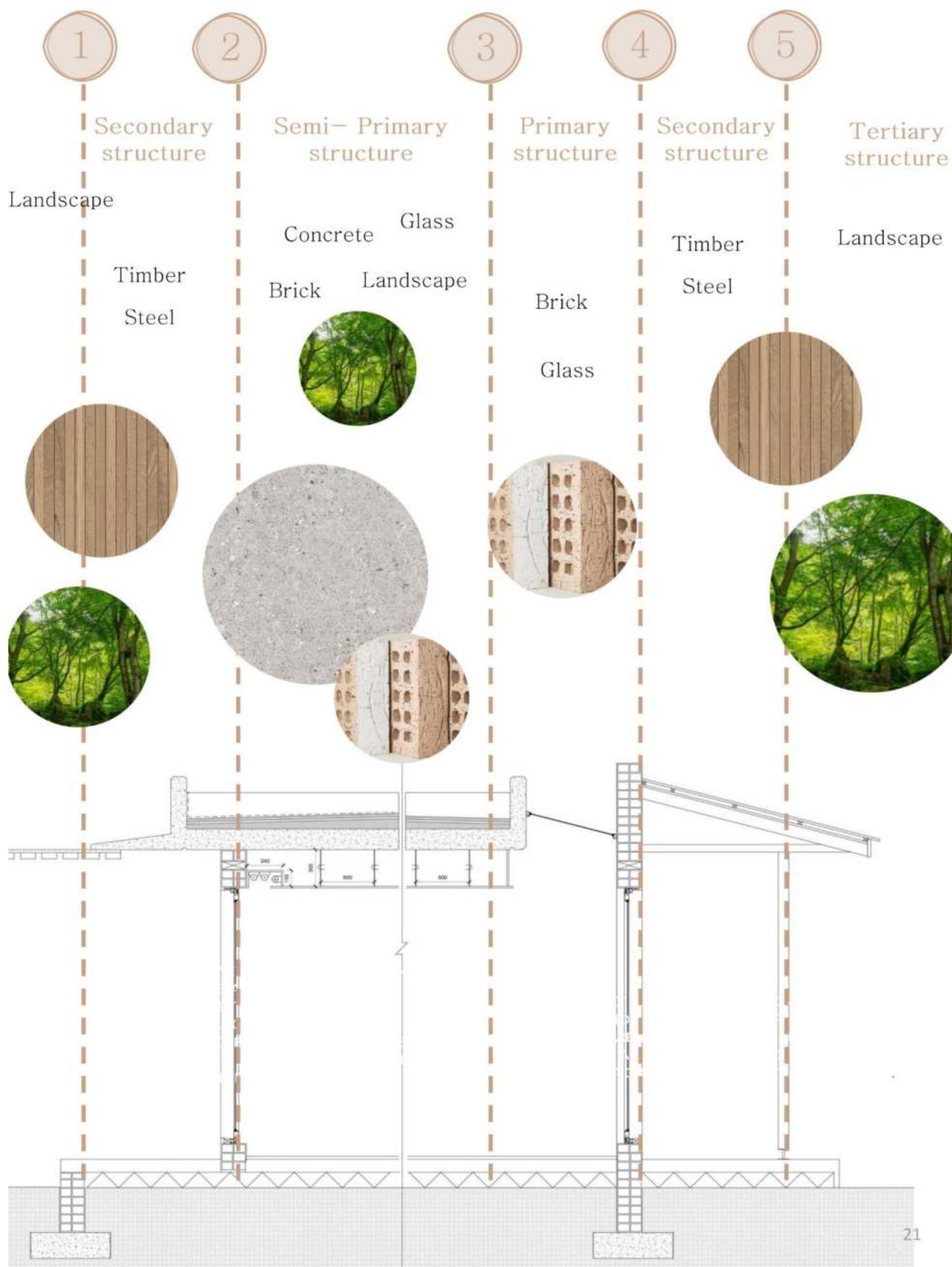


Fig. 16. Sectional Diagram showing Structural integration.



Khoo Teoh Paut Hospital

Location: Singapore
Architect: RMJM

Insert Nature

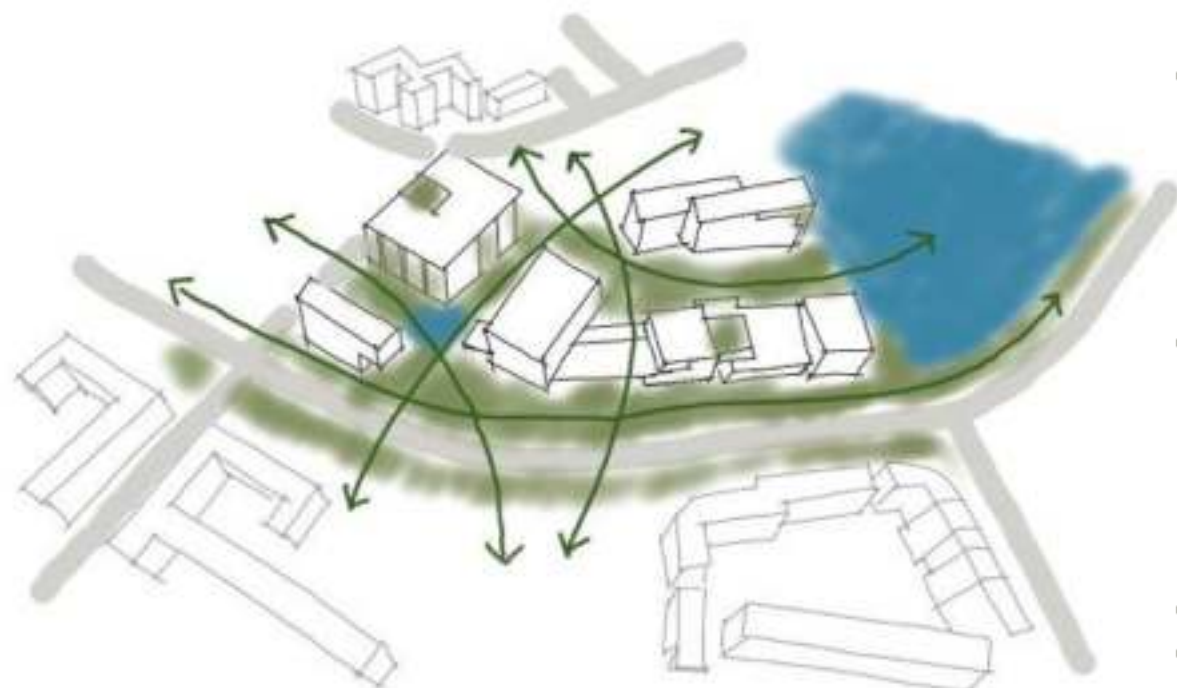
colour, texture, green walls, optical illusions. This contributes to threshold spaces.

Spatial Identity

different spaces has different needs & elements

Way-finding

spatial identity helps patients to keep track of their orientation when moving through the building



Hospital in a garden, garden in a hospital.



Nelson Mandela Children Hospital

Location: Johannesburg, South Africa
Architect: G&P, John Cooper Architecture, Ruben Reddy Architects, Sheppard Robson

Integration of nature

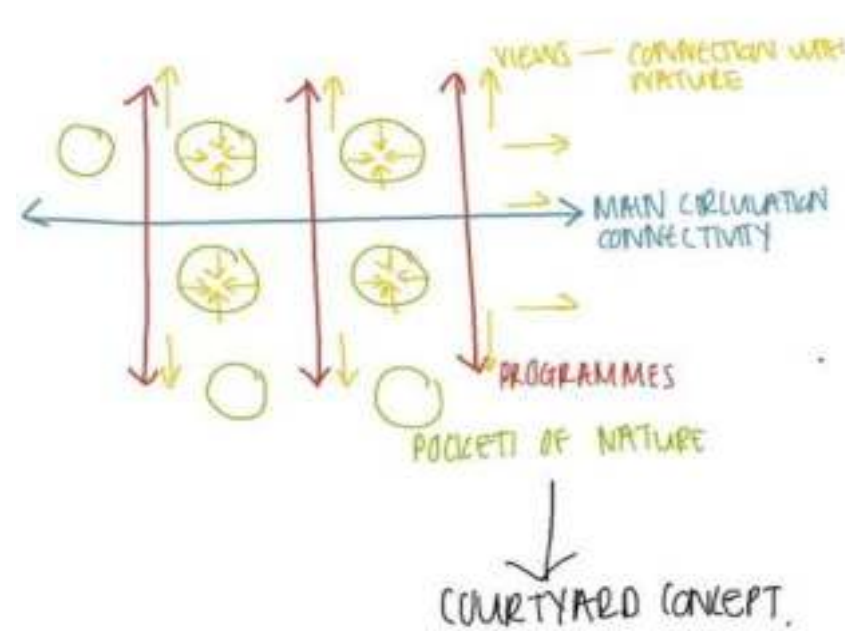
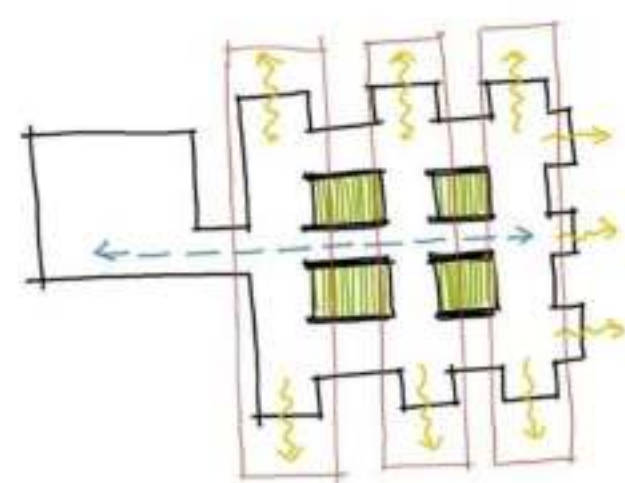
A series of courtyard spaces creates the opportunity for patients to interact with nature visually but also encourages patients to spend time in nature within a safe and healthy environment.

Circulation

The layout of the building is regulated by a main spine of connectivity. This access path created universal access to the hospital. The main spine enhances the different programs in the building.

Daylighting

The different courtyards enhances the natural light within the wards and interiors of the building.



Courtyard concept.

Maggie Centers

Location: United Kingdom
Architect: Norman Foster

Healing Spaces

The relationship between humans and other living systems are interdependent. Buildings connect people and nature in buildings. Buildings tells a story of place which leaves an ecological footprint or narrative. People spend 90% of their time indoors. Walls become the obstacle between human and nature.

Windows are key transporters of daylighting. Natural daylighting is crucial for hospital recovery.

Nature has the ability to bring people together, thus becoming important to rebuild communities and establish social cohesion within neighborhoods.

Indigenous architecture is dependent on the climate conditions of the site.

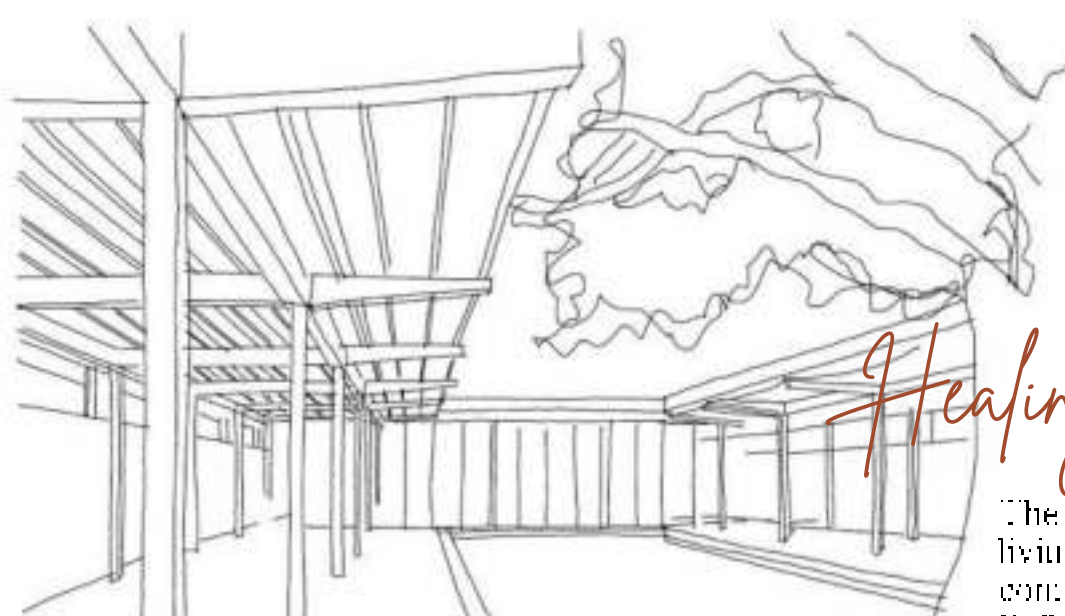
REFUGE

BIOPHILIC DESIGN

Maggie Centers

PROSPECT

Biophilic design - a love of life



Convent of La Tourette

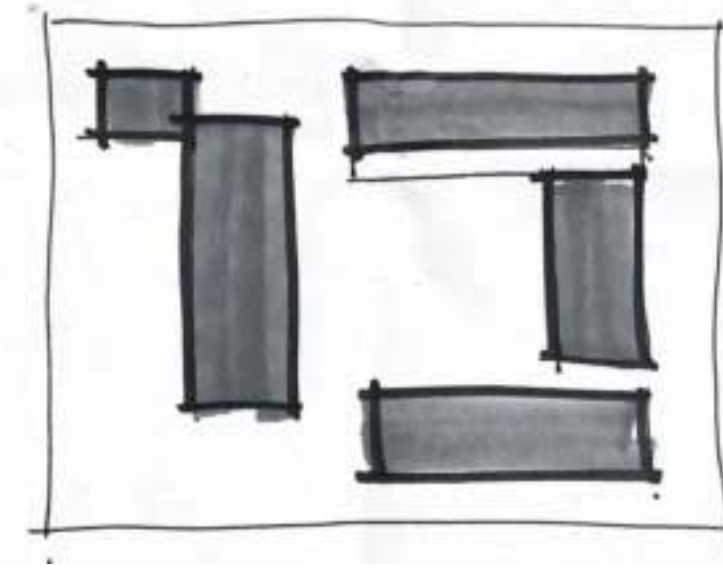
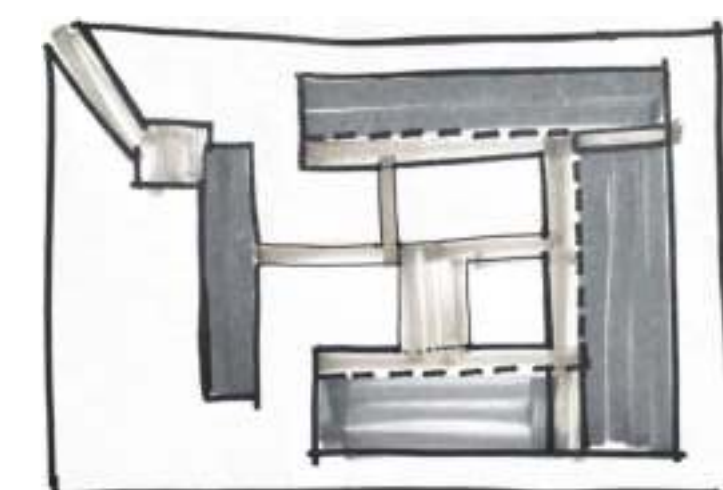
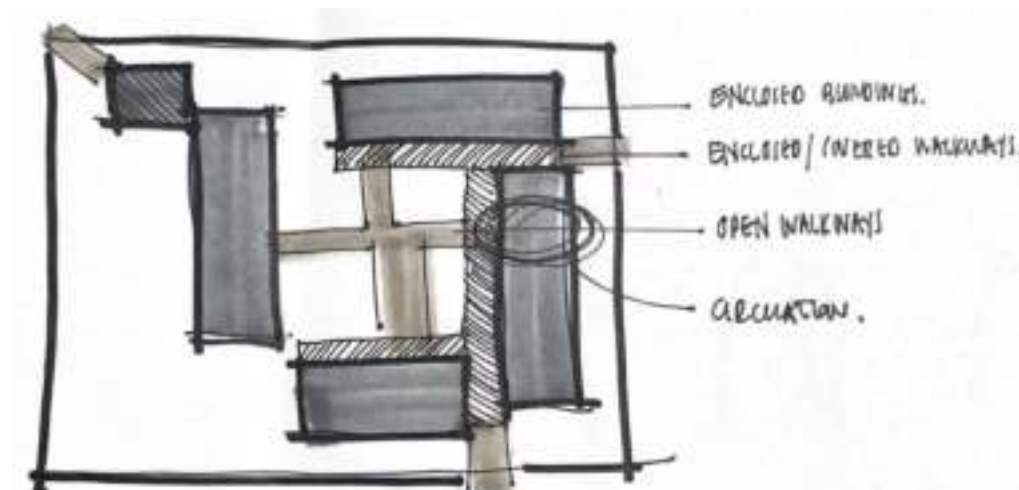
Location: France
Architect: Le Corbusier

Structure

SCF - supporting structure formed with columns and beams

Façade: free masonry and glazed windows

Roof gardens



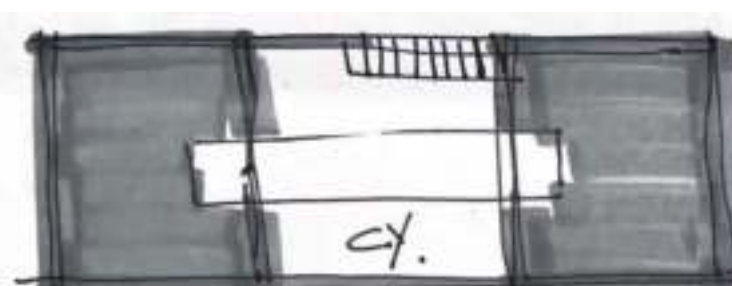
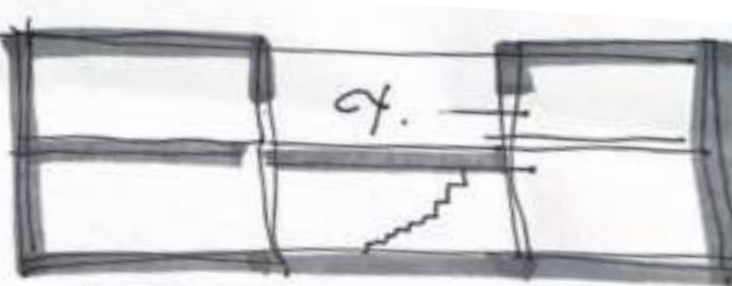
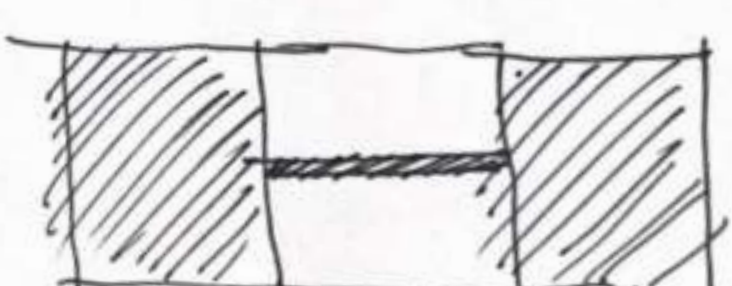
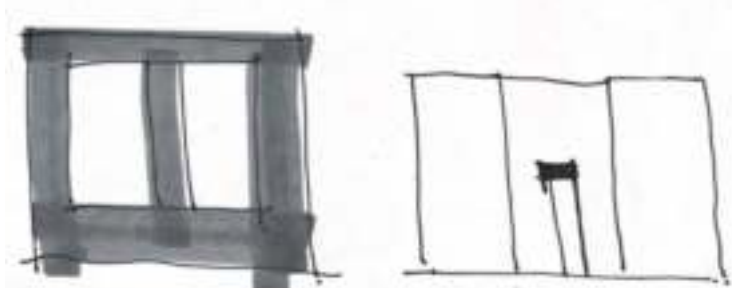
Azuma House

Location: Japan
Architect: Tadao Ando

Expression of enclosure

Light gives character to daily-life spaces

Abs. rec. space formed by the relationship between wind and light

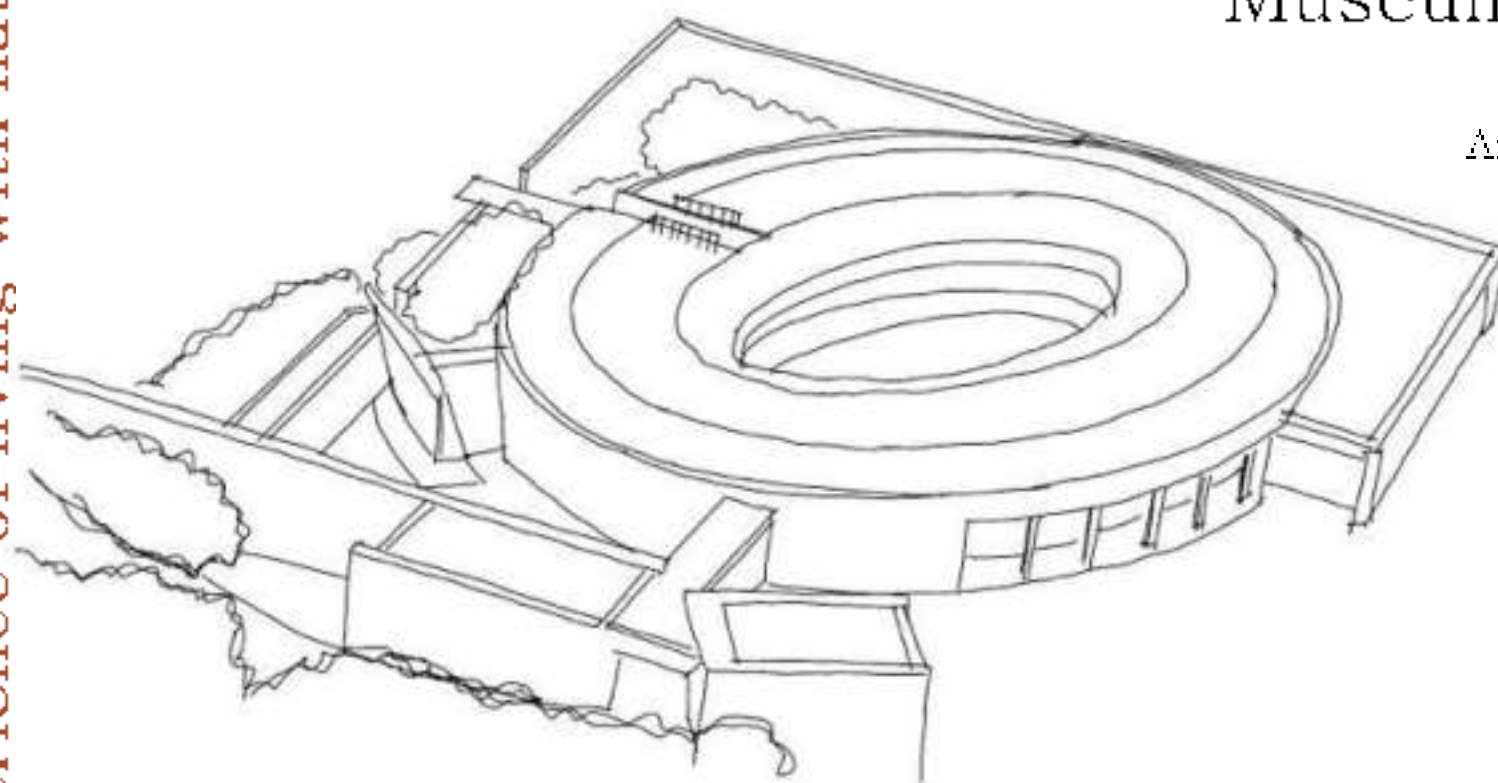


Question the inertia that makes modern architecture

Naoshima Contemporary Art Museum & Annex

Location: Japan
Architect: Tadao Ando

Silence of architecture promotes experience of living with nature



Passive Systems

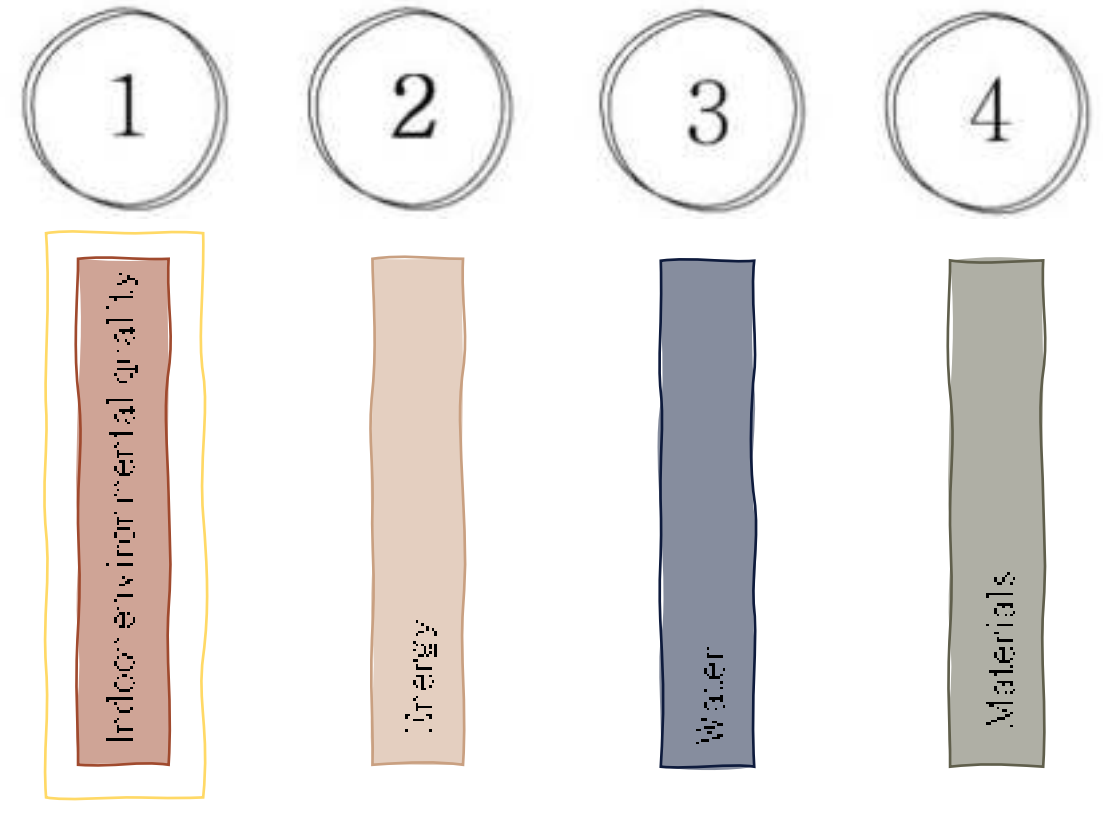
Regenerative design thinking



GREEN STAR RATING TOOL

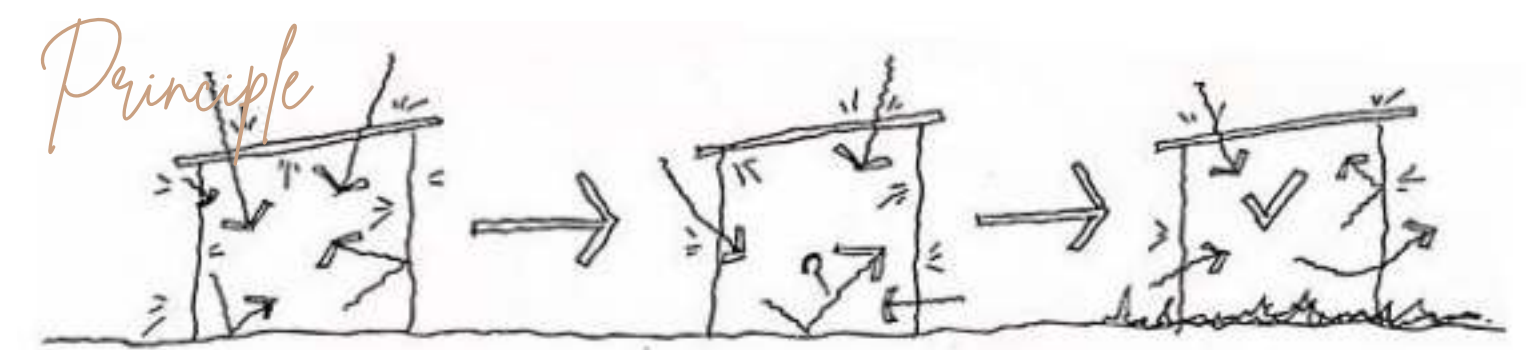
Green Building Council South Africa

The Green Star Rating tool is developed by the Green Building Council of South Africa. This initiative is consulted to identify relative passive systems to investigate in the building. These categories introduces precedent studies that was consulted to act as metrics for the evaluation of Passive systems in the building.

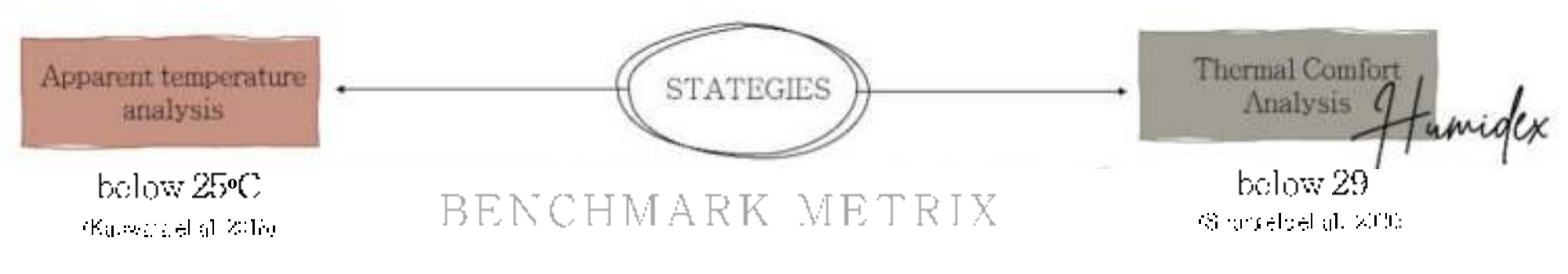


Green Star Rating Tool Categories:

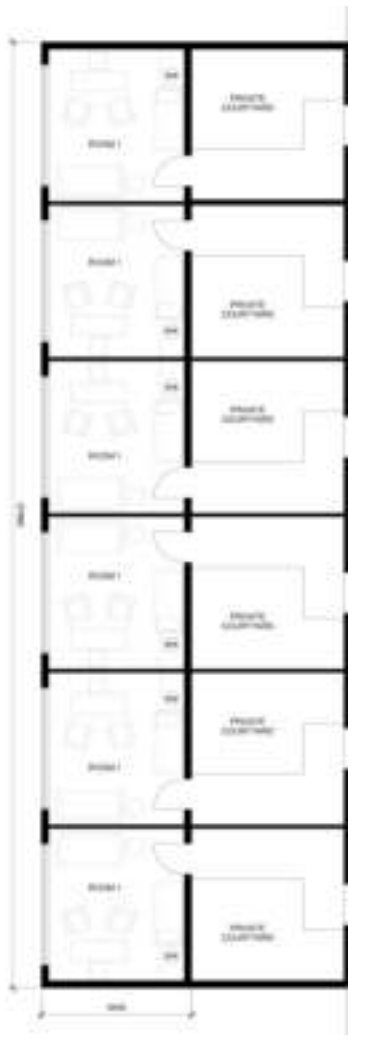
1. Management
 2. Indoor Environmental Quality
 3. Energy
 4. Transport
 5. Water
 6. Materials
 7. Land use & Ecology
 8. Emissions
 9. Innovation
 10. Socio-economic environment
- Green Building Council of South Africa 2014



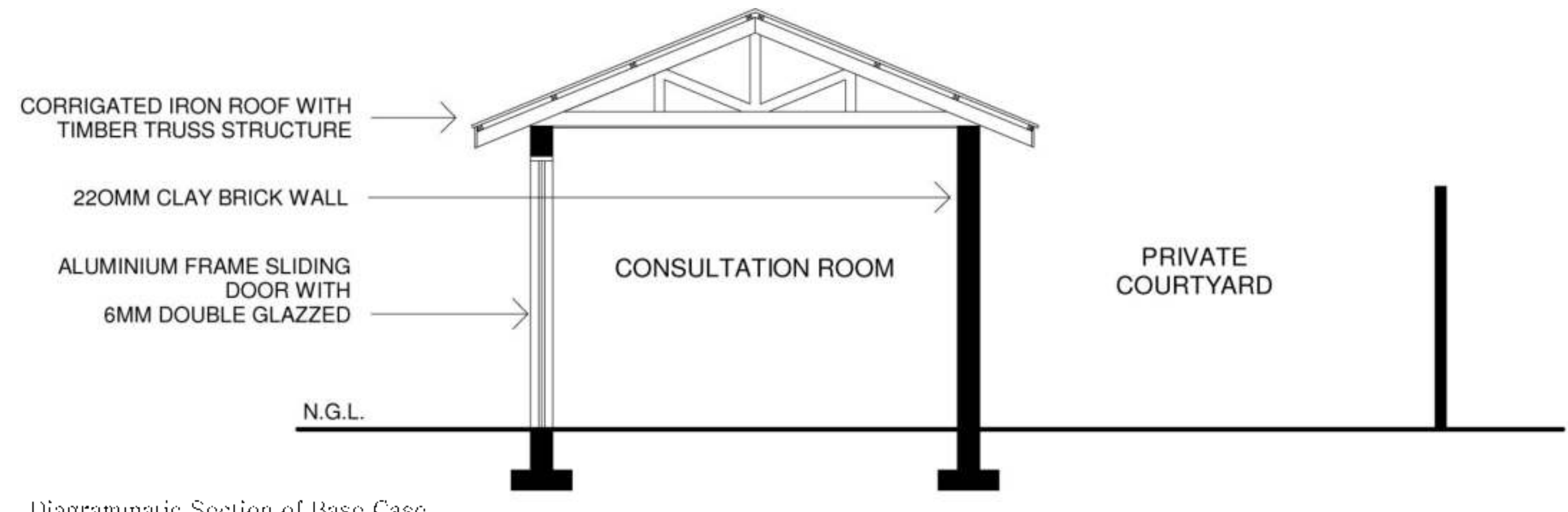
"How do you design a building that cools itself?"
Natural climate controlling system



Floor plan indicating focus area for investigation.



Floor Plan. Building part under investigation.



Diagrammatic Section of Base Case.

Base Case

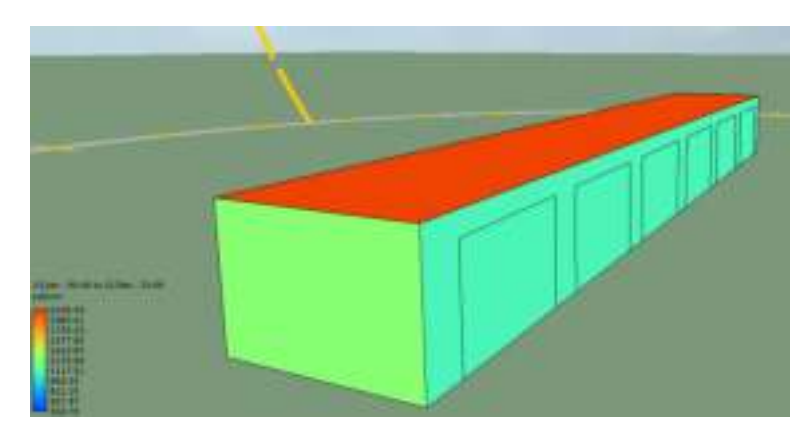


Diagram of Heat gain on surfaces (IESve 2021).

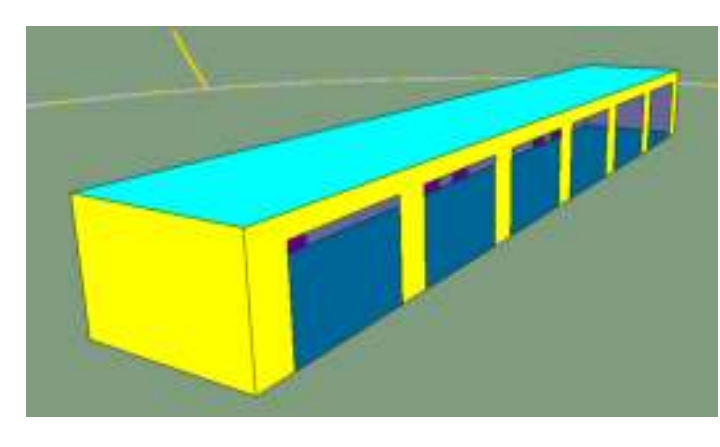
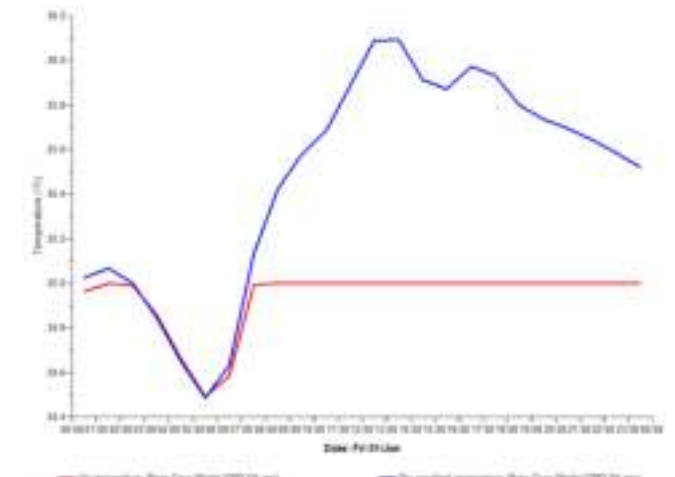
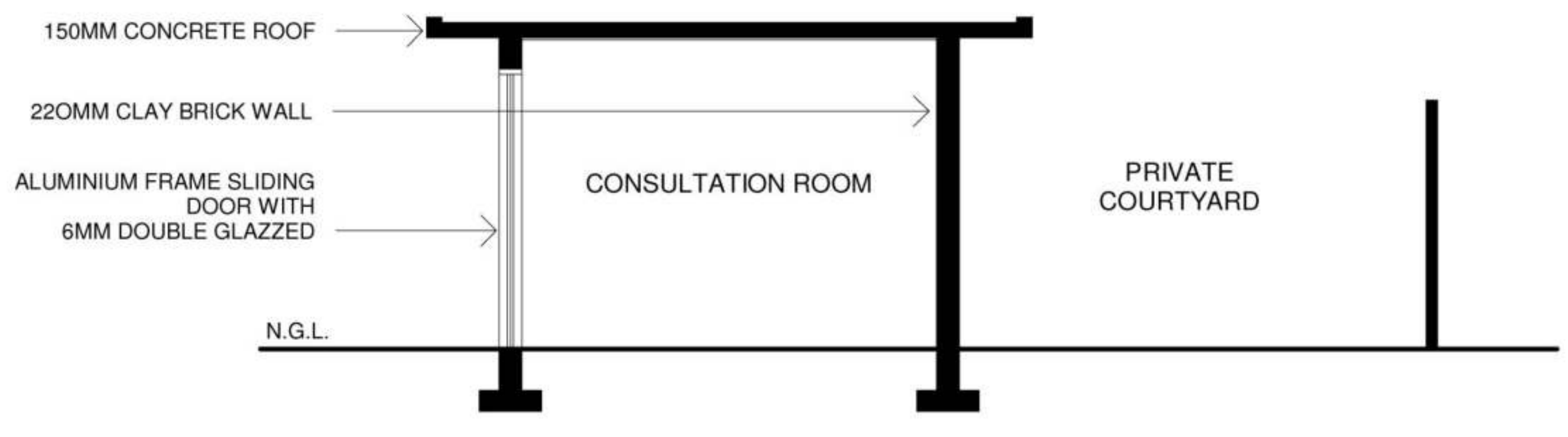


Diagram of assigned materials (IESve 2021).



Graph indicating relationship between indoor & outdoor temperatures (IESve 2021).



Diagrammatic Section of Iteration A.

Iteration A

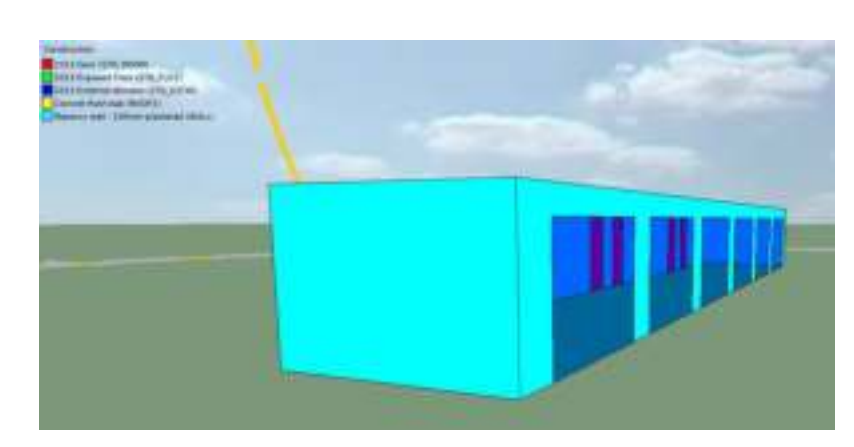
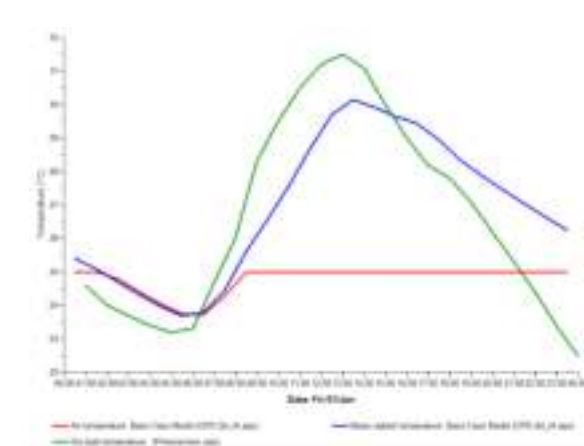
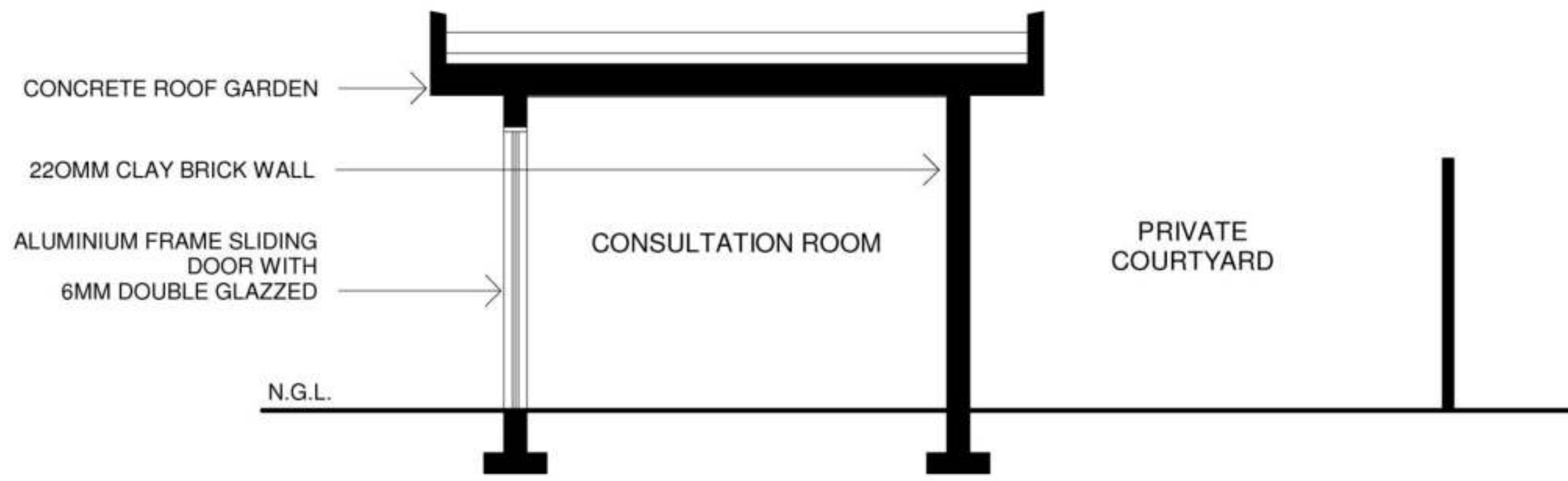


Diagram of Heat gain on surfaces (IESve 2021).



Graph indicating relationship between indoor & outdoor temperatures (IESve 2021).



Diagrammatic Section of Iteration B.

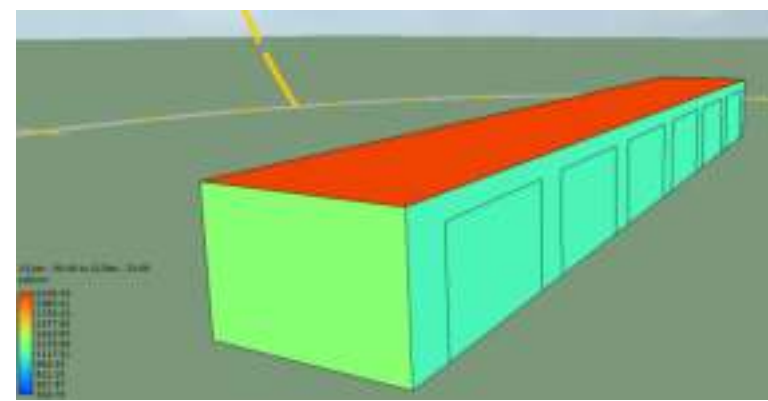


Diagram of Heat gain on surfaces (IESve 2021).

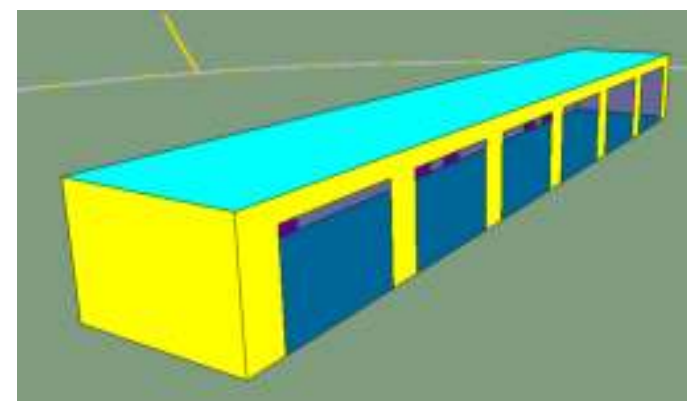
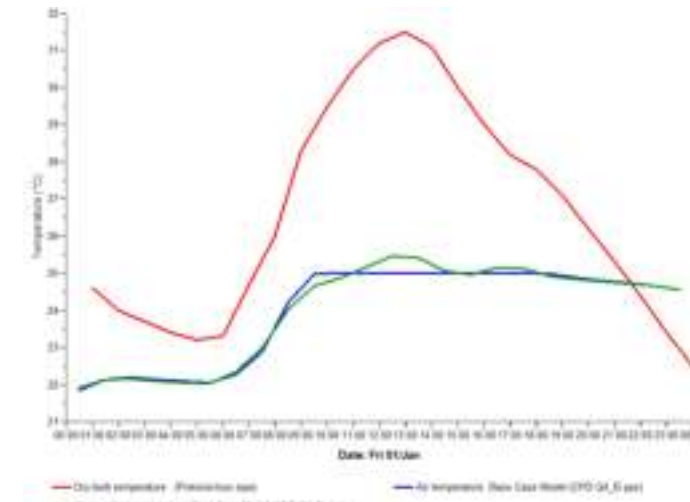
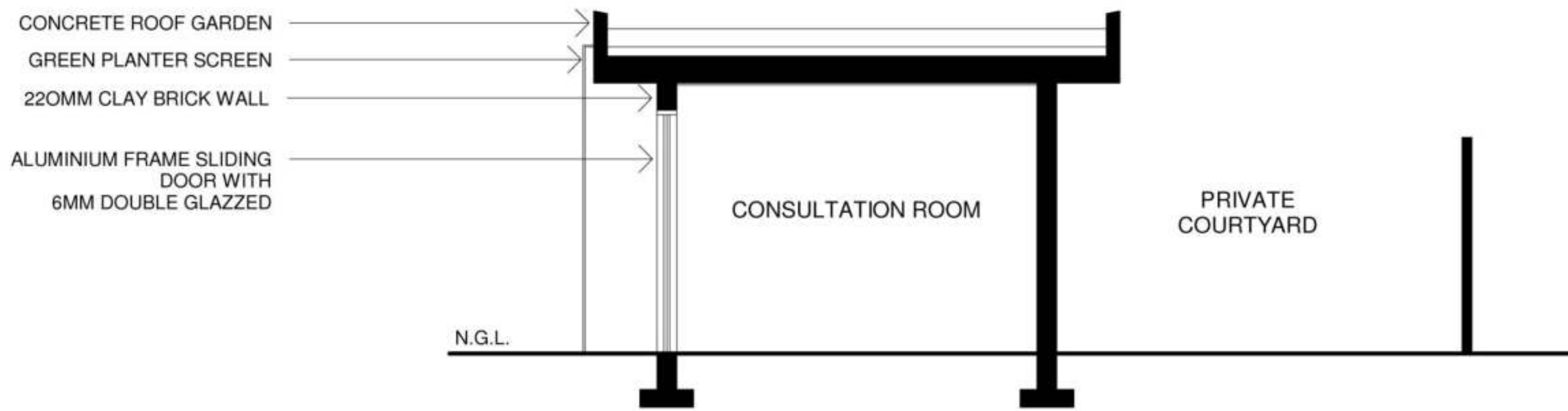


Diagram of assigned materials (IESve 2021).



Graph indication relationship between indoor & outdoor temperatures (IESve 2021).



Diagrammatic Section of Iteration C.

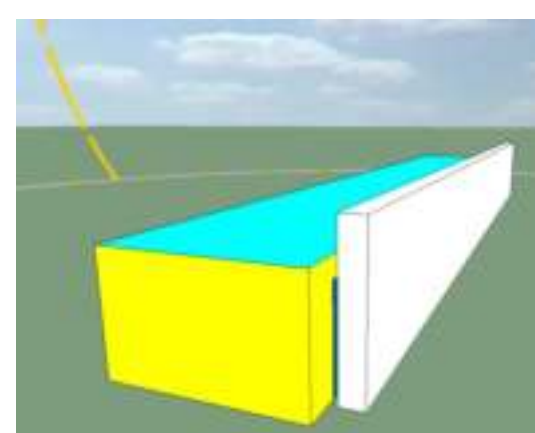


Diagram of Heat gain on surfaces (IESve 2021).

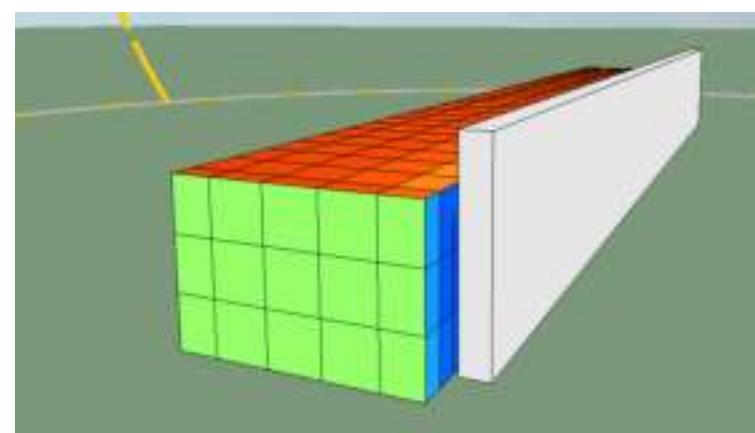
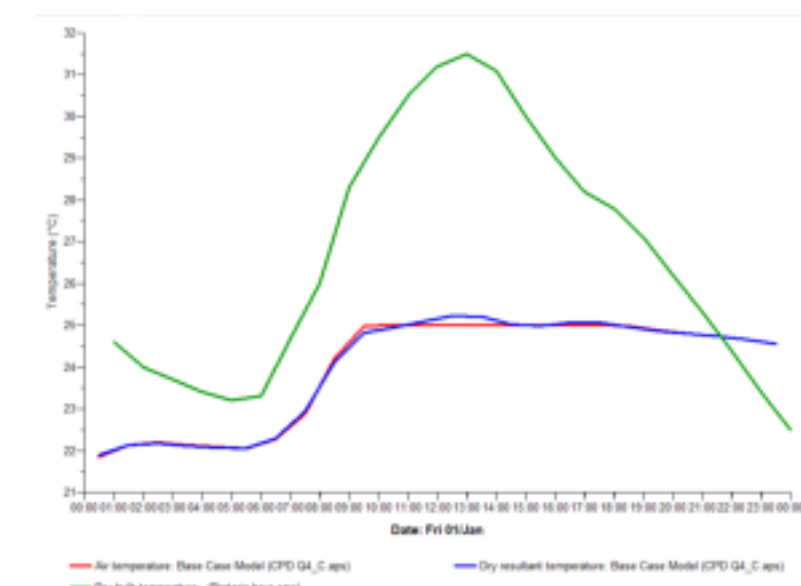
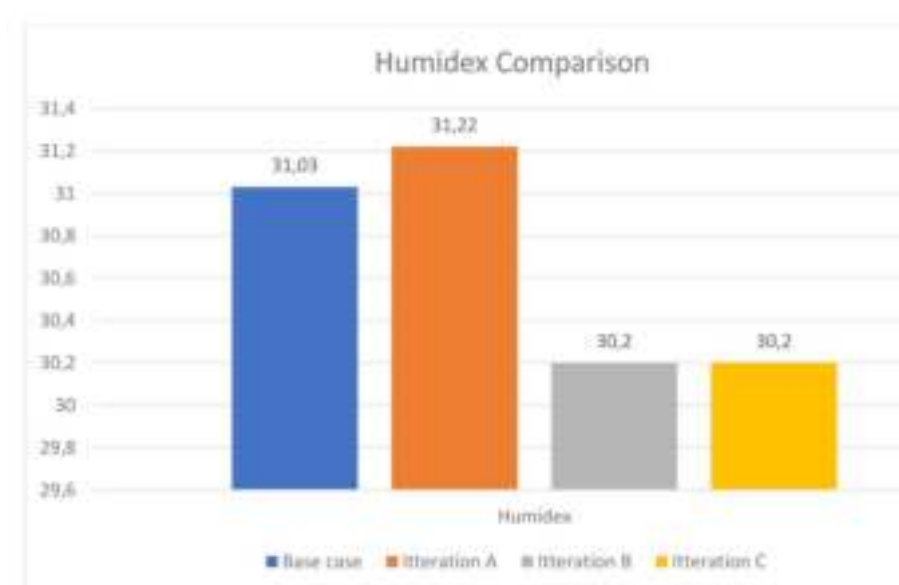


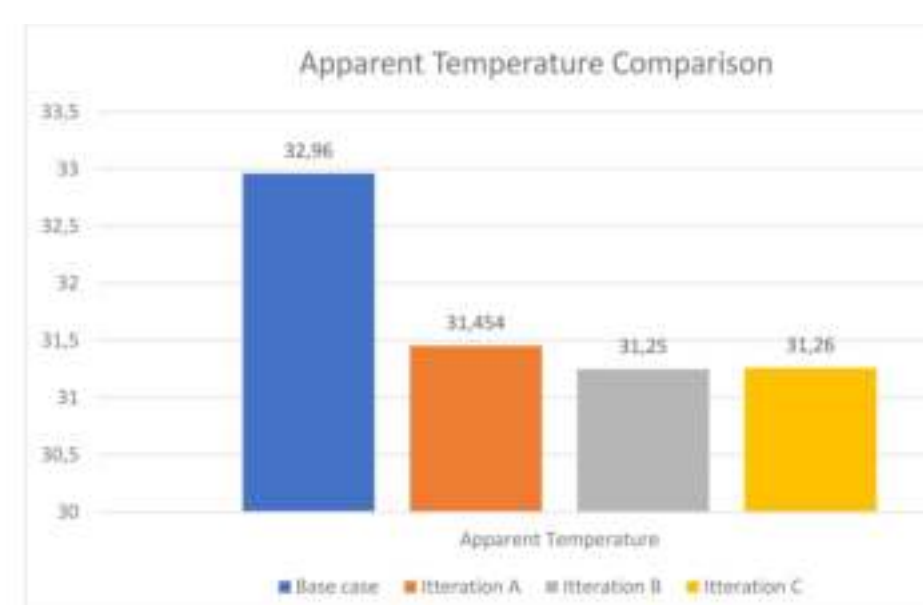
Diagram of assigned materials (IESve 2021).



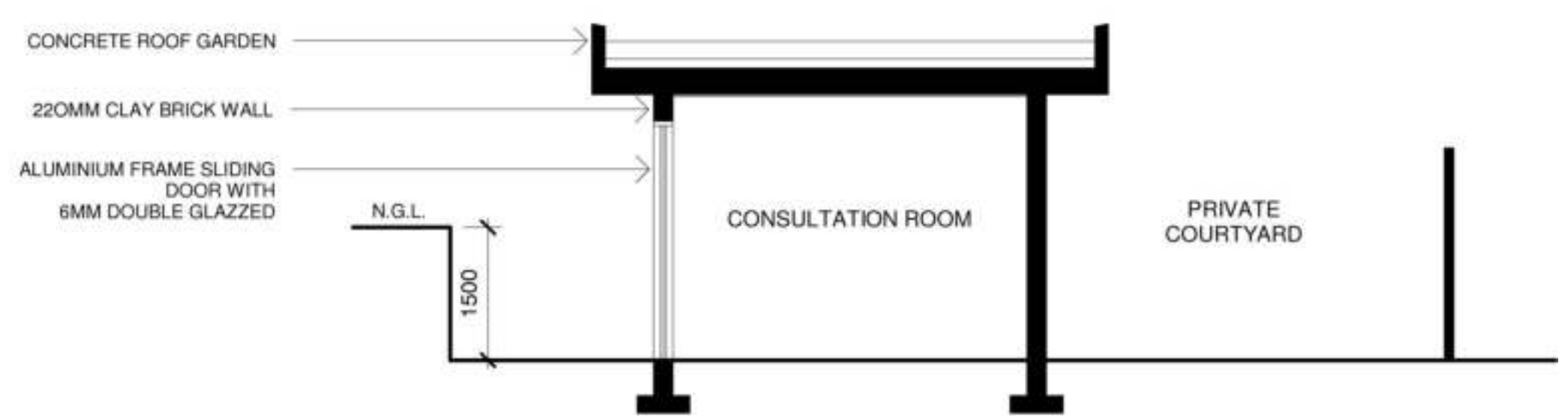
Graph indication relationship between indoor & outdoor temperatures (IESve 2021).



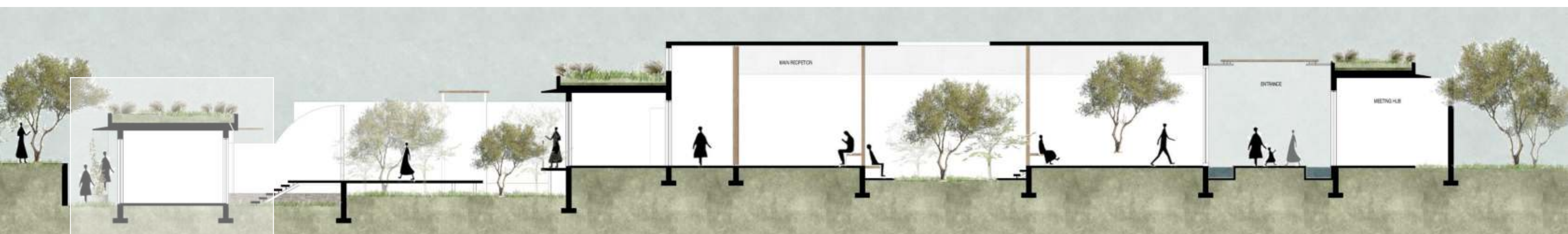
Graph indicating Humidex comparison.



Graph indicating AT comparison.



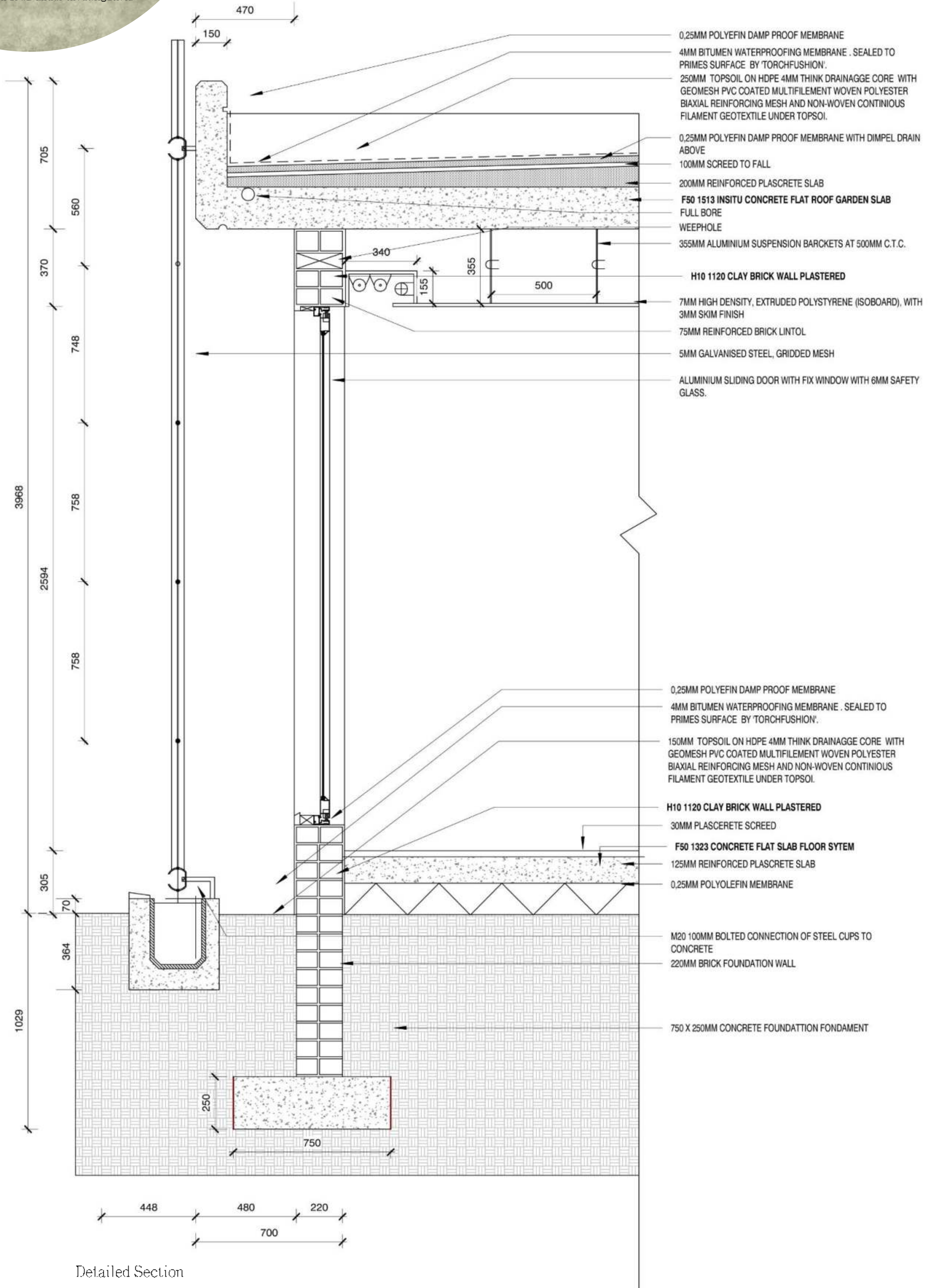
Diagrammatic sections of strategies to be explored further.





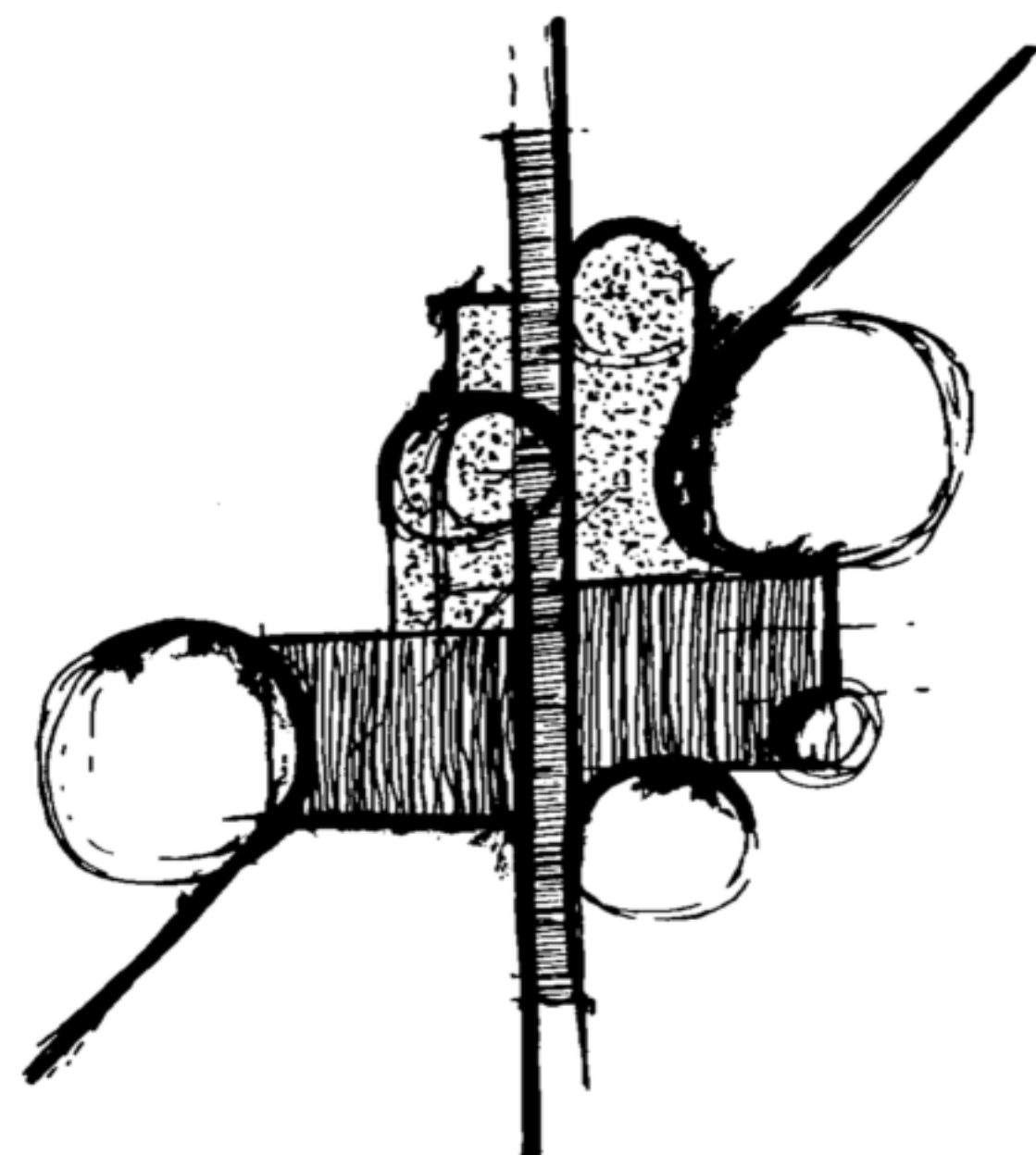
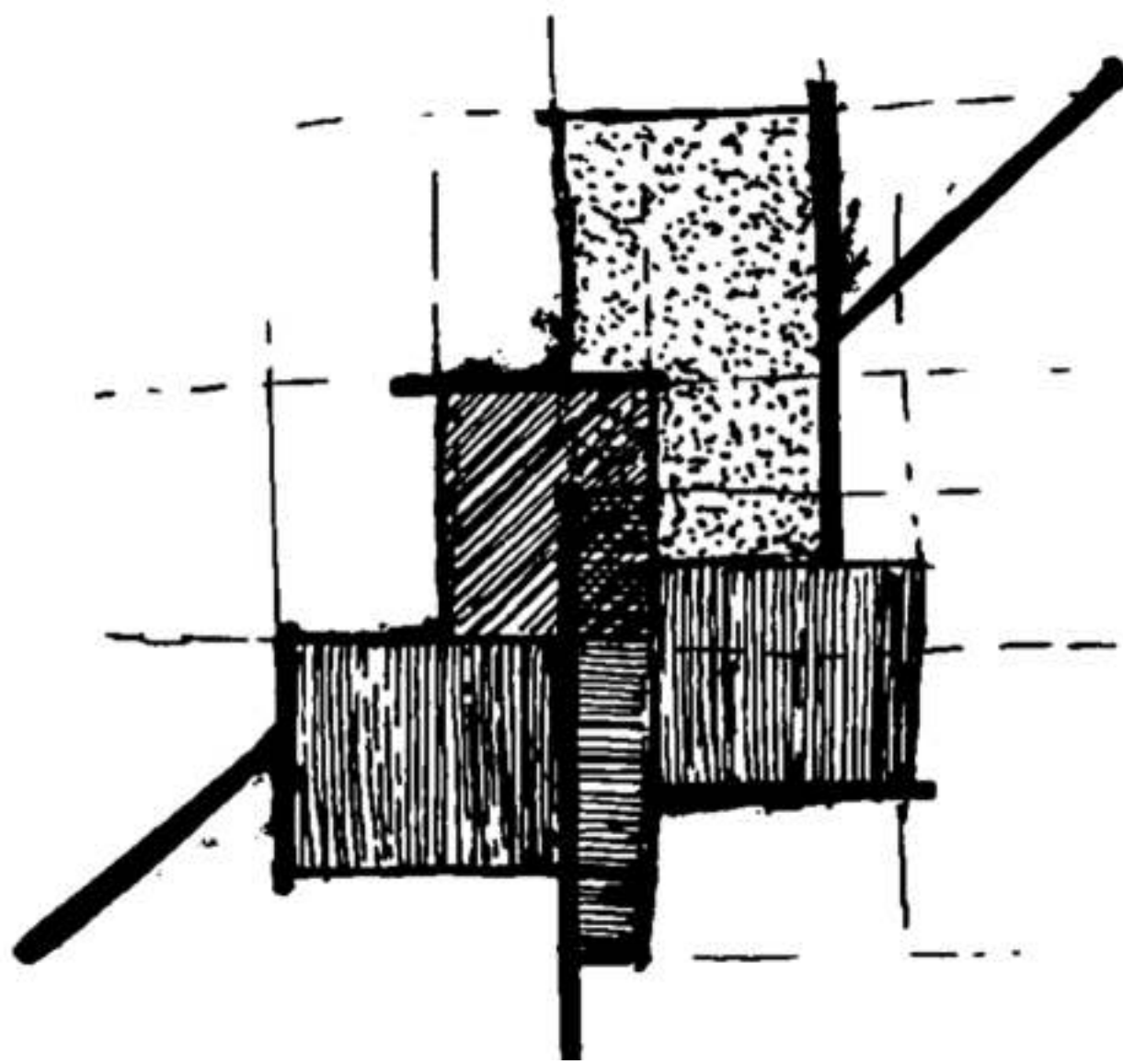
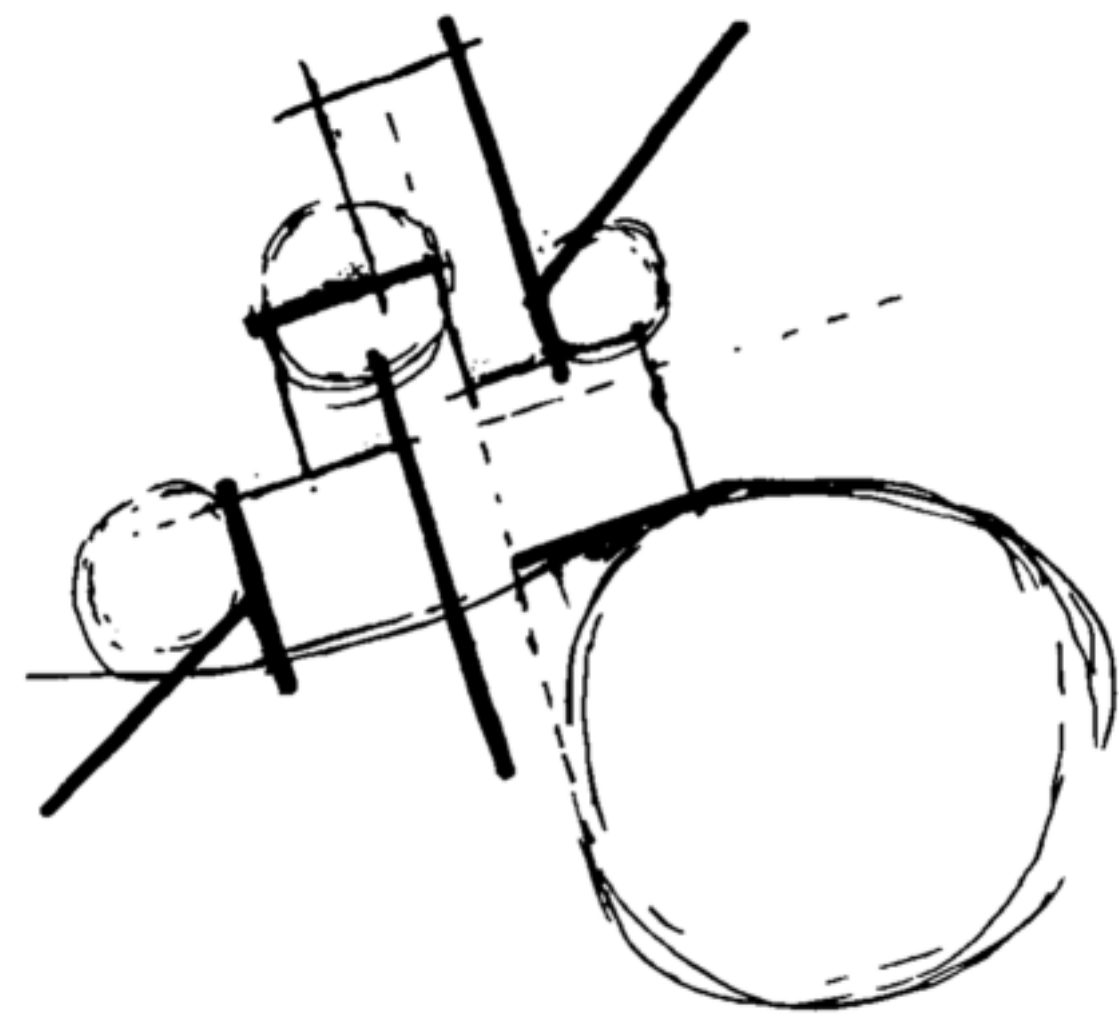
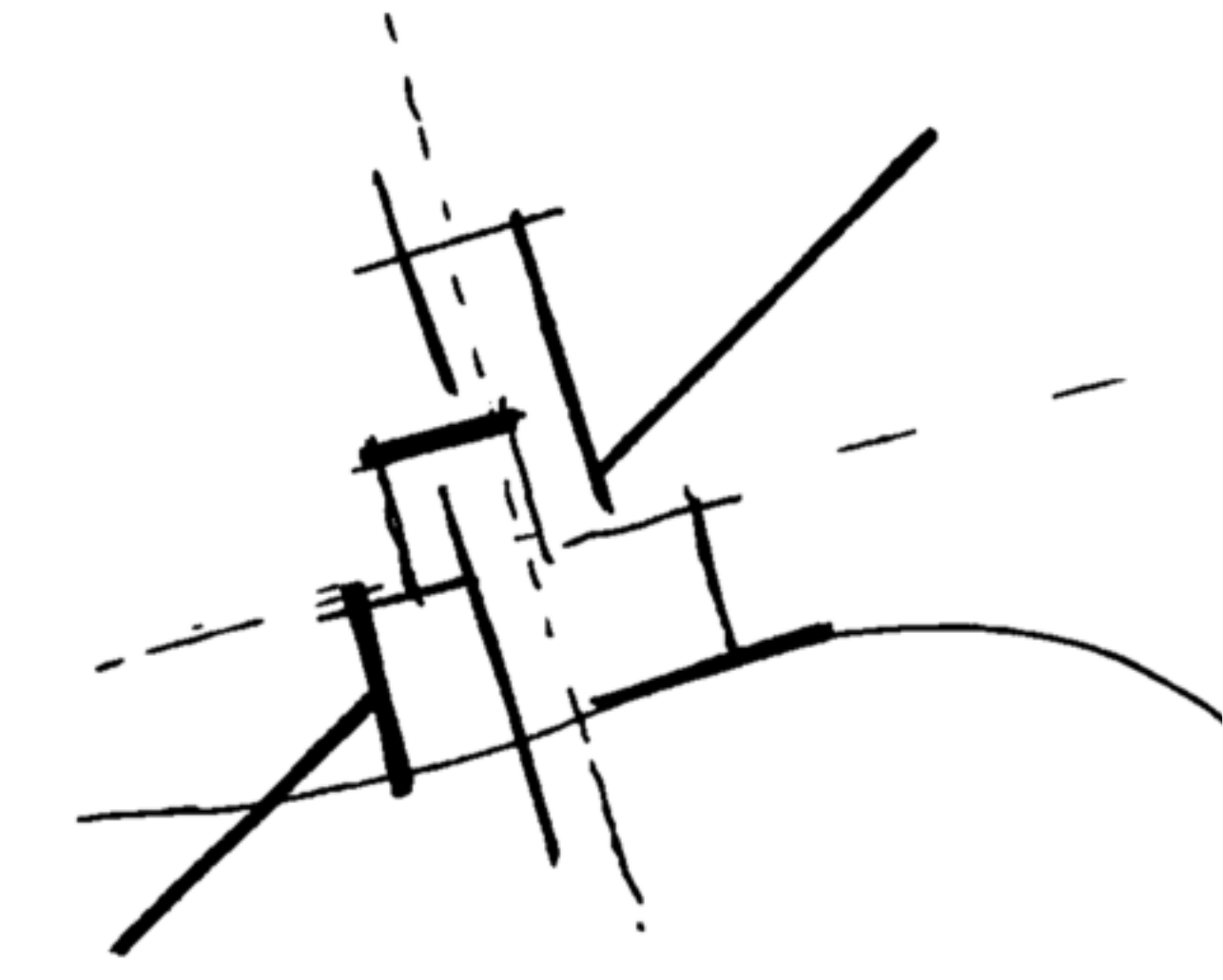
Section through area under investigation.

It is evident that the increase in thermal mass in the roof structure aids the regulation of the indoor temperatures. The additional soil density also contributes to this statement, allowing even better results. The final resolution of the planter screen seems to be the best solution, especially protecting the windows on the western façade from direct sunlight and intense heat gain. The increase of roof gardens are now also considered throughout the design.

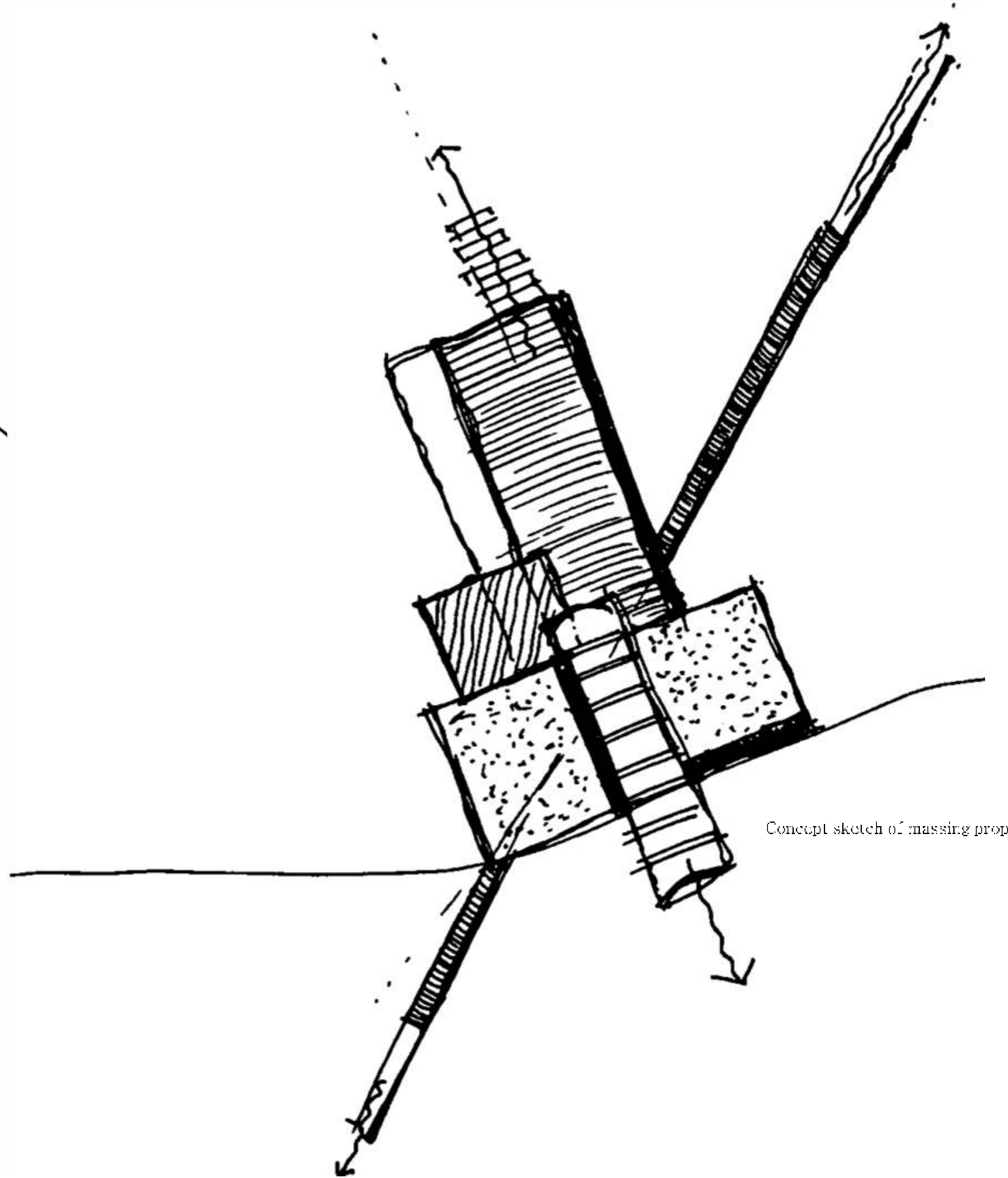


Detailed Section

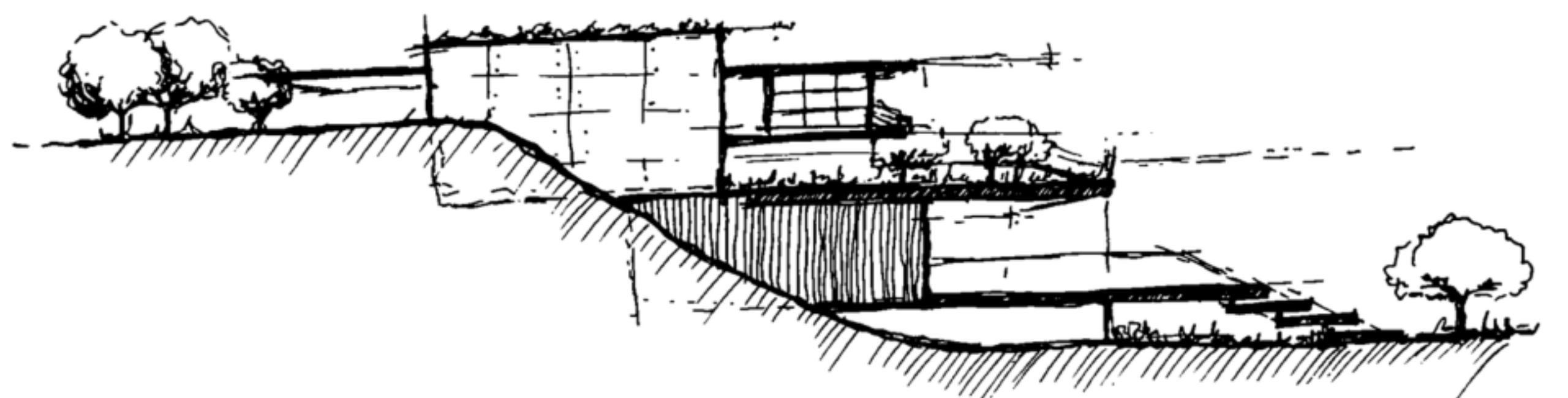
The first design concept focused on the massing's relationship with the site and between the systems within. A rigid geometry is inspired by the existing cityscape and infrastructure. The building aims to sit within the natural slope of the site and becomes integrated with nature and its existing planes.



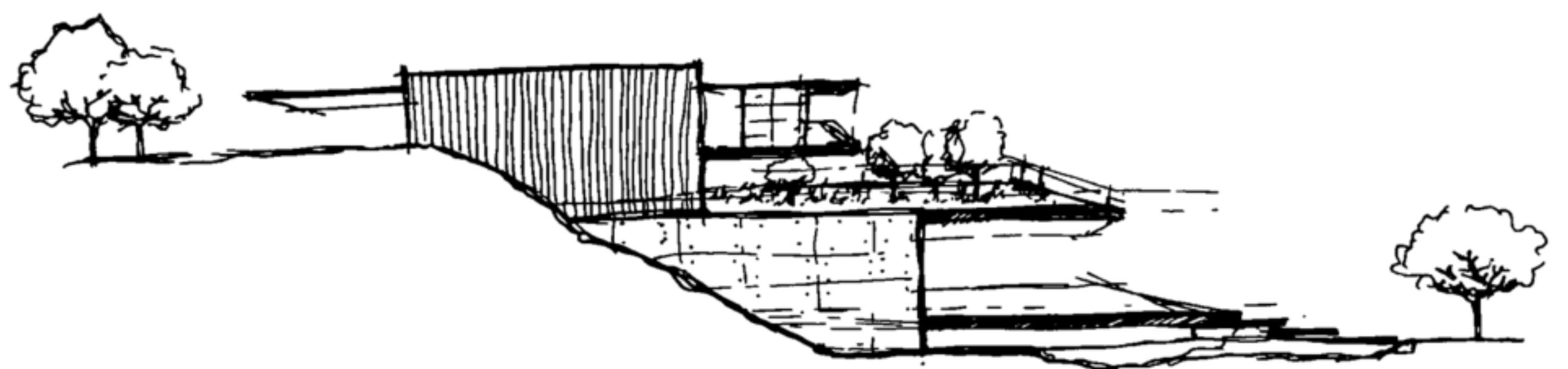
Series of Concept sketches of massing proposal.



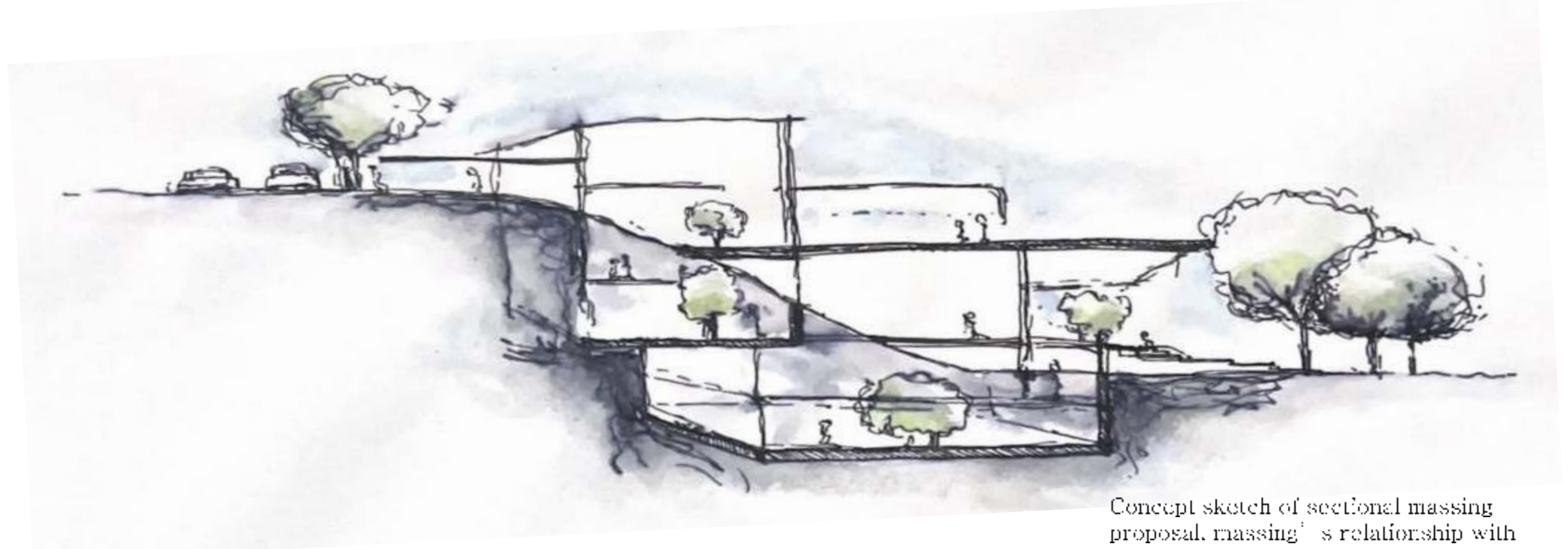
Concept sketch of massing proposal.



Concept sketch of massing proposal.



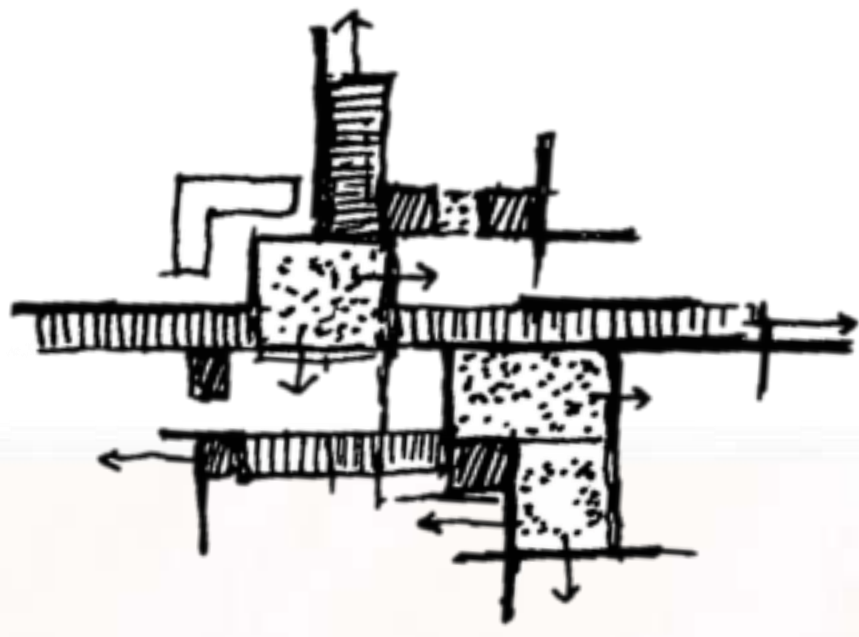
Concept sketch of massing proposal.



Concept sketch of sectional massing proposal, massing's relationship with topography and site.

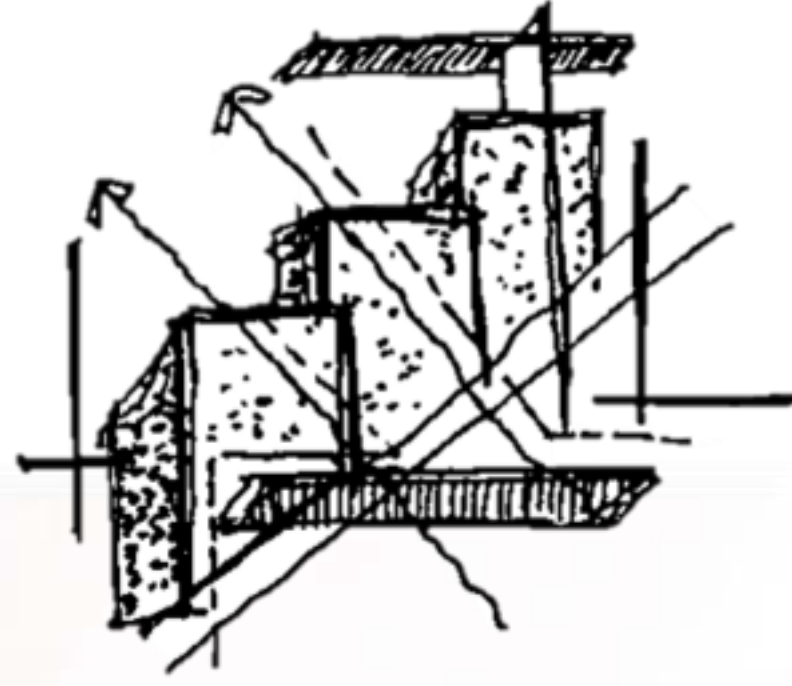
Technical Concept

Structure promoting honesty, stability & connection.



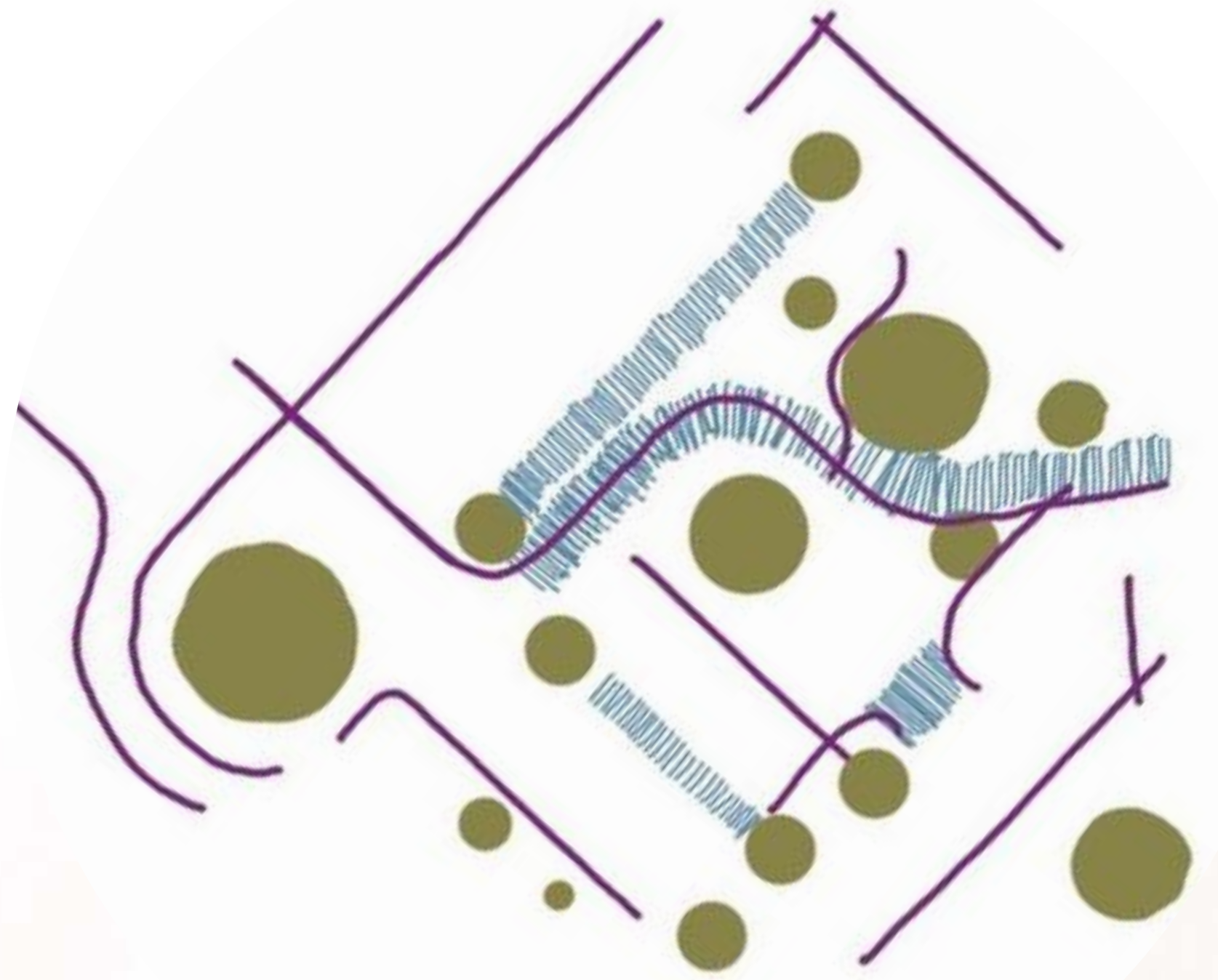
COURTYARD CONCEPT

The connection between vertical planes, horizontal planes and existing nature creates the opportunity for courtyard spaces. This concept aims to react to the existing typology and carefully inserting tectonics for space-making.



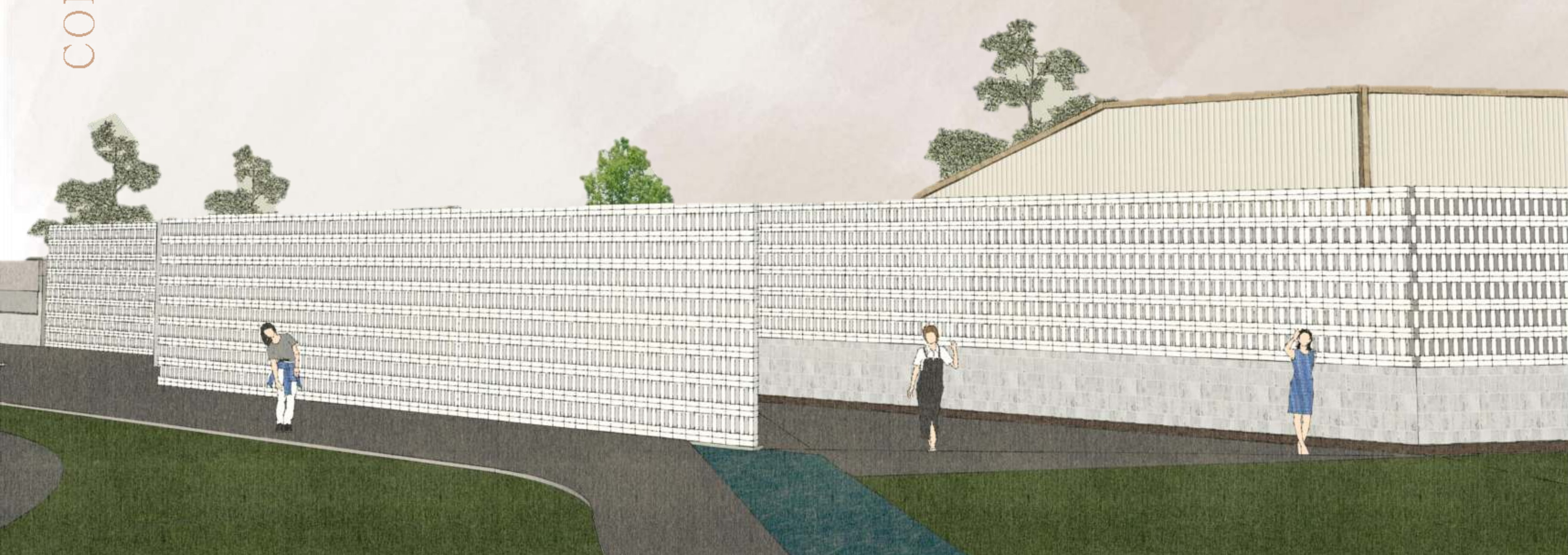
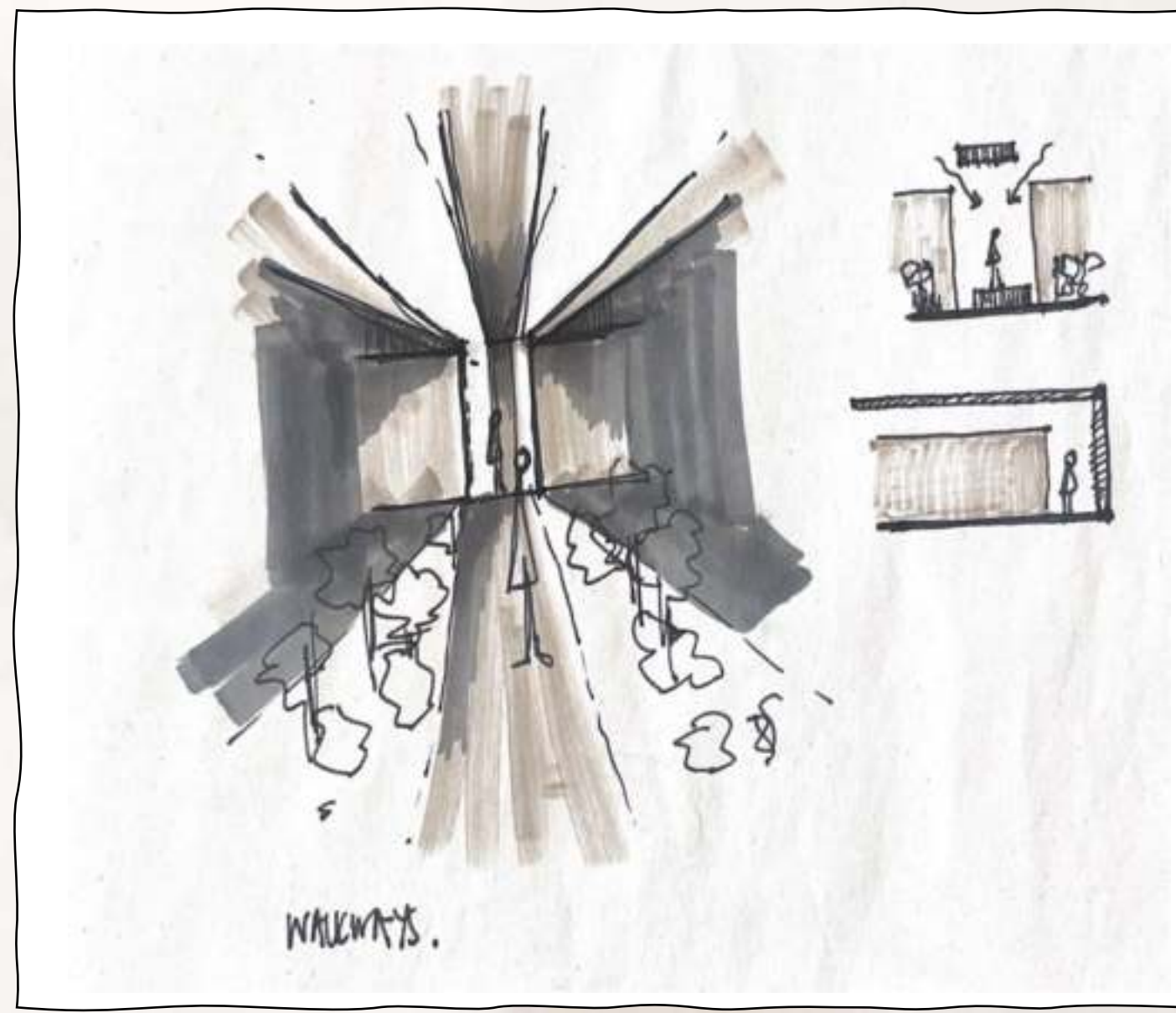
VISUAL TECTONICS

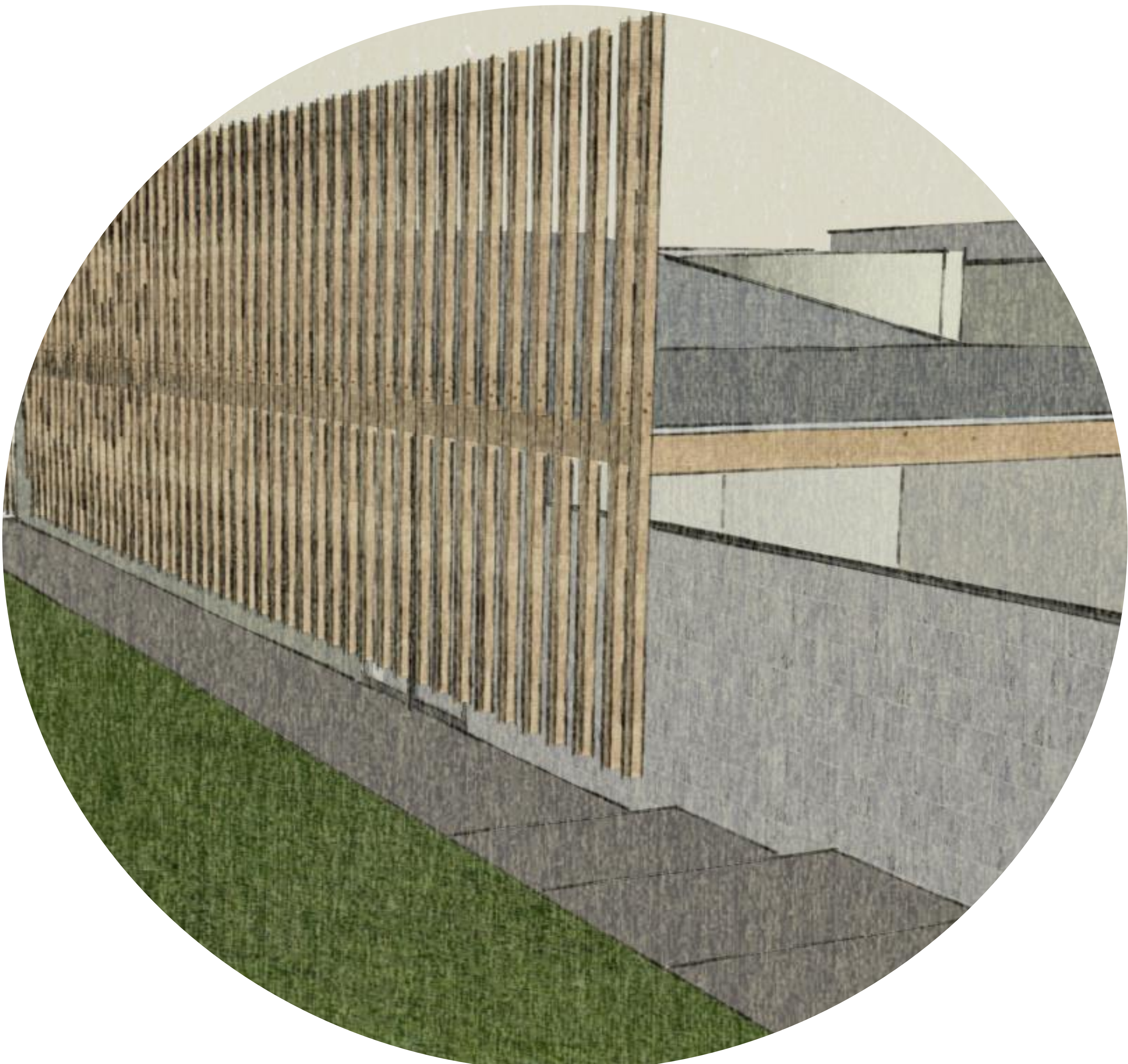
Visual tectonic should aim to create direction in the programmed of the site, acting as visual aid to enhance the legibility of the site. Tectonics should inform movement and programmed, allowing accessibility to the narrative of the design, place, occupants or building.

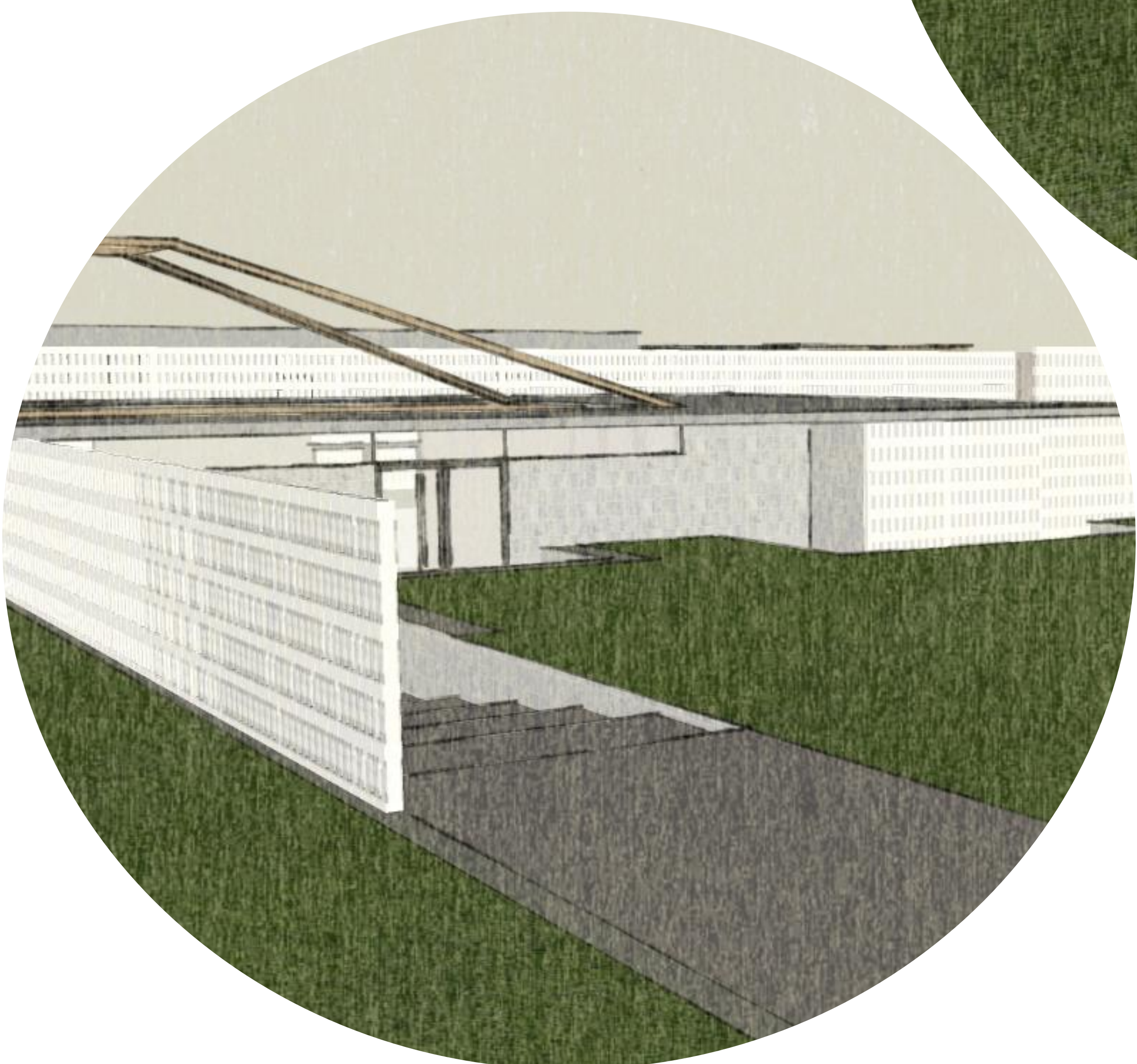
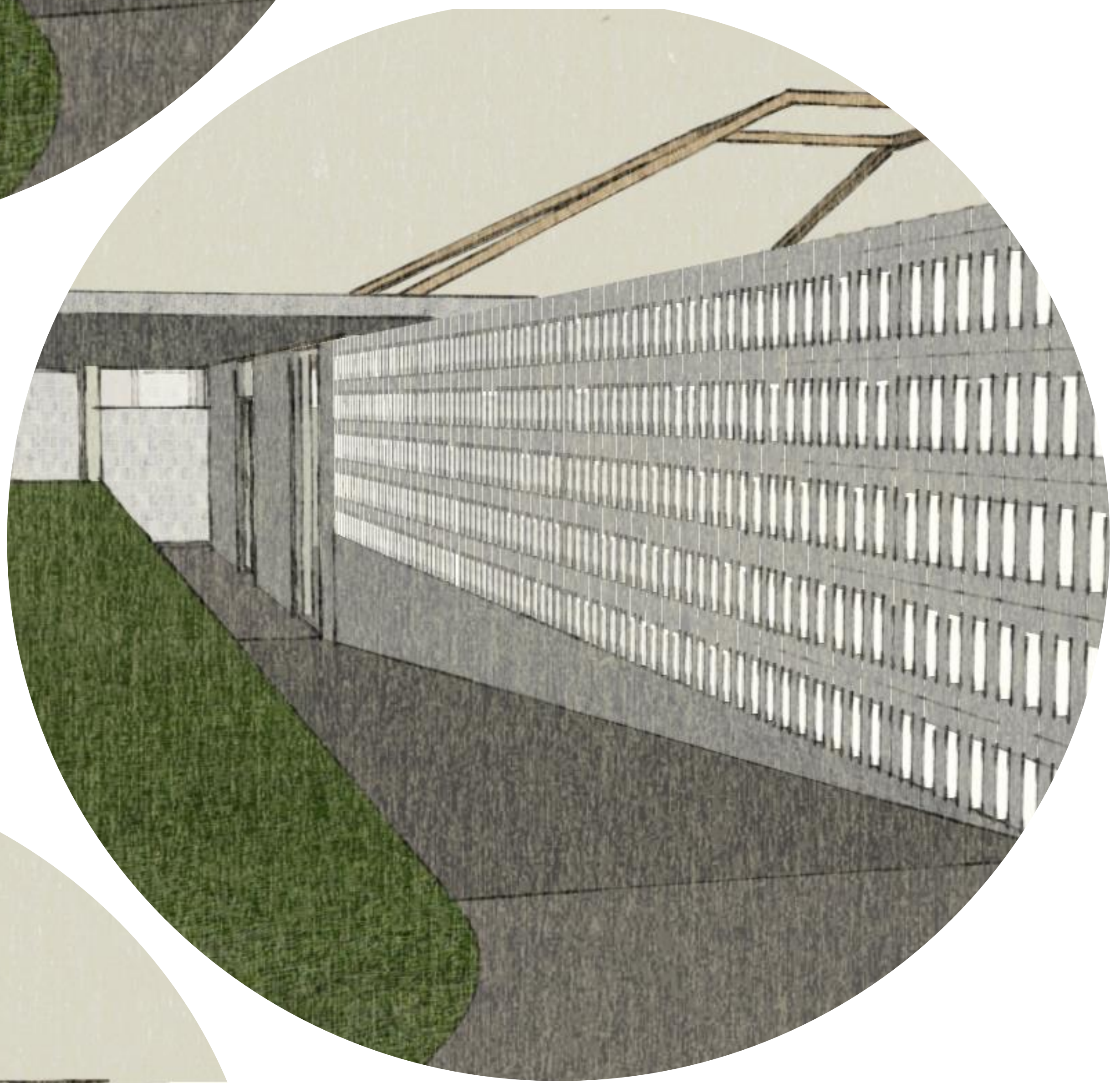


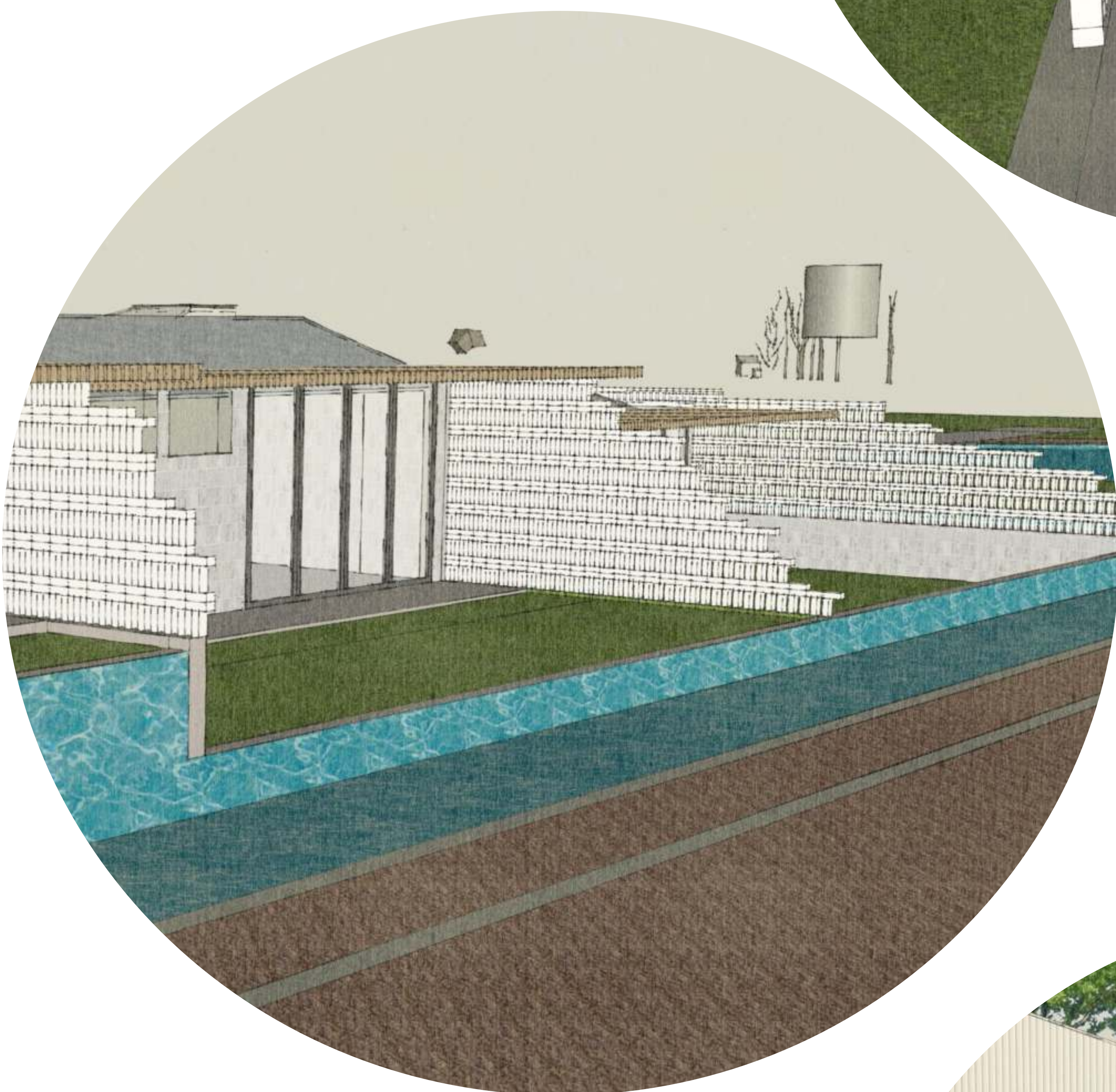
Concept diagram identifying the connection between structural systems, vertical planes, horizontal planes and nature

CONCEPT DEVELOPMENT

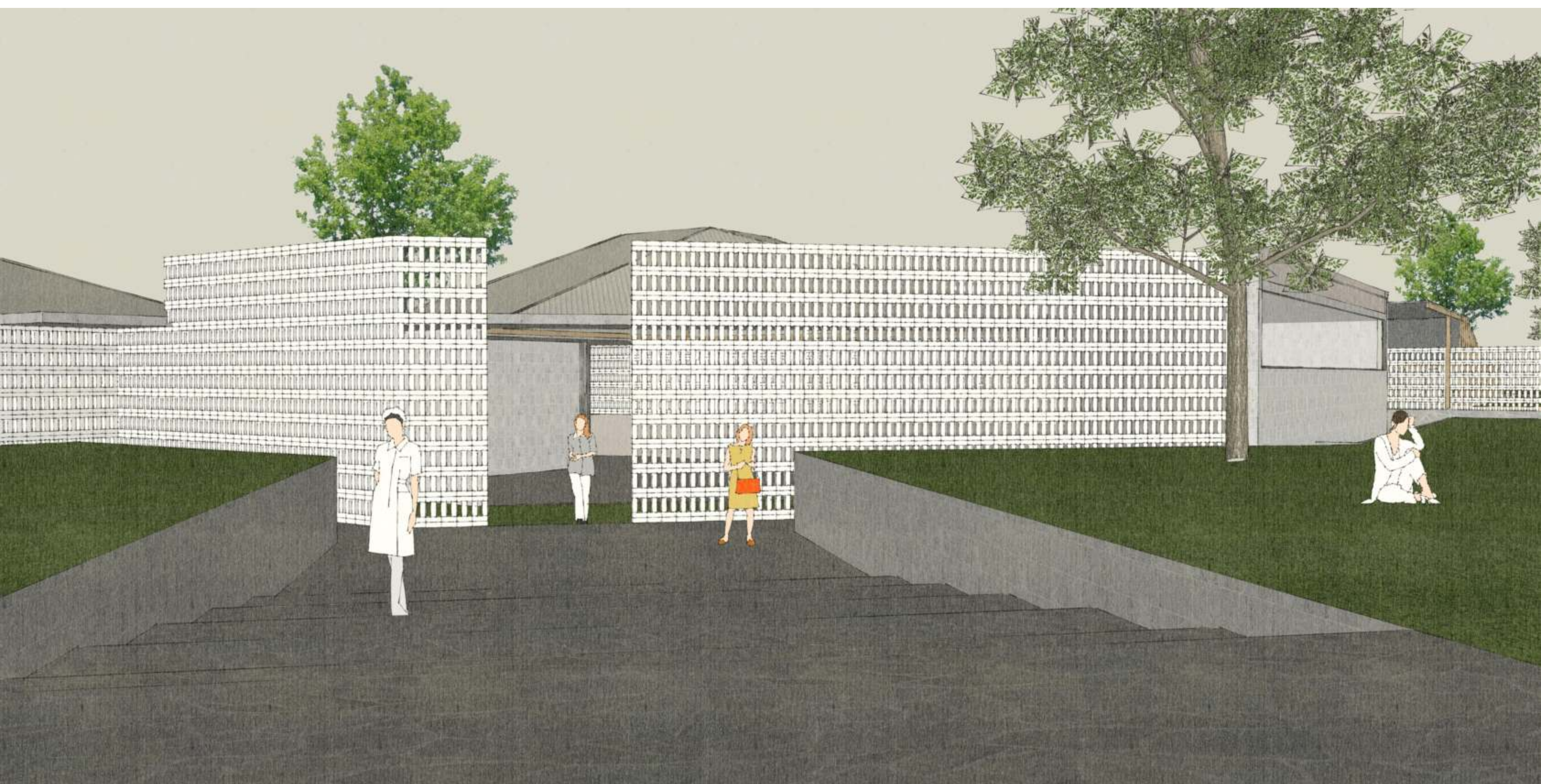
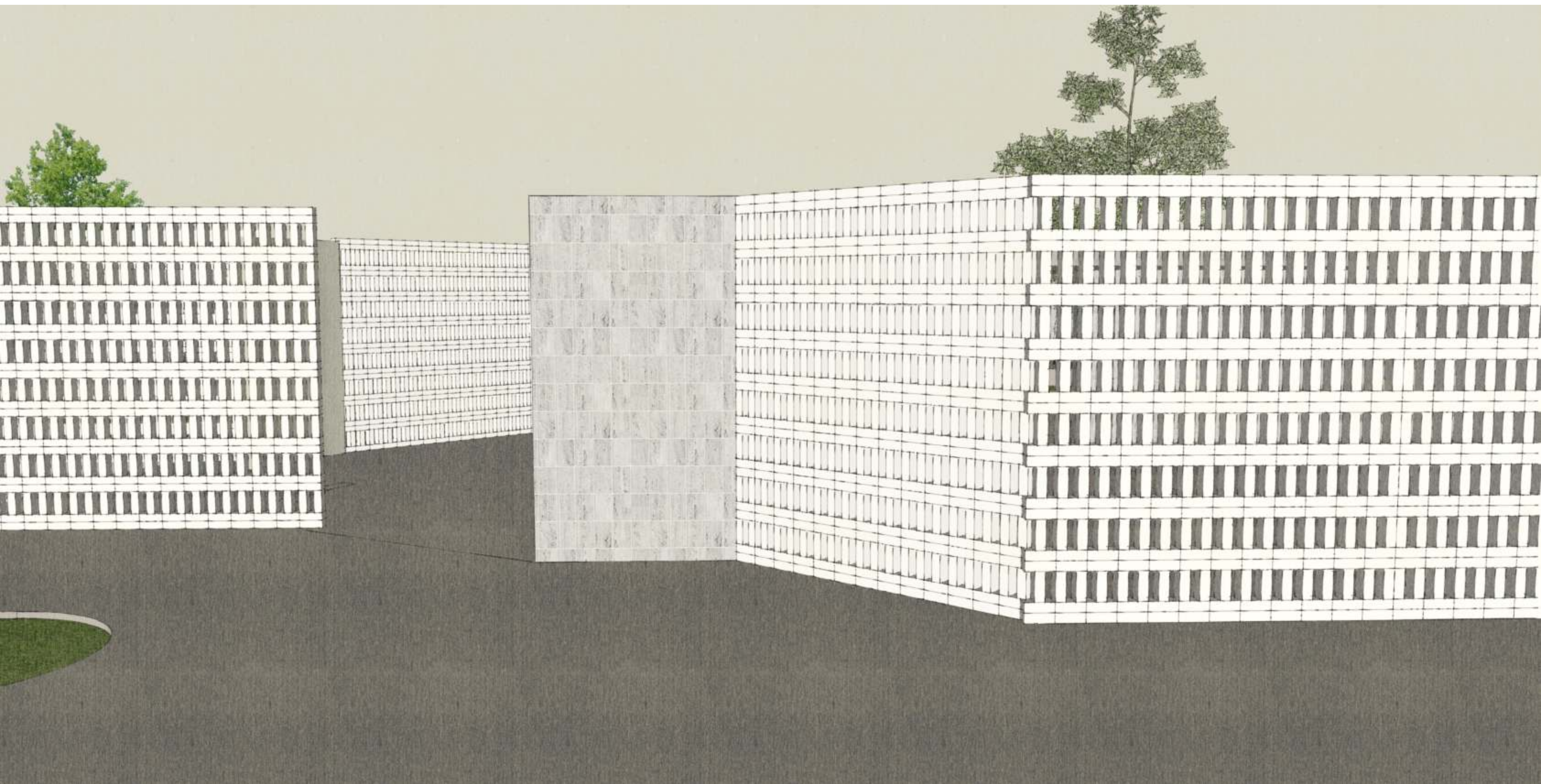


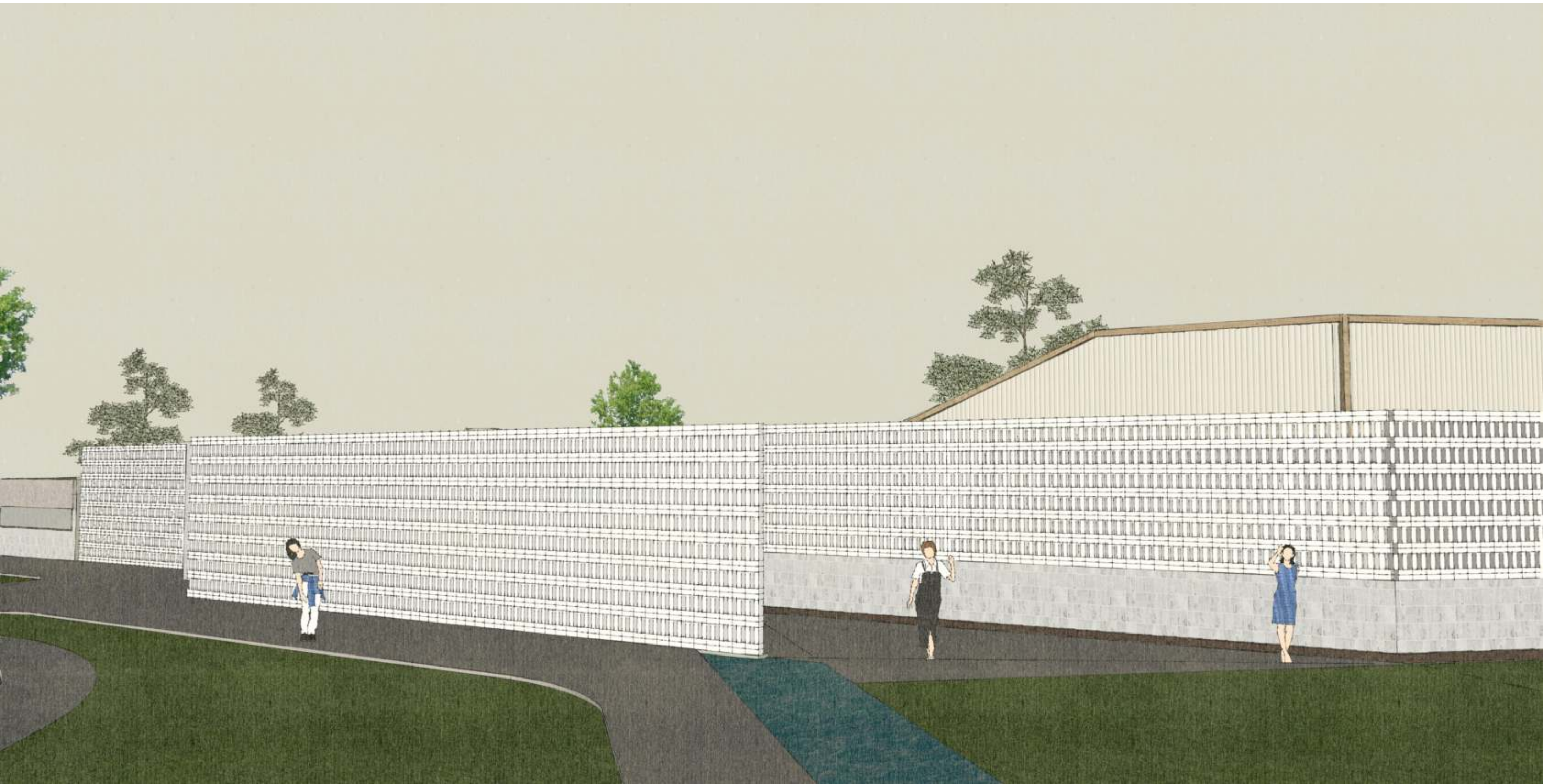


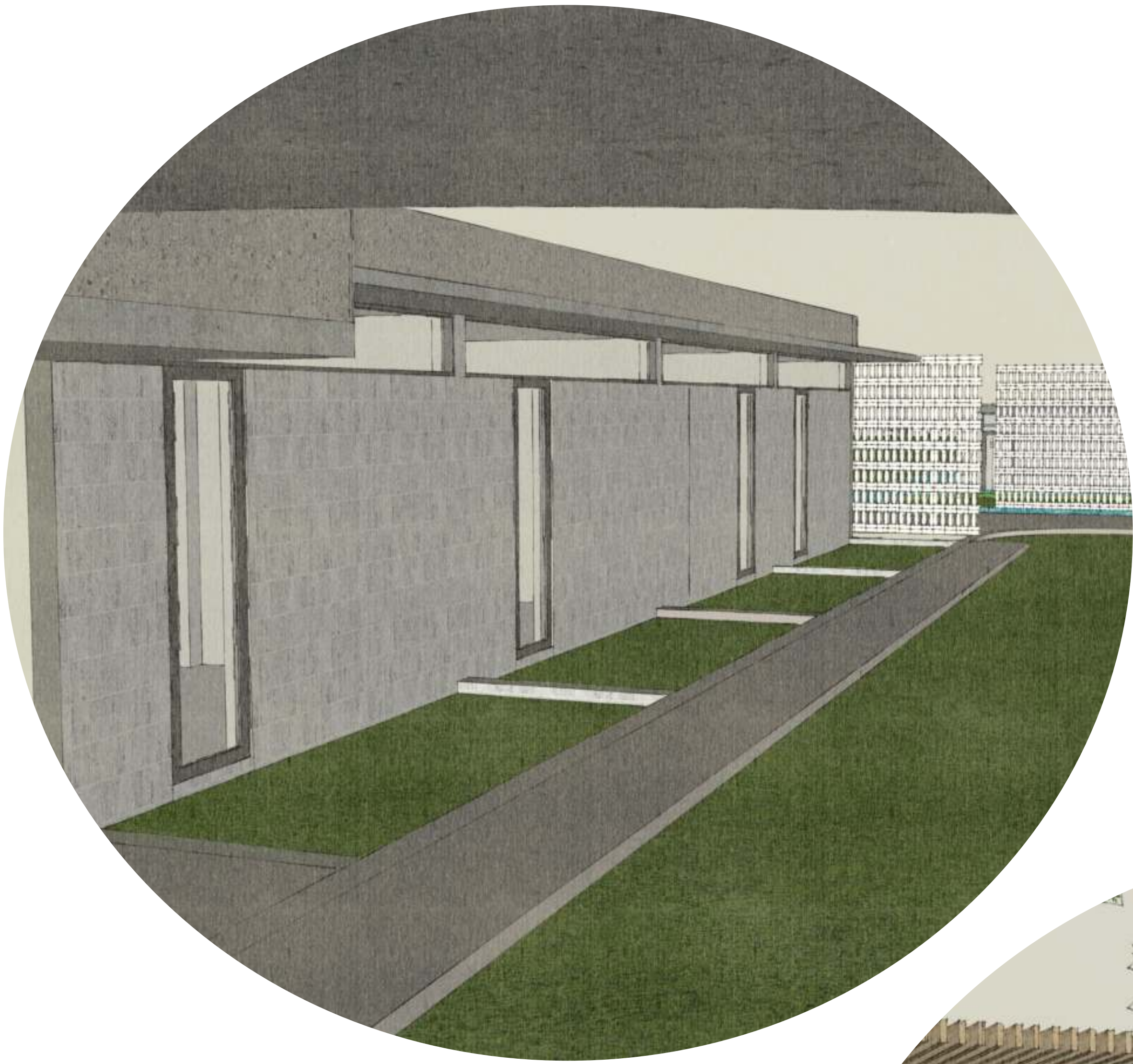




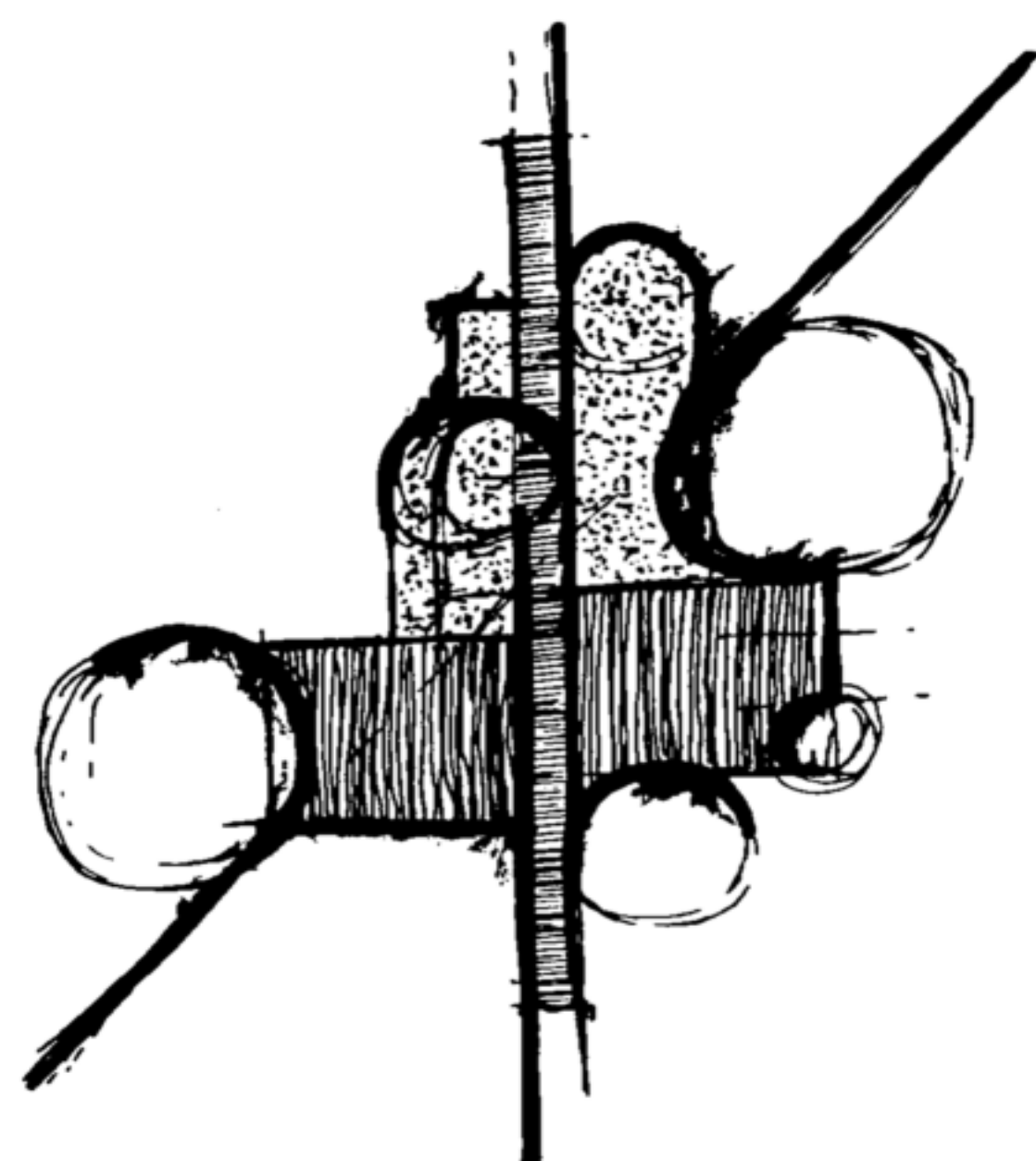
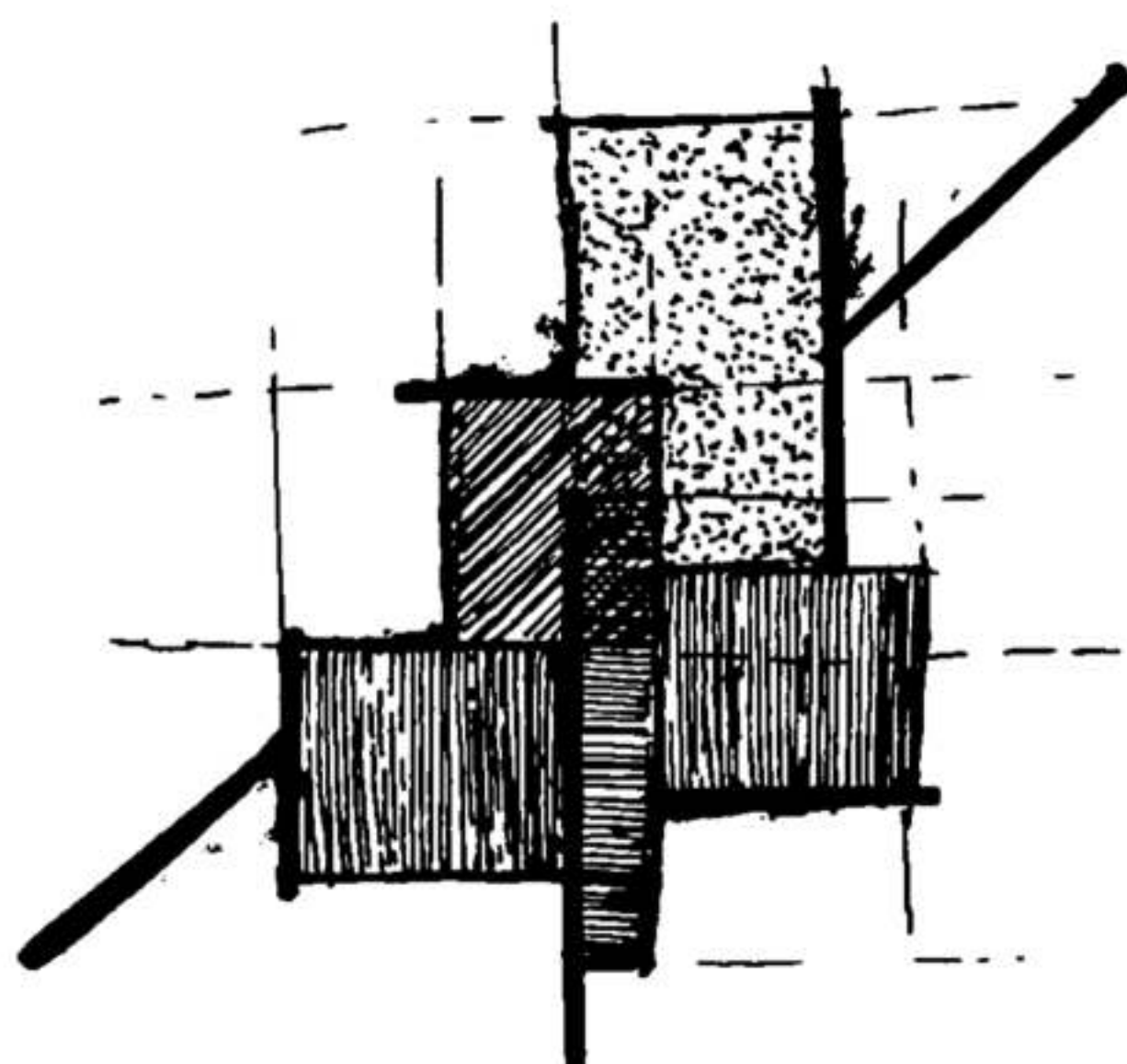
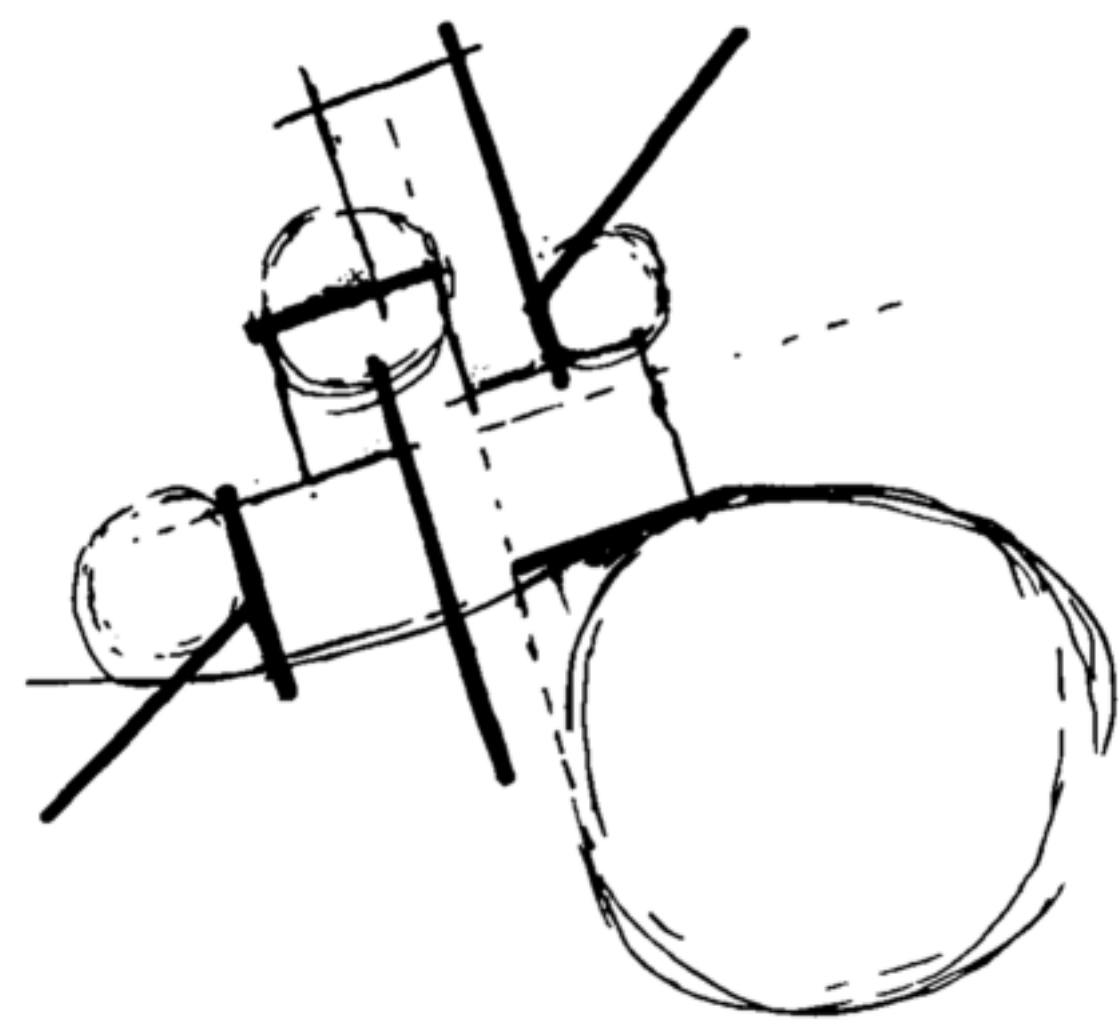
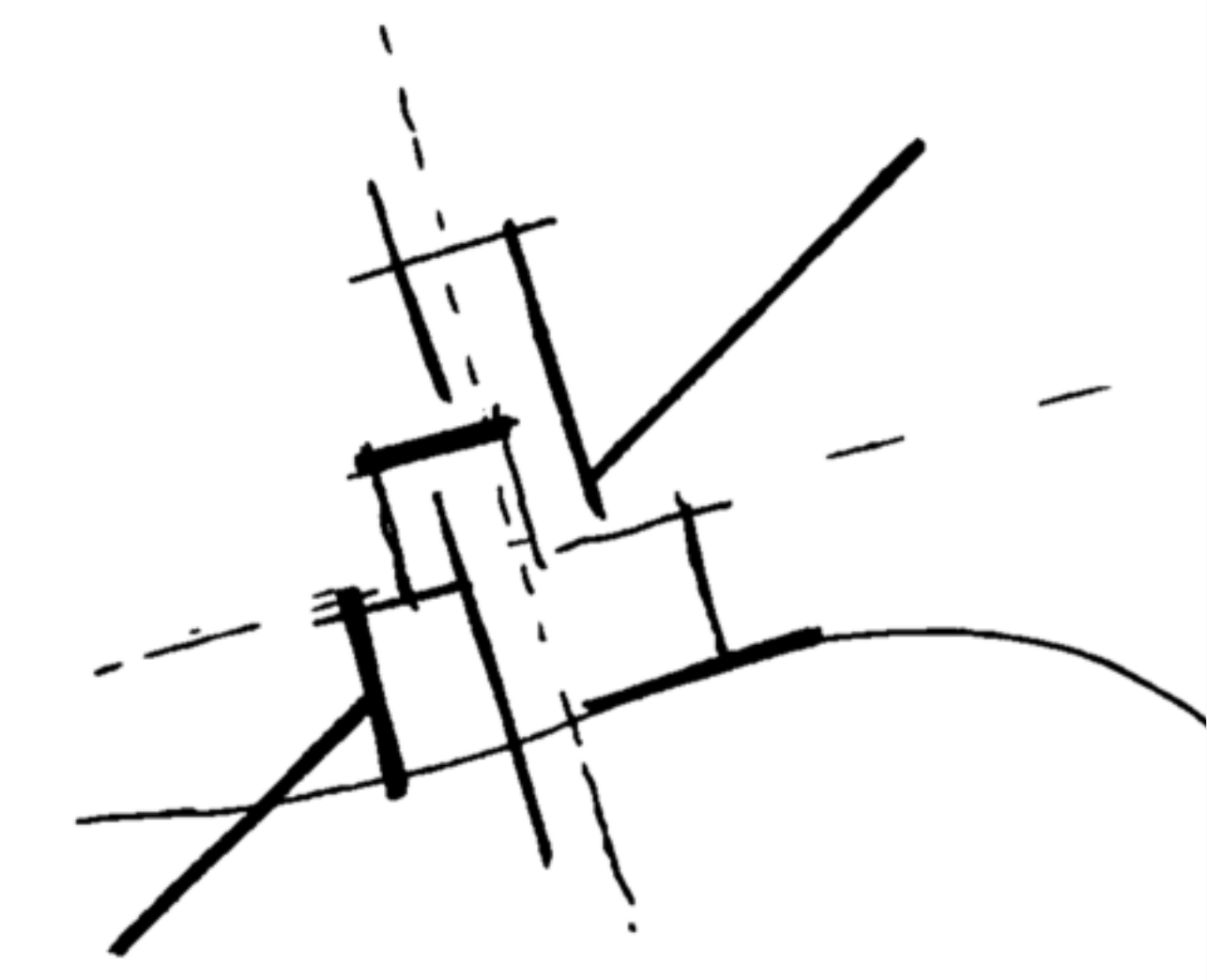




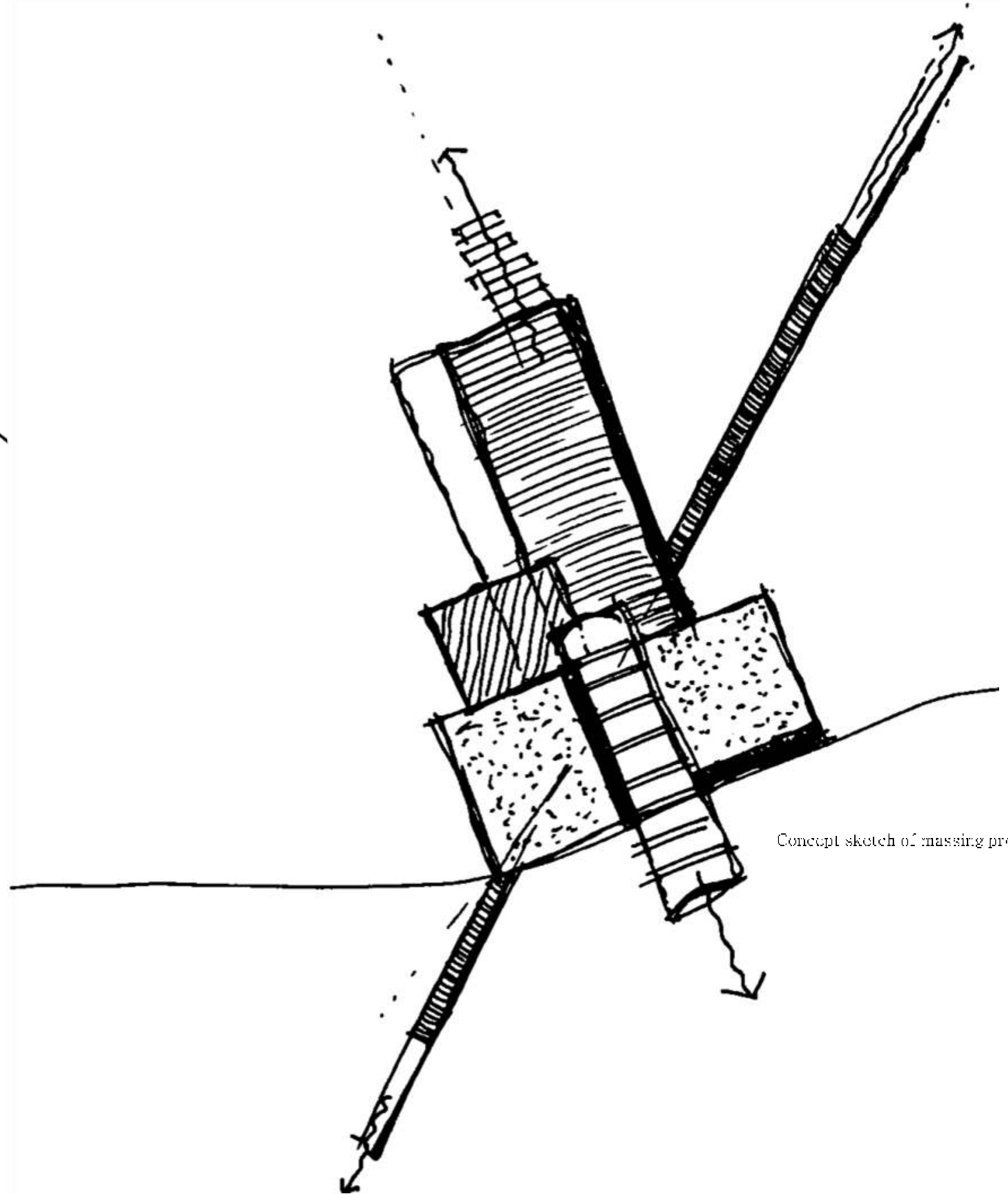




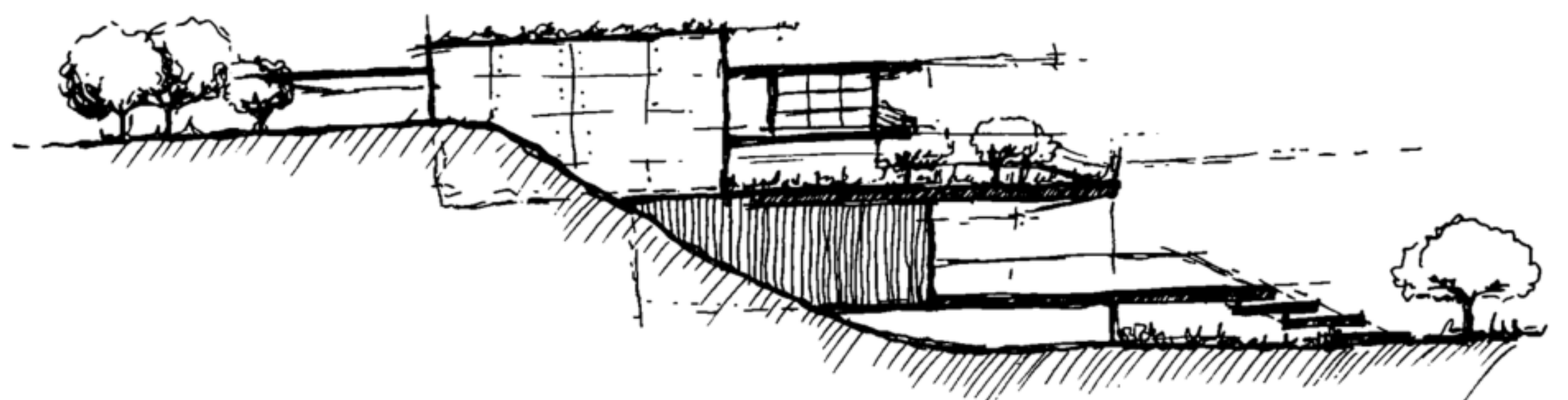
The first design concept focused on the massing's relationship with the site and between the systems within. A rigid geometry is inspired by the existing cityscape and infrastructure. The building aims to sit within the natural slope of the site and becomes integrated with nature and its existing planes.



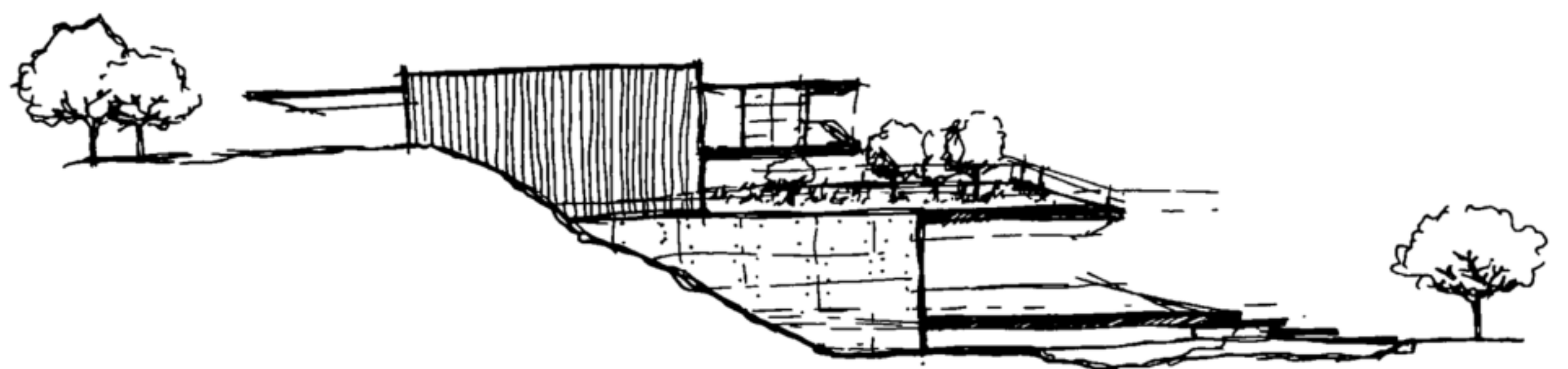
Series of Concept sketches of massing proposal.



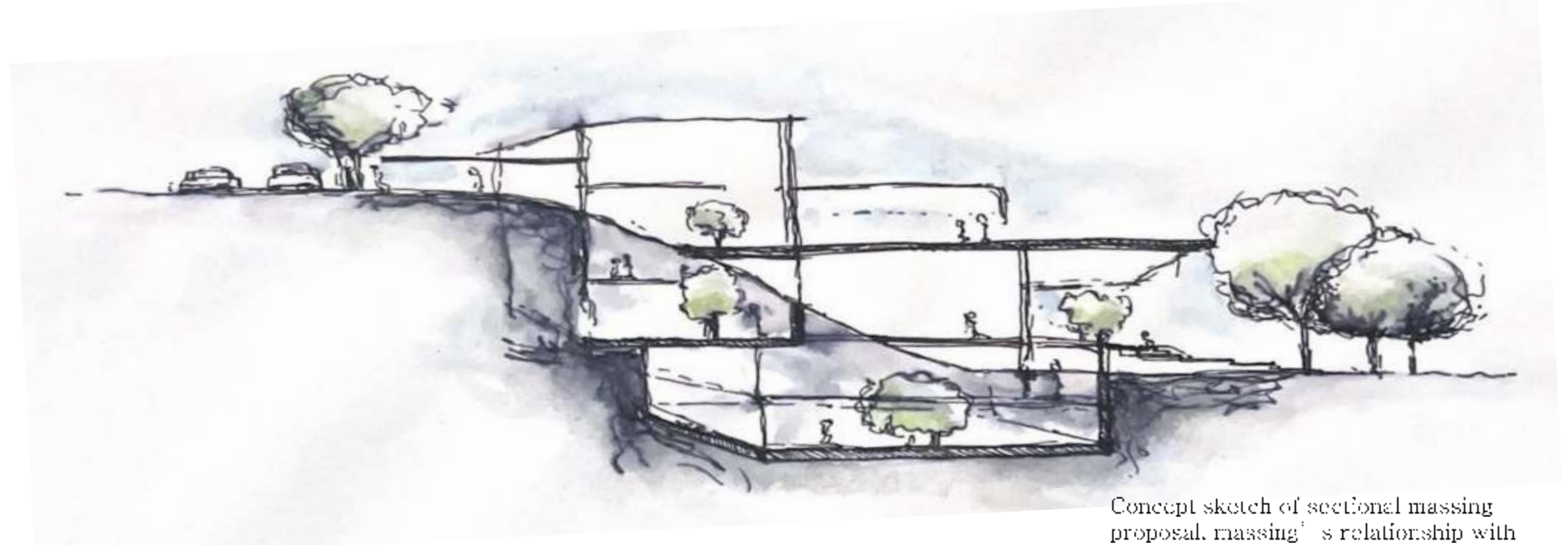
Concept sketch of massing proposal.



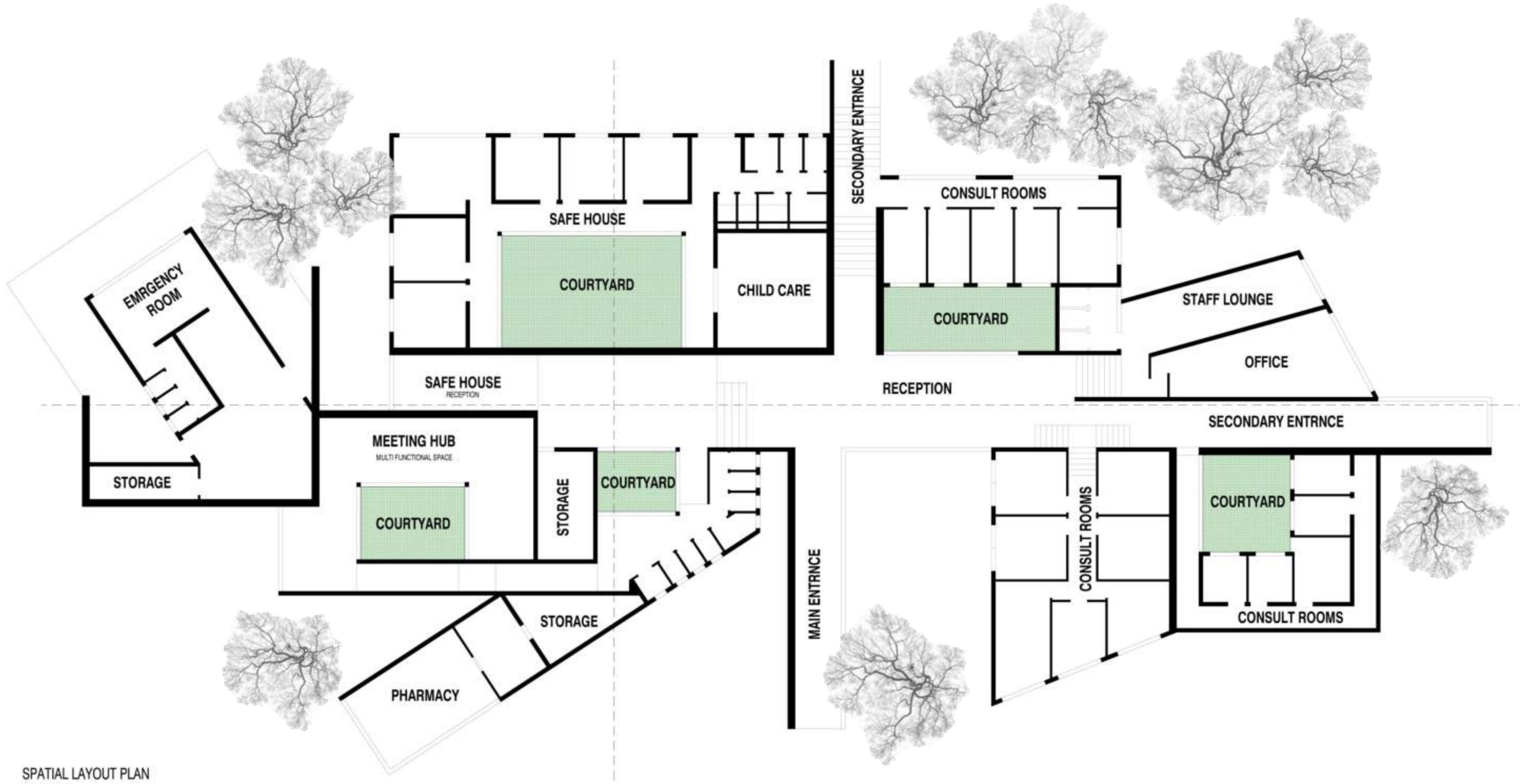
Concept sketch of massing proposal.



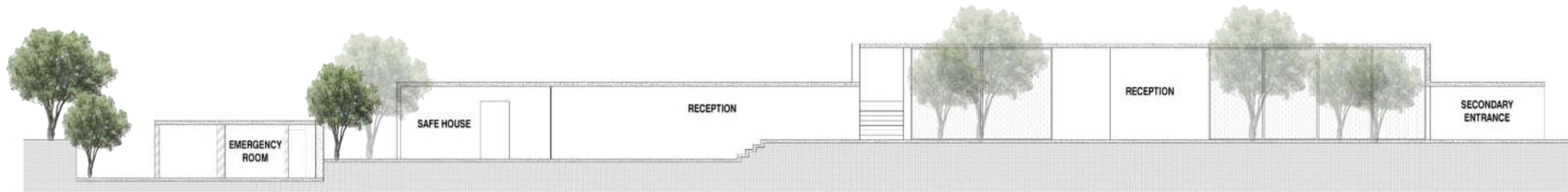
Concept sketch of massing proposal.



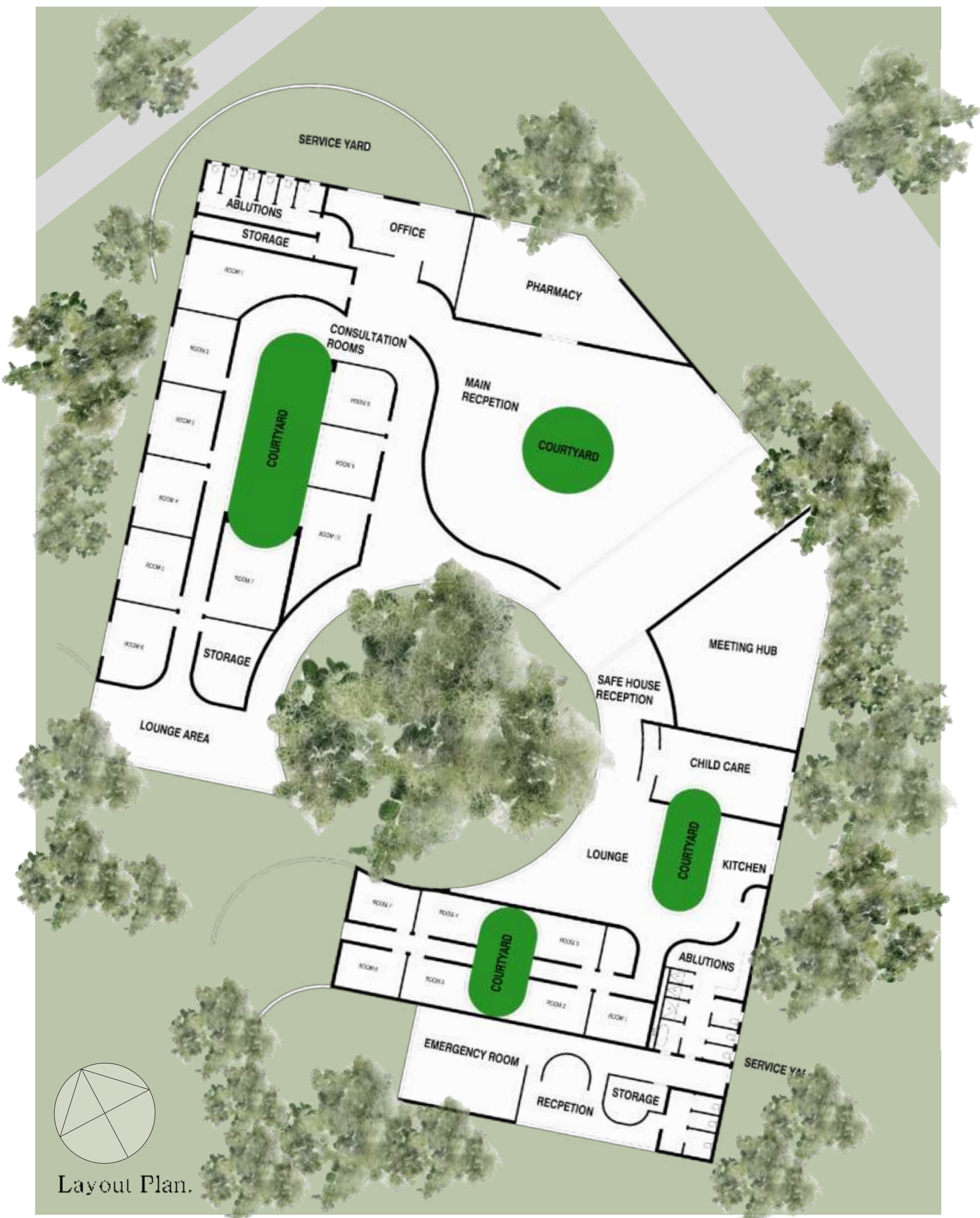
Concept sketch of sectional massing proposal, massing's relationship with typology and site.



SPATIAL LAYOUT PLAN
SCALE 1:200

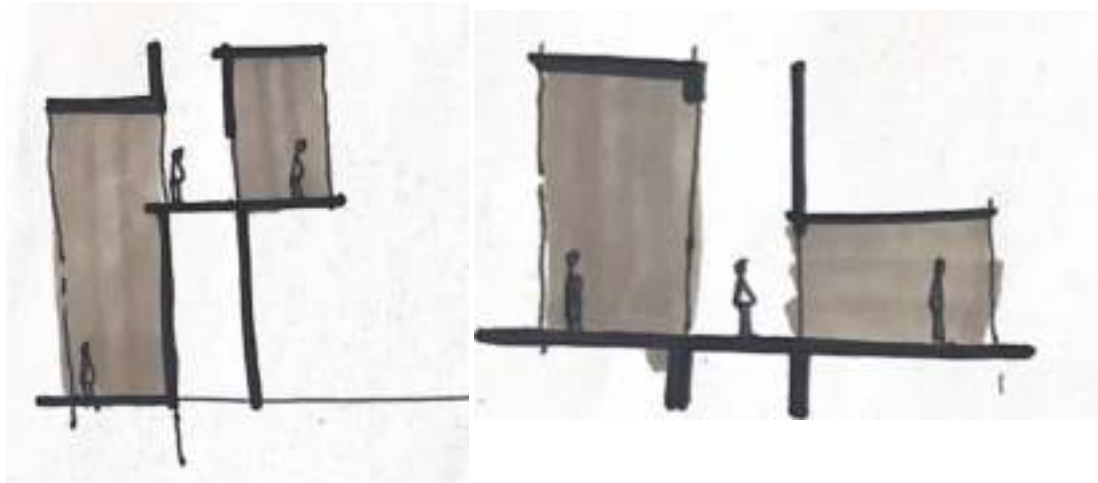
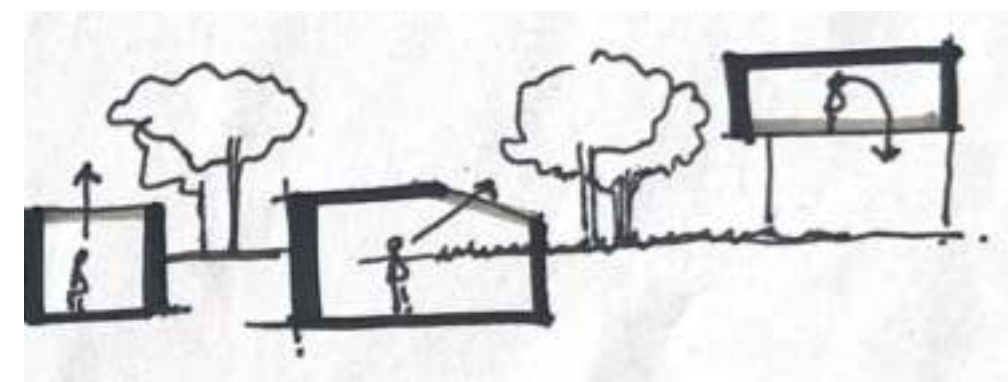


LONGITUDINAL SECTION A-A
SCALE 1:200

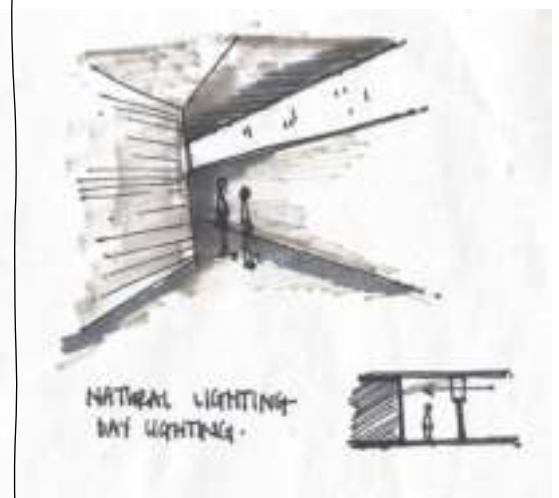
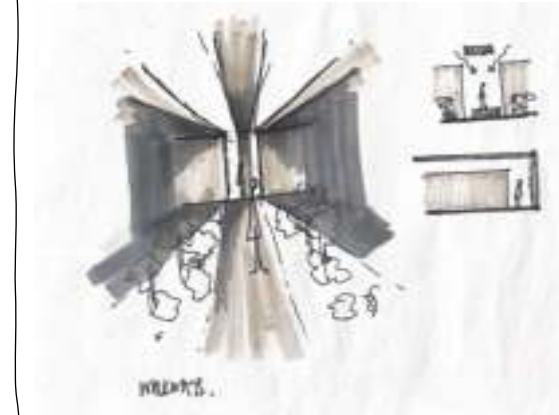
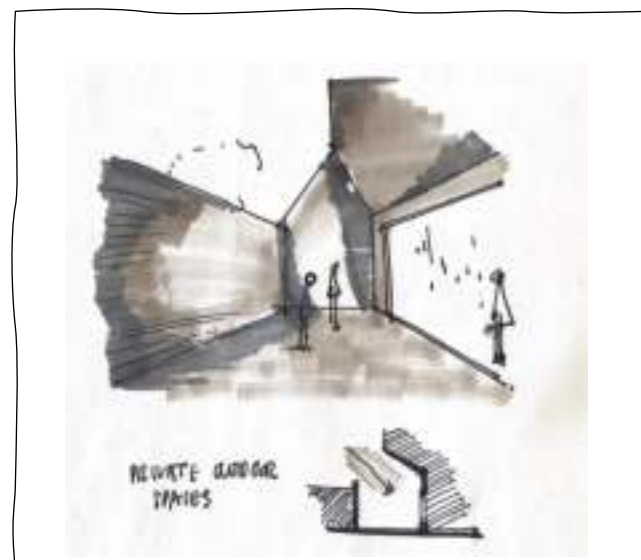


Layout Plan.

This design iteration became critical to the final design as this iteration introduces the new orientation and placement on site. Feminine space-making becomes evident in the spatial planning of the center, with an exploration of hierarchy in space through vertical volumes.



Conceptual exploration of vertical spaces and interaction with nature.

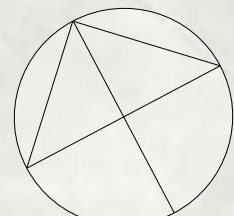
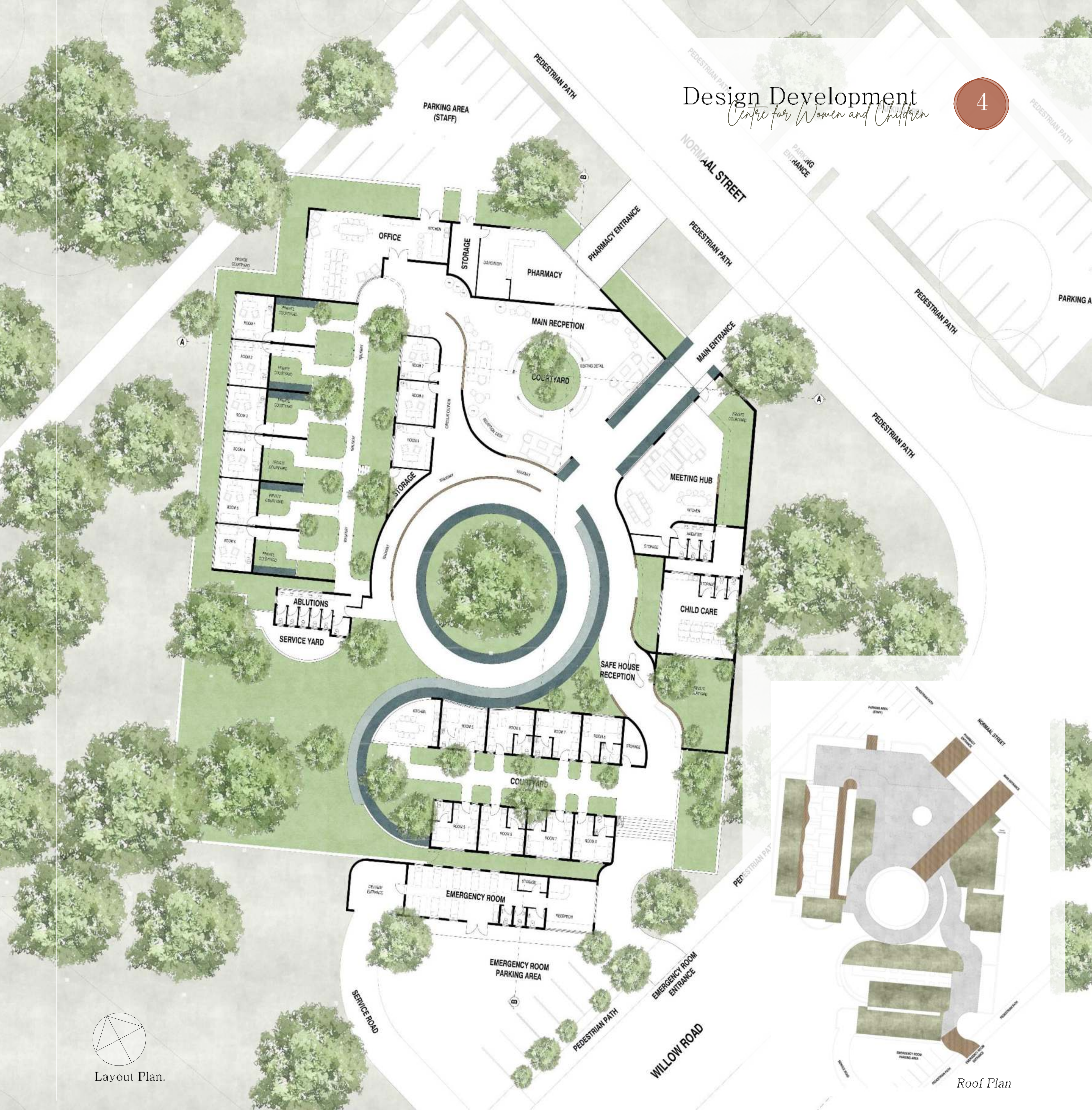


Exploration of spatial quality.



Conceptual exploration of spatial layout and zoning.

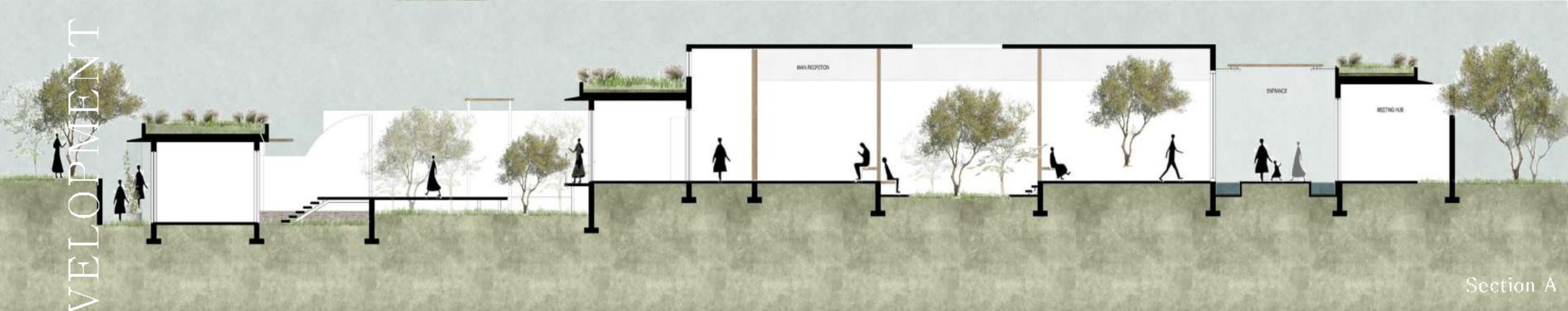




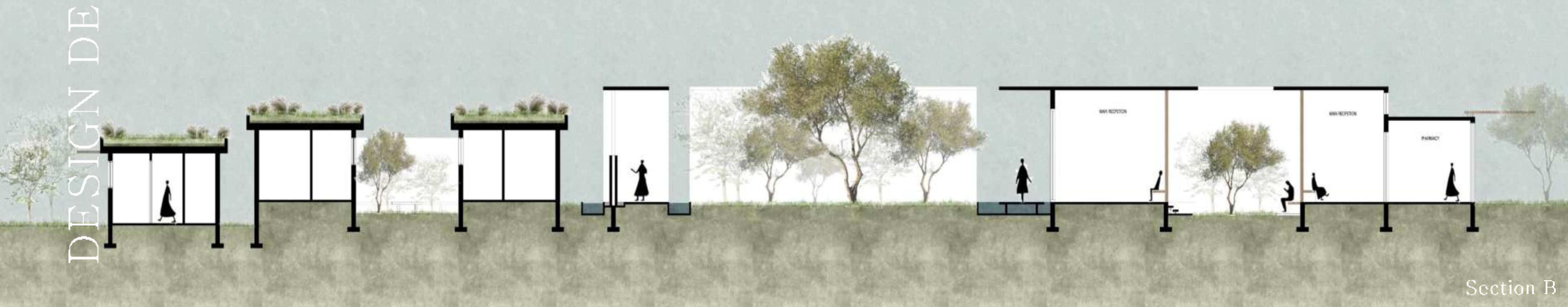
Layout Plan.

Roof Plan

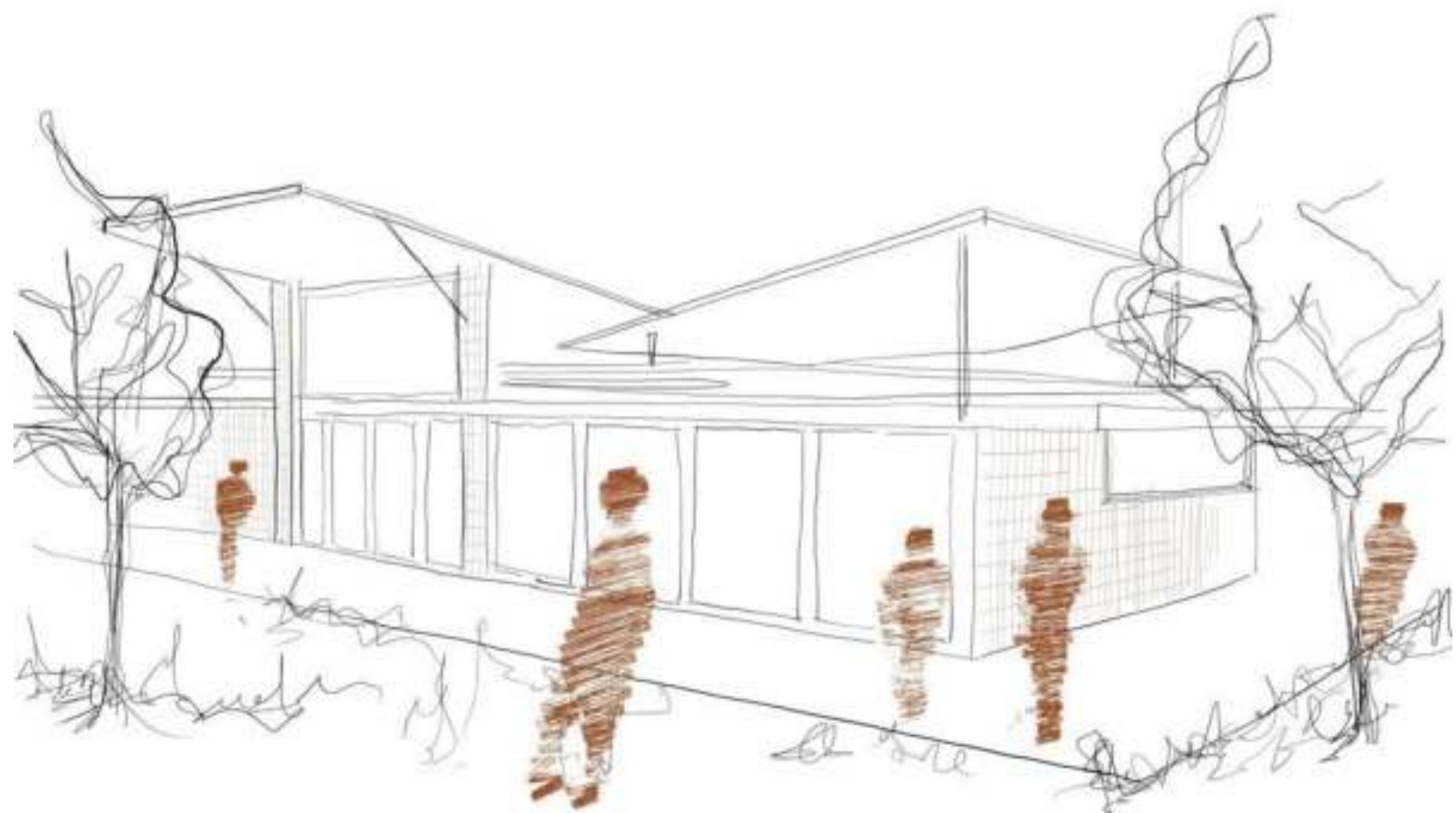
DESIGN DEVELOPMENT



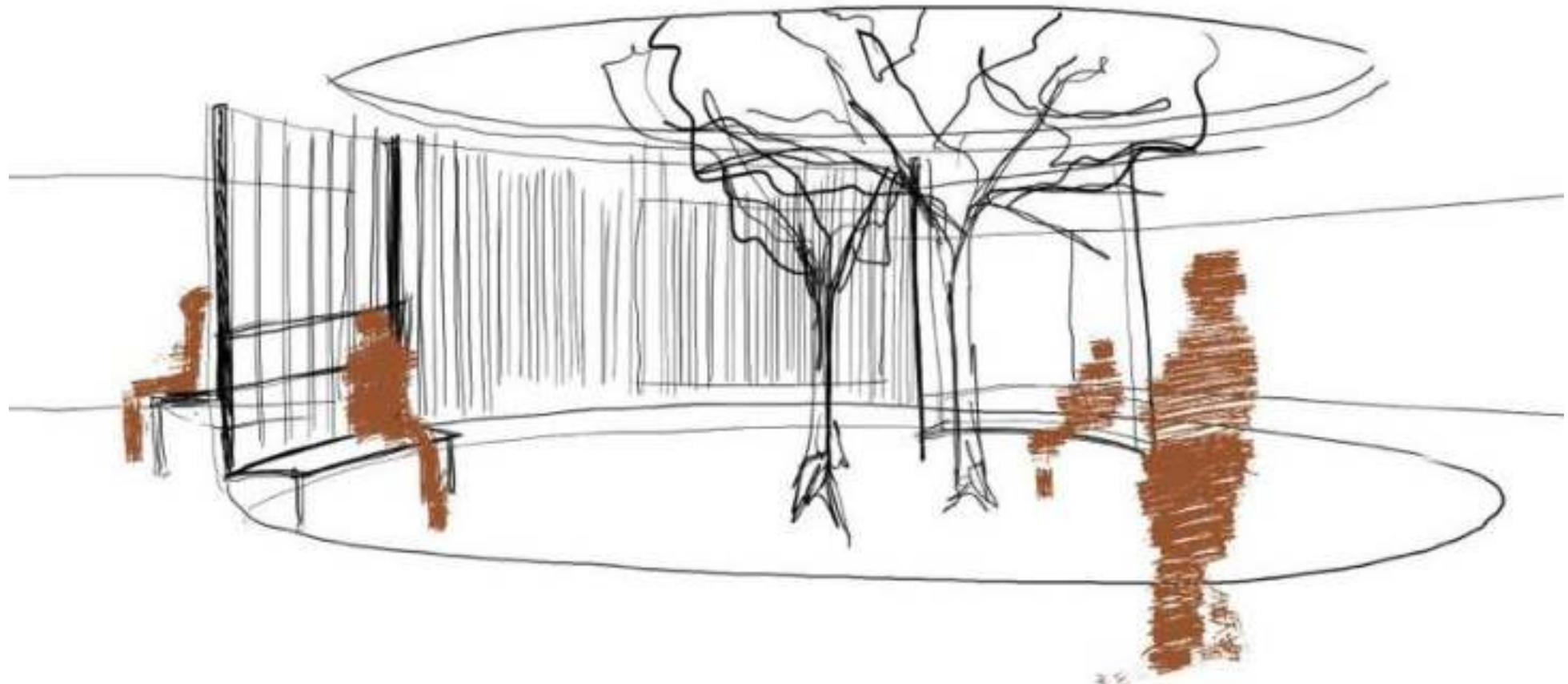
Section A



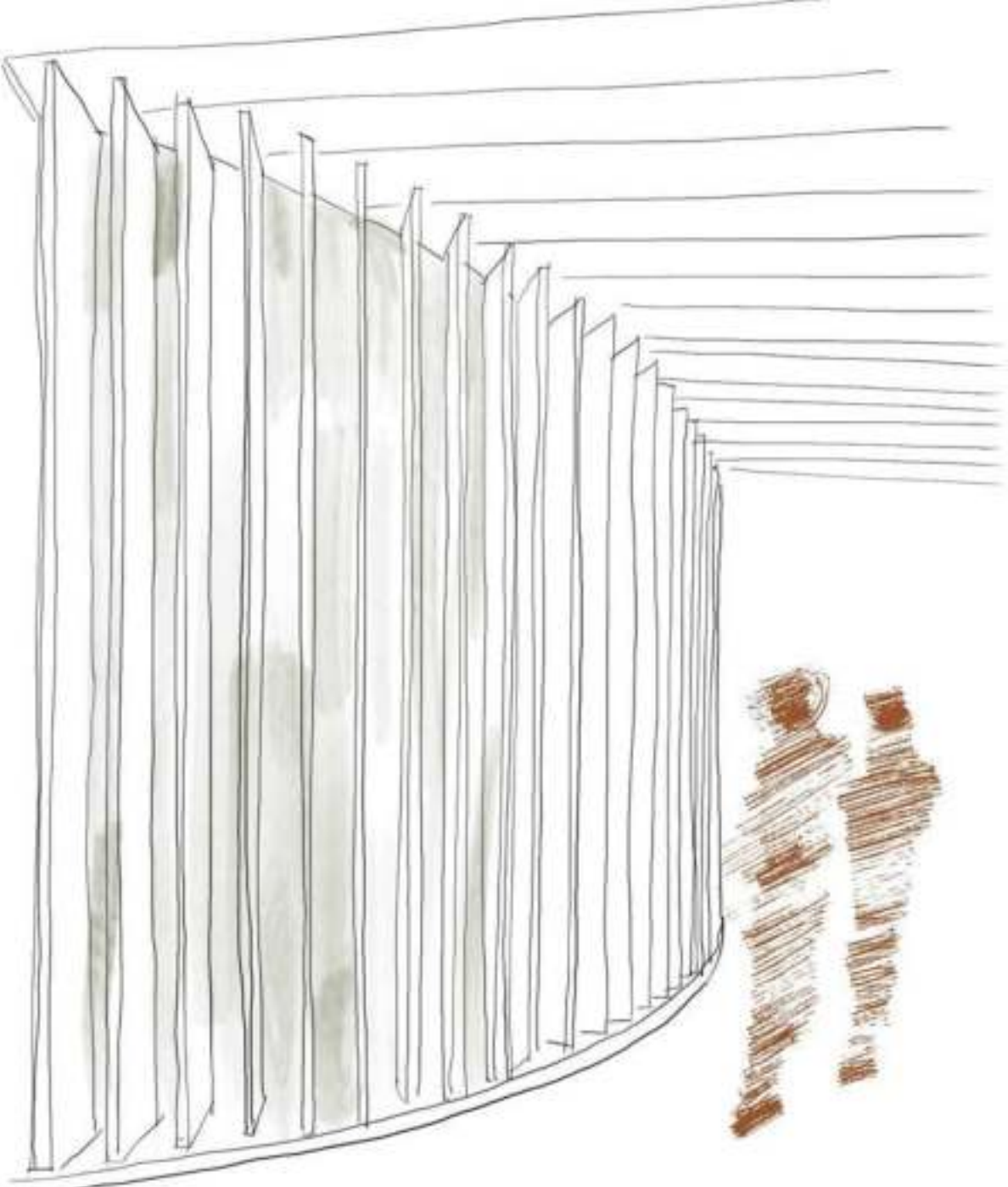
Section B



User connection with the building façade. Single storey creates an intimate scale between users and building.

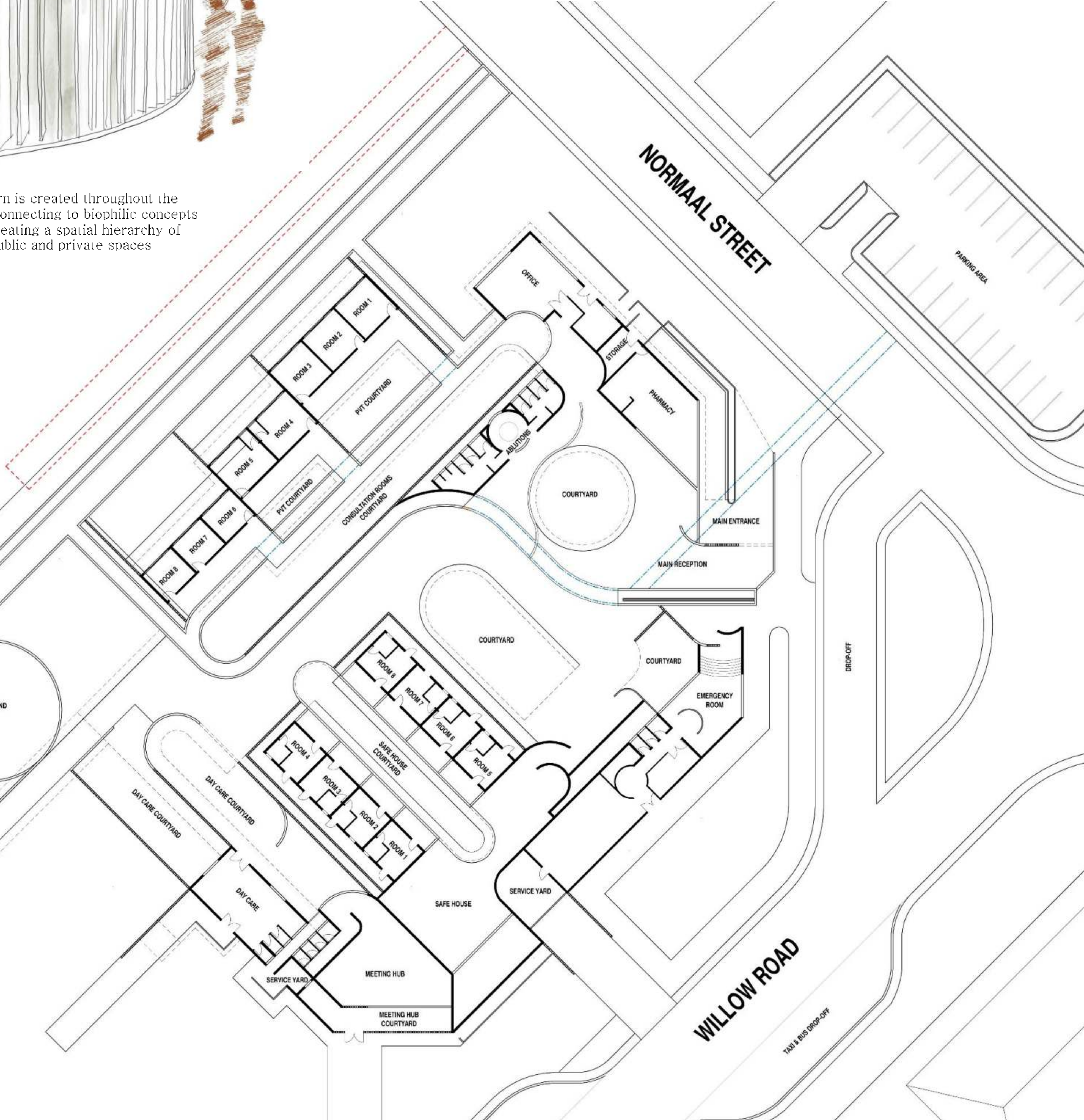


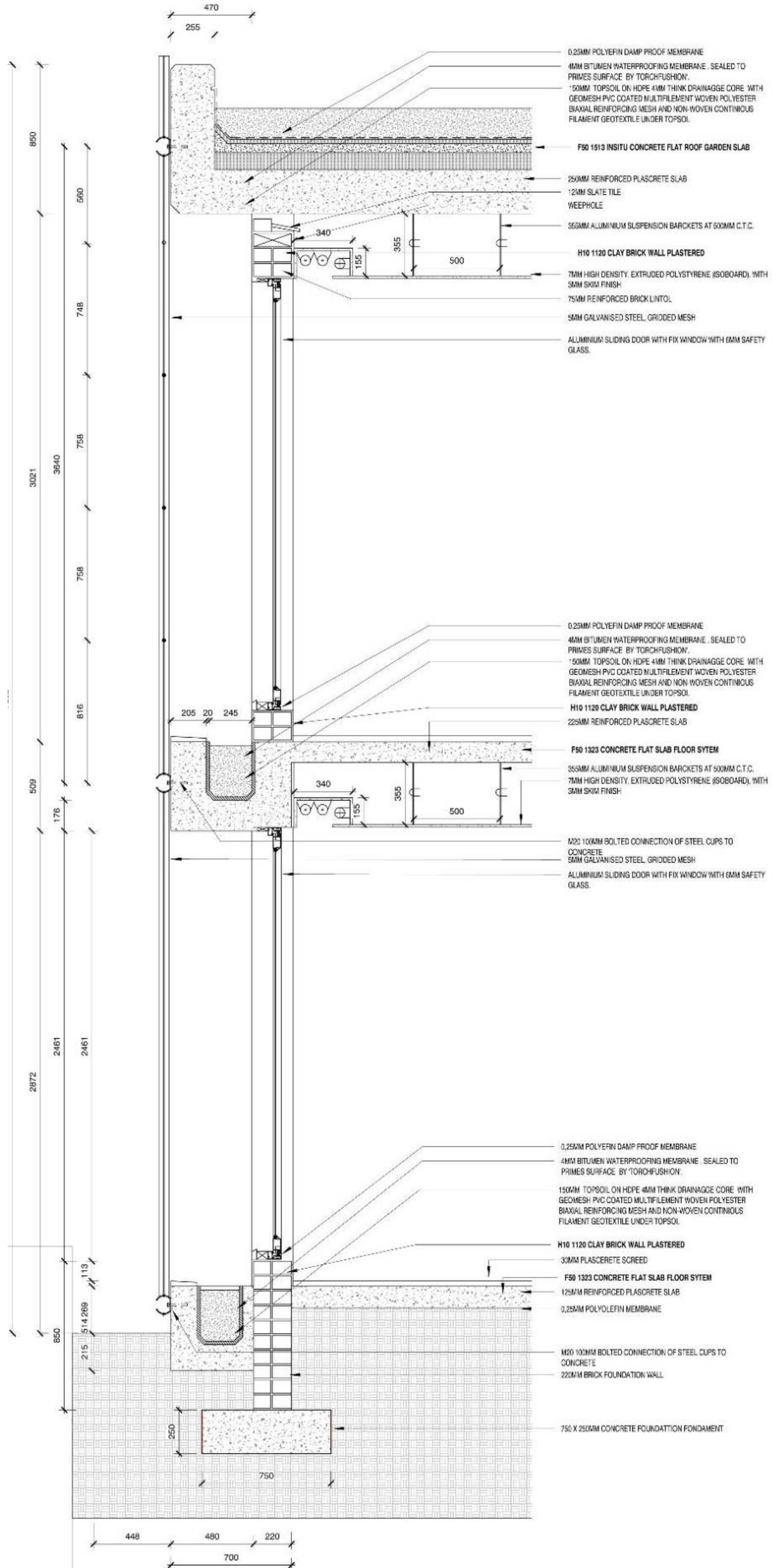
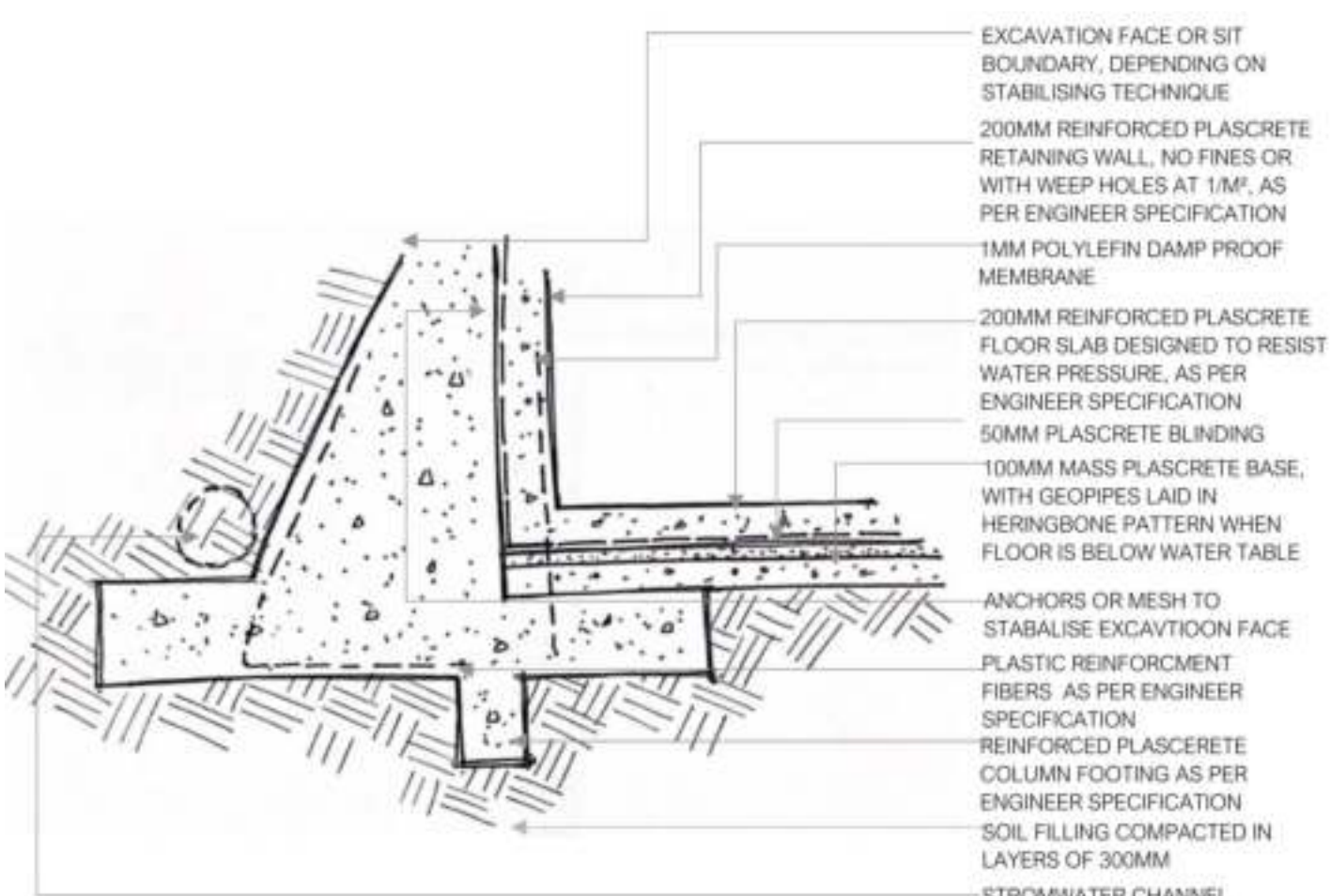
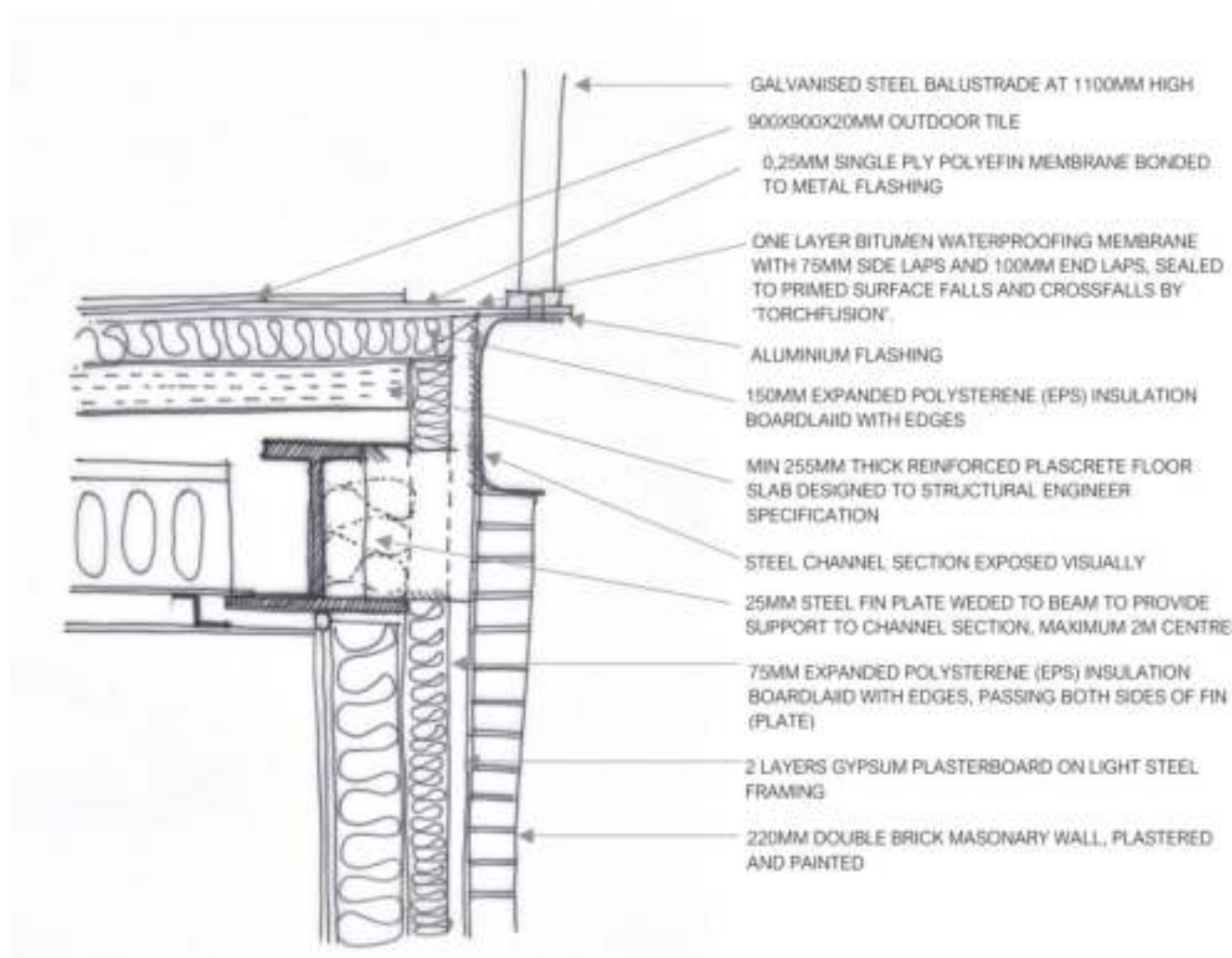
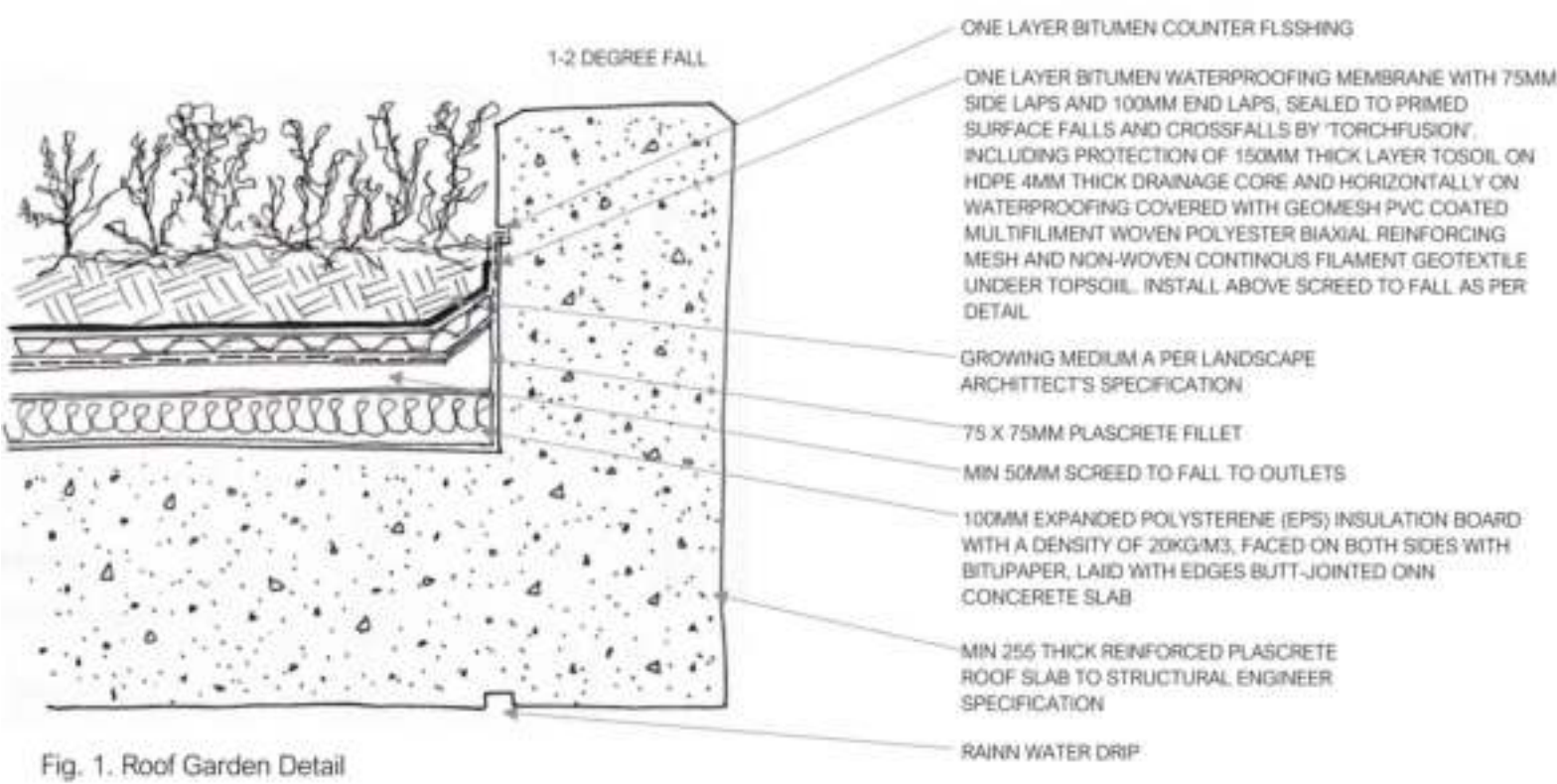
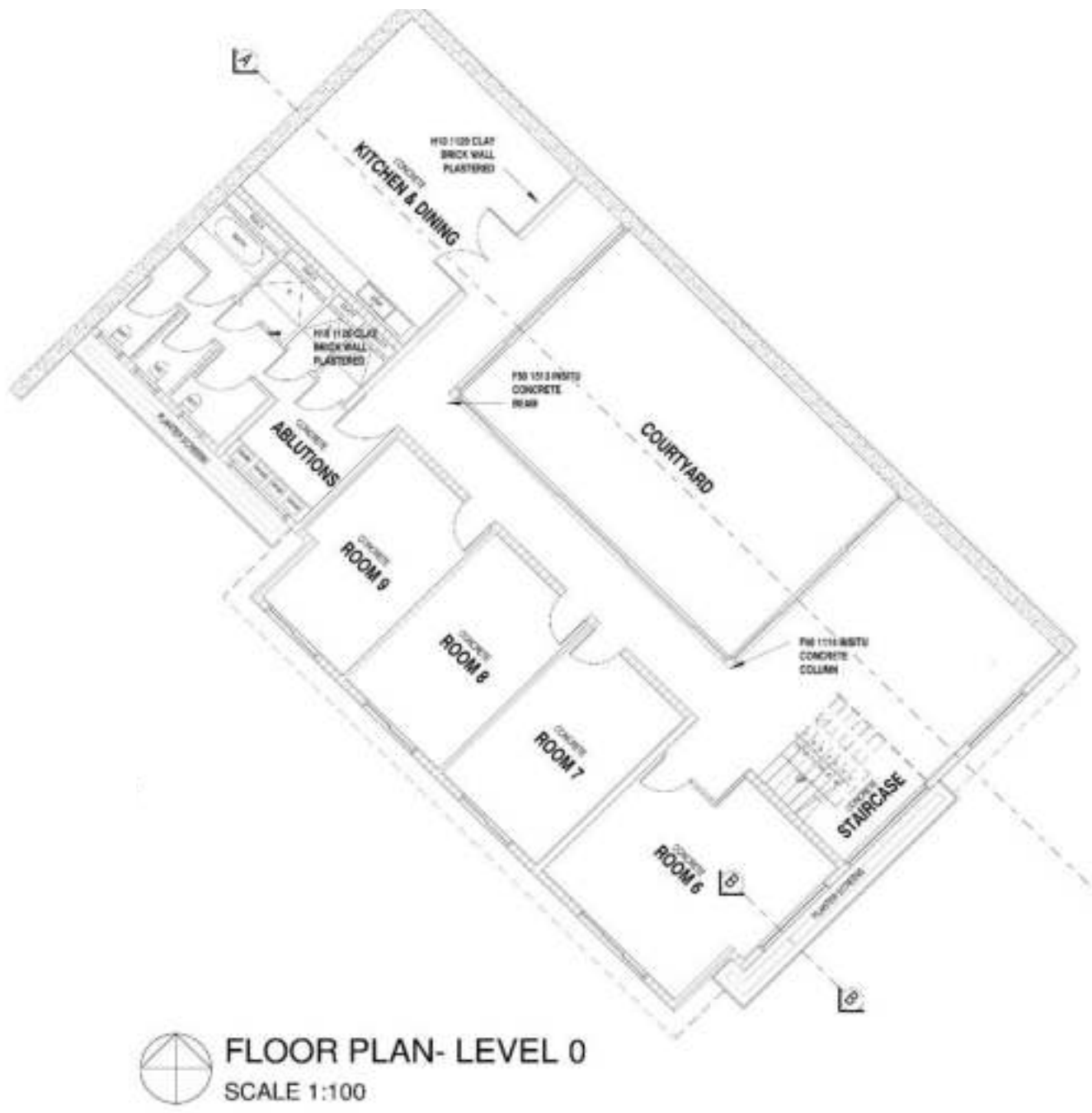
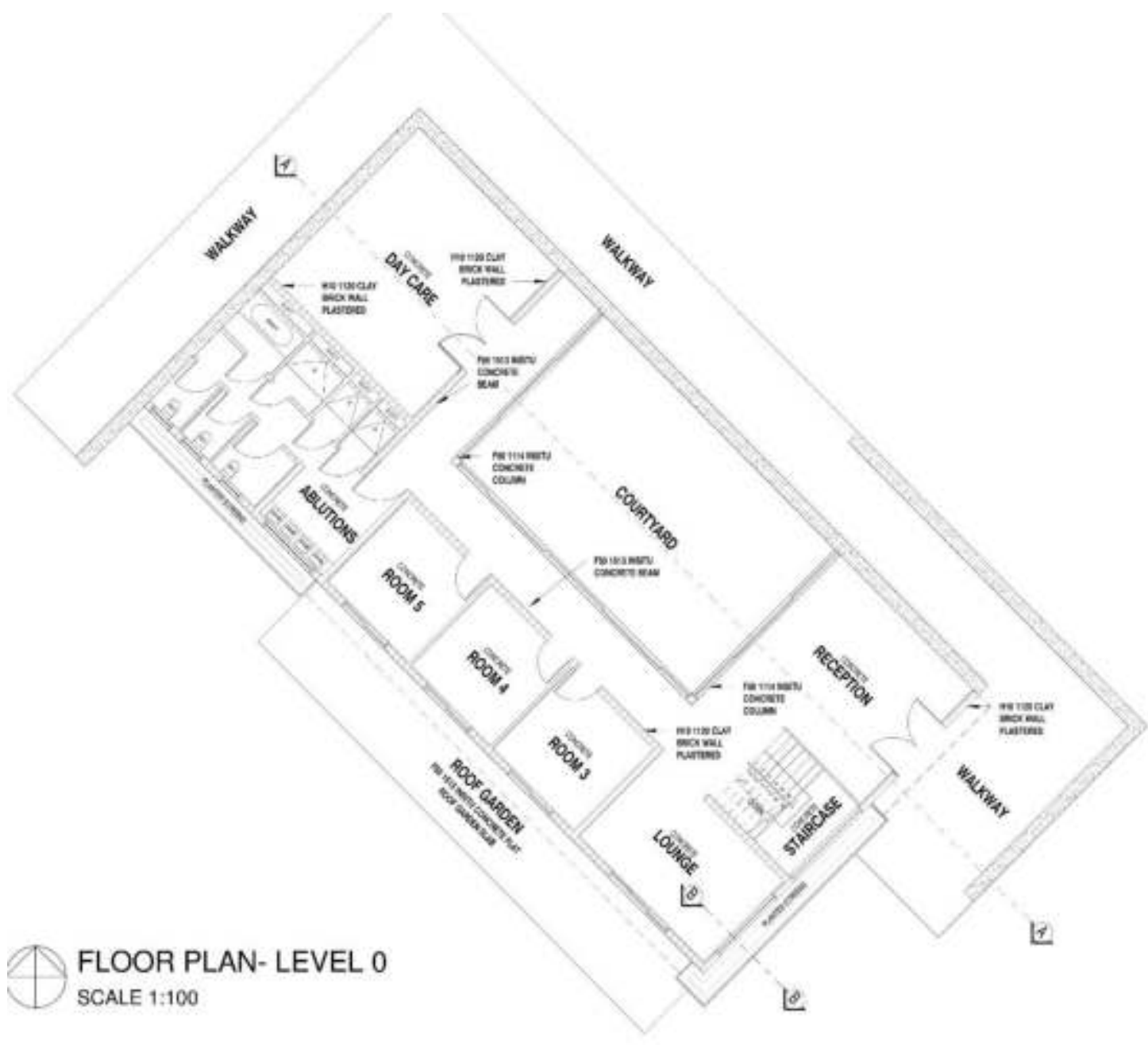
Sketch showing the relationship between indoor and outdoor spaces, and the symbiosis between inside and outside, nature and building, human and architecture.



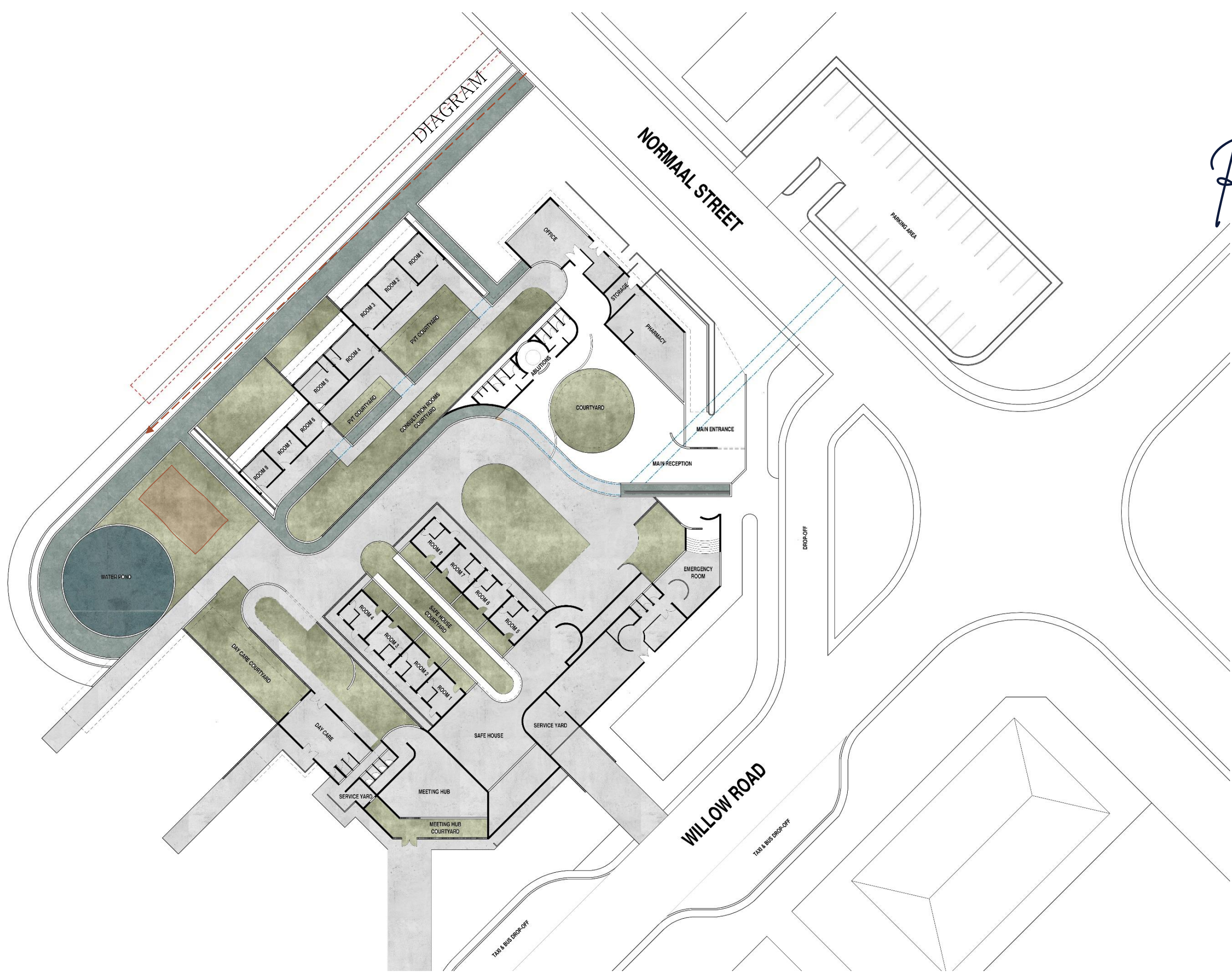
Pattern is created throughout the design, connecting to biophilic concepts and creating a spatial hierarchy of public and private spaces

DESIGN DEVELOPMENT

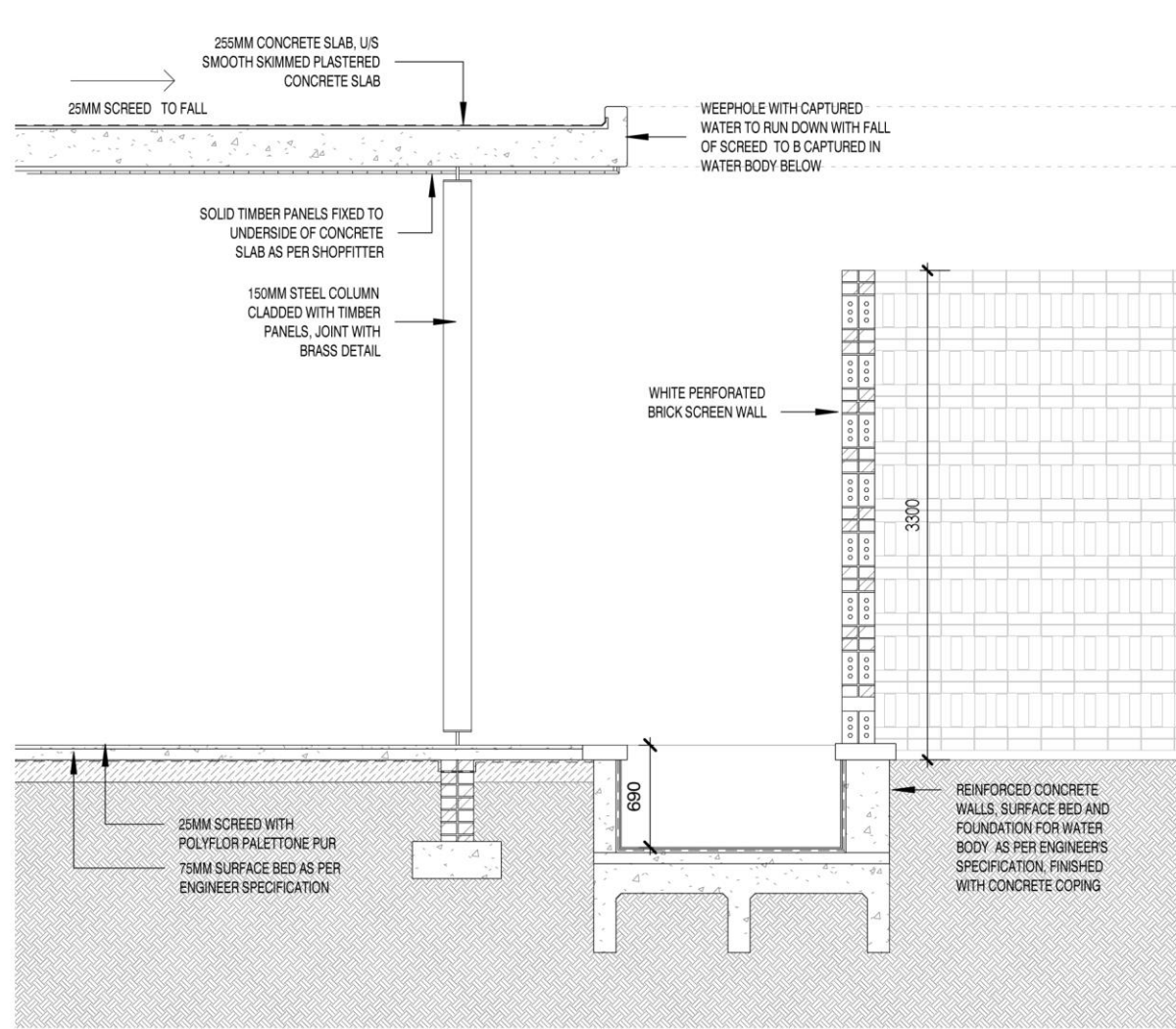
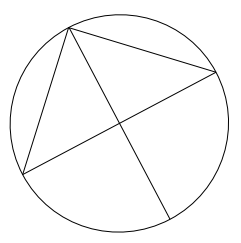




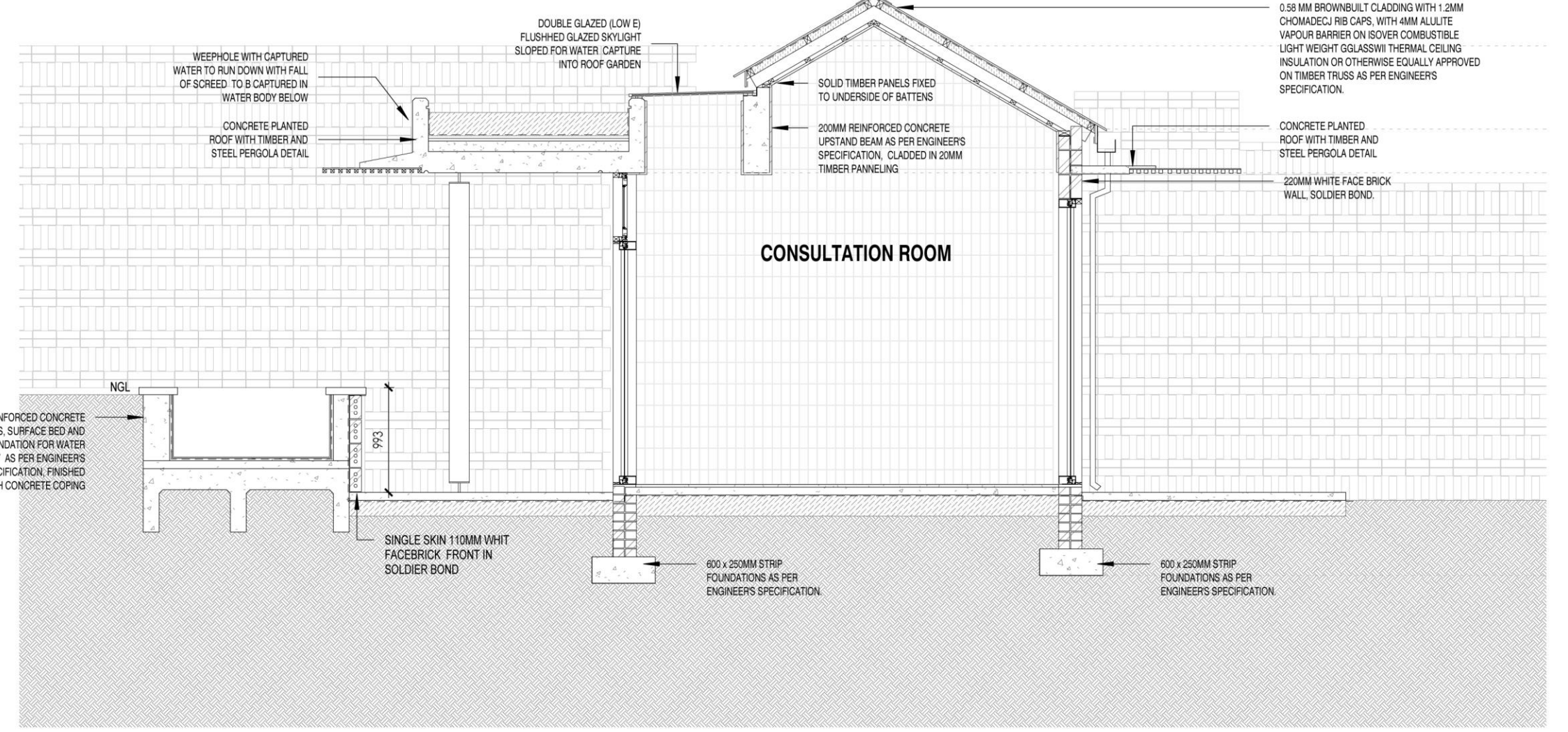
Systems
Rain water harvesting



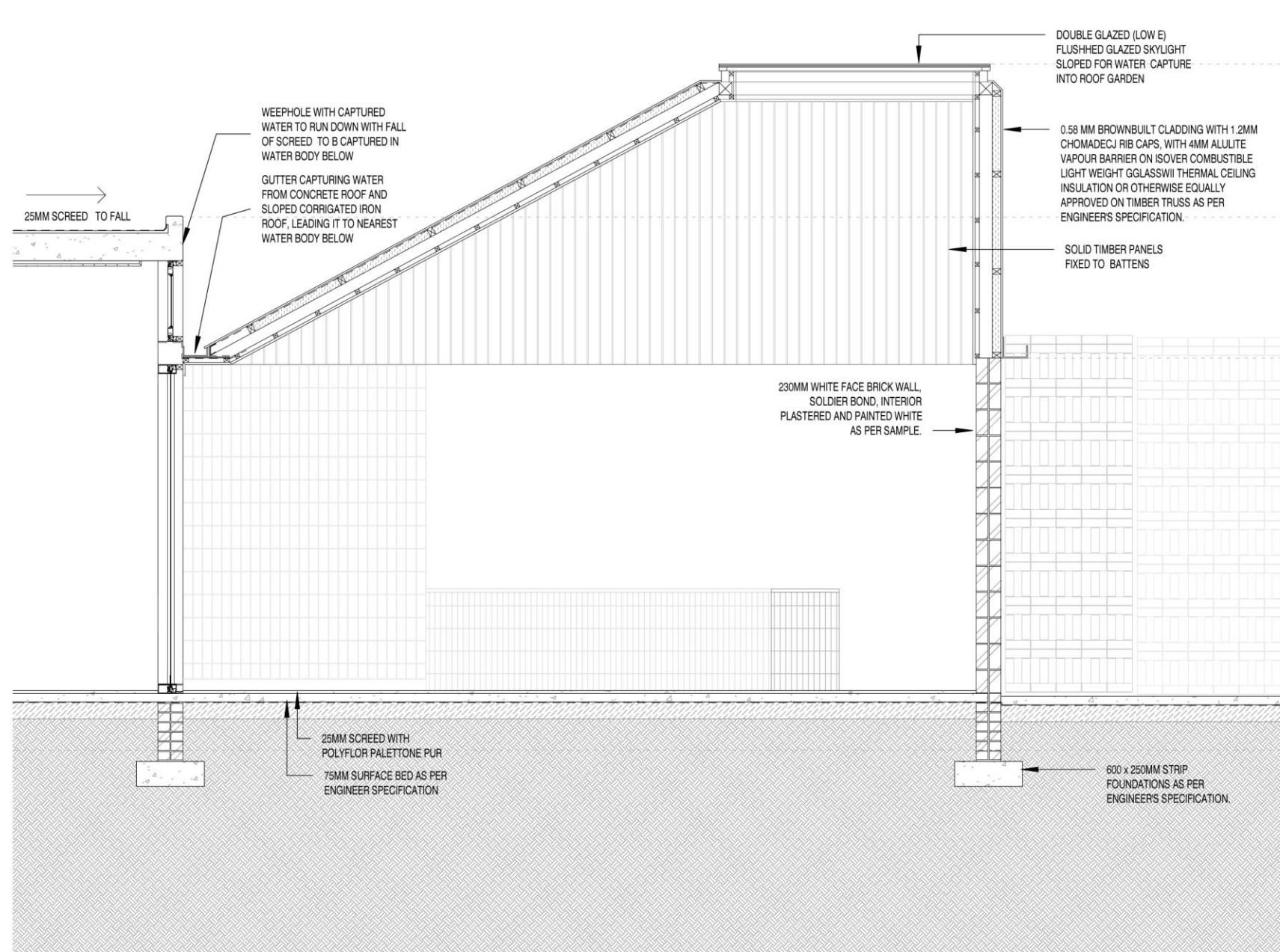
Water bodies Layout Plan .
Scale 1:250



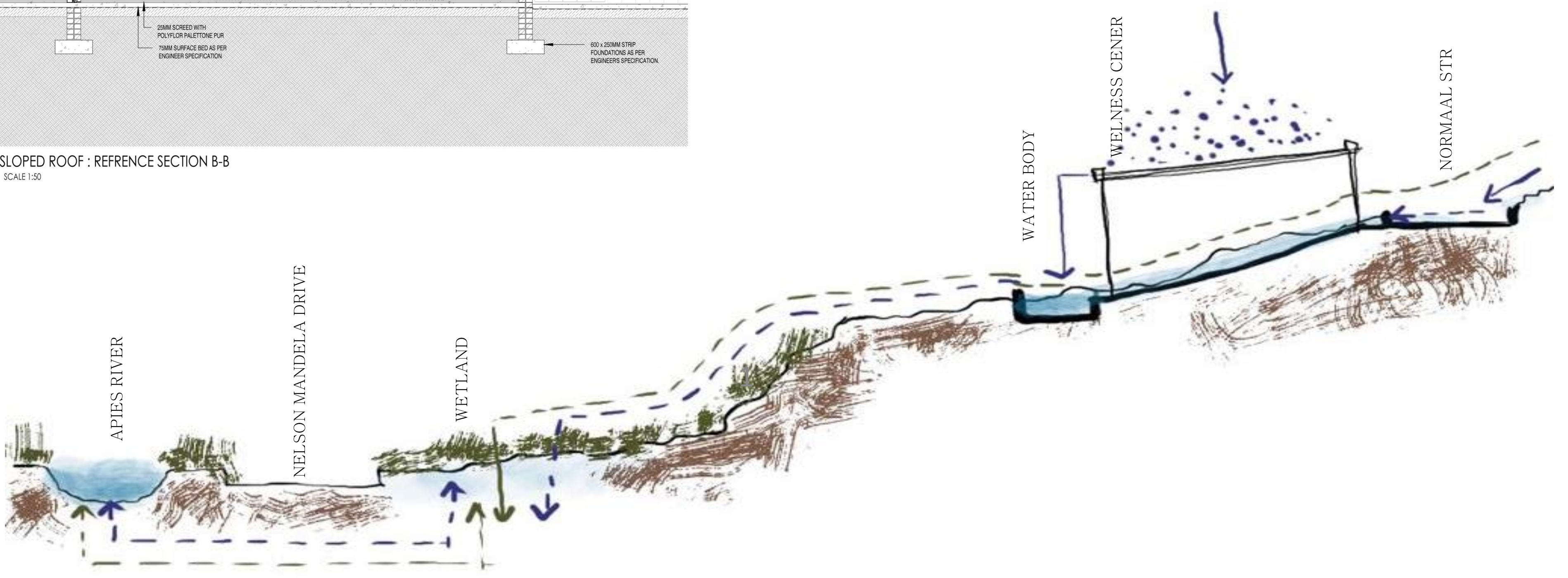
CONCRETE ROOF SECTION : REFERENCE SECTION A-A
SCALE 1:50



ROOF GARDEN SECTION : REFERENCE SECTION A-A
SCALE 1:50



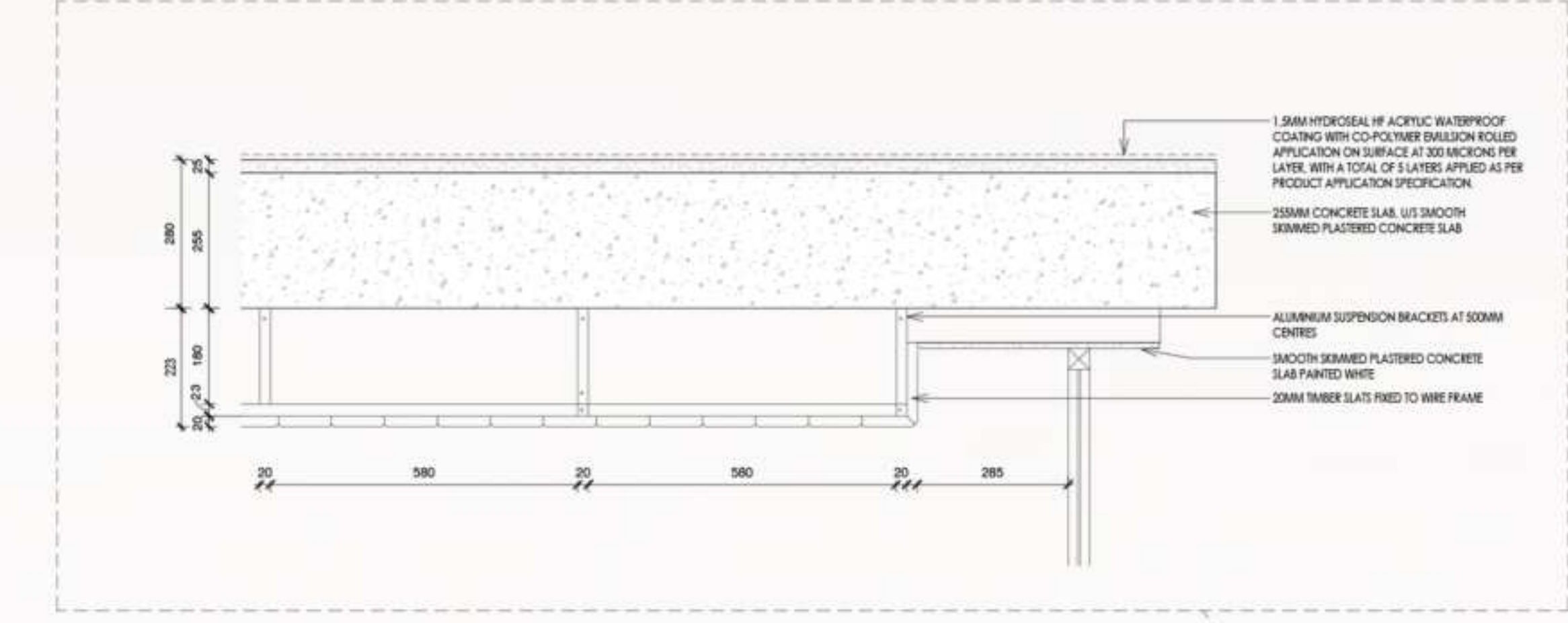
SLOPED ROOF : REFERENCE SECTION B-B
SCALE 1:50



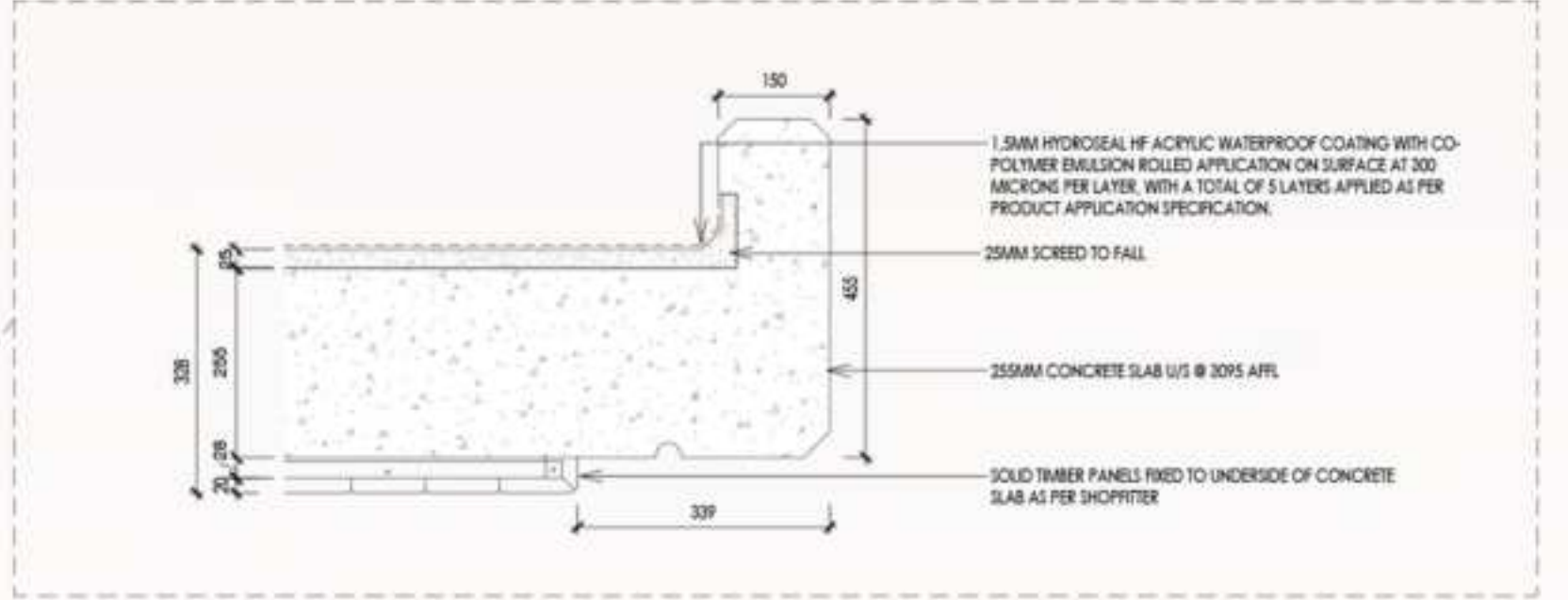
Diagrammatic exploration of stormwater and rainwater on site.



 GROUND FLOOR PLAN
SCALE 1:100



TIMBER BULKHEAD DETAIL
SCALE 1:10



TIMBER CEILING DETAIL
SCALE 1:10

