

A DESIGN OF THE WEAVING COMMUNITY CENTER IN SLEMAN YOGYAKARTA THROUGH CONTEXTUAL DESIGN APPROACH

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**UNIVERSITAS
ISLAM
INDONESIA**

In Sleman area with contextual Design Approach



한국건축교육인증원
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International Undergraduate Program in Architecture
Final Architectural Design Studio

A Design Of The Weaving Community Center In Sleman Yogyakarta Through Contextual Design Approach

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ORIGINALITY STATEMENT

As the Author of this book, I, Rania Ababssi, declare that all parts of this work except those mentioned in reference are the Author's original work. The ideas and processes involved in the writing and development of this final project were created by the Author, considering the supervisor's and examiners' input. The completed project has been submitted to the Department of Architecture at the Islamic University of Indonesia for educational use and publication, with the intellectual property rights retained by the Author.

Yogyakarta, May 6th 2025



Rania Ababssi

PREFACE

Assalamualaikum Wr. Wb.

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The Author believes that there is always room for improvement and growth. She acknowledges that both the preparation and the final design report are not flawless. Therefore, she is open to any constructive criticism and suggestions, hoping they will guide her on a better path in her future endeavors.

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Friday, August 20th 2025



Rania Ababssi

ABSTRACT

Indonesia's traditional bamboo weaving crafts, particularly in the production of carpets, baskets, and household goods, are facing a sharp decline due to modernization, mass-produced alternatives, and the erosion of generational knowledge. In many rural communities, bamboo weaving was once an integral part of daily life and cultural identity, but younger generations are now shifting toward industrial jobs, leaving behind this centuries-old craftsmanship. This decline not only threatens cultural heritage but also disrupts the economic sustainability of artisans, especially in regions known for their skilled weaving traditions.

Despite efforts by the government and NGOs to revive interest through tourism and cultural initiatives, these strategies often commercialize the craft rather than truly empower the weavers. The lack of integration between learning, making, and appreciating traditional bamboo weaving diminishes its cultural significance. This research proposes an architectural intervention that reimagines the weaving center as a multi-functional space for production, education, and cultural experience, fostering a deeper connection between artisans, learners, and visitors while ensuring the sustainability of bamboo weaving traditions.

Keyword: Weaving Heritage, Weaving Community Center , Contextual Design Approach

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***If we are to preserve culture we must
continue to create it...***

by Johan Huizinga





01.

INTRO

DUCTION

Design **Premise**

A Design Of The Weaving Community Center In Sleman Yogyakarta Through Contextual Design Approach

A A Design Of The Weaving Community Center that preserves traditional craftsmanship, enhances tourism, and fosters community engagement through a contextual design approach inspired by local materials and techniques.

A Design Of The Weaving Community Center In Sleman Yogyakarta Through Contextual Design Approach

PROJECT TITLE

Weaving Heritage

The rich tradition of handwoven crafts, including textiles, carpets, and baskets made from natural materials like bamboo, rattan, and pandan leaves. This heritage reflects the identity, craftsmanship, and storytelling of local communities, passed down through generations as both a cultural practice and a source of livelihood. However, modernization and mass production threaten its survival, making preservation efforts crucial.

Weaving Center

A weaving center is a specialized cultural and production facility that supports the practice, preservation, and promotion of traditional and contemporary weaving techniques. In architectural terms, it requires spaces tailored to the weaving process, such as areas for loom operation, material preparation, dyeing, and exhibition. These centers often serve dual purposes—as working studios for artisans and as educational or tourism-oriented venues where visitors can learn about the craft.

Contextual Design Approach

The contextual design approach in architecture is a design methodology that responds directly to the physical, cultural, historical, and environmental characteristics of a site. It prioritizes harmony between the new structure and its surroundings by analyzing factors such as local climate, topography, urban fabric, building traditions, and social patterns. Architecturally, it often involves using locally sourced materials, adopting traditional construction techniques, and interpreting vernacular forms in contemporary ways.



THE ARCHITECTURAL ISSUE

The architectural issue is the decline of traditional textile craftsmanship in Indonesia but to be specific in Yogyakarta, due to mass production and modernization. Traditional weaving and batik-making communities struggle with inadequate infrastructure, lack of sustainable workspaces, and declining cultural transmission. The project seeks to create an architectural intervention that preserves and revitalizes Indonesia's textile heritage by providing spaces for education, production, and community engagement.

Overview: Gamplong Tourism Village is known as a center for weaving crafts, produced directly by hand. It is also known as "mini Hollywood" because Gamplong Nature Studio is located there



Background

DESIGN PROBLEM STUDY

Gamplong, located in Moyudan District, Sleman Regency, Yogyakarta, is a village renowned for its craftsmanship and agricultural activities. Its background reflects a rich tradition of creativity and resourcefulness, making it a significant contributor to the local economy.

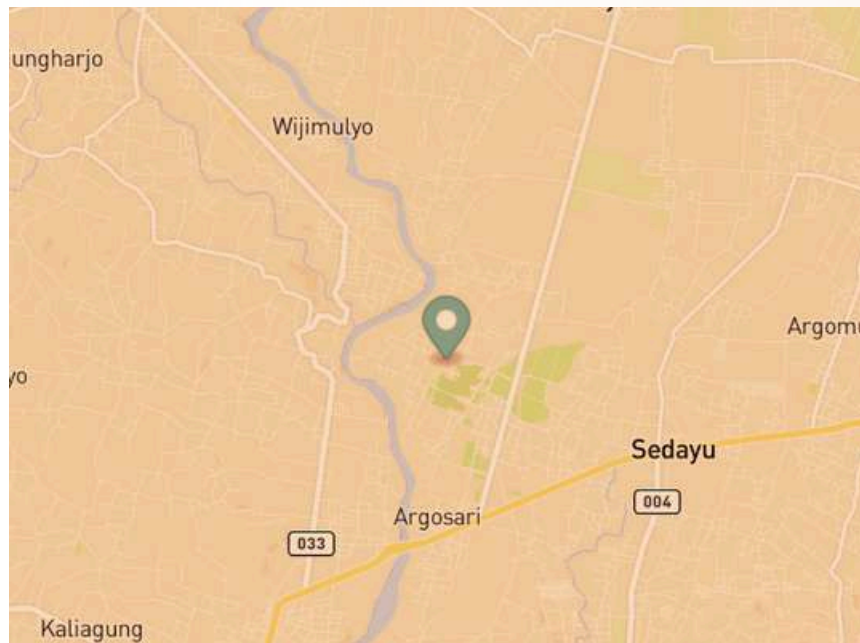


Figure 1.1 The project village
Source : Google maps



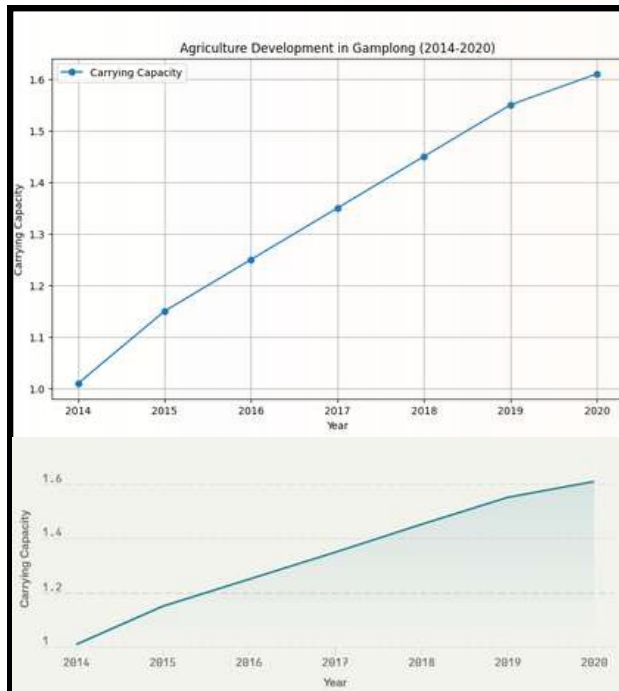
Figure 1.2 Woman working on ATBM tool
Source : Taking by Author

The developpements in Gamplong :

Gamplong is renowned as a handicraft village, producing woven goods such as bags, baskets, and lampshades using natural materials like water hyacinth and palm leaves. Traditional fabric weaving, including lurik made on non-mechanized looms (ATBM), has been practiced since the 1950s, preserving generational craftsmanship. Innovation has expanded the product range to include contemporary items like mats, handbags, and souvenirs, strengthening the village's identity as a center for traditional weaving. The handicraft industry not only sustains local artisans but also generates up to Rp 310 million monthly, attracting tourists who participate in weaving workshops and experiential cultural programs. Alongside its craft industry, Gamplong's fertile land supports rice farming, contributing significantly to Sleman's agricultural output, with around 40% of Yogyakarta's rice supply coming from the region. The synergy between agro-tourism and creative industries has further enhanced economic resilience, allowing Gamplong to balance tradition with innovation. By integrating craftsmanship, agriculture, and tourism, the village continues to thrive as a hub for cultural preservation and sustainable development.

Develloppement of the area

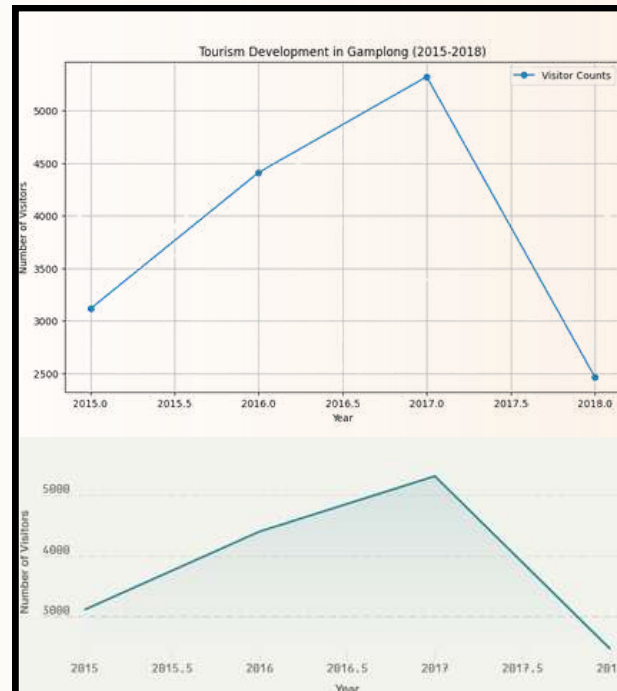
DESIGN PROBLEM STUDY



Agriculture Development in Gamplong (2014-2020)

The carrying capacity of agricultural land in Gamplong shows a steady increase from 1.01 in 2014 to 1.61 in 2020. This growth indicates improved agricultural productivity and land utilization over the years.

The upward trend suggests that efforts to enhance agricultural practices, such as better crop management and land use, have positively impacted the region.



Tourism Development in Gamplong (2015-2018)

Visitor numbers increased significantly from 3,115 in 2015 to a peak of 5,321 in 2017, reflecting growing interest in Gamplong as a tourist destination.

However, there was a sharp decline to 2,467 visitors in 2018. This drop could indicate challenges such as stagnation in innovation or competition from other tourist destinations.



Craftsmanship Development (2015-2018)

Income from craftsmanship rose steadily from IDR 310 million in 2015 to IDR 340 million in 2018. This consistent growth highlights the resilience and importance of the handicraft industry in Gamplong's economy.

The increase reflects successful marketing, tourism integration, and possibly diversification of products.

Developpement of the area

LOCATION



Figure 1.3 The location
Source : Google maps

The location I chose for my design is strategically positioned near Gampong Tourism Village, making it an ideal spot for attracting visitors who are already coming to the area for its cultural and historical appeal. Since Gampong is well known for its **traditional crafts and film set tourism**, my design can benefit from this existing touristic flow, increasing engagement with local craftsmanship.

Additionally, the site is surrounded by **many craft shops**, including the one we surveyed, which highlights the strong presence of artisanal activities in the area. This concentration of craft-related businesses not only reinforces the identity of the place but also encourages visitors to explore beyond Gampong Tourism Village and discover different aspects of local craftsmanship.

The touristic atmosphere of Gampong Tourism Village itself also presents a great opportunity to introduce new facilities within my design. Since tourists visiting Gampong are already interested in culture and heritage, they would be naturally inclined to **explore nearby attractions**. By designing a space that enhances the craft experience whether through workshops, exhibitions, or interactive activities—the project can complement the existing tourism while offering something unique.

Another key reason for selecting this location is that **the land is not used for agriculture**. Unlike other areas in Gampong that are dedicated to farming, this particular site does not contribute to agricultural production. Instead of leaving it underutilized, the land can be repurposed to support a **craft-focused facility** that benefits both the local artisans and visitors, making it a meaningful addition to the existing cultural landscape.



Figure 1.4 The production room with the owner
Source : taking by author

Data collection and interviews

INTERVIEWS

Gamplong Tourism Village in Sumber Rahayu Village, Moyudan District, Sleman Regency, Yogyakarta

Ragil Jaya Craft is a traditional weaving production house located in Gamplong Village, Moyudan, Sleman, Yogyakarta. Established in the 1960s, it has been producing distinctive handcrafted textiles for decades.

Artisan Demographics: The weaving process at Ragil Jaya Craft is intricate and time-consuming, with artisans typically producing one to two meters of woven fabric per day. During the pandemic, they adopted a made-to-order system due to a decrease in buyers and economic downturns. Despite these challenges, Ragil Jaya Craft has sustained its operations, although the pandemic led to a reduction in active artisans, resulting in a repetition of product designs from five years prior. Notably, only a few specialized artisans are proficient in weaving techniques that incorporate specific motifs or patterns. The traditional nature of their weaving techniques and the reliance on experienced artisans suggest that older individuals play a significant role in their production processes. The age of their staffs is more than 50 years with a total number of 20 artisans, the owner explained that the young generation can come for learning workshops but there is no clear interest by them to learn and carry on this heritage, the young people in that area often work in markets or jobs like that, also the elderly do this job by season; along with agriculture which is one of the main source of income in that area;

Collaborations:

Ragil Jaya Craft has engaged in various collaborations to enhance its products and market reach. They have served both domestic and international markets for export and import but the collaborations are mainly with Yogyakarta's companies, though they have traditionally relied on conventional marketing methods.

Data collection and interviews

CRAFT SHOPS FACILITIES



Figure 1.5 the shops rooms and zones
Source : taking by author

MATERIALS USED

The artisans at Ragil Jaya Craft specialize in weaving with natural fibers. These materials are sourced locally and are integral to their traditional weaving techniques.



Figure 1.6 the natural materials used
Source : taking by author

PRODUCTS

Ragil Jaya Craft uses natural materials in their weaving process, and thanks to the experience and skills of their artisans, they can produce various patterns and colors. Their deep knowledge of traditional techniques allows them to create intricate and high-quality woven fabrics that reflect the cultural heritage of Gamplong.



Figure 1.7 The productus in storage area
Source : taking by author



Figure 1.8 Gathering picture on one of the initiative
Source : Google maps pictures

Data collection and interviews

LOCAL INITIATIVES

Gamplong Tourism Village in Sumber Rahayu Village, Moyudan District, Sleman Regency, Yogyakarta

Local Initiatives:

In 2024, the Student Executive Board of the Faculty of Economics and Business at Universitas Gadjah Mada (BEM FEB UGM) conducted business development training for lurik weaving artisans in Sumberarum Village, Sleman Regency. This initiative aimed to enhance the artisans' business acumen and ensure the sustainability of this ancestral craft.

Challenges and Opportunities:

Despite these efforts, the weaving industry in Sumber Rahayu Village faces challenges such as competition from modern textile industries and a declining interest among the younger generation in pursuing traditional crafts. Addressing these issues requires a multifaceted approach, including:

- **Education and Training:** Implementing programs to educate the youth about the cultural and economic significance of weaving can foster interest and participation.
- **Market Expansion:** Developing marketing strategies to promote lurik products to broader markets, both domestically and internationally, can enhance the industry's viability.
- **Technological Integration:** Incorporating modern technology in design and production processes can improve efficiency and appeal to contemporary consumers.

GOVERNMENT APPROACHES

There have been several government initiatives for heritage preservation in Yogyakarta, such as the Indonesian Heritage Agency (IHA) and Heritage Impact Assessments (HIA). However, these efforts mainly focus on historical landmarks and museums rather than directly preserving the weaving heritage in Sumber Rahayu Village. While cultural heritage policies exist, there are no specific programs dedicated to safeguarding traditional weaving practices, leaving the industry reliant on independent initiatives and local artisans.

PROBLEM MAPPING

Background

Decline of Traditional Craftsmanship

Shift in Economic Focus: Agriculture, Tourism & Craftsmanship

Issue

Loss of generational weaving and bamboo craftsmanship knowledge

Low youth interest in craftsmanship as younger generations shift to industrial jobs

Over-reliance on tourism without sustainable artisan empowerment

Lack of multifunctional community-based cultural spaces

Need to attract cultural tourism through contemporary yet rooted architecture

Needs

Awareness-Raising Needs → Educating the younger generation on craftsmanship

Weaving & Craftsmanship Skill Development Needs → Training & workshops

Economic Sustainability Needs → Market expansion, product diversification, financial support

General-specific issue

General:
Lack of integrated spaces combining production, education, and market access

Specific:
Limited access to raw materials & advanced tools
Low youth participation in craftsmanship
Inconsistent demand due to dependence on tourism

Design objective

● Ensuring the preservation and revitalization of Gamplong's weaving heritage by creating a Multi-Functional Weaving and Cultural Center that integrates production, education, and tourism. This will provide artisans with skill development, sustainable economic opportunities, and a platform to showcase their work while strengthening the local economy.

Sustainable Goals
(SDGs 4, 8, 11)

SDG 4: Quality Education – through workshops, learning spaces

SDG 8: Decent Work & Economic Growth – by empowering local weavers and sellers

SDG 11: Sustainable Cities & Communities – creating culturally rooted, accessible, and meaningful architecture

DESIGN FRAMEWORK				
LITERATURE STUDY	Critical Regionalism (Frampton)	Placemaking & Cultural Preservation	Architectural Tectonics & Materiality	Craft Revival & Economic Empowerment
SPECIFIC PROBLEM	How can weaving practices be integrated into architectural expression and programmatic use to attract youth, support women, and engage visitors?			
DESIGN QUESTIONS	How to design a facility that integrates natural and cultural tourism potentials? How to reinterpret weaving and craftsmanship as both spatial and tectonic expressions? How can design empower local artisans economically and socially? How can the building be both futuristic and rooted in heritage to attract global and local audiences?			
Theoretical Framework	Gamplong Craft Typology	Critical Regionalism Approach	Building Integration with Landscape and Craft Activity	Decoding Cultural Symbols (Textiles, Motifs)
Design objective	focusing on local weaving, handcrafts, and cultural production/planting in Gamplong.	Using traditional weaving materials like bamboo, Designing shading, airflow, and tactile materials that respect local identity, Expressing weaving logics in façade, structure, or layout	“architecture shouldn’t stand alone” Gardens, open spaces, or semi-outdoor weaving areas become part of the experience Architecture is performative, letting people see and participate in the process of craft	“analyzing local visual symbols” Ornamentation-Screen patterns Structural language (like modular logic of weaving used for roof/facade structure) It’s about translating tradition into design language.

Design Project

DESIGN APPROACH

The project will use a Contextual & Participatory Approach to ensure that the space aligns with the community's needs and traditions while also attracting modern visitors. This dual approach integrates architectural sensitivity to the local environment with active community engagement.

Contextual Design Approach

- The architecture will incorporate local materials and traditional weaving patterns, ensuring cultural continuity and aesthetic harmony.
- Site planning will adhere to existing land regulations and ownership constraints, respecting the historical and social fabric of the area.
- A climate-sensitive design will be implemented, integrating natural ventilation and shading strategies to enhance comfort and reduce reliance on mechanical cooling systems.

Design Approach Method

The project follows a community-driven, iterative process:

Engagement & Concept – Co-design sessions with artisans and stakeholders to define spatial needs.

Prototype & Testing – Create scaled models to test weaving-integrated elements.

Feedback & Refinement – Adjust designs based on community input for functionality and authenticity.

Implementation & Training – Build the space while offering skill-based workshops for long-term sustainability.



MATRIX OF DESIGN THINKING BY BRYAN LAWSON

The project will use a Contextual & Participatory Approach to ensure that the space aligns with the community's needs and traditions while also attracting modern visitors. This dual approach integrates architectural sensitivity to the local environment with active community engagement.

Matrix of Design Thinking	Practical	Formal
Regulations	Lack of policy support for weaving as an economic industry-The government provides cultural preservation laws, but weaving is not fully recognized as an industry needing development support. (Law No. 5 of 2017 on Cultural Advancement, Goverment Regulation No. 1 of 2022 on Cultural Heritage, Sleman regency spatial planning RTRW 2021-2041	Absence of specific building guidelines for weaving as a material - Current regulations do not address how weaving can be integrated into architectural tectonics or material innovation. (Ministerial Regulation No. 14 of 2021 on Building Materials and Standards)
Users: weaving artisans and local community	Limited facilities for Weaving Artisans & artisans - No dedicated space for weaving education, exhibition, and production, leading to a decline in craftsmanship.	Lack of institutional support - No weaving-based research center to innovate on material use and tectonics in architecture.
Clientssss	Low funding for weaving industry development weaving is not prioritized in economic aid programs	Disconnect between heritage and urban developpemnt weaving in treated as rural tradition rather than an evolving craft
Regulations: Designer and architects	Lack of accessbible materials and techniwiues: artisans have difficulty sourcing sustainable weaving materials for architectural use	No standardization of weaving for construction weaving techniques need to be adapted and tested for large scale application in buildings

Table 1.1 matrix of design thinking by Bryan Lawson
Source : Made By Author

	Radical	Symbolic
	No radical approaches to redefine weaving as a living architecture there is a need for experimental projects where weaving materials and techniques shape architecture itself	Weaving traditions are not actively promoted as cultural identity; the craft is undervalued in modern developement with no major programs fostering weaving in contemporary design (law No 24 of 2019 on creative economy)
	Youth disengagement younger generations are uninterested due to outdated learning methods and a lack of modern relevance	Need for experience based learning ; the center should engage people by allowing interaction with weaving as an architectural elements
	Failure to bridge weaving with contemporary culture; weaving is not marketed as part of modern design limiting interest	Repositioning weaving as a key design and architectural feature creating a center where weaving plays a structural aesthetic and functional role
	Weaving is not used symbolically in architecture the tradition is often decorative rather than tectonic	Innovative material exploration integrating weaving with natural fibers, tensile structures, or bio based materials to create functional building elements

Table 1.1 matrix of design thinking by Bryan Lawson
Source : Made By Author

Design Problem

Excellency, Originality, and *Novelty*

Design Of Pinisi Cultural Center As the integration space between cultural tourism and Maritim tourism as the new iconic space of Bulukumba regency

Islami, Pahrul // Universitas Islam Indonesia // 2024

The author Draws from cultural typologies (shipbuilding vs. weaving) he aims to preserve heritage while modernizing it also Integrates local economic and educational roles but also uses architecture as a tool to showcase and support local crafts and identity and last Aligns with sustainability and tourism goals

Similar typology, same approach to use Critical Regionalism to reinterpret local traditions into architectural design.

Design Of Cultural Center With Cultural Waterfront Design Strategies In Madura Strait Area, Kedung Cowek, Surabaya

RIFQI CAHYA MAHENDRA // Universitas Islam Indonesia // 2022

The author also use regional cultural identity (weaving in Gampong, Madurese–Javanese in Surabaya) as a design foundation. Both integrate sustainable design with natural elements (waterfront vs. craft landscape). And last aim to revive local heritage and support tourism and economic development through cultural-based architecture.

Similar typology, same approach; cultural-based architecture.

Design of Cultural Museum with Narrative Approach in Palembang City

Rizka Fadila Muhammad // Universitas Islam Indonesia // 2022

The author also based on neuroscience research. use cultural heritage (weaving in Gampong, Palembang history and art) as the foundation. He aims to educate the public and showcase culture in engaging ways. And last function as cultural tourism destinations that support identity, economy, and preservation.

Similar typology, preserve local culture while promoting tourism and strengthening city identity through architecture.

Design Problem

CONSTRAINTS MATRIX FOR THE WEAVING CENTER (DETAILED)

Design Aspect	Practical Constraints	Formal Constraints	Social Constraints	Temporal Constraints
Site & Context	Located in front of Gamplong Tourism Village, must consider road access and visitor circulation	Needs to blend with rural Javanese aesthetic and local weaving identity	Should create a cultural landmark, attracting both tourists and local artisans	Needs to be adaptable to seasonal activities (weaving vs. agriculture)
Structure & Materials	Must use natural materials (bamboo, coconut leaves, plant fibers) while ensuring durability	Architectural style inspired by vernacular structures like traditional Joglo and Pendopo	Should reflect Javanese weaving heritage in material choices and spatial experience	Materials should allow for future repairs and easy replacement
Energy & Sustainability	Natural ventilation and lighting due to hot climate, passive cooling strategies	Green roofing or shading must blend with the natural landscape	Needs to create a comfortable work environment with minimal energy use	The structure must withstand long-term wear from weaving activities
Circulation & Accessibility	Production area takes up the most space and needs efficient workflow	Spaces should be visually connected but separated by function	Must be inclusive for artisans, students, and tourists of different ages	Spaces should be flexible for workshops, exhibitions, and temporary setups
Function & Space Use	Large weaving production space, Pendopo for community activities, storage room, trade/export facilities	Open yet defined spaces for different activities, integrating semi-outdoor areas	Must foster engagement between locals, tourists, and young apprentices	Needs to support both seasonal weaving and year-round tourism

Table 1.2 Constraints Matrix for the Weaving Center (Detailed)
Source : Made By Author

Design Problem

DESIGN HYPOTHESIS

Integrating contextual and participatory approaches in the design process will create a space that preserves traditional weaving practices, enhances artisans' engagement, and attracts modern visitors. By blending local materials, climate-sensitive strategies, and community-driven input, the project ensures both cultural continuity and contemporary appeal.

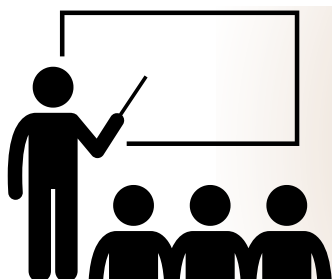
How the Approaches Solve the Problem

Contextual Design Approach

- Uses local materials and traditional weaving patterns to maintain cultural authenticity.
- Incorporates climate-responsive design (natural ventilation & shading) to enhance comfort.
- Respects land regulations and ownership constraints, ensuring sustainable site integration.

What They Wish to Have

NEEDS & ASPIRATIONS



dedicated space for visitors & training

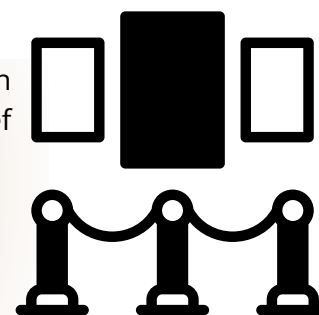
Interview with association chief

- A multi-functional space for welcoming tourists, holding weaving workshops, and accommodating student activities.

Showroom & exhibition space

Interview with association chief

- A place to display and sell local crafts to tourists, improving visibility and sales.



Improved marketing & digital presence

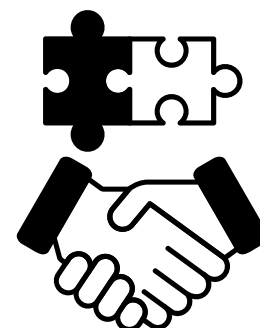
Interview with association chief

- Facilities that help them adopt modern digital marketing while preserving traditional craftsmanship.

Integration of tradition & modernity

Interview with association chief

- A way to balance traditional weaving techniques while making them relevant to modern market demands.



Interview with association chief

ABOUT THE AREA

“fasilitasnya dan dukunganya adalah ketrampilan yang mereka miliki.dari peninggalan nenek moyang sehingga menjadi keunikan di desa gamplong,dan didukung oleh pemerintah “



Figure 1.9 The association chief while interviewing him
Source : Taking by the author

ASPECT TO ADOPT**WHY NOT TO INCLUDE FARMING?****01 Weaving heritage**

- The traditional craft of creating textiles using handwoven techniques passed down through generations. It is essential in design for preserving cultural identity, inspiring material innovation, and supporting artisan communities.

02**Tourism**

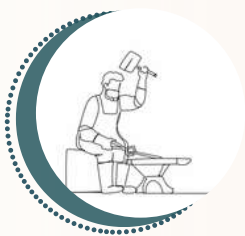
- The movement of people to destinations for leisure, culture, or exploration. It plays a key role in design by driving economic growth, shaping visitor experiences, and promoting cultural exchange through facilities and attractions.

03**Agriculture**

- Why not integrate agriculture?
Some artisans have farmland, but it is not extensive.
- How do they balance both?
Farming is done seasonally, ensuring craft production continues. They integrate with agriculture because they have agricultural land but it is not large, So during the planting season they have to work on the land, and the land becomes productive land

*ASPECT TO ADOPT***FIGURATIVE DESIGN (PRILIMINARY)****Pendhapa as the Core Space**

- Functions as a central gathering area for artisans, training sessions, and visitor interactions.
- Provides natural ventilation while allowing an open, flexible layout.

**Craftsmanship Embedded in Architecture**

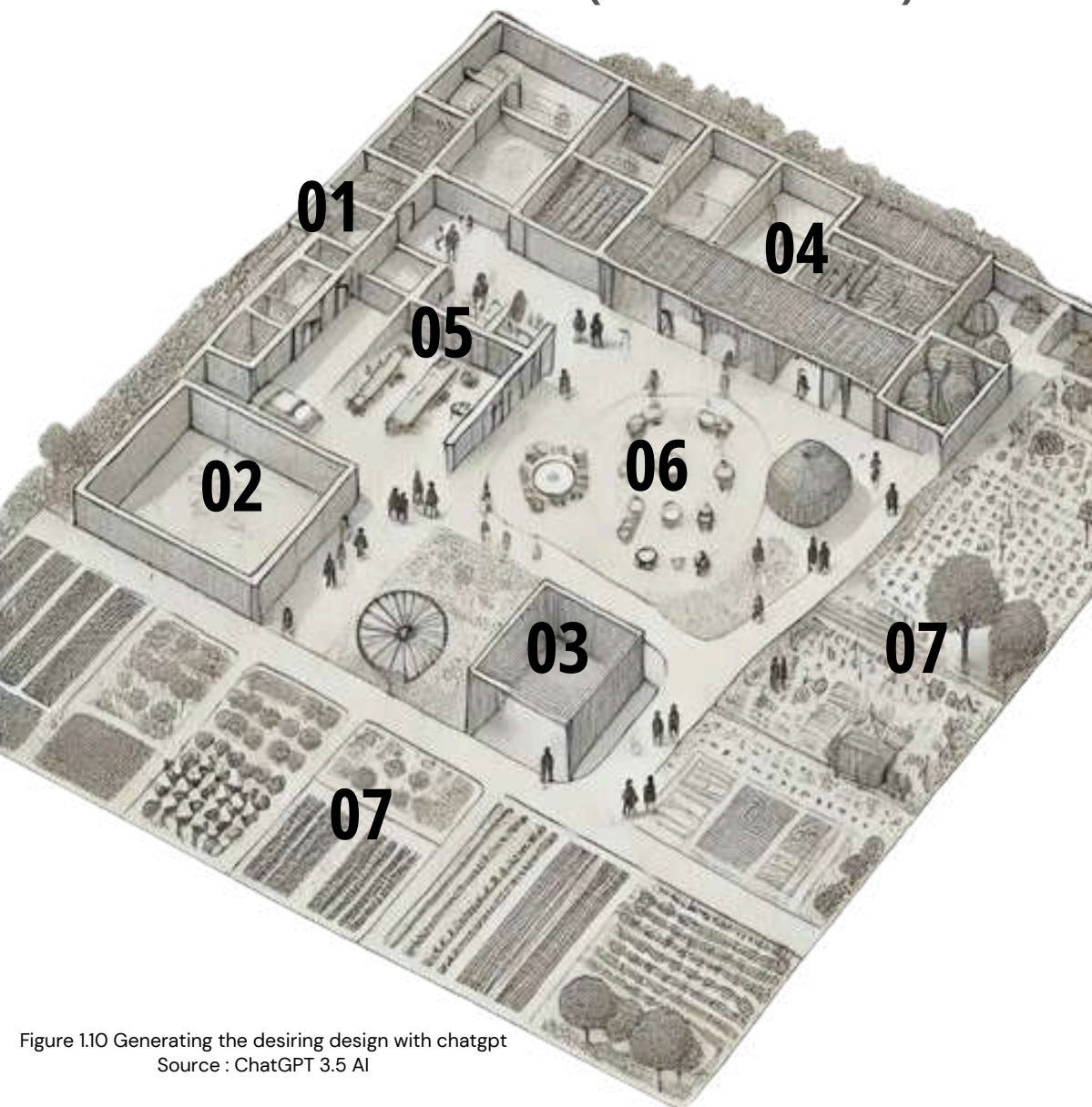
- Structural elements (columns, beams, and walls) showcase local weaving patterns or carved details.
- Integration of woven bamboo panels or exposed brick walls with traditional joinery techniques.

**Traditional Tectonics with Modern Adaptations**

- Using wooden or bamboo trusses combined with contemporary structural reinforcements for durability.
- A mix of earthy materials (wood, clay, and stone) ensuring sustainability and authenticity

SKETCHES organize and locate the site

FIGURATIVE DESIGN (PRILIMINARY)



It illustrates key zones like the entrance, public areas, artisan workshops, education spaces, and natural integration with the surrounding landscape

- 01** tour weaving zone
- 02** Tourist experience zone
- 03** Entrance and modern Pandopo
- 04** showrooms
- 05** Education and artisans workshops
- 06** Public spaces
- 07** Landscape

“Useful facilities include.. a joint showroom, to display craft community products.. Increasing the progress of tourist villages. So that tourists can buy craft products; The above facilities are for craft education, promotion.. product sales. and so on

Figure 1.10 Generating the desiring design with chatgpt
Source : ChatGPT 3.5 AI

*"A people without the knowledge of their
past history, origin and culture is like a
tree without roots."*

by Marcus Garvey





02.

PROBLEM STUDY

- **T TYPOLOGY STUDY**
- **DESIGN APPROACH STUDY AND DESIGN
PROBLEM ANALYSIS**
- **PRECEDENT STUDY**
- **SITE CONTEXT STUDY**

Building Typology

CULTURAL CENTERS

Here’s a concise list of MY typologies in the multi-functional weaving center :

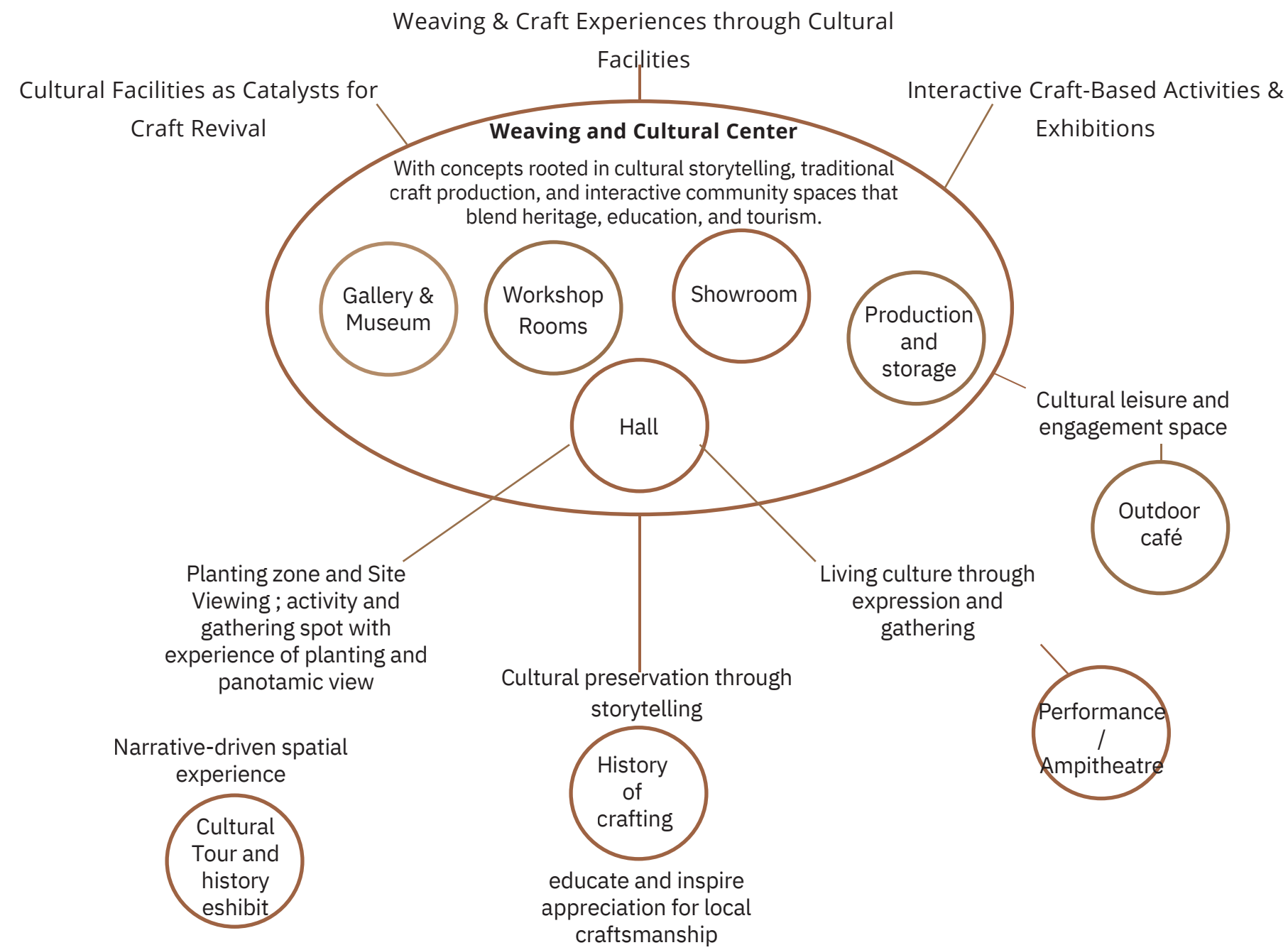


Figure 2.1 typology in multi-functional weaving centers
Source : Modified by the author

*Building Typology***CULTURAL CENTER TYPOLOGY****Cultural Center Typology**

A cultural center is a facility that plays a key role in preserving, developing, and promoting the cultural identity of a region. According to the Indonesian Dictionary (KBBI), a cultural center is defined as a place for the development and cultivation of culture. It functions not only as a physical space but also as a medium for community engagement, fostering appreciation and understanding of local heritage. As highlighted in a scientific paper by Universitas Pelita Harapan (UPH), cultural centers contribute significantly to shaping urban identity and strengthening collective memory. They serve as venues for exhibitions, performances, education, and interaction, making culture accessible and alive within the community.

Meanwhile, a weaving or craft center is a facility dedicated to supporting traditional craftsmanship, particularly in handmade or manually produced goods. These centers typically accommodate a variety of functions, including craft production, skill training, and the promotion and marketing of local products. According to architectural research from Universitas Islam Indonesia (UII) and Universitas Komputer Indonesia (UNIKOM), such centers serve as important spaces for cultural continuity and economic empowerment. They provide hands-on learning through workshops, preserve traditional knowledge through direct practice, and support local artisans particularly women by offering a space to produce and sell their crafts. The integration of production, education, and exhibition in one space makes craft centers essential for sustaining heritage in modern society.

By combining the roles of a cultural center and a weaving center, a multifunctional facility can support not only cultural preservation but also economic development and community empowerment through sustainable design and programming.

CULTURAL CENTER TYPOLOGY

Cultural Centers Regulations

To design and build a cultural center or weaving/craft center in Yogyakarta:

- Follow Governor Regulation No. 40/2014 for architectural integration of local culture.
- Ensure compliance with spatial and urban planning regulations (Perda DIY No. 2/2010).
- Respect traditional architectural styles, community values, and conservation norms throughout the process.

Regulation/Policy	Scope/Requirement	Relevance to Cultural/Craft Centers
Governor Regulation No. 40/2014	Architectural guidelines for new culturally nuanced buildings	Mandatory for new/renovated cultural/craft centers
DIY Regional Regulation No. 2/2010	Spatial planning, cultural heritage preservation	Ensures alignment with urban and cultural priorities
Municipality Territorial Regulation No. 5/1991	Building setbacks and technical requirements	Technical compliance in heritage districts
DIY Regional Regulation No. 6/2012	Culture and nature reserve preservation	Framework for development in protected areas
Cultural Heritage Conservation Advisory Council	Oversight and recommendation for heritage area projects	Required approval for sensitive locations

Table 1.3 Cultural Centers Regulations
Source : Made By Author

Cultural Center’s Services And Function

Cultural centers serve as dynamic hubs that foster artistic, educational, social, and community development. Their functions and services are multifaceted, aiming to enrich local culture, promote participation, and strengthen community bonds.

Building Typology

CULTURAL CENTER TYPOLOGY

Function/Service	Description
Arts and Culture Promotion	Exhibitions, performances, artist support
Education and Workshops	Classes, informal learning, creative workshops
Community Engagement	Social events, participatory projects, public discussions
Heritage Preservation	Safeguarding traditions, crafts, and local history
Leisure and Recreation	Recreational activities, creative events
Economic and Social Development	Tourism promotion, local business support, event rentals
Support and Accessibility Services	Shops, catering, barrier-free facilities, family amenities

Table 1.4 Cultural CENTER Typology
Source : Made By Author

Facility Requirements and Space Organization Standard

Cultural centers and weaving/craft centers require thoughtfully designed spaces to support diverse activities such as performances, exhibitions, workshops, and community events. Key facility requirements include auditoriums with appropriate seating and stage areas, flexible exhibition spaces, specialized workshops, dance halls with sufficient ceiling height, classrooms, libraries, administrative offices, and visitor amenities like lobbies, restrooms, and parking. Spaces should be organized into functional zones with clear circulation paths, ensuring accessibility and safety. Proper adjacency of related spaces (e.g., dressing rooms near stages) and flexible multi-use areas enhance usability. These standards help create cultural centers that are functional, welcoming, and respectful of local cultural needs.

Building Typology

CULTURAL CENTER TYPOLOGY

Space Type	Area/Dimension Standards	Notes
Auditorium/Theater	27–36 m² per 100–200 seats	Includes stage, backstage, dressing rooms
Workshops/Studios	30–60 m²	Equipped for specific crafts and arts
Dance/Choreography Halls	Height ≥ 4.2 m (dance), 6–8 m (acrobatics)	Adjacent dressing/rest rooms
Lecture/Club Rooms	≥ 30 m²	For meetings and educational activities
Library/Reading Rooms	Variable, includes storage and staff rooms	Quiet study areas
Administrative Offices	~6 m² per employee	Workspace for staff
Lobby/Foyer	≥ 12 m² for small halls, larger for bigger venues	Visitor circulation and socializing
Parking	20–25 spaces per facility	Guest vehicle accommodation
Support Areas (toilets, storage)	Adequate per visitor and staff needs	Essential for operations

Table 1.5 Cultural CENTER Typology
Source : Made By Author

For weaving and craft centers, it is recommended to provide well-ventilated, naturally lit workshop spaces equipped with appropriate tools and storage to support traditional craft activities. Incorporating areas for display and sales can also help promote local artisans and sustain cultural heritage.

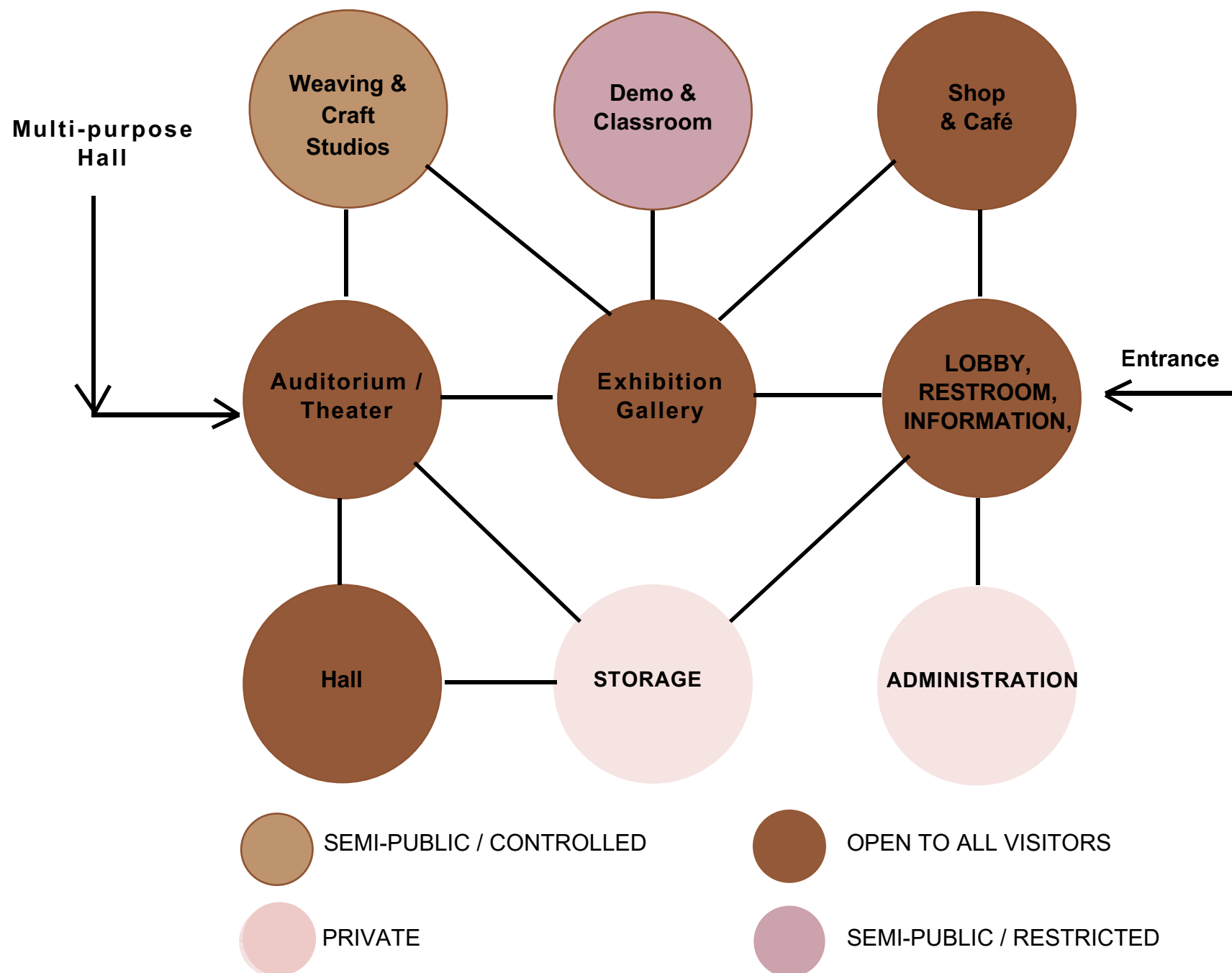
*Building Typology***CULTURAL CENTER'S SPACE ORGANIZATION DIAGRAM**

Figure 2.2 Cultural Center's Space Organization Diagram
Source : Made by Author

CULTURAL CENTER TYPOLOGY

Space Use And Access

Based on common practice and design principles from cultural centers worldwide, the spaces in cultural centers and weaving/craft centers can be categorized by their level of privacy and typical user groups as follows:

Space/Zone	Access Level	Typical Users	Description/Function
Public Spaces	Open to all visitors	General public, tourists, visitors	Includes lobby, exhibition galleries, cafés, shops, outdoor plazas, and performance auditoriums during events. These spaces invite community engagement and cultural participation.
Craft and Workshop Areas	Semi-public / Controlled	Permanent students, craftsmen, visiting learners	Workshop studios and craft rooms are primarily for artisans and students but often allow visitor observation or participation during demonstrations or classes. Access may be supervised or scheduled.
Educational Rooms and Classrooms	Semi-public / Restricted	Students, workshop participants	Used for classes, lectures, and training sessions; generally accessible to enrolled participants and staff.
Performance Backstage and Technical Areas	Private	Performers, technicians, staff	Includes dressing rooms, green rooms, loading docks; restricted to authorized personnel only.
Administrative Offices	Private	Staff, management	Offices and meeting rooms for staff and management; not open to the public.
Support and Service Areas	Private	Staff	Storage, maintenance, technical rooms, and service corridors; restricted access for operational purposes.
Circulation Paths	Varies	Depends on zone	Public corridors and staircases in visitor areas; separate private circulation routes for staff and performers to avoid overlap.

Table 1.6 Space Use And Access
Source : Made By Author

CULTURAL CENTER TYPOLOGY

Visitor Activities in a Cultural Center

Visitors to cultural centers engage in a wide variety of activities that immerse them in local culture, arts, and community life. Common visitor activities include:

- Exploring exhibitions of art, crafts, photography, and cultural artifacts.
- Attending performances such as music concerts, dance shows, theater, and street performances.
- Participating in hands-on workshops and classes like traditional crafts, cooking demonstrations, or dance lessons.
- Visiting galleries and artisan showcases to view and purchase locally made products.
- Enjoying interactive exhibits, virtual or augmented reality experiences, and storytelling sessions that deepen cultural understanding.
- Relaxing in cafés, social lounges, and family-friendly areas designed for all ages.
- Taking part in cultural festivals, heritage tours, and community events hosted by the center.
- Using visitor information desks to learn about local history, events, and natural environment.

Cultural Center Programs to Engage Visitors

Visitor Activity	Engagement Program Example
Viewing exhibitions and galleries	Rotating artisan showcases, craft markets
Attending performances	Music/dance/theater nights, cultural festivals
Participating in workshops	Craft, cooking, dance classes
Exploring interactive exhibits	VR/AR experiences, storytelling corners
Socializing and relaxing	Cafés, lounges, family-friendly zones
Learning about local culture	Guided tours, talks, information desks

Table 1.7 Cultural Center Programs to Engage Visitors
Source : Made By Author

*Building Typology***SIMILAR TYPOLOGY BUILDING****SINGKAWANG CULTURAL CENTER****Typology**

Singkawang Barat, Indonesia

Architect: PHL Architects

Area: 1972 m²

year: 2017

A notable precedent in Indonesia with a similar typology to a cultural center combined with weaving/craft facilities is the Singkawang Cultural Center in West Kalimantan. This project involved adaptive reuse of an old cinema building into a vibrant cultural center that serves as a hub for multicultural community activities, including traditional arts and crafts. The design respects local heritage by using Singkawang's distinctive local bricks and preserving the authenticity of the original structure while introducing new functions such as exhibition spaces, performance areas, and craft workshops

Figure 2.3 Singkawang Cultural Center facade
Source : Archdaily





Figure 2.4 Singkawang Cultural Center interior
Source : Archdaily

The project itself later called Singkawang Cultural Center. Singkawang Cultural Center is a pioneer project serves as a cultural house, a community center that became the center for fostering and promoting culture and art in Singkawang, also to strengthen community bonds by displaying elements of Singkawang heritage through the architectural design of the building, local cuisine, artistic performances, and visual art displayed inside the building. The building is one of Tjhai Chui Mie's efforts as the mayor of Singkawang (2017–2022) to create her vision and mission that is the Great Singkawang by focusing on creative economy development.

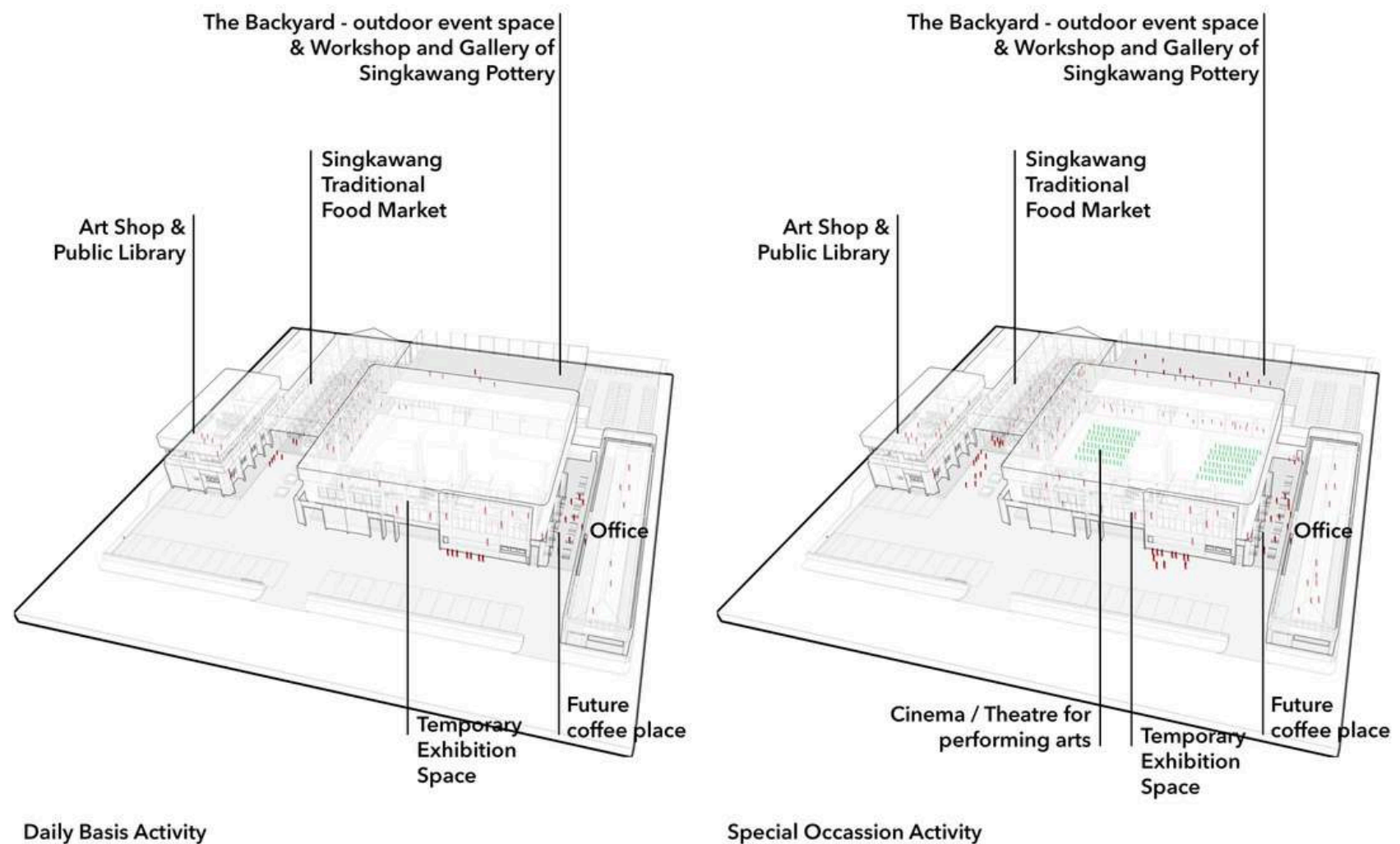


Figure 2.5 Singkawang Cultural Center rooms diagram
Source : Archdaily

Building Typology

SIMILAR TYPOLOGY BUILDING

TEC DESIGNS ARTISANAL SHOPPING AND CULTURAL CENTER

Typology

Quito, Ecuador

Architect: Taller EC (TEC)

Area: 4260.0 sqm

year: 2016

The Artisanal Shopping and Cultural Center, designed by TEC Taller EC, is a prominent hybrid cultural and commercial project located in the north of Quito, Ecuador. The center is also known as Plaza Artesanal Reina Victoria and is intended to serve as both a traditional artists' market and a vibrant urban catalyst for the area

Figure 2.6 TEC Designs Artisanal Shopping and Cultural Center facade
Source : Archdaily





Figure 2.7 TEC Designs Artisanal Shopping and Cultural Center interior
Source : Archdaily

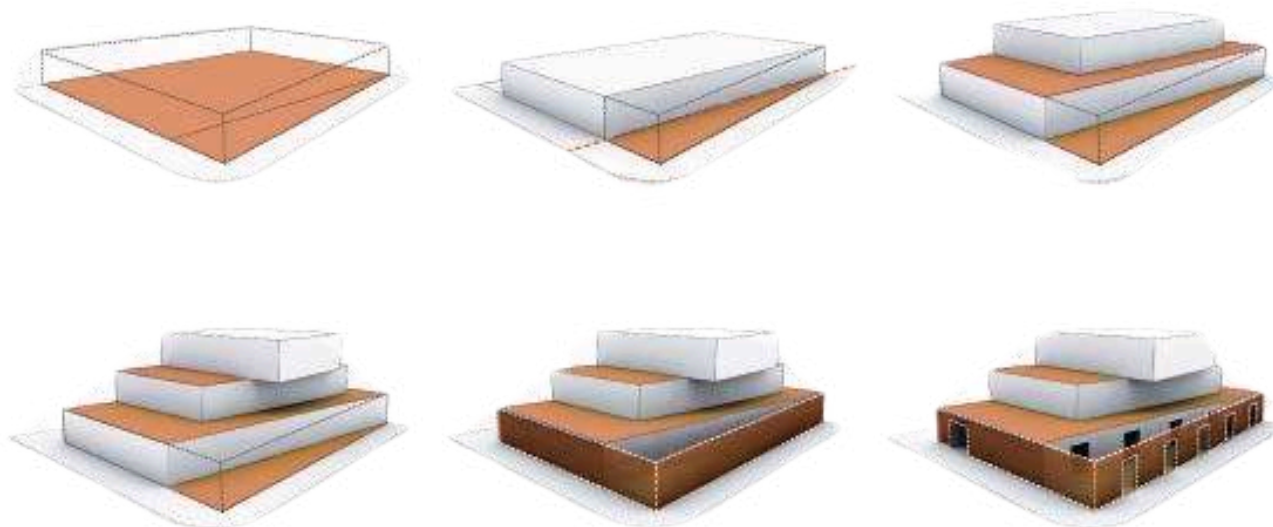


Figure 2.8 TEC Designs Artisanal Shopping and Cultural Center rooms diagram
Source : Archdaily

The project consists of several autonomous buildings of varying sizes, all connected by an interior plaza or courtyard that serves as a communal and public space.

The center includes:

- 3 underground parking levels
- Approximately 50 artisan shops
- Restaurants
- A cultural center
- Outdoor plazas and public spaces, especially on the upper floors

Purpose and Experience

- The center aims to promote the national craft trade by providing an attractive environment for artisans and visitors, blending commercial activity with cultural experiences.
- It is designed to function as a domestic and international tourist attraction, stimulating the local economy and celebrating Ecuadorian heritage through complementary activities such as exhibitions, performances, and culinary offerings.
- The project aspires to become a cultural icon for the area, strengthening the identity of the neighborhood and offering a new urban landmark

*Building Typology***SIMILAR TYPOLOGY BUILDING****CULTURAL CENTER JEAN-MARIE TJIBAOU**

Approach

Site Condition

Singkawang Barat, Indonesia

Architect: Renzo Piano Building Workshop

Area: 8550 m²

year: 1998

Located near an important natural and cultural site (facing the ocean and sacred Kanak grounds).

Designed without disturbing existing landscape and cultural elements.

Weaving workshops, performance spaces, and exhibition galleries are zoned along a linear axis, responding to climate and cultural processions.

Blends indoor and outdoor use, much like your outdoor amphitheater and courtyard.

Transparent lobby and educational areas welcome both locals and tourists while respecting traditional spatial hierarchies.

Figure 2.9 Cultural Center Jean-Marie Tjibaou render
Source : Archdaily

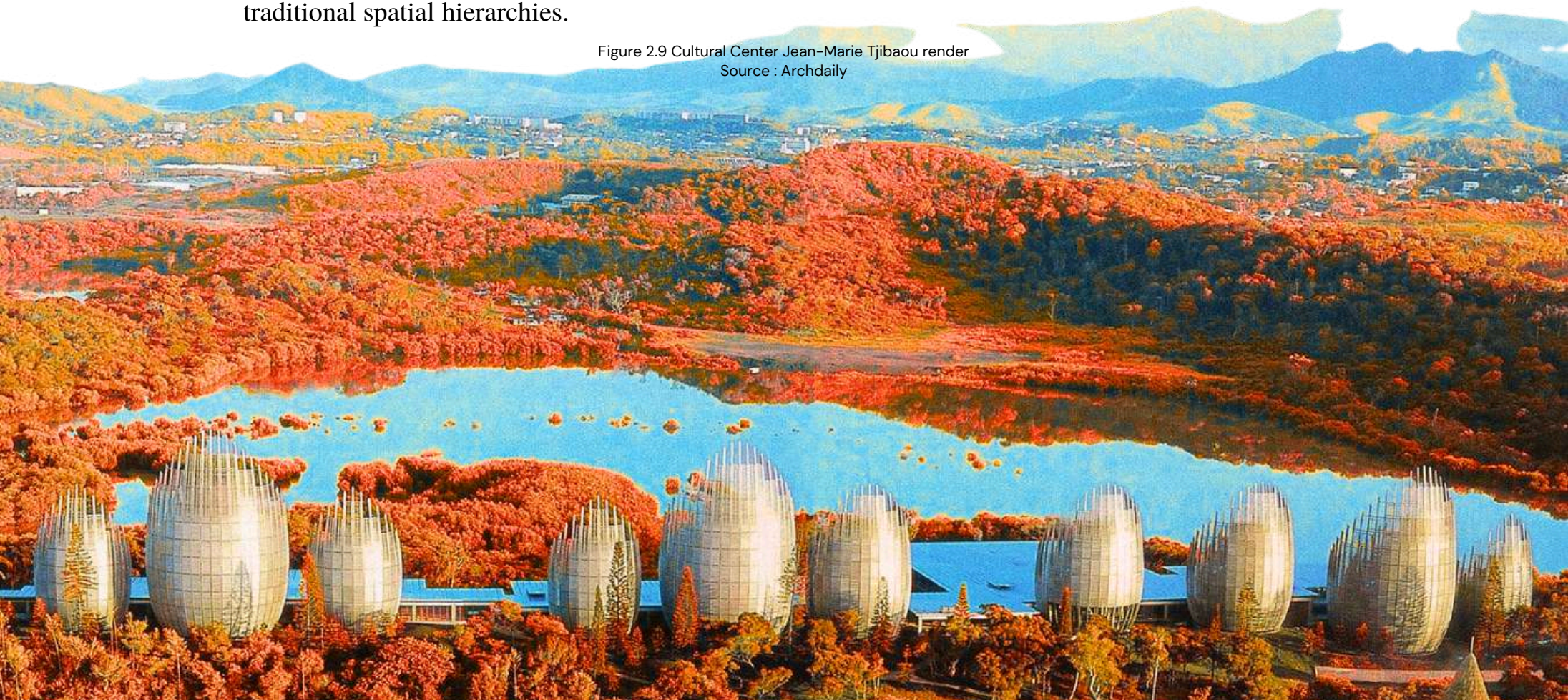


Figure 2.10 Cultural Center Jean-Marie Tjibaou interior
Source : Archdaily

The building is a landmark that celebrates Kanak culture. Located on a peninsula between two bays, the center consists of ten wooden pavilions inspired by traditional Kanak huts, grouped into clusters for exhibitions, research, and creative studios. The design uses sustainable strategies like passive ventilation, double-skin facades, and adjustable wooden louvers to naturally cool the buildings in the tropical climate. The center serves as a museum, media library, performance space, and park, acting as a hub for Kanak cultural creation, exchange, and international influence.

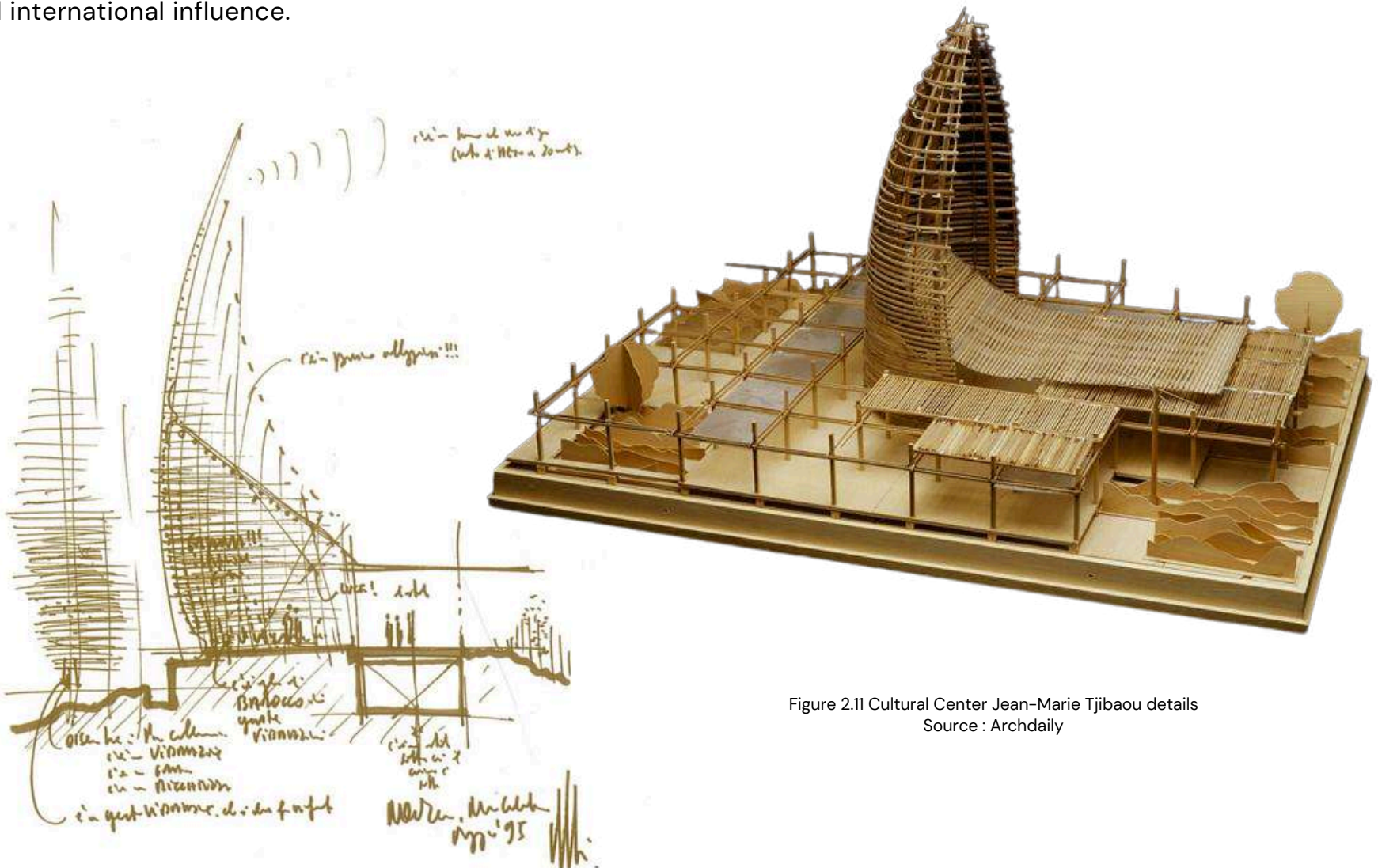


Figure 2.11 Cultural Center Jean-Marie Tjibaou details
Source : Archdaily

Shigeru Ban Architects, 2014

ASPEN ART MUSEUM



Figure 2.12 Aspen Art Museum maquette
Source : Archdaily

 Corner of South Spring Street and East Hyman Avenue, downtown Aspen.

 Area: 3065 square meters

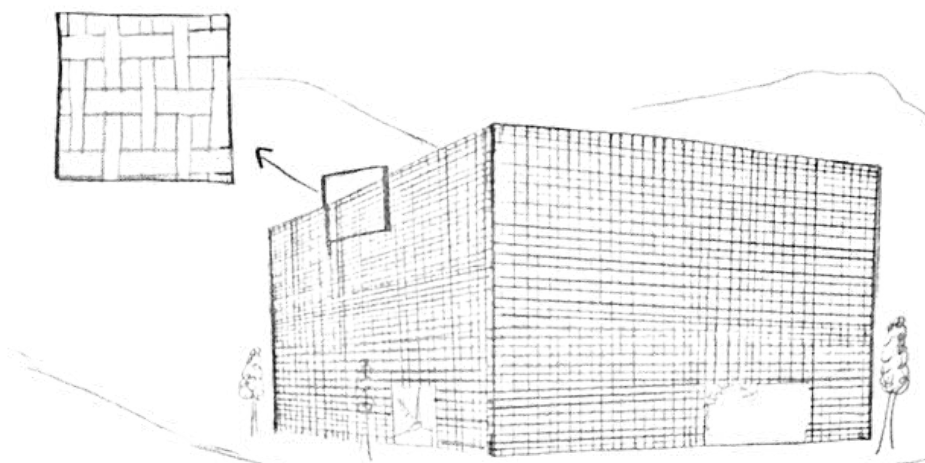


Figure 2.13 Aspen Art Museum facade
Source : Archdaily

The Aspen Art Museum, designed by Shigeru Ban Architects, is a contemporary art space that emphasizes sustainability and innovation. The building features a striking façade of wooden slats and expansive glass, allowing natural light to permeate the interior. The museum's design incorporates flexible exhibition spaces, a rooftop terrace, and a public plaza, fostering community engagement. Its integration with the surrounding landscape reflects a commitment to environmental stewardship while providing a dynamic venue for contemporary art and cultural programming.

DESIGN CONCEPT:

- Transparency and open views to connect inside and outside.
- Main entrance along East Hyman Avenue.

CIRCULATION:

- Visitors enter into a reception area and two ground-floor galleries.
- Access to upper levels via:
 - Moving Room: a glass elevator in the northeast corner.
 - Grand Stair: spans three levels with a unique indoor-outdoor configuration (10-foot exterior / 6-foot interior), includes glass wall and art pedestals.

MATERIALITY & EXTERIOR DESIGN

- Woven Wood Screen:
 - Made from Prodema (paper, resin, and wood veneer).
 - Functions as both a visual screen and architectural identity.

Shigeru Ban Architects, 2014

ASPEN ART MUSEUM

The design masterfully integrates traditional craftsmanship with contemporary architectural innovation.

Grand Staircase:

A key feature is the three-level Grand Stair between the woven facade and glass wall, functioning as both a circulation path and exhibition space.

Rooftop Experience:

The museum's rooftop sculpture garden offers panoramic views of Aspen's landscape

Structural Integration:

The woven screen is affixed to a steel framework, creating a semi-transparent envelope

Woven Wood Screen:

crafted from Prodema panels a composite material combining paper and resin encased within a dual-sided wood veneer

Hybrid Structural System:

The building employs a combination of concrete, steel, and wood to achieve a robust yet flexible structural system.

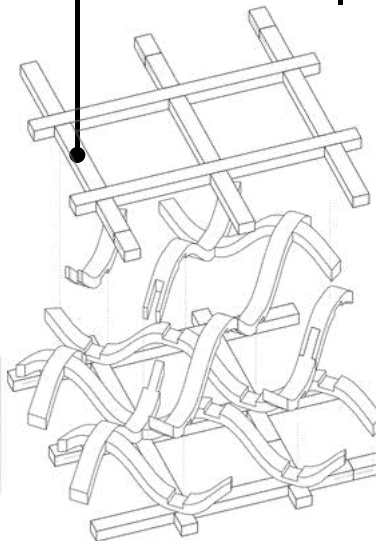
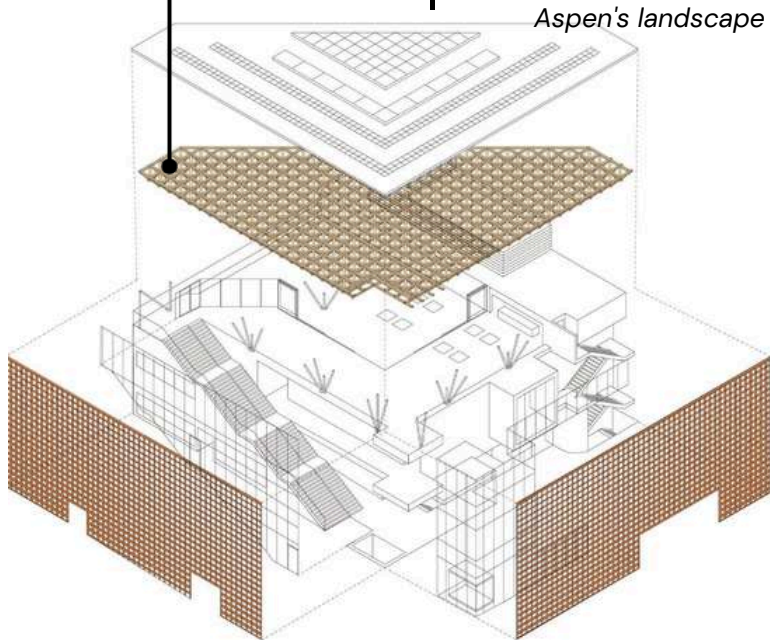


Figure 2.14 Aspen Art Museum facade details
Source : Archdaily

ROOFTOP & PUBLIC SPACES

Rooftop services:

Rooftop Sculpture Garden:

Offers unobstructed public views of Ajax Mountain.

Includes: So, the rooftop café and bar.- Outdoor event and screening area.

Other amenities:

AAM Shop and bookstore.

Artist apartment.

Art storage and preparation areas.

CONCEPTUAL FRAMEWORK

Basket Analogy:

Shigeru Ban likens the museum to a basket, stating, "Because the museum doesn't have collections, there are many different exhibition it's like a basket and you can put anything you like inside." This metaphor underscores the building's role as a versatile container for diverse artistic expressions.

Contextual Sensitivity:

The facade's texture and color draw inspiration from Aspen's traditional brick masonry buildings, allowing the museum to harmonize with its urban context while maintaining a contemporary identity.

Building Typology

PRECEDENTS - COMPETITION

KÉRÉ SPIRITUAL AND COMMUNITY CENTER

Approach

Site Condition

Notsé, Togo
Architect: Diébédo Francis Kéré
Area: 7,000 square meters
year: construction started on October 2024

Kéré Architecture Unveils Design; this project using Contextual Integration approach including a sanctuary, temples, and an open-air amphitheater, all designed to reflect the cultural and spiritual heritage of the Ewé people. The integration of these structures within the town's context showcases a harmonious blend of architecture and cultural identity.

Figure 2.15 Kéré Spiritual and Community Center Render
Source : Archdaily





Figure 2.16 Kéré Spiritual and Community Center zone's diagrams
Source : Archdaily

the project is centered around the historic Agbogbo wall and Agbogbodzi Sanctuary, the design includes a symbolic spiral tower and low-rise buildings that follow the natural topography, promoting contextual and sustainable integration. Construction began in October 2024 and is expected to finish by February 2026.

“ IT IS A JOY TO SEE HOW IDEAS AND TECHNIQUES EMBEDDED WITHIN MY WORK HAVE NOW BECOME 'SALONFÄHIG' AND WIDELY ACCEPTED BY PEOPLE BUILDING ON THE CONTINENT. THE CENTRE WILL DEMONSTRATE HOW ARCHITECTURE CAN BE A CATALYST FOR COMMUNITIES TO CELEBRATE THEIR CULTURES. “
- FRANCIS KÉRÉ

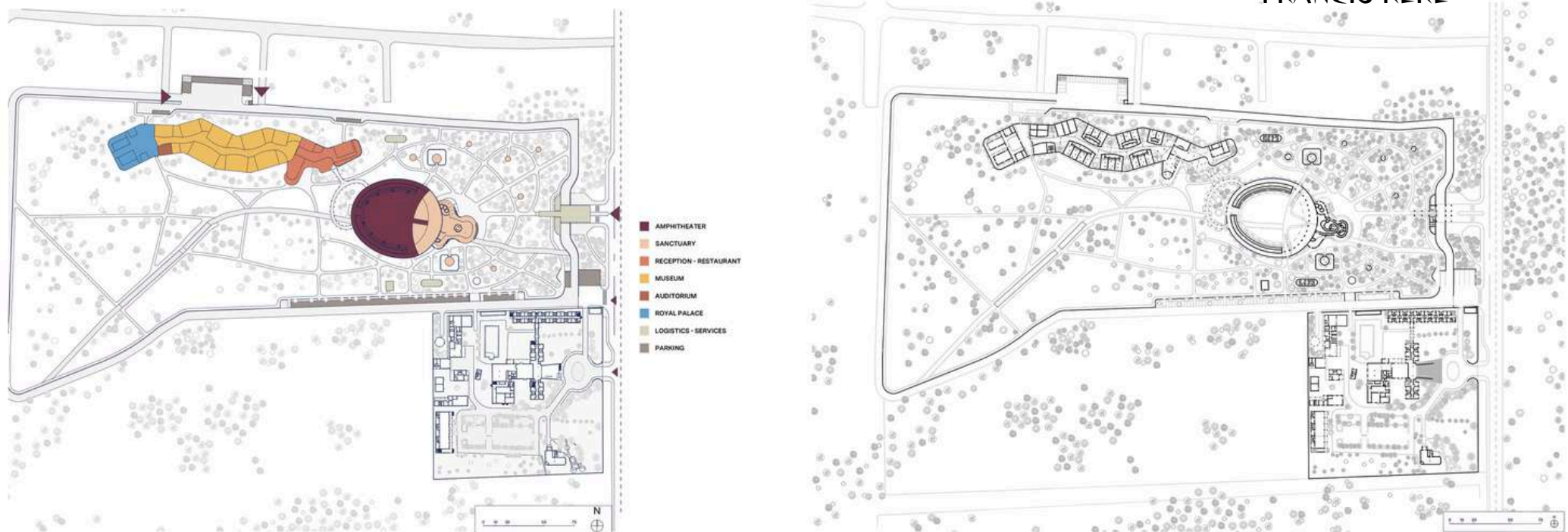


Figure 2.17 Kéré Spiritual and Community Center technical drawings
Source : Archdaily

*Building Typology***LESSON LEARNED AND WHAT APPROACH TO USE**

According to the precedents that either have the same site condition, typology or approach :

First, the use of Contextual and Community-Centered Design as a **Primary approach**

Second, considering **human and nature/ design following the site**

Third, Programmatic Zoning & Flexibility (Typological Approach) on **how functions relate spatially**; ensuring program synergy and flexibility over time.

And last, Experiential / Human-Centered Design aproach on **How people move through, feel, and interact with the space.**

Building Typology

HOW TO USE THESE APPROACH IN MY DESIGN

Contextual and Community-Centered Design

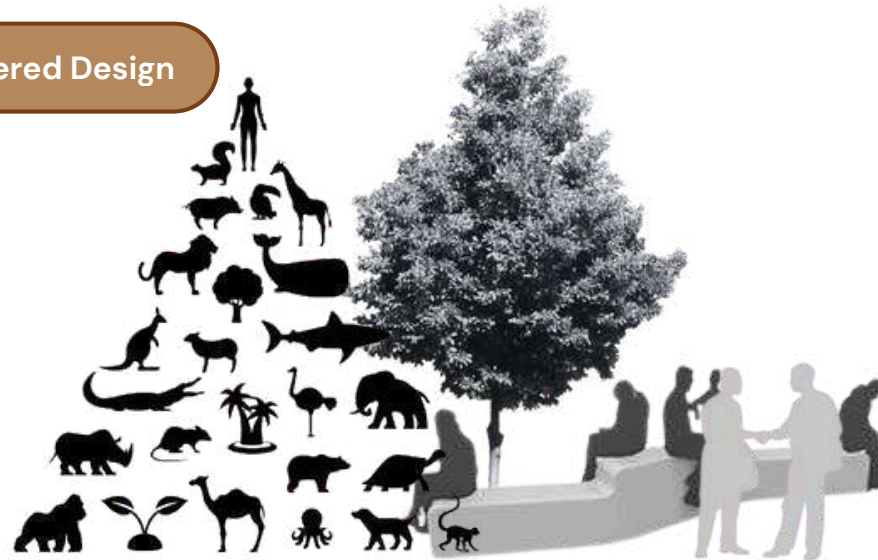


Figure 2.18 Contextual and Community-Centered Design
Source : pinterest

Purpose: Ensures respect for site, culture, and community needs.

Why it's key: I am dealing with cultural expression, public interaction, and site sensitivity.

human and nature/ design following the site

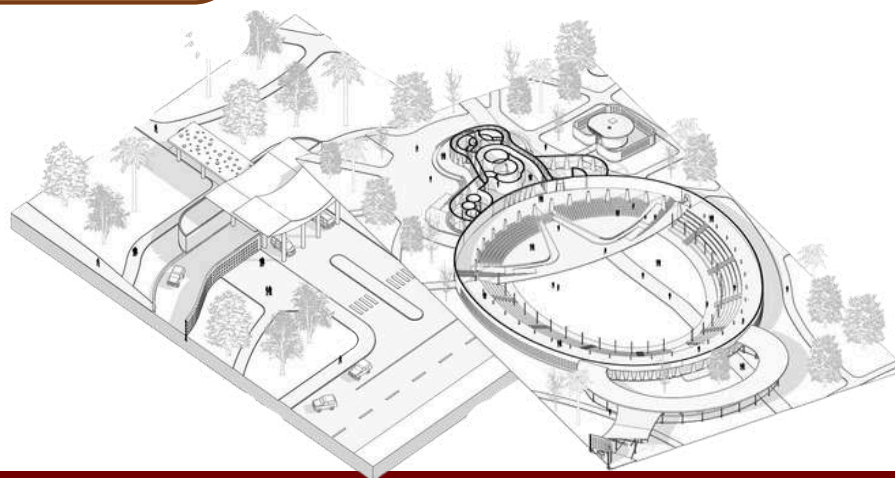


Figure 2.19 human and nature/ design following the site
Source : pinterest

Focus: Use of daylight, ventilation, material efficiency, and integration with the landscape.

How in my project: Craft studios benefit from natural light and ventilation – Outdoor pathways, green courtyards, and open amphitheaters align with passive climate strategies

Building Typology

HOW TO USE THESE APPROACH IN MY DESIGN

Experiential / Human-Centered Design

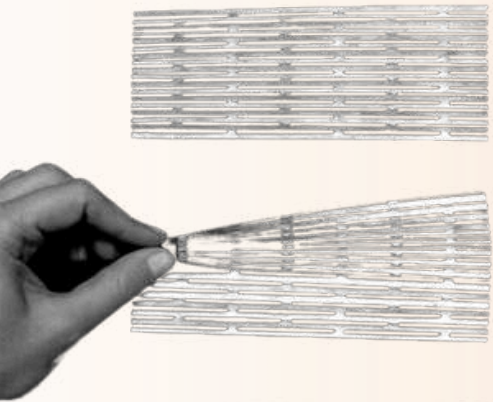


Figure 2.20 Experiential / Human-Centered Design
Source : pinterest

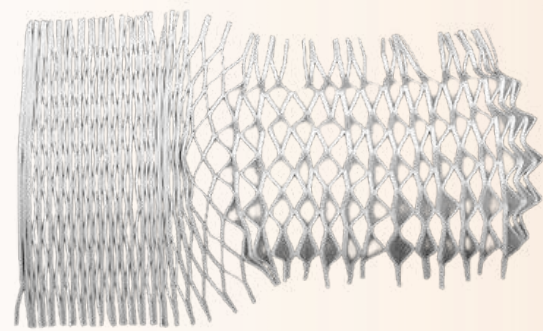
Focus: How people move through, feel, and interact with the space.

How in my project: Pathways from lobby to exhibition to crafts should feel like a journey. – Areas for pause and interaction (like the café or outdoor courtyard) enrich the experience. – Visitors can **see and hear crafts being made**, reinforcing cultural education.

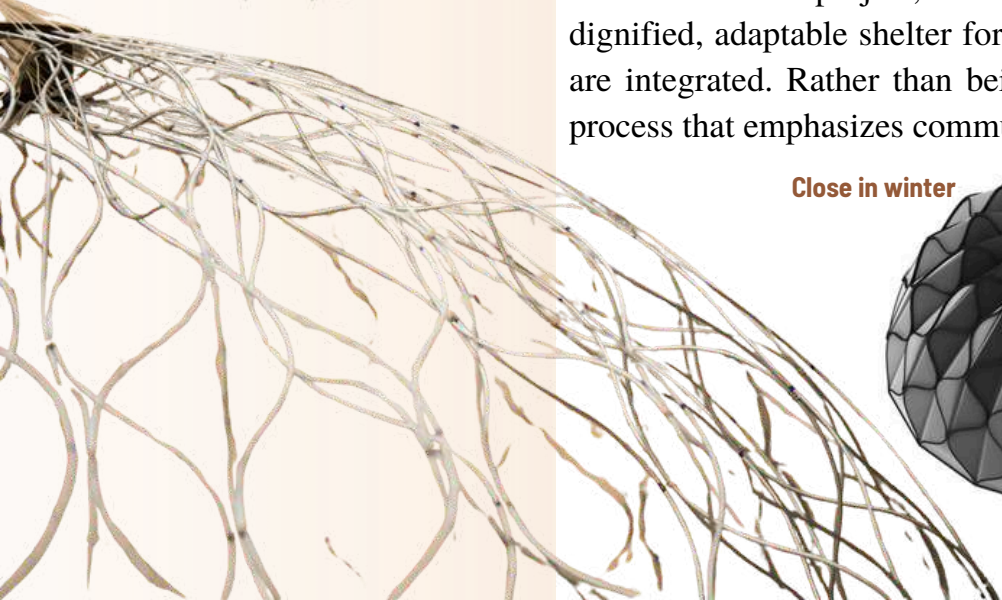
01



02



03



'Weaving a Home' project (1st project)

abeer seikaly - Palestinian designer

Abeer Seikaly reimagines shelter through the lens of her cultural identity. The Jordanian-Palestinian architect and artist sits down with Urth Magazine to discuss the importance of questioning the status quo and how architecture can exist as a social technology in the face of refugee crises and climate-related displacement.

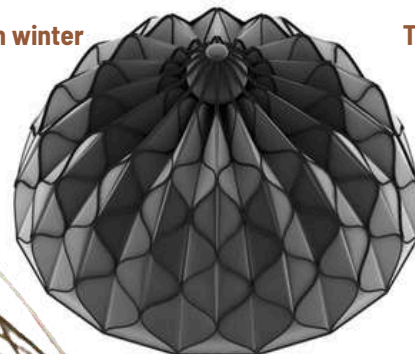


Figure 2.21 Precedent Weaving a Home by abeer seikaly

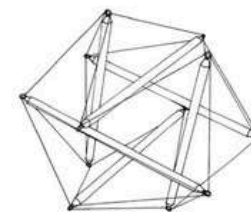
Source : Archdaily

Her best-known project, "Weaving a Home," was inspired by Bedouin tents and aims to provide dignified, adaptable shelter for displaced people using an innovative structure where fabric and frame are integrated. Rather than being a product for mass production, the project is a social and cultural process that emphasizes community collaboration and cultural relevance.

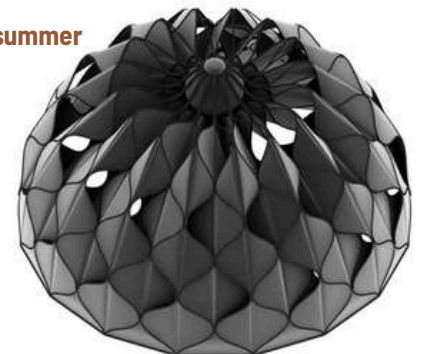
Close in winter



Tensegrity



Opens in summer





Wet State



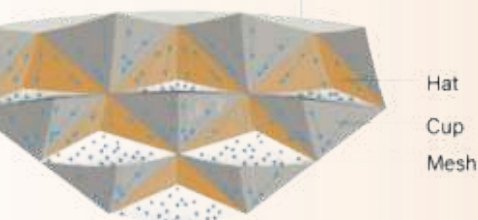
Humid State



Dry State



Route of Water Transport through pinecone scales



Hat Cup Mesh

Chrysalis, 2015 – ongoing (2d project)

abeer seikaly - Palestinian designer



Figure 2.21 Precedent Weaving a Home by abeer seikaly
Source : abeer seikaly Main website

sing familiar or new materials in alternative ways can reflect a deeper sensitivity to both culture and the environment. The author focuses on a weaving workshop in Assam, where they collaborated with the local community and NEDfi to experiment with Water Hyacinth as a sustainable building material. This plant, while commonly used in local crafts and known for purifying water, was reimagined for architectural use.

Pavilion, Venice, Italy

BAMBOO STALACTITE / VTN ARCHITECTS



Figure 2.22 Precedent Weaving a Home by abeer seikaly
Source : vtnarchitects.net

The Bamboo Stalactite by VTN Architects is a remarkable pavilion constructed entirely from bamboo, showcased at the 2018 Venice Architecture Biennale. This structure exemplifies sustainable design and traditional craftsmanship.⁴⁰

Construction Overview

- **Modular Design:** The pavilion comprises 11 modules, each formed by connecting two hyperbolic shell structures.
- **Prefabrication:** Bamboo beams were prefabricated in Vietnam and assembled on-site in Venice within 25 days by a team of 8 Vietnamese craftsmen, supported by architects and students.
- **Structural Flexibility:** Bamboo's inherent flexibility allowed for the creation of a lightweight yet sturdy structure, adaptable to various environments.

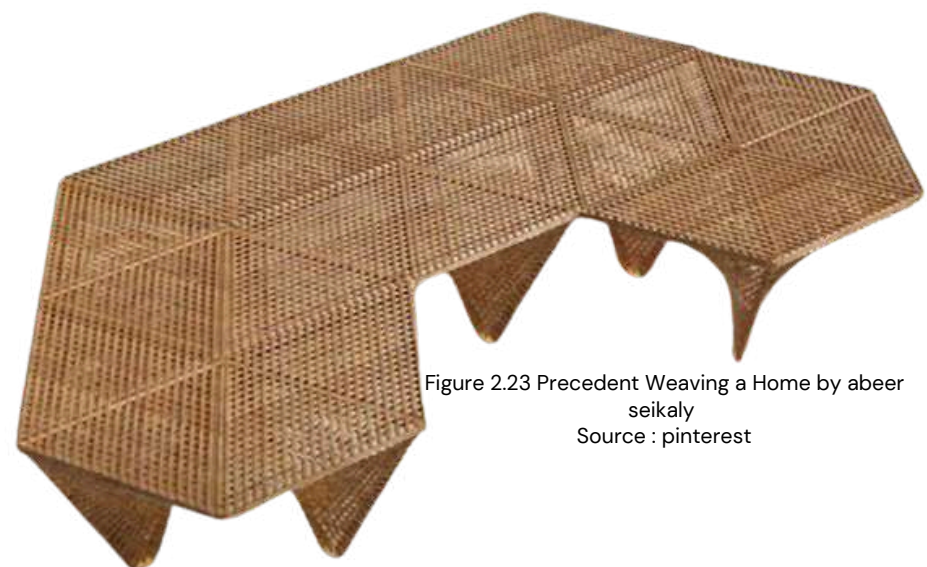


Figure 2.23 Precedent Weaving a Home by abeer seikaly
Source : pinterest



03. SITE CONTEXT STUDY

- SITE LOCATION
- MACRO ANALYSIS
- SITE AREA
- SURROUNDINGS
- MICRO ANALYSIS SITE CONDITION

Craftsmanship in Gamplong
BASED ON TIME LINE

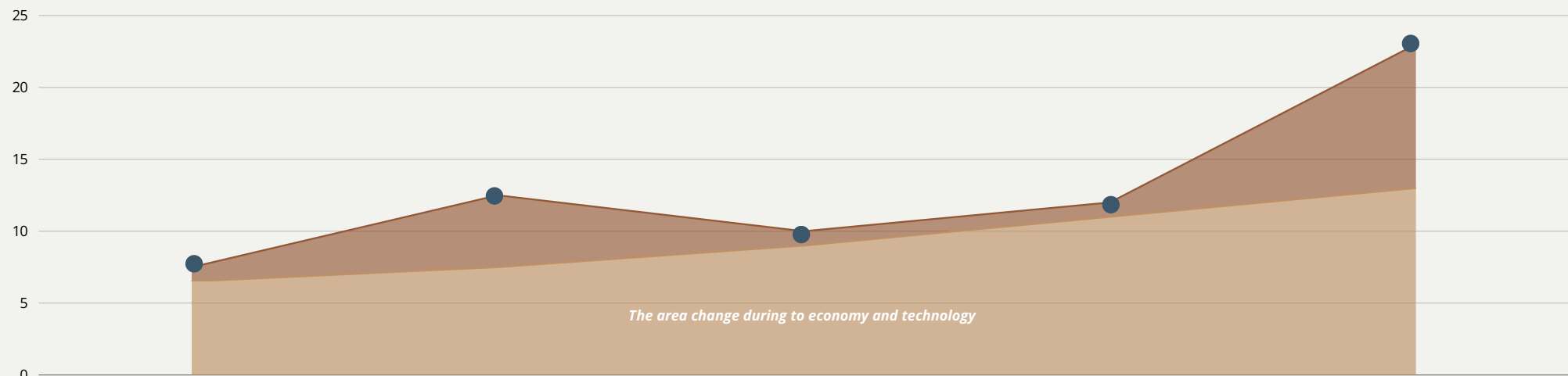
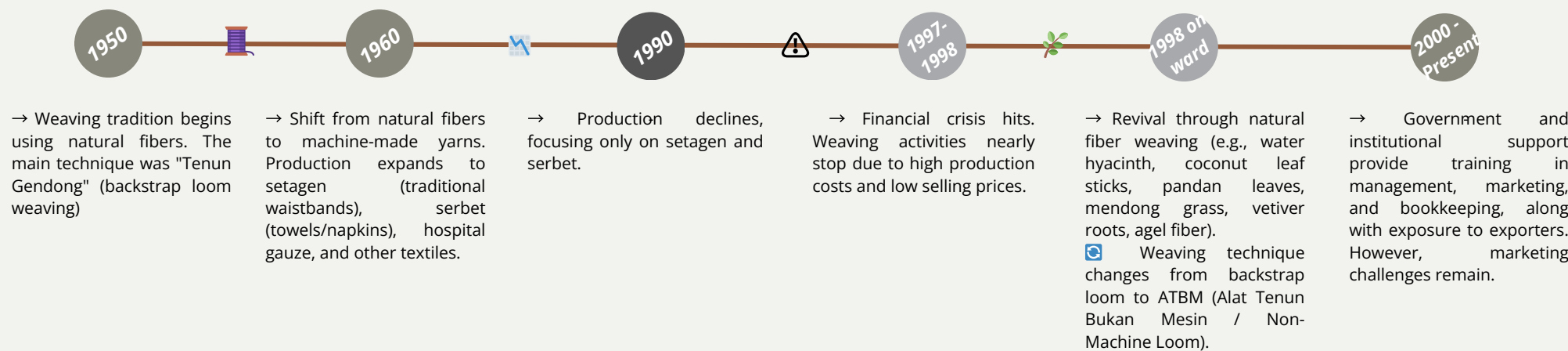


Figure 3.1 Craftsmanship in Gamplong time line
Source : Made by author



Current Issues:
Lack of young people interested in weaving.
Need for digital marketing strategies to modernize sales while preserving traditions.

What They Wish to Have

OBSTACLES THEY FACE



Figure 3.2 Gamplong location
Source : Made by author

From association chief

1. Limited youth participation – Weaving is seen as an outdated skill, and younger generations are not interested.
2. Land ownership & restrictions – The land belongs to the provincial government (Hak Pakai), limiting construction options.
3. Economic struggles – Weaving alone does not provide a stable income, so many artisans balance weaving with farming.
4. Lack of direct financial support – No specific incentives or funding for craft businesses, making it hard to scale production.





Suggested Location by association chief

LOCATION



Figure 3.3 chosen location for the design
Source : Taken by author

📍 Disana sdh ada pendopo 1
in Sumber Rahayu Village, Moyudan District, Sleman Regency, Yogyakarta

REASON

Status tanah kas desa; Dan disana sdh ada 1 pendopo , rencana ada pengembangan bangunan yang lain , seperti toilet , galery , mosium tenun , dapur , mushola dan lain lain

Village land status; And there is already 1 pendopo, there are plans to develop other buildings, such as toilets, galleries, weaving museums, kitchens, prayer rooms and others.

Suggested Location by association chief

LOCATION



Disana sdh ada pendopo 1
in Sumber Rahayu Village, Moyudan District, Sleman Regency, Yogyakarta



This location is ideal not only because it was suggested by both shop owners and the association chief, but also because it sits at the heart of existing craft ecosystems—close to many craft shops, Gamplong Studio Alam, and local agricultural lands. This strategic placement ensures:

Stronger Local Economy – The center complements nearby craft shops, boosting visibility and sales for artisans.

Integrated Tourism Flow – Visitors to Gamplong Studio Alam can naturally extend their experience to this cultural hub.

Sustainability & Material Sourcing – Proximity to agricultural lands allows for sustainable material use, reinforcing local craftsmanship.

Figure 3.3 chosen location for the design
Source : Google earth

Suggested Location by association chief
ARCHITECTUREE NEARBY



 Disana sdh ada pendopo 1
in Sumber Rahayu Village, Moyudan District, Sleman Regency, Yogyakarta



The architecture in the surrounding area blends traditional Javanese influences with modern, rustic elements, creating a distinct character. Exposed brick walls are a defining feature, commonly seen in both residential and commercial buildings, adding a sense of warmth, authenticity, and durability. Many structures incorporate limasan and joglo-style roofs, reflecting Javanese heritage, while others adopt a more industrial-rustic aesthetic, maintaining a balance between tradition and contemporary design.

Figure 3.4 Architecturee nearby
Source : Taken By Author

Analysis of selected site

ANALYSIS OF SELECTED SITE

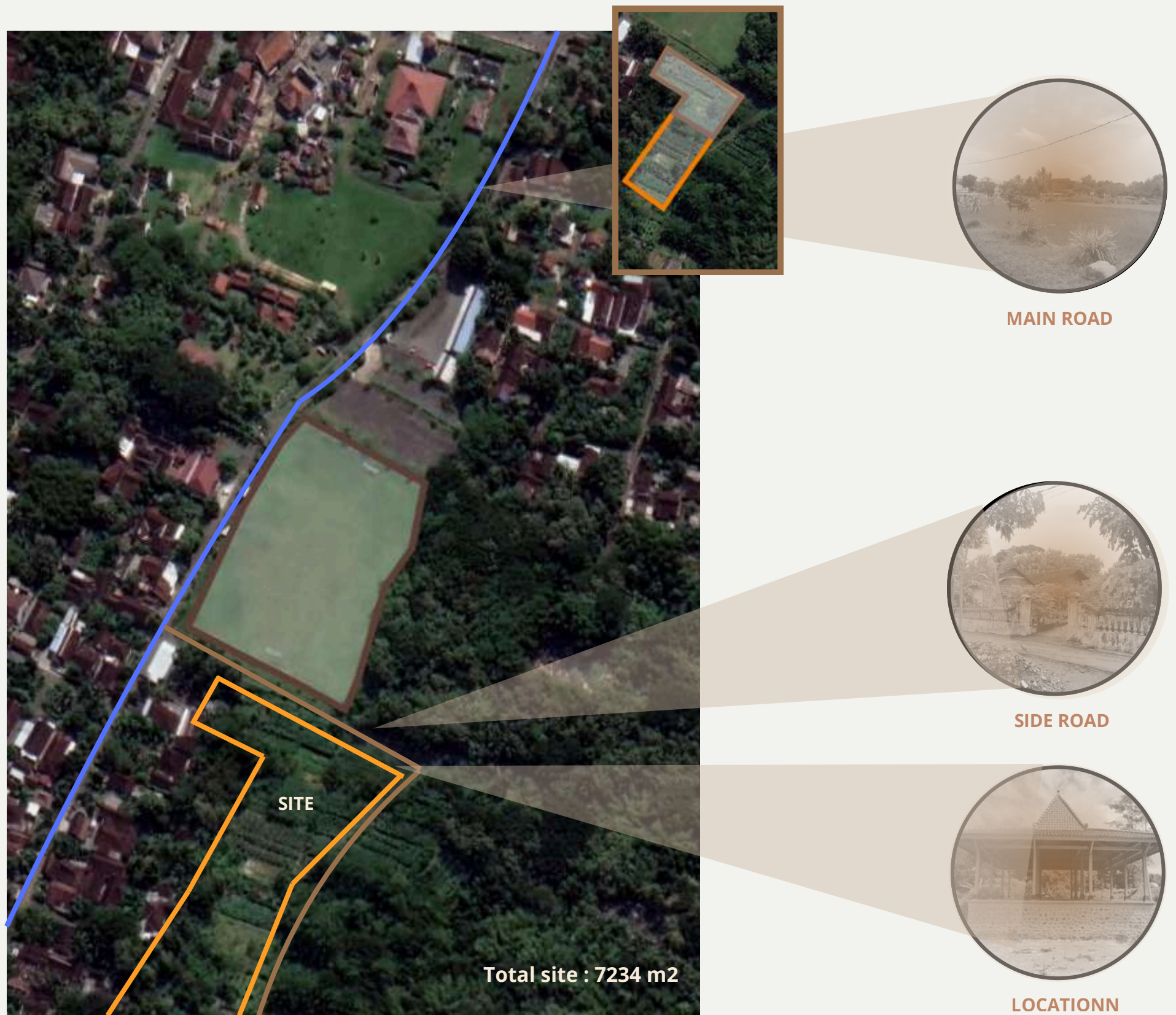


Figure 3.5 Analysis of selected site
Source : Modified By Author

TOPOGRAPHY AND CONTOURS



This figure presents an analysis aimed at understanding the site and its surrounding context. The topography is the first layer of study, with elevation levels ranging from 60 meters (minimum) to 80 meters (maximum), suggesting a gentle slope that may influence drainage, views, and building placement. Key existing elements are color-coded for clarity: **the Gamplong studio** and the fake train station are marked in blue, indicating important cultural and experiential features of the area. **The sport field**, shown in green, represents a vital public space that supports community activities. **The proposed project location** is highlighted in black and white, drawing attention to its central placement within this network. Surrounding **roads** are also mapped to show access points and circulation patterns. Finally, nearby **craft shops** are included to emphasize the area's creative economy and its relevance to the project's program.

- 1) Gamplong studio train station
- 2) Sport field
- 3) Location
- 4) Craft shops
- 5) Roads
- 6) Forest
- 7) Settlements

Legend

Figure 3.6 situation plan, Topographic and contours map
Source : Modified By Author

*Analysis of selected site***TOPOGRAPHY AND CONTOURS****1 Gamplong studio train station**

A small tourist train station near Gamplong Nature Studio, mostly active on weekends, supporting local attraction access rather than daily commuting.

3 Location

Gamplong 3, a rural area in Sleman Regency, blending rice agriculture with home-based weaving, located on the fringe between urban Yogyakarta and countryside.

5 Roads

Narrow village roads used by motorbikes and carts, connecting fields, homes, and craft shops; limited traffic flow and occasional access issues in rainy seasons.

7 Settelements

Clustered family homes, often with adjacent weaving spaces or small yards for drying crops; community-based and modest in scale.

2 Sport field

An open, multi-use community field used occasionally for local games, ceremonies, or school activities, typically quiet on weekdays.

4 Craft shops

Small, home-based or roadside shops showcasing and selling woven products, mostly traditional in design and operated by older generations.

6 Forest

Scattered tree zones and bamboo groves that border agricultural plots; not dense forests, but ecologically important for shade and local biodiversity.

SURROUNDINGS AND SITE POTENTIAL



Figure 3.7 SURROUNDINGS AND SITE POTENTIAL
Source : Modified By Author



Crafting shops



Studio Gampolong



Sport field



settlements



Forest

Analysis of selected area

EXISTING SITE MORPHOLOGY: WEAVING POTENTIAL

The location has many workshops that we can see them here and understand that the main income source of the people here is **weaving industry**.



LEGEND

1. Lovely craft
2. Zulia Craft
3. Yani Oglek Craft
4. Tenun Oglek
5. B.craftjogja
6. Ragil Jayacraft
7. Sriti production

Figure 3.8 Existing Site Morphology
Source : Modified By Author

EXISTING SITE MORPHOLOGY: AGRICULTURE POTENTIAL

The location has many agriculture lands that we can see them here and understand that one of the main income source of the people here is **agriculture**

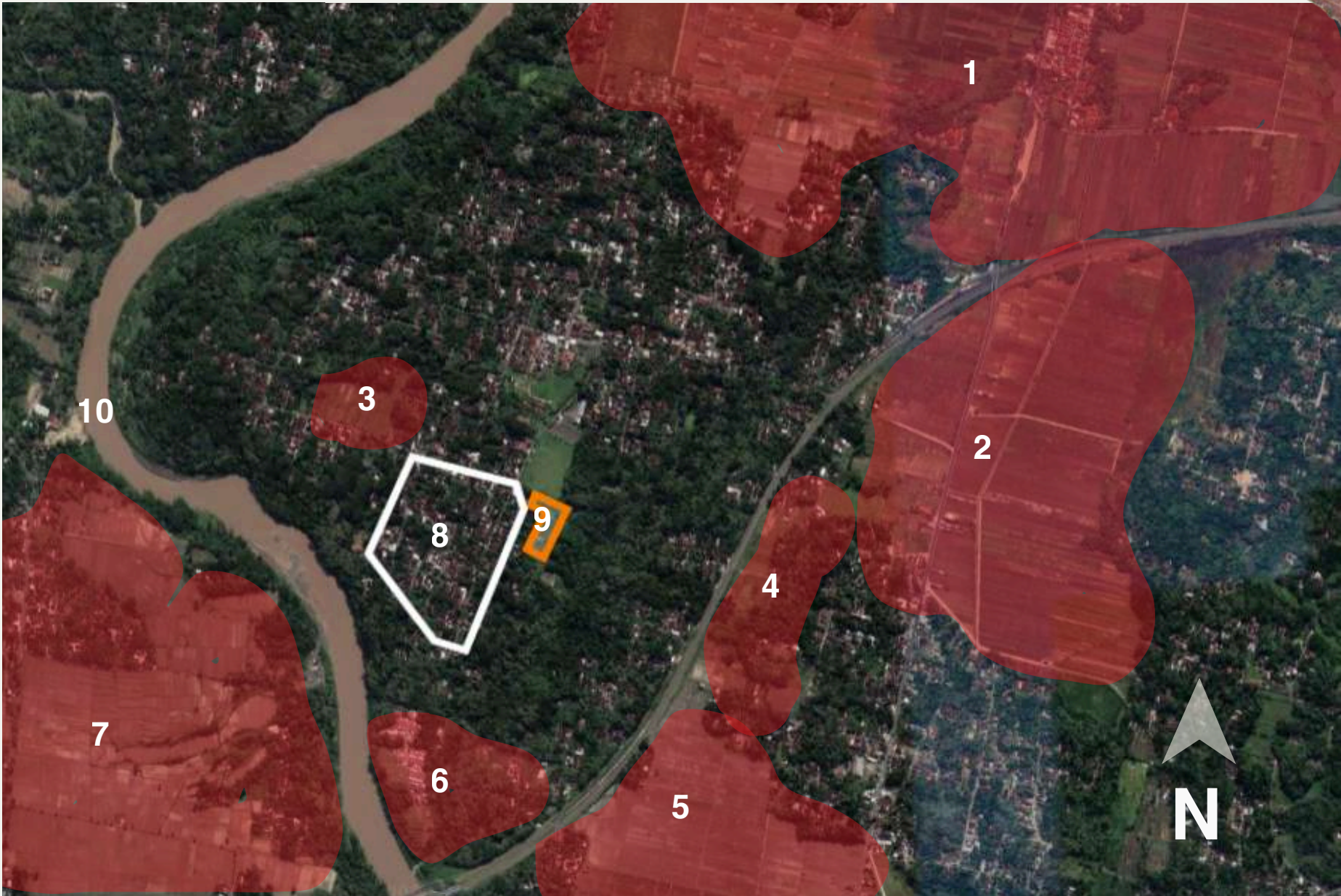


Figure 3.9 Existing Site Morphology
Source : Modified By Author

LEGEND

- 1. Gamplong 1: Rice Cultivation, Natural Fiber Crops and Coconut Palms
- 2. Sumberrahayu Village : Paddy Fields, Mixed Farming and Horticulture
- 3. Moyudan Subdistrict: High Agricultural Potential, Rice Dominance
- 4. Sumberrahayu Village
- 5. Sumberrahayu Village
- 6. Moyudan Subdistrict: High Agricultural Potential, Rice Dominance
- 7. Banguncipto area: Rice Cultivation, Dryland Farming and Shallot Farming
- 8/9 . location and centralazation of crafting shops
- 10. Progo river

Analysis of selected area

EXISTING SITE MORPHOLOGY

The location has many landmarks that we can see them here but still tourism isn't a main income source of the people here. the area landmarks are according to the owner of Ragil Jaya Craft :”Landmarks that can be visited, Gamplong Nature Studio, Progo River, Japanese heritage bridge”

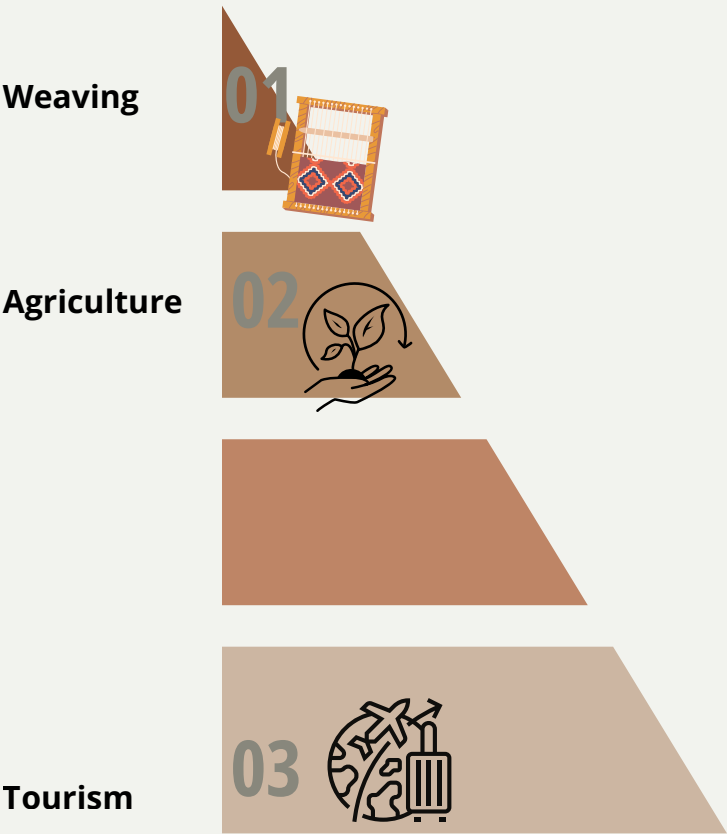


Figure 3.10 Existing Site Morphology
Source : Modified By Author

LEGEND

- 1. Japanese heritage bridge
- 2. Progo River
- 3. Gamplong Nature Studio

ANNALYSIS OF THE DOMINANTE AREA INDUSTRY



Main Sources of Livelihood in the Region :

Based on regional observations and maps, the primary sources of income in the Gamplong and surrounding areas—such as Sumberrahayu, Moyudan, and parts of Kulon Progo are agriculture and traditional crafts, especially weaving. Extensive agricultural fields are cultivated year-round, while many residents are also involved in home-based or small-scale weaving, reflecting a dual economy rooted in land and craftsmanship. Tourism, while present, remains secondary; it is mostly concentrated in the Gamplong Studio Alam area and sees peak activity only on weekends. Therefore, local livelihoods are sustained largely by farming and craft production, not daily tourist flows.

BUT HOW CAN

HEY BALANCE BETWEEN

ARGRICULTURE AND WEAIVING

Agriculture and weaving industry in the area

ANALYSIS OF THE DOMINANTE AREA INDUSTRY

HOW IT



Cultural and Agricultural Duality in Gamplong

In Gamplong, the livelihoods of many residents revolve around both rice farming and traditional weaving. These two practices are deeply embedded in daily life, with individuals often transitioning between them based on the seasonal agricultural calendar. Rice planting and harvesting occur at different times depending on the field's location, prompting a rhythm of life that adjusts naturally to the land's needs.

WORKS



Seasonal Balance and Adaptation

To sustain both roles, community members prioritize farming during active planting or harvesting periods, then shift to weaving during the agricultural off-season. This pattern allows them to fully participate in both economic and cultural activities without overlap or conflict. It reflects a flexible, adaptive lifestyle where timing, tradition, and livelihood are harmoniously balanced.

THE ANSWER:

DEPENDS ON THE NEEDS/ SEASON/ LOCATION OF RICEFIELD

SITE REGULATIONS ANALYSIS

CONCEPT AND OBJECTIVES

A multi-functional weaving and cultural center that enhances tourism, education, and community engagement while preserving local craftsmanship.

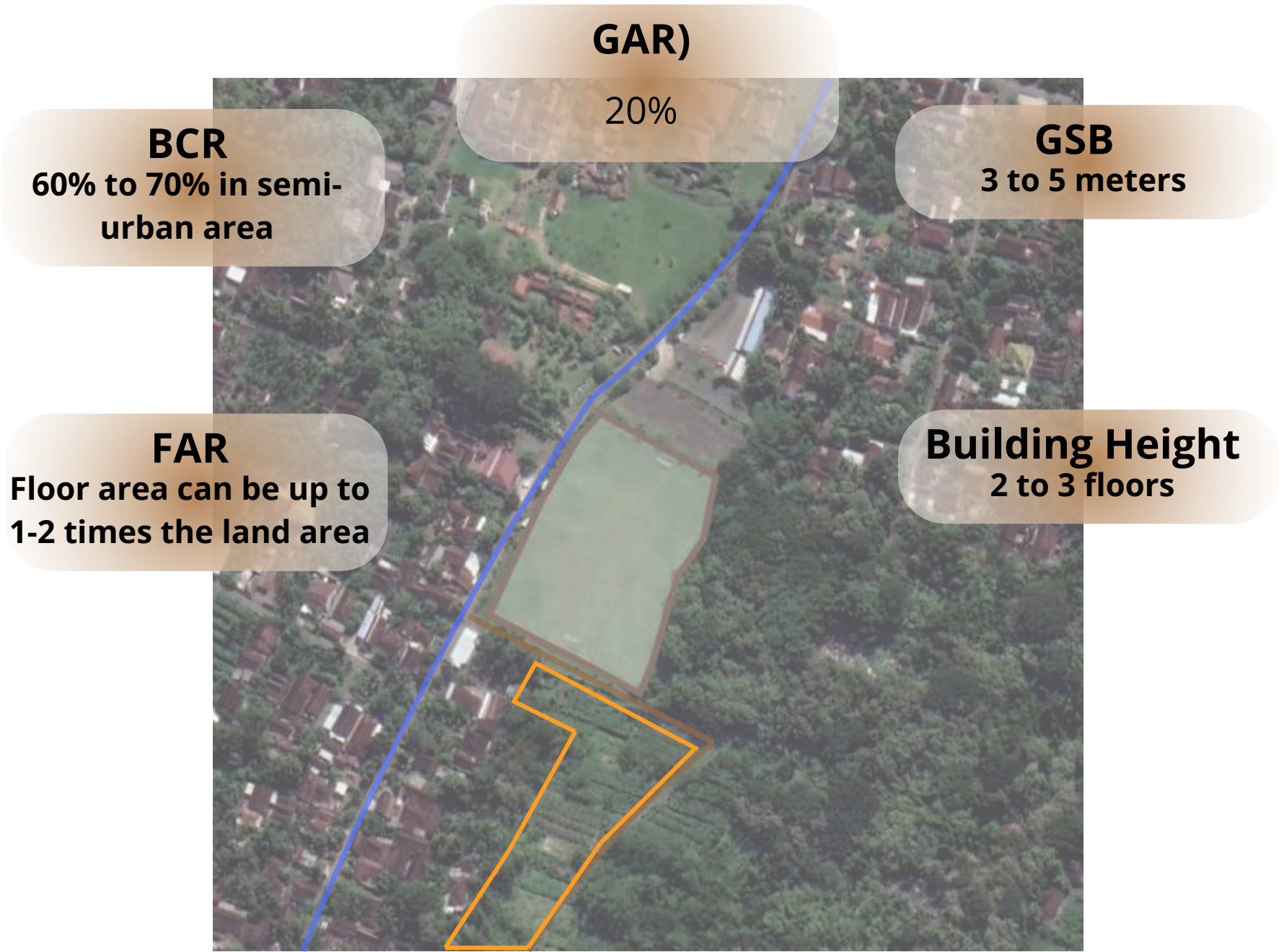


Figure 3.11 situation plan, Topographic and contours map
Source : Modified By Author

Analysis of selected site

SITE ENVIRONMENTAL ANALYSIS

CLIMATE AND HUMIDITY :

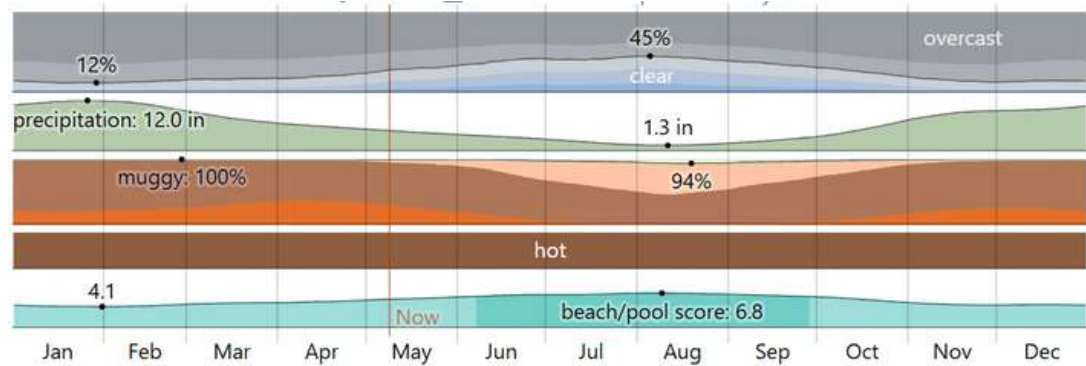
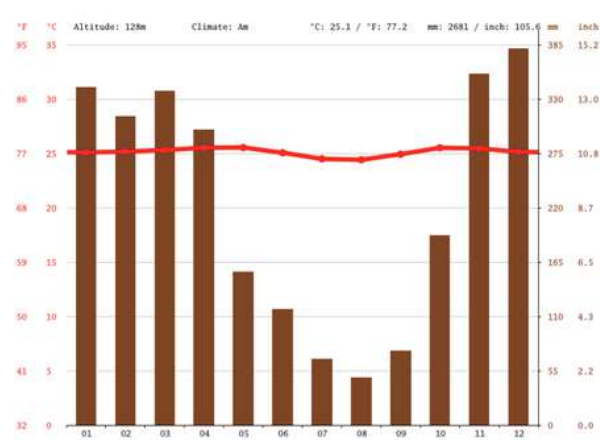


Figure 3.12 Humidity and climate situation in Yogyakarta
Source : (Weather spark)

Gamplong I, Yogyakarta, has a tropical monsoon climate with an average temperature of 25.1°C and high humidity year-round (85–89%). Rainfall is heavy from November to March and lowest

from June to August. The site receives ample sunlight and consistent winds, mainly from the east and south. These conditions suggest using natural ventilation, shaded openings, and moisture-resistant materials in design.

SUN PATH AND WIND PATTERNS :

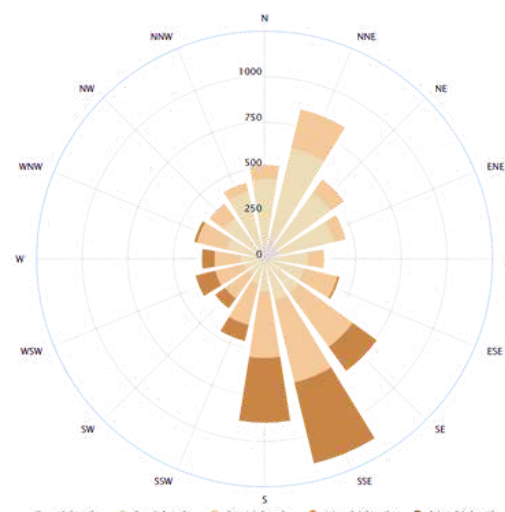
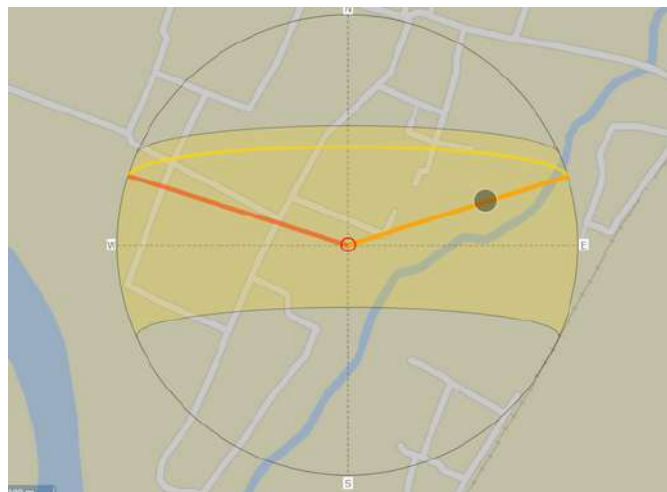


Figure 3.13 Sun path and wind rose
Source : By the author, by Meteoblue)

Gamplong experiences consistent daylight year-round, from about 11 hours 40 minutes in June to 12 hours 35 minutes in December, with a high sun path due to its equatorial location.

supports passive solar design using shading and daylighting. Prevailing winds come from the east and southeast, especially in the dry season, with moderate speeds of 1–5 m/s, making cross-ventilation strategies effective for comfort and energy efficiency.

SITE ENVIRONMENTAL ANALYSIS

VEHICLE CIRCULATION



SUN PATH



WIND DIRECTION



NOISE



Figure 3.14 SITE ENVIRONMENTAL ANALYSIS
Source : Modified By Author

"Tradition is a guide, not a jailer."

by W. Somerset Maugham





04.

Design Problem solving

- **DESIGN EXPLORATION**
- **GENERAL CONCEPT NARRATIVE**
ANALYSIS APPLICATION STRATEGY

WORKSHOP

CULTIVATION PRACTICES



PATTERNS USING ATBM TOOLS

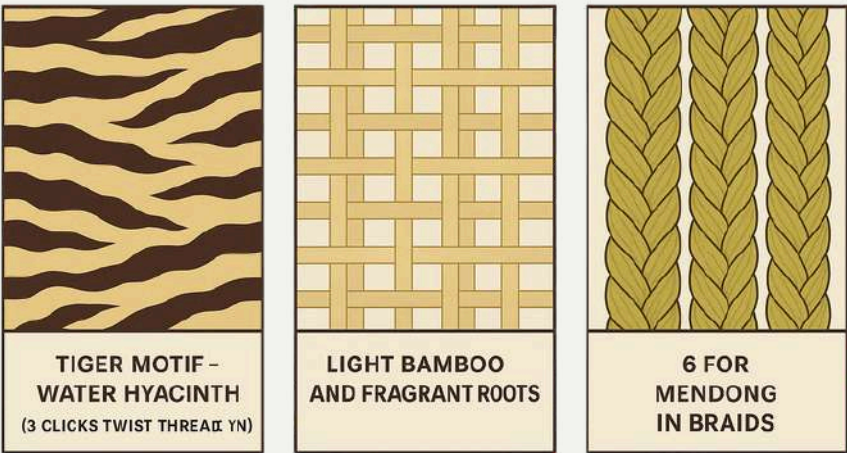


Figure 4.1 Patterns using atbm tools
Source : Chatgpt

EXISTING SITE MORPHOLOGY: AGRICULTURE POTENTIAL



Water Hyacinth

Water hyacinth (*Eichhornia crassipes*) is commonly found in the waterways and swamps near Gamplong. The community utilizes this abundant plant in their weaving crafts, transforming it into various products like bags, mats, and home accessories.



Coconut Fronds

Coconut palms are prevalent in the region, providing an ample supply of fronds. These fronds are traditionally used in weaving and crafting, supporting the local handicraft industry.



Fragrant Roots

Fragrant roots, such as vetiver, are also available in the area and are used in traditional crafts. These roots add aromatic qualities to the products and are integral to the local weaving practices. The proximity of these natural materials supports the sustainability and cultural heritage of Gamplong's weaving traditions.

Future Sustainability of the Area

Sustainability in material sourcing can be supported by nearby regions: water hyacinth from the swamps of Ambarawa, coconut fronds from Pangandaran, and fragrant roots from Wonosari, Gunung Kidul. With Ambarawa’s vast swamp areas, the continuous growth of hyacinth offers a renewable resource, ensuring future material availability without harming the ecosystem.

WORKSHOP

PREPARING THE MATERIALS

agelleaf

He bought it from leaves that were still green, then he cut them into small pieces, and connected them, then put them on

Plants that can be built in the area
water hyacinth - fragrant roots

Planting to WEAVING

THE ROLLS READY FOR WEAVING

split by hand, joined by hand without machines.
After it is finished weaving on the roll, it is then connected to the newly woven one.
After being connected, the finished roll is cut by rolling it up.

PATTERNS USING ATBM TOOLS

There are several patterns, including tiger motif water hyacinth (3 clicks twist thread: yarn), 1 with light bamboo and fragrant roots because it's thin, 6 for mendong in braids

Figure 4.2 Workshops weaving process
Source : Made by Author

HOW WE MADE THE TIGER MOTIF

N °	Image	Process explanation
Collecting the materials		For the tiger motif; it uses the water hyacinth material and yarns after collecting them and separationg it by hands.
The atbm compon-enents		The atbm or Alat Tenun Bukan Mesin: -The shuttle with weft: for making space for the natural materials espically when it’s as fragile as light bamboo and fragrant roots. -The chair: with this hight its comforting for workers that spend the whole day with this position repeating the same process over and over so they need comfort -The treadies: are used to lift and lower specific warp threads by controlling the movement of the heddles. By pressing different treadles with the feet, the weaver can create various shed openings, allowing the shuttle to pass the weft thread through and form different weaving patterns.
Weaving Showroo ms		Putting the materials nearby, installing on the atbm machine; by the worker and putting the yarn on the atbm machine; next the preparation of the yarn before using it in this machine.

Table 4.1 HOW WE MADE THE TIGER MOTIF workshop
Source : Made By Author

Weaving Process

HOW WE MADE THE TIGER MOTIF

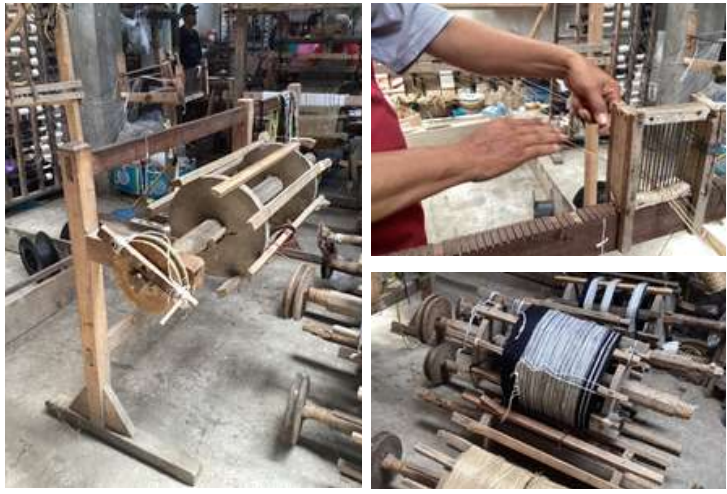
N °	Image	Process explanation
Select, Clean and Cut the leaves into small strips		The process begins by choosing agel leaves that are still green and flexible. These are easier to work with and less brittle than dried ones. Any dust, dirt, or rough surface is gently wiped or washed off to ensure smoothness and cleanliness before processing. Using a sharp blade or scissors, the green agel leaves are sliced into thin, even pieces—usually long, narrow strips suitable for weaving or coiling. Depending on the weaving method, the strips may be left to soften for a few hours or partially dried to reach the ideal flexibility.
Connect the strips		The ends of the agel strips are overlapped slightly and joined together. This can be done by: • Twisting them into each other • Using a small dab of natural adhesive or pressing while damp • This forms longer, continuous threads or ribbons.
Wrap the connected agel on a spool or holding stick then ready for threading into the machine		The connected, extended strip is wound onto a spool or stick to keep it neat, accessible, and ready for use during the crafting process. Once the agel material is prepared and coiled, it's ready to be integrated into the main crafting process (such as weaving into a motif or combining with yarn).

Table 4.1 HOW WE MADE THE TIGER MOTIF workshop
Source : Made By Author

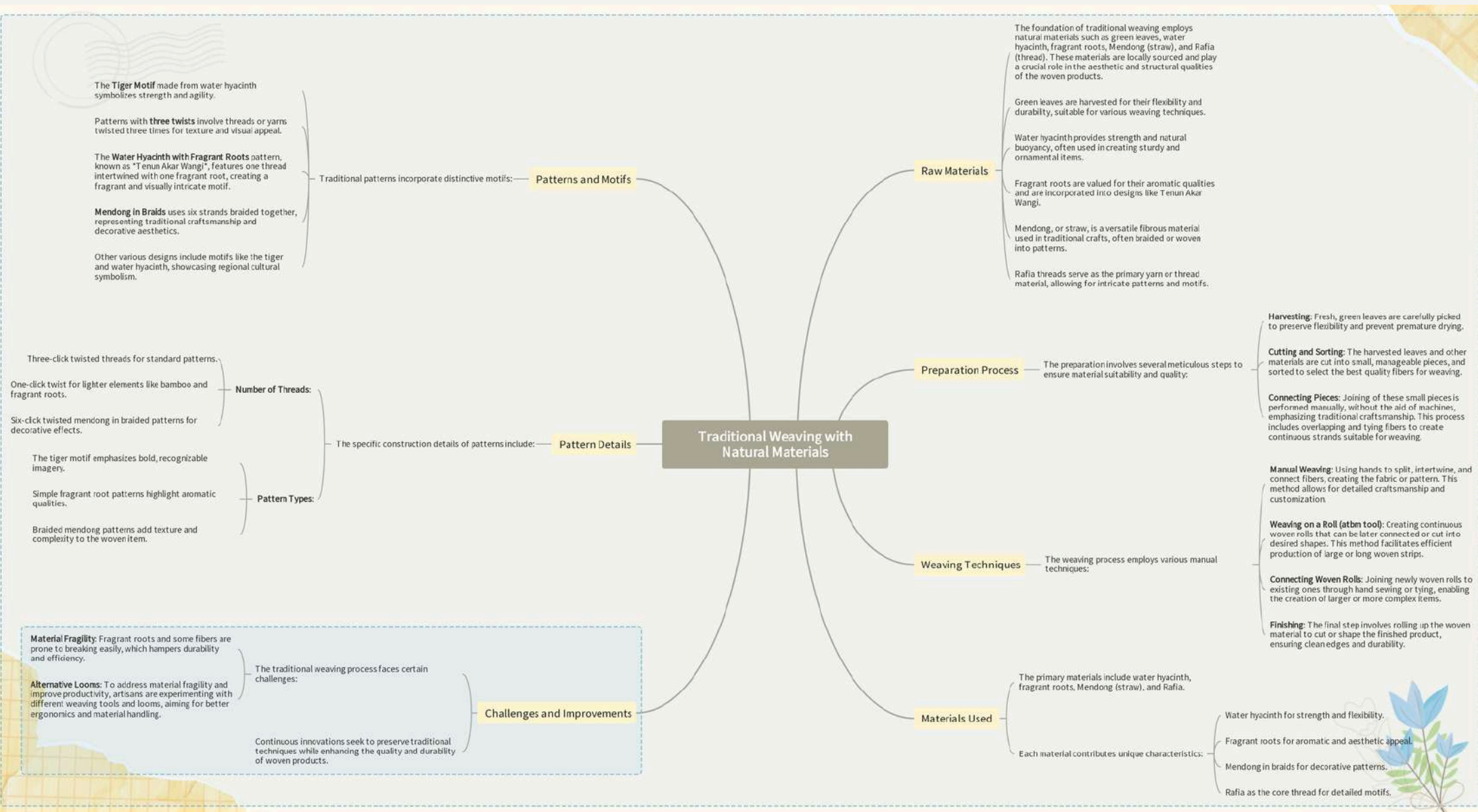
HOW WE MADE THE TIGER MOTIF

N °	Image	Process explanation
ATBM machine		The process begins by placing the yarn into the machine, then positioning the water hyacinth slides. Two slides are inserted at the edges and one in the center. The yarn is twisted around them using three clicks of the mechanism to secure the structure. Excess material from the sides is trimmed, then the process is repeated—adding slides, twisting, and cutting—until the tiger motif is fully formed.
Quality Control and Finishing		To ensure each piece is well made, the artisans carefully monitor the tension of the yarn and alignment of the slides throughout the process. Once approximately five meters are completed, the section is cut and set aside. Each piece is then inspected closely, and any imperfections—such as loose fibers or uneven edges—are trimmed and corrected by hand before moving to storage.
Storage and Reuse		After completion and quality checking, the finished tiger motifs are stored flat in a dry area to maintain their shape and integrity. These pieces are later bought or used by local women artisans to craft traditional home decorations or functional kitchen tools like trays, placemats, and baskets, preserving both craftsmanship and cultural value.

Table 4.1 HOW WE MADE THE TIGER MOTIF workshop
Source : Made By Author

WORKSHOP

WEAVING PROCESS



HOW WE MADE THE TIGER MOTIF

Documentation And phazes narration (Machine making)

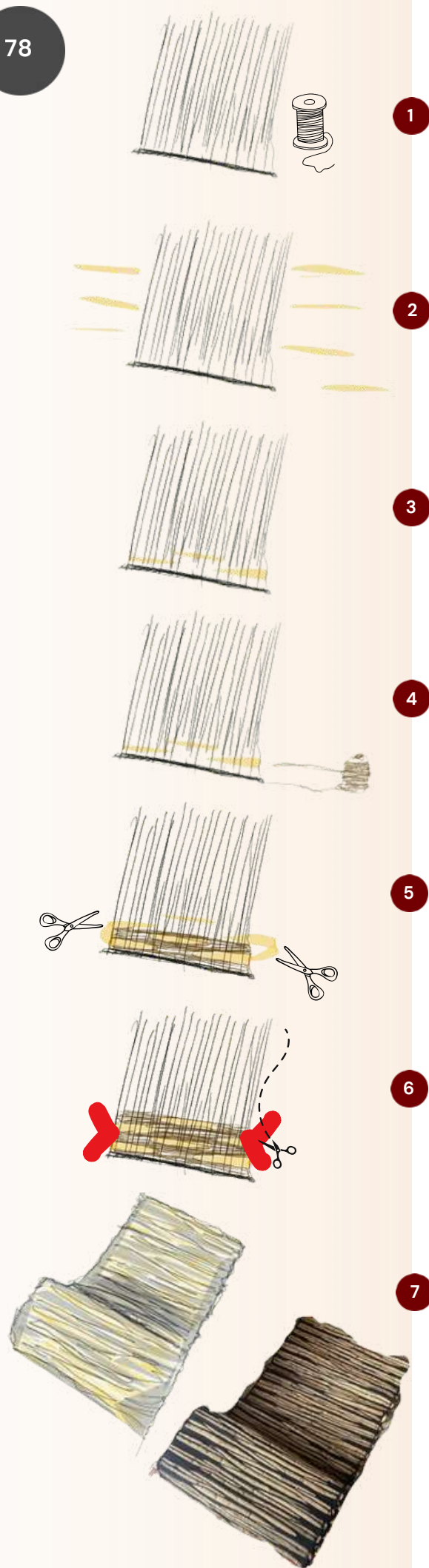
Self Documentation And Hand Made Motif



Figure 4.3 Self Documentation for workshop
Source : Taking by Author

The documentation photos included in this report were taken by the author during her participation in the workshop and illustrate each stage of the process. The steps have also been redrawn to clarify the sequence:

1. Place the yarn into the machine: This prepares the thread for weaving and ensures it is properly aligned.
2. Position the water hyacinth slides nearby: These natural fibers will be integrated into the weaving process.
3. Insert two slides at the extremities and one in the middle: This forms the structural base of the pattern.
4. Twist the yarn around the slides with three clicks of the machine: This secures the slides and begins forming the motif.
5. Cut off the excess material from the sides of the water hyacinth slides: This step cleans the edges for the next section.
6. Add the next section of slides and repeat the twisting: Continue building the motif section by section.
7. Trim the extremities again after each section: Keep edges neat and controlled.
8. Repeat the entire process: Continue placing slides, twisting yarn, and trimming until the full tiger motif is completed.



HOW TO MAKE THE TIGER MOTIF

Learning the tectonic through handmaking

Self Documentation And Hand Made Motif

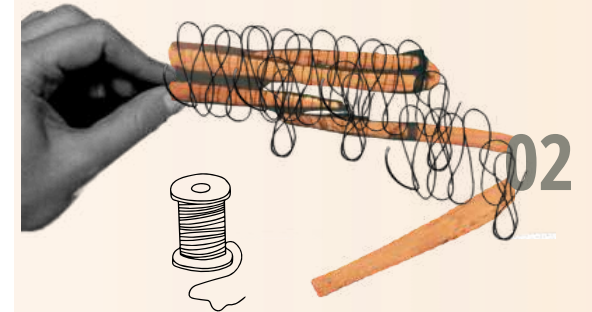


Figure 4.4 Self Documentation for workshop
Source : Taking by Author

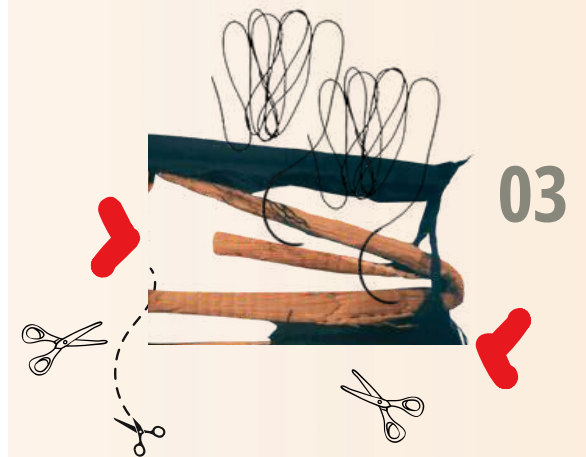
Simply to make the tiger motif with hand; we start with the water Hiacinth material that we will combine threads with it, Insert two slides at the extremities and one in the middle, Twist the yarn around the slides and make layers of the threads in between the water Hiacinth, Cut off the excess material then keep repeating the same process over and over till we finish the quantity needed and last trim the extremities and now its ready for use.



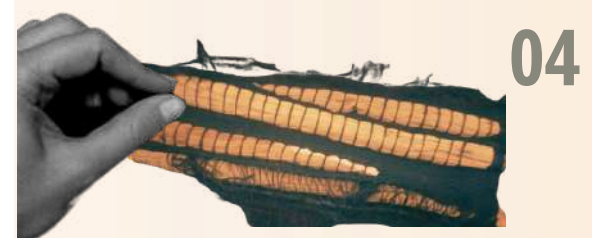
01



02



03



04



05

FROM A USELESS PLANT TO A MILLION-DOLLAR INDUSTRY

Water Hyacinth

harvesting

Drying

Flattening

preparing the plant's stems for weaving then using techniques that are rolling, twisting, or braiding



coconut fronds (leaves) are frequently used for weaving, particularly during religious and cultural celebrations. The most common weaving is ketupat, a diamond-shaped rice dumpling casing made from woven young coconut leaves. Other forms include umbul umbul janur, long woven strips used as decorations, and bleketepe, used at wedding ceremonies. The art of weaving with coconut leaves is known as Puni in some regions.

WEAVING TECHNIQUES:

Rolled Weave:

Stems are rolled around a core (like seagrass) to create a rope-like structure, which is then woven.



Figure 4.5 Rolled Weave Technique
Source : artexnaman.com

Twisted Weave:

Two or three stems are twisted together to form a strand, which is then woven into the desired shape.



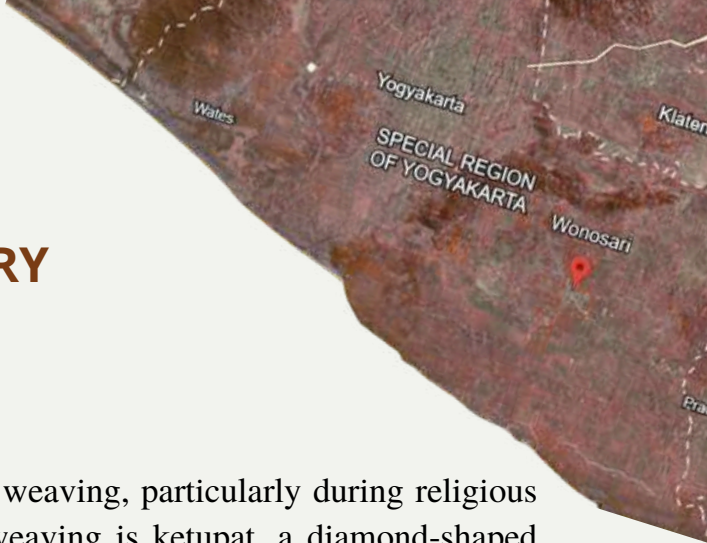
Figure 4.6 Twisted Weave Technique
Source : fehandicraft.com

Braided Weave:

Three or more stems are braided together to create a strong, rope-like structure.



Figure 4.7 Braided Weave Technique
Source : fehandicraft.com



Learning the tectonic through handmaking

FROM A USELESS PLANT TO A MILLION-DOLLAR INDUSTRY

Fresh coconut fronds

harvested from the tree

split along the midrib

create individual weaving strands

Soaking the fronds in water to make them less prone to breakage during weaving then using common techniques

Water hyacinth, an invasive aquatic plant, can be transformed into woven crafts like baskets, mats, and even textiles. The process involves harvesting, drying, and preparing the plant's stems for weaving, often utilizing techniques like rolling, twisting, or braiding. These woven items are not only aesthetically pleasing but also environmentally friendly, offering a sustainable alternative to traditional materials.

WEAVING TECHNIQUES:

Kelangsah:

A mat woven from a whole coconut leaf, where the leaflets are woven together while still attached to the stem.



Figure 4.8 Kelangsah Weave Technique
Source :phuhaogroup.com

Bleketepe:

A woven coconut leaf decoration placed at the entrance of a house, particularly during weddings.



Figure 4.9 Bleketepe Weave Technique
Source : baliexpress.jawapos.com

Ketupat :

A traditional Indonesian and Malay rice dumpling casing, often made for Eid celebrations.

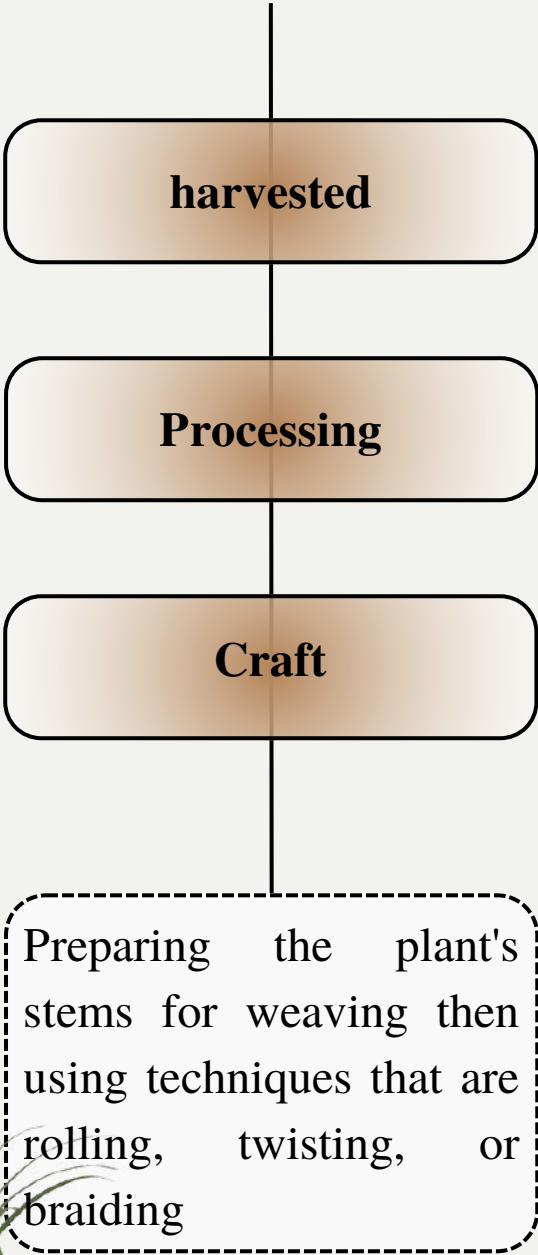


Figure 4.10 Ketupat Weave Technique
Source : hantubaca.com

FROM A USELESS PLANT TO A MILLION-DOLLAR INDUSTRY



fragrant roots



fragrant roots, particularly vetiver (akar wangi), are used in weaving, primarily in creating textiles and other crafts. Farmers in areas like the foothills of Mount Cikuray cultivate vetiver, and its roots are processed into various products. The weaving process utilizes these fragrant roots, often alongside other natural dyes and materials, to create unique and aromatic textiles.

WEAVING TECHNIQUES:

Layered Reduction Technique:

A mat woven done by start thick (e.g. 6 threads), weave fragrant roots in, then reduce threads gradually to shape and tighten the piece.



Figure 4.11 Layered Reduction Technique
Source : Taking by Author

Zigzag:

A basic weaving pattern where threads cross each other diagonally, creating a zigzag or chevron-like look.



Figure 4.12 Zigzag Weave Technique
Source : Taking by Author



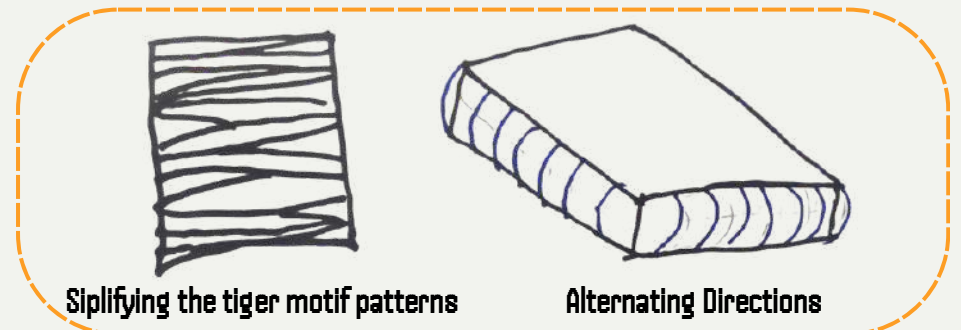
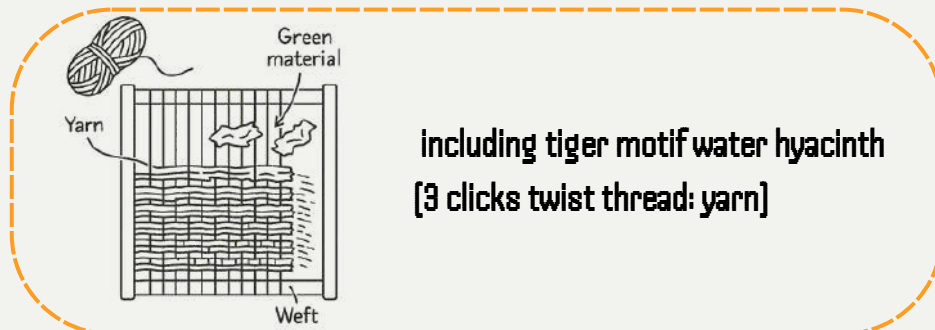
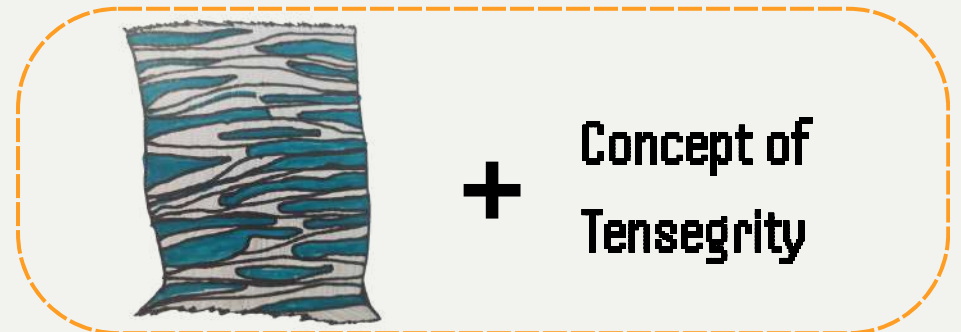
TRANSFORMATION

WEAVING PROCESS

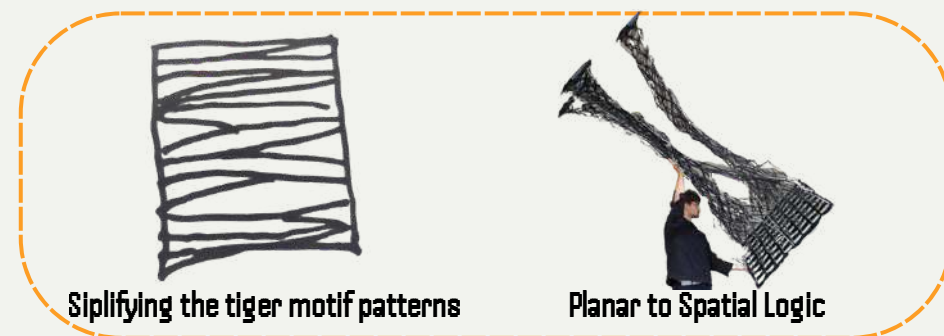
Weaving



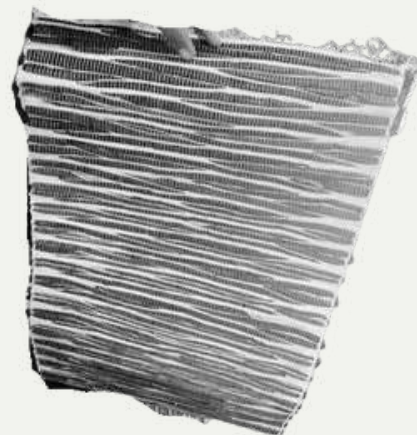
Architectural



ORR



Final weaving result



Final tectonic result

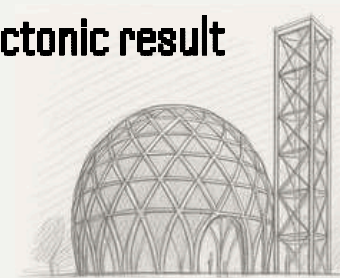


Figure 4.13 Weaving process
Source : Drawing and made by Author

TRANSFORMATION

WEAVING PROCESS

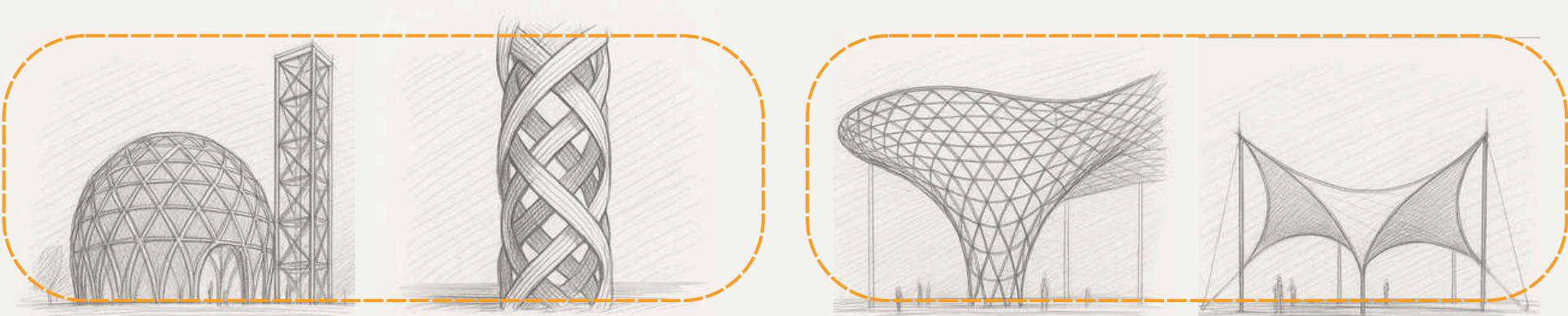


Figure 4.14 Weaving process
Source : Chatgpt

Planar to Spatial Logic:	Alternating Directions:	Interlacing Fibers:	Textile Flexibility:
Flat grids transform into 3D shapes (domes, towers), turning surface into space. • In flat form, forces are mostly tension or compression in-plane. • In 3D, the curvature stabilizes the structure — tension and compression flow across the surface and between elements. • In tensegrity, this logic fits because the cables (tension) and struts (compression) work together spatially without touching directly — they "float" in balance.	Structures twist and braid, creating strength through opposing flows (like braided columns). • In tensegrity architecture, alternating directions and braiding create strength by balancing opposing forces —tension and compression. The twisted or braided design distributes stress across the structure, making it more stable and resilient. This concept mirrors how individual components, like columns, interact in a dynamic network where each part supports the others, allowing for a lighter, more efficient structure.	Elements weave but don't touch, forming light, open, dynamic surfaces (like tensile nets). • Lightness and Openness: The weaving technique creates dynamic, open surfaces that distribute forces efficiently, allowing for lighter designs. • Tension and Compression Balance: Tensioned woven elements provide stability without rigid connections, ensuring strength and balance. • Flexibility and Strength: Tensioned fibers maintain flexibility, adapting to external forces while enhancing strength and stability.	Stretchy, knitted forms that adapt and respond (like fabric tension structures). • Textile Flexibility: The stretchy, knitted forms in tensegrity structures act like fabric tension systems, allowing the structure to flex and adapt to external forces. This flexibility supports the architecture by distributing loads efficiently, maintaining stability, and reducing the need for rigid, heavy materials. The dynamic tension and compression balance enhance the structure's resilience and lightweight properties.

Design Project

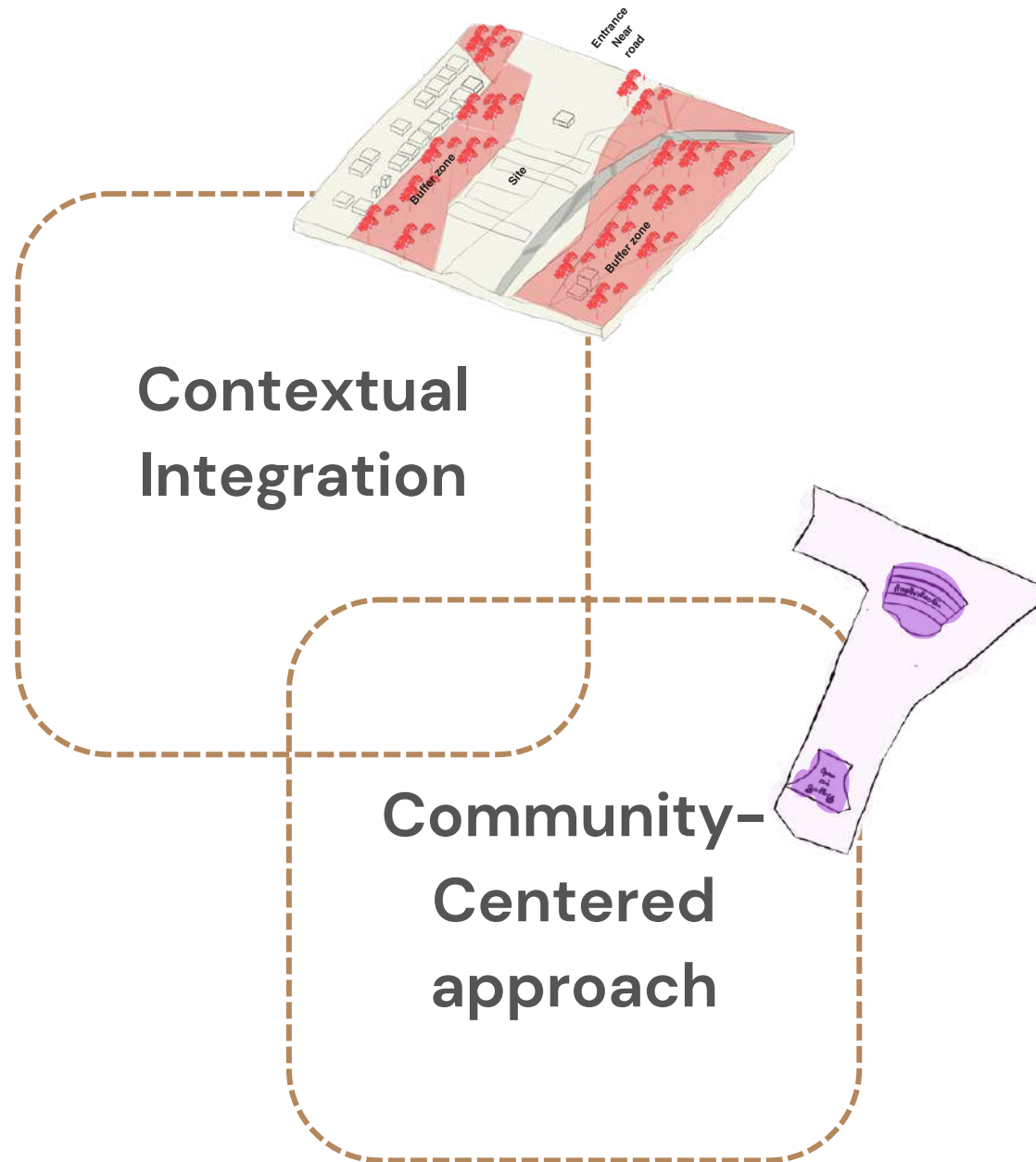
OBJECTIVE

“ Fasilitas yg bermanfaat antara lain ..showroom bersama ,untuk memajang product komonitas ketajinan ..Meningkatkan kemajuan desa wisata ,agar wisatawan bisa membeli product kerajinan “

OBJECTIVES

A multi-functional weaving and cultural center that enhances tourism, education, and community engagement while preserving local craftsmanship.

- ✓ **Preserve Traditional Craftsmanship – Provide spaces for artisans to continue and pass down weaving techniques.**
- ✓ **Boost Tourism & Sales – Create interactive experiences (e.g., live weaving, exhibitions) to attract tourists and increase purchases.**
- ✓ **Modernize Without Losing Authenticity – Introduce digital marketing spaces while maintaining a focus on handwoven techniques.**
- ✓ **Engage the Younger Generation – Incorporate trendy, collaborative spaces to make traditional weaving more appealing.**
- ✓ **Sustainable & Adaptive – Use local materials and flexible spatial arrangements for multipurpose use.**



Its role in my design ; Contextual Integration through **aligning building with site limitations and visual connections**. last is Community-Centered Design through **ensuring the center is engaging, inclusive, and lived-in** or through **public plaza and clear amphitheater taking a big space of the design**.

Design Problem solvingg

DESIGN CONCEPT

Brainstorming

The common ground between the 3 explorations is first ; Clear Zoning by Access Level since all three designs apply a hierarchy of access (public, semi-public, private areas) and also the zoning ensure clarity in user experience, security and function. Second, ensuring cultural Engagement through Experience through either (interactive programming, layers of engagements or support the narrative of craft and tradition). Last, respect for Context (Landmark and Sports Field), indoor-Outdoor Synergy and community as the core user

Design Problem solving

EXPLORATIONS

Flow Through Material Zone

Visitors walk into a rice-field transitional garden → arrive at the open Pendopo lobby → touch and smell materials in the Sensory Room → move into Hands-on Learning → finish in the Education Room, with green voids punctuating their journey.

Design Problem solving

EXPLORATIONS

CONCEPT DESIGN

Contextual Integration

Concept

Pilars

Brief

- Cultural Context (Material + Pattern)
- Site Context (Regulations + History + Community)
- Climate Context (Passive Design)

This weaving center concept celebrates culture, climate, and community. It blends local materiality and craft, aligns with site and social context, and ensures sustainability through passive design — creating a space that honors tradition while serving future generations.

Contextual Integration

The design of the Weaving Community Center in Sleman, Yogyakarta, follows a Contextual Design Approach that aligns the architectural language with local values, land characteristics, and cultural symbolism. The spatial arrangement is conceived as a sequential journey through three conceptual layers: Material – Tools – Human, mirroring the lifecycle of traditional weaving and its deep-rooted community ties. Also Inspired by zigzag weaving patterns, the building blocks are arranged to create dynamic movement across the site, blending cultural symbolism with spatial functionality.

Cultural Integration

Site Respect & Topographical Sensitivity

Pattern-Inspired Site Planning

Climate Sensitivity

Spatial Function: Material – Tools – Human

RICE-FIELD TRANSITIONAL GARDEN

Landscape as Journey:

Think of the garden as a threshold that slows people down. Use raised timber walkways like in real rice paddies, or stepping stones slightly submerged in water.

Layered Planting:

Integrate tall grasses, rice plants, and shallow water pools. Vary heights and densities to evoke movement and depth.

Sensory Features:

gentle rustling sound of rice leaves
small irrigation channels (aliran air sawah) to introduce soft water sounds
earthy scent from wet soil and plants

Precedents :

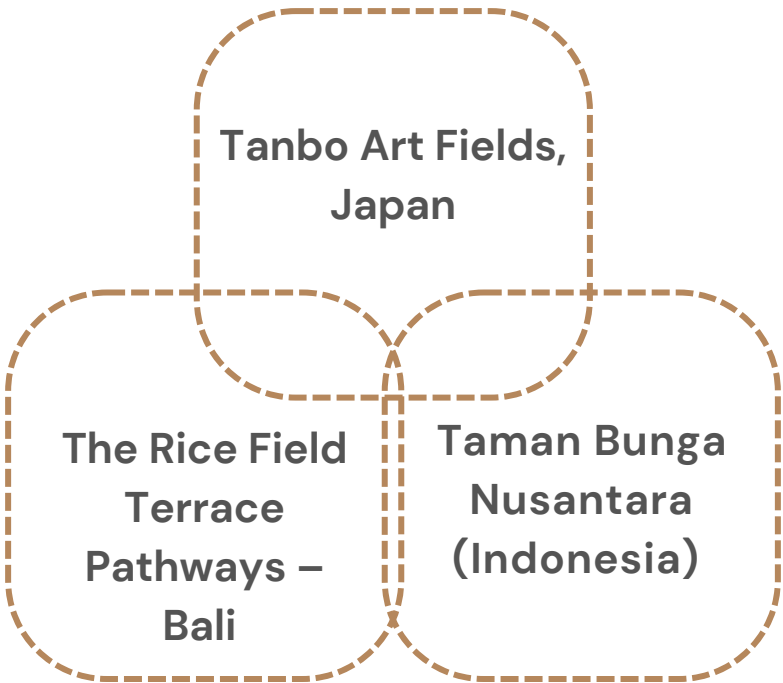


Figure 4.15 Tanbo Art Fields, Japan
Source : Archdaily



Figure 4.16 The Rice Field Terrace Pathways Bali
Source : Archdaily

- rice fields as an art canvas and immersive landscape experience
- traditional narrow walkways weaving through paddies
- thematic gardens integrating water and plants



Figure 4.17 Taman Bunga Nusantara (Indonesia)
Source : Archdaily

Response analysis

SENSORY ROOM

Multi-sensory Engagement:

1. walls clad in various raw and finished materials visitors can touch
2. aroma diffusers for scents of wood, grass, clay, oils
3. subtle soundscape (forest sounds, water trickling)

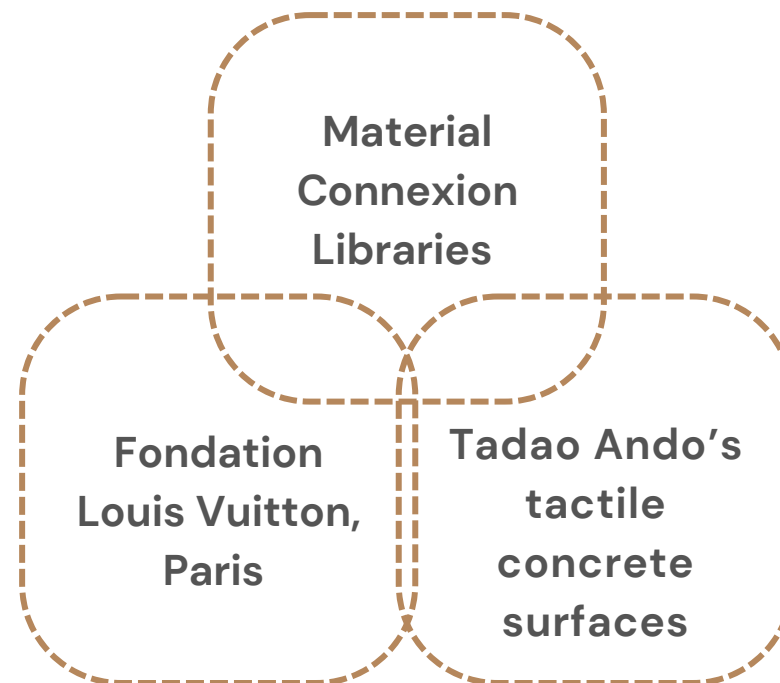
Display Techniques:

1. floating material panels hanging from the ceiling
2. illuminated boxes with textures inside
3. rotating platforms with samples people can handle

Lighting:

1. dramatic, focused lighting on textures
2. adjustable levels for mood shifts

Precedents :



- global materials libraries where samples can be touched
- walls of textures and samples
- minimalism emphasizing texture and light

HANDS-ON LEARNING ROOM

Workshop Environment:

- 1. large communal tables
- 2. flexible storage for tools and raw materials
- 3. durable, easy-to-clean surfaces

Transparency:

- 1. glass walls so visitors see ongoing activities
- 2. open connection to adjacent garden spaces

Cultural Touch:

- 1. references to craft studios in local culture
- 2. e.g. batik studios, wood carving workshops

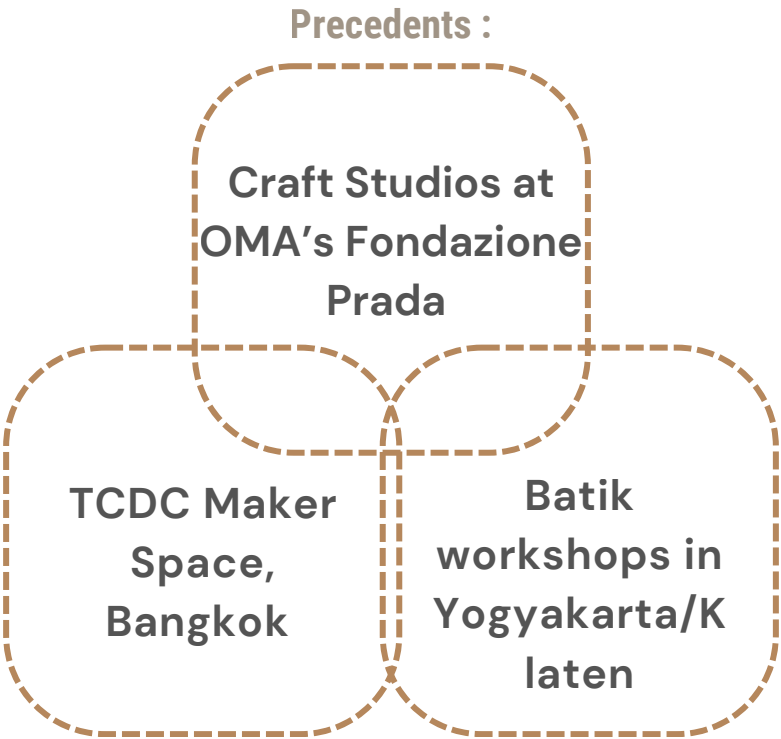


Figure 4.18 Craft Studios at OMA's Fondazione Prada – TCDC Maker Space, Bangkok – Batik workshops in Yogyakarta/Klaten
Source : Archdaily

- industrial yet warm spaces
- creative labs open to public
- long tables, wax pots, drying racks

Response analysis

EDUCATION ROOM

Flexible Classroom:

1. movable chairs and tables
2. integrated screens for multimedia presentations
3. shelves for displaying models or samples

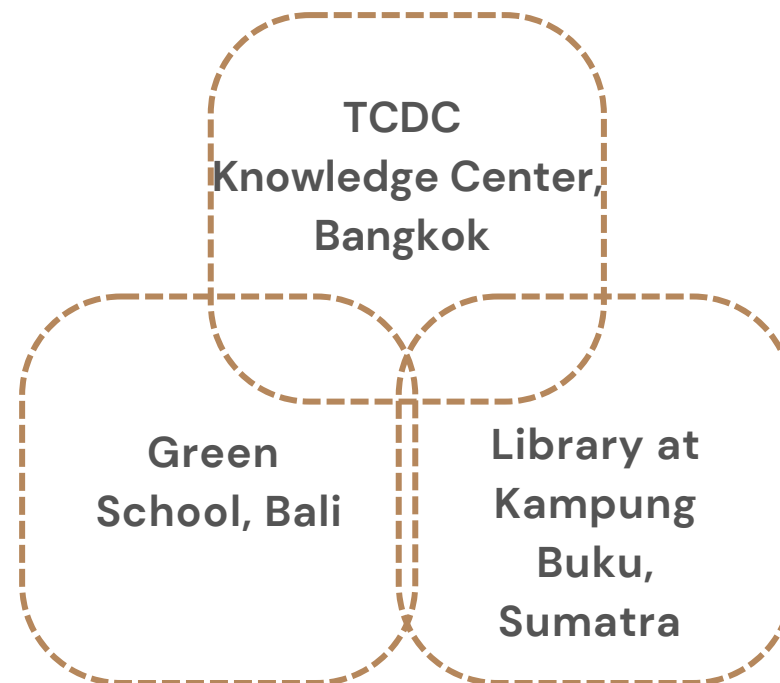
Green Integration:

1. indoor plants or vertical gardens
2. views to outdoor green voids

Calm Atmosphere:

1. muted colors
2. acoustic treatments for clarity

Precedents :



- modern educational environments
- bamboo classrooms connected to nature
- traditional architecture meets learning space

GREEN VOIDS ALONG THE JOURNEY

Spatial Punctuation:

- 1. courtyards or atriums filled with plants
- 2. visual relief between enclosed rooms



Natural Light:

- 1. skylights or clerestories
- 2. filtered shadows from trees

Cooling & Airflow:

- 1. passive ventilation
- 2. cool microclimate



Figure 4.19 National Gallery Singapore courtyards – Tropical Courtyards in traditional Indonesian houses – Foster + Partners' green atria in Masdar City
Source : Archdaily

- green pockets within architecture
- shaded, lush breathing spaces
- integrating nature for climate control

Design Problem solving

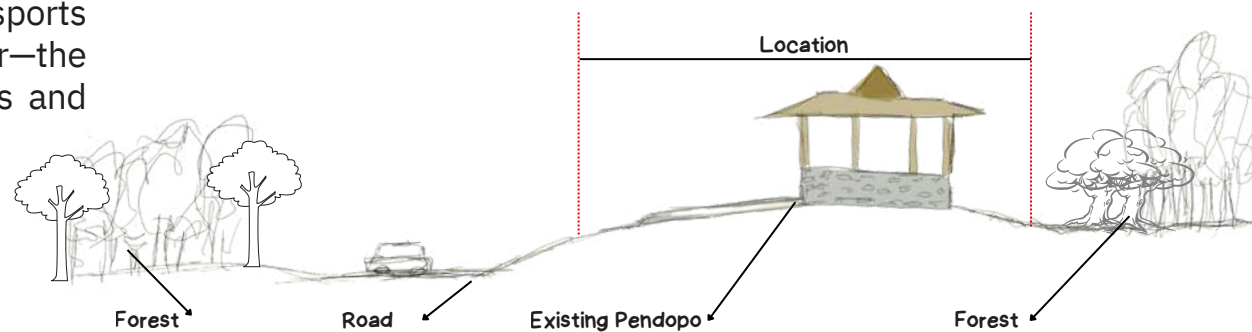
GEOGRAPHICAL CONTEXT RELATION



Figure 4.20 Geographical Context Relation
Source : Google Earth

Zoning Analysis :

Based on the site's spatial context—bordered by a well-visited public landmark on one side and a sports field that must remain untouched on the other—the spatial organization follows a gradient of access and interaction.



Design Problem solving

GEOGRAPHICAL CONTEXT RELATION

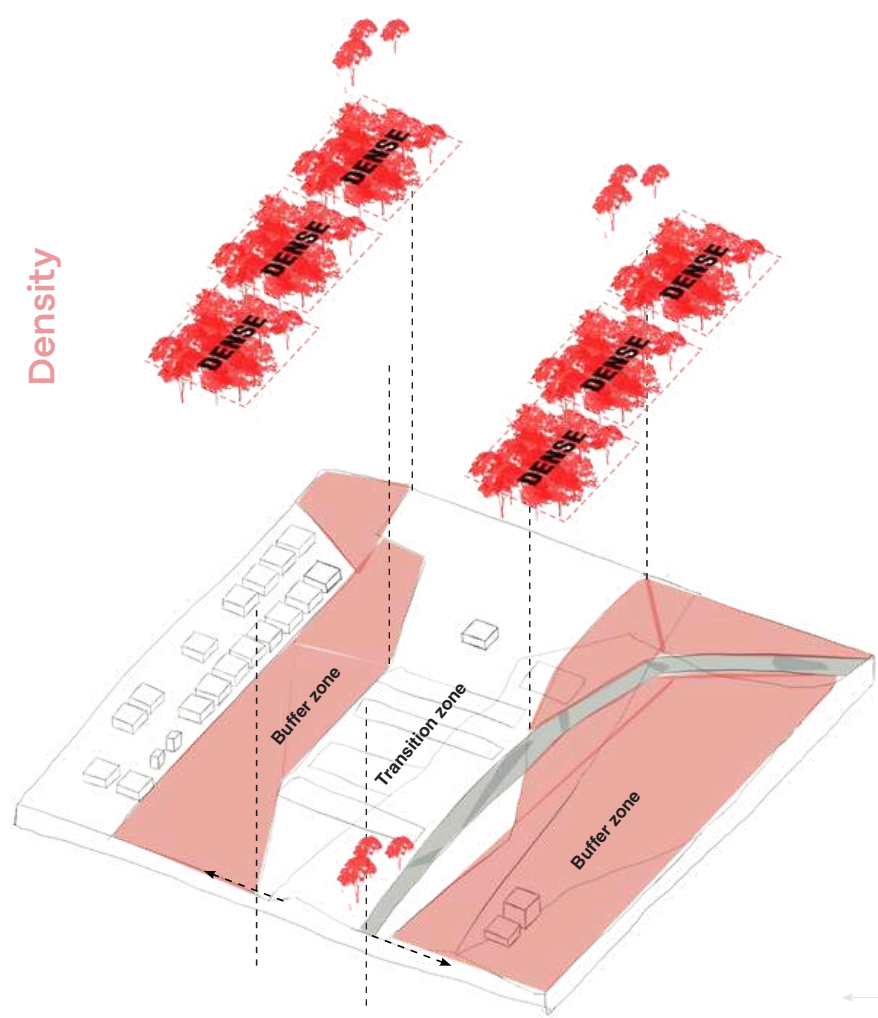


Figure 4.21 EXISTING SITE MORPHOLOGY
Source : Made by author

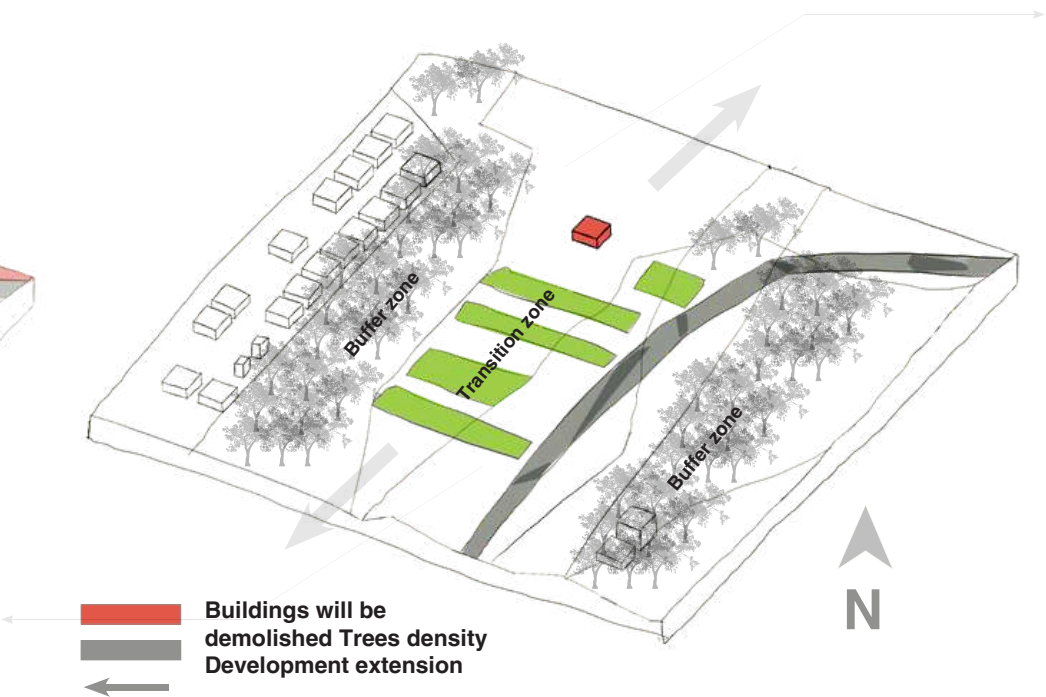


Figure 4.22 Existing Site Analysis : BUILDING AND FACILITIES PLANNING
Source : Made by author

Design Problem solving

GEOGRAPHICAL CONTEXT RELATION

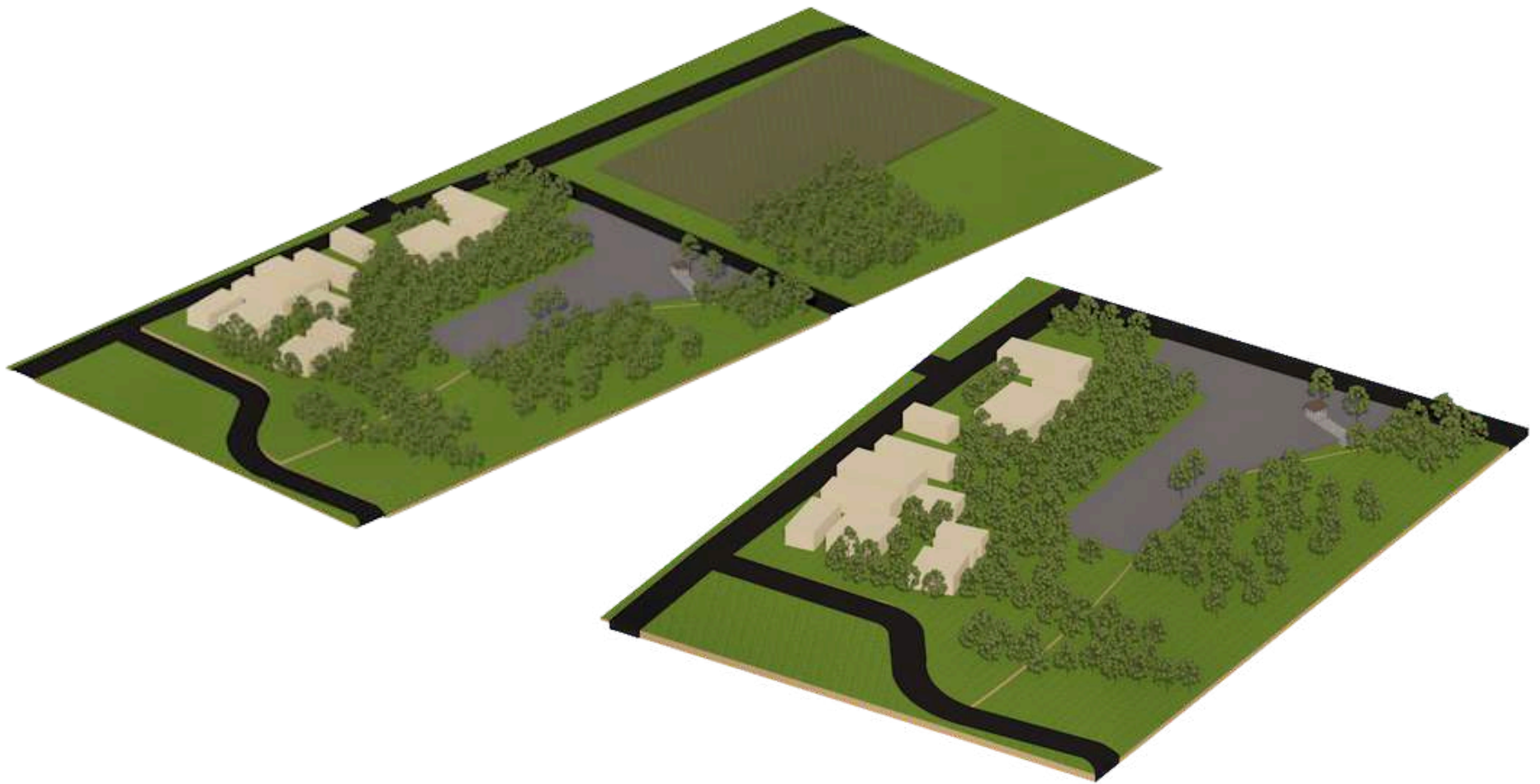


Figure 4.23 Render of Existing Site Analysis : BUILDING AND FACILITIES PLANNING
Source : Made by author

Design Problem solving

GEOGRAPHICAL CONTEXT RELATION

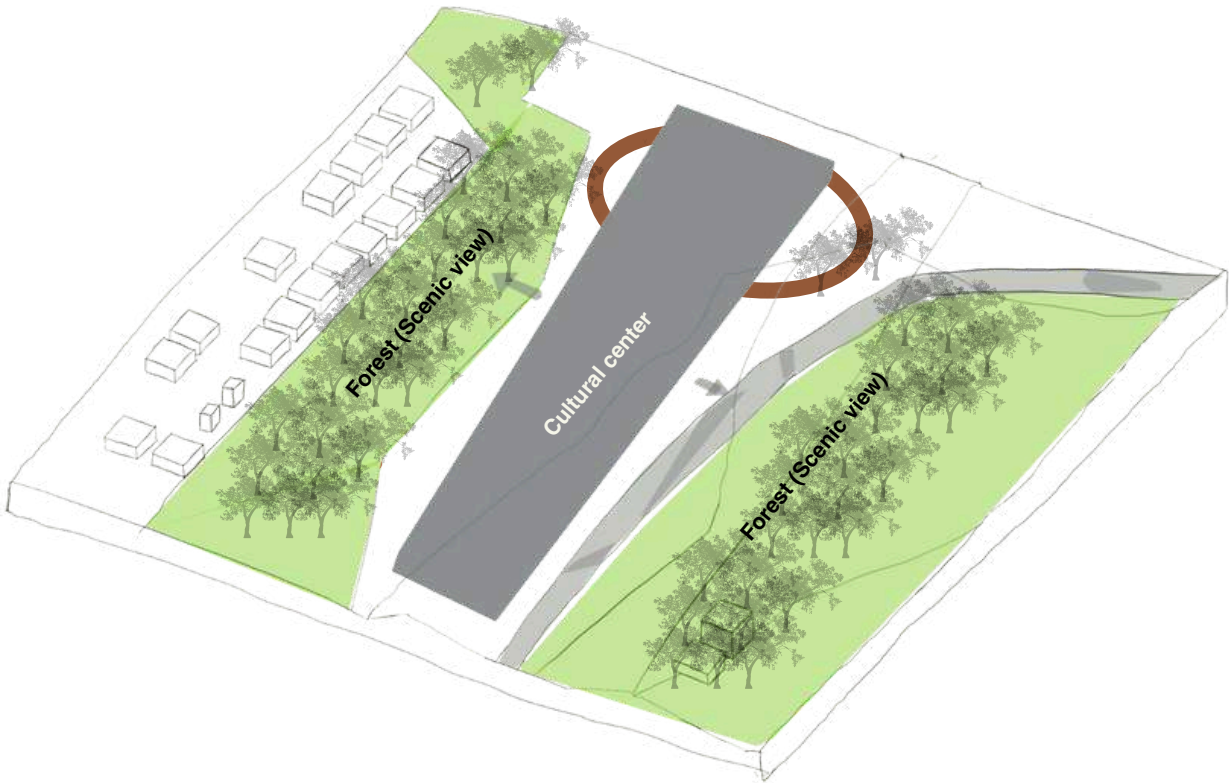
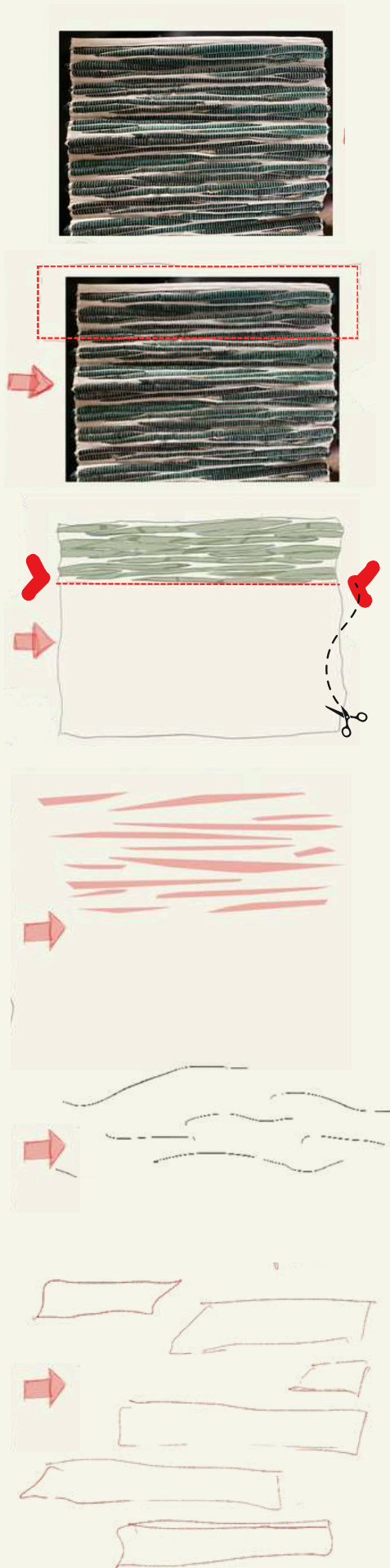


Figure 4.24 Extension Scheme of Building Allocation
Source : Made by author

Design Problem solving

TRANSFORMATION



- 1 First thing was exploring the tiger pattern that I learned during the workshop a zigzag motif traditionally crafted using water hyacinth. I then experimented with twisted yarns (threads) to enhance the texture and depth of the weaving.
- 2 I began by isolating a segment of the weaving pattern not replicating it in full, but extracting a fragment to study its essence. This selective cutting allowed me to reinterpret the motif and translate it into architectural form patterns.
- 3 I simplified the weaving patterns to understand their core geometry and rhythm. This abstraction process enabled me to reinterpret the motifs and translate them into architectural form patterns.
- 4 I focused on the simplified zigzag patterns of the water hyacinth weaving, which closely resemble a tiger's fur. This visual similarity became a conceptual link, guiding the translation of the texture into architectural surface treatments and forms.
- 5 When observed in 2D, the weaving patterns reveal organic, curvy, and twisted forms. This interpretation informs the development of fluid architectural geometries that echo the natural rhythm and movement found in traditional weaving.
- 6 By interpreting the weaving patterns in a more simplified manner, each curve can be translated into modular blocks. This allows for the creation of a harmonious architectural composition that reflects the rhythm and balance of the original craft

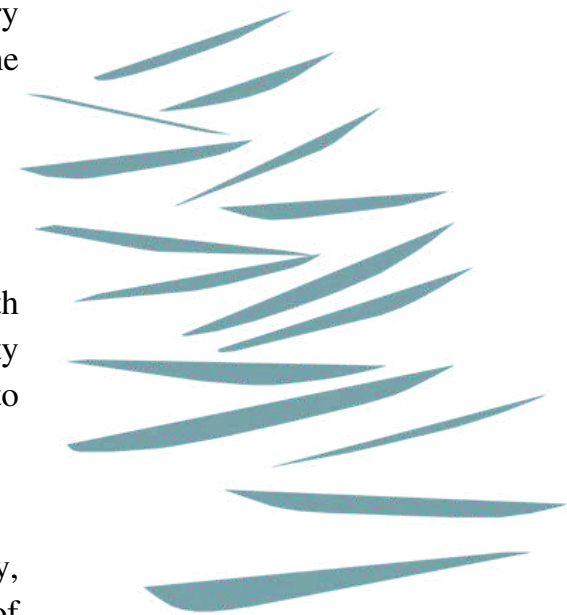
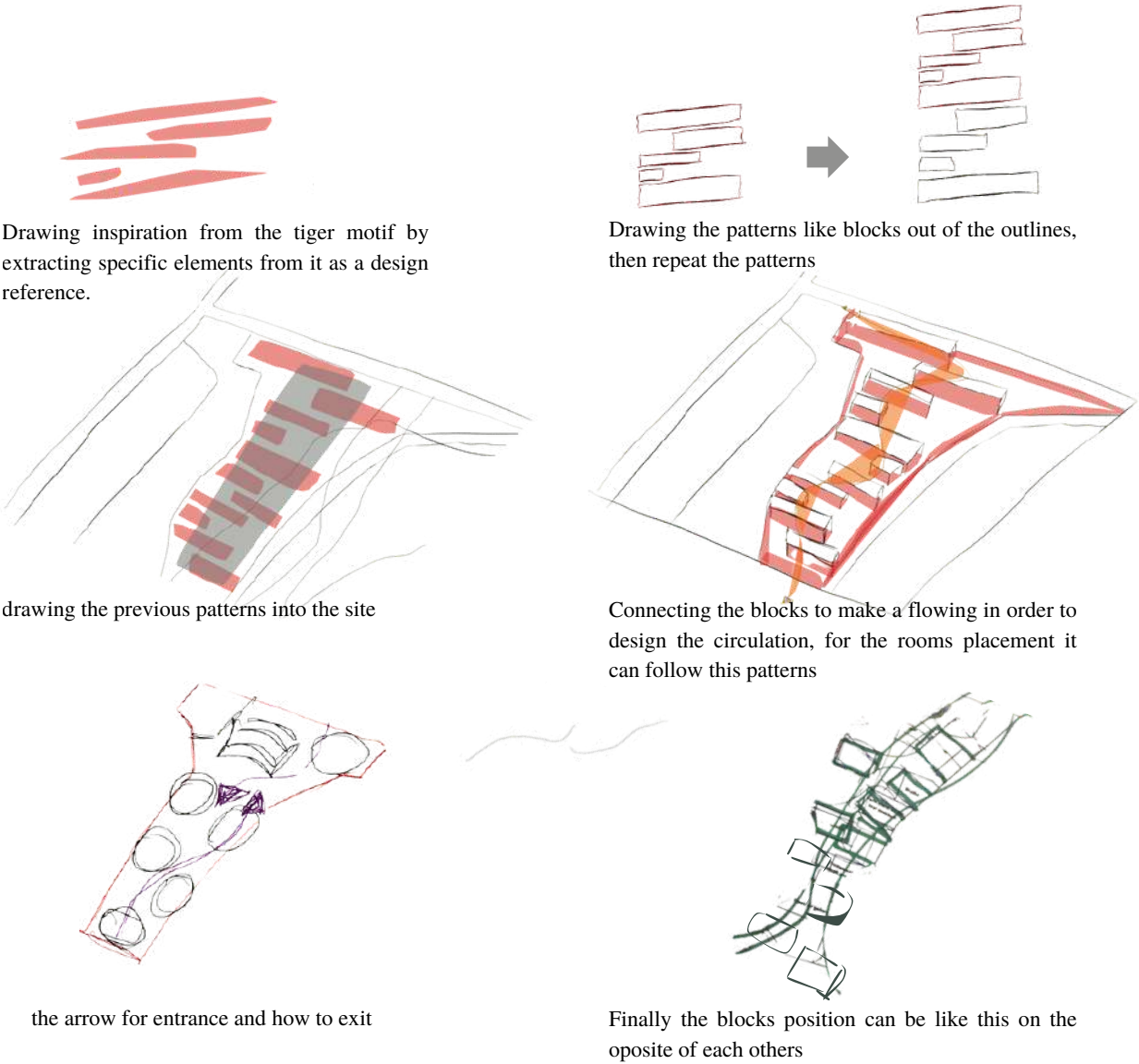


Figure 4.25 Patterns Transformation
Source : Made by author

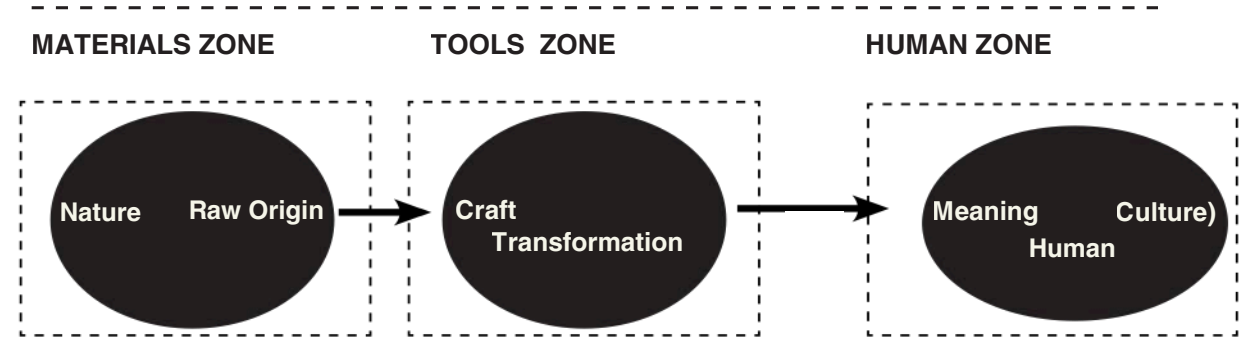
TRANSFORMATION OF BLOCKS

Transformation of zoning

TRANSFORMATION



STORY LINE

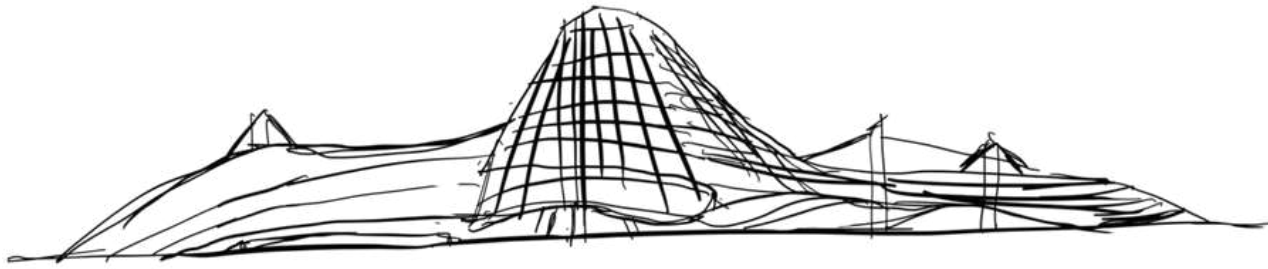


*Exploration***1**

1ST ALTERNATIVE

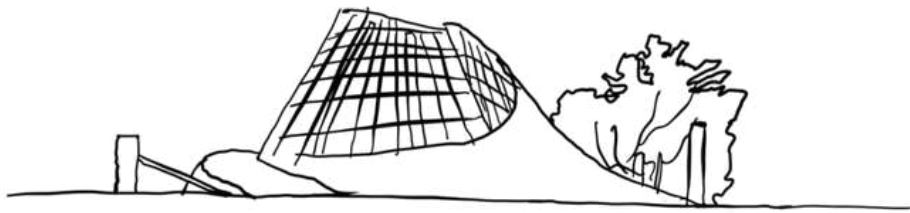
Section and elevations (showing the envelope)

East View



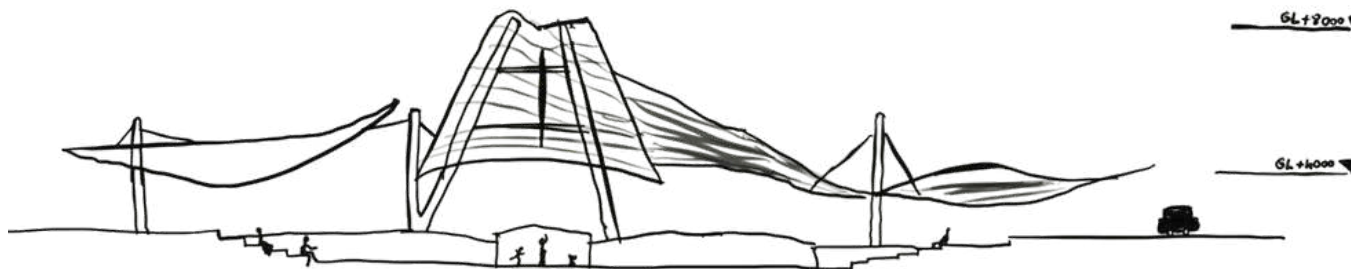
A roof shape that's naturally draws in the north to south circulation

North View



A form that naturally connects physically and visually with the view on the sport field on the north

Section



A form inspired from the crafting industry as cultural tradition of the local community

Figure 4.27 Section and elevations (showing the envelope)
Source : Made by author

1ST ALTERNATIVE

Axonometric alternative 1



Figure 4.28 Axonometric alternative 1
Source : Made by author

Design Problem solving

1ST ALTERNATIVE

Render alternative 1



Figure 4.29 Render alternative 1
Source : Made by author

Design Problem solving

1ST ALTERNATIVE

Site plan alternative 1

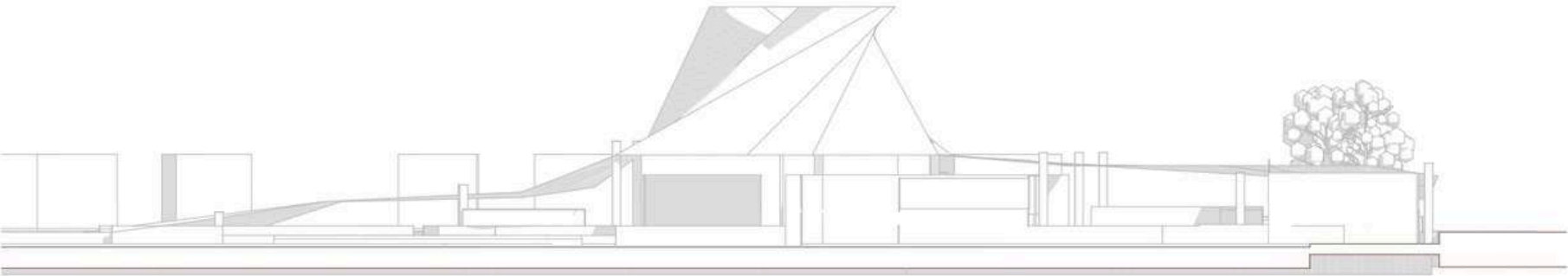


Site plan Alternative 1

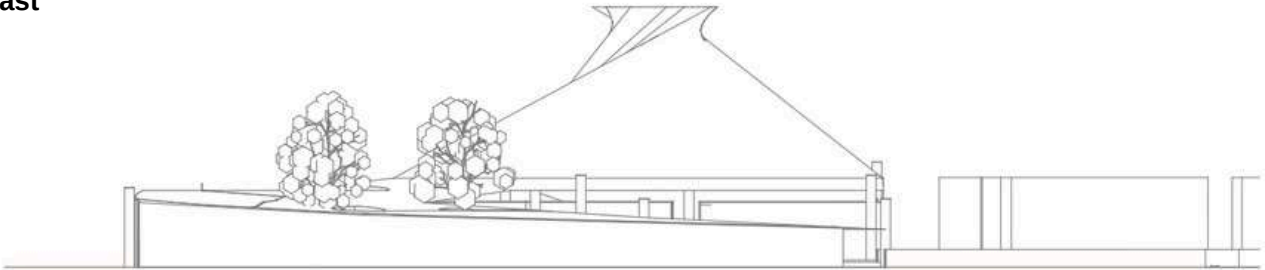
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1ST ALTERNATIVE

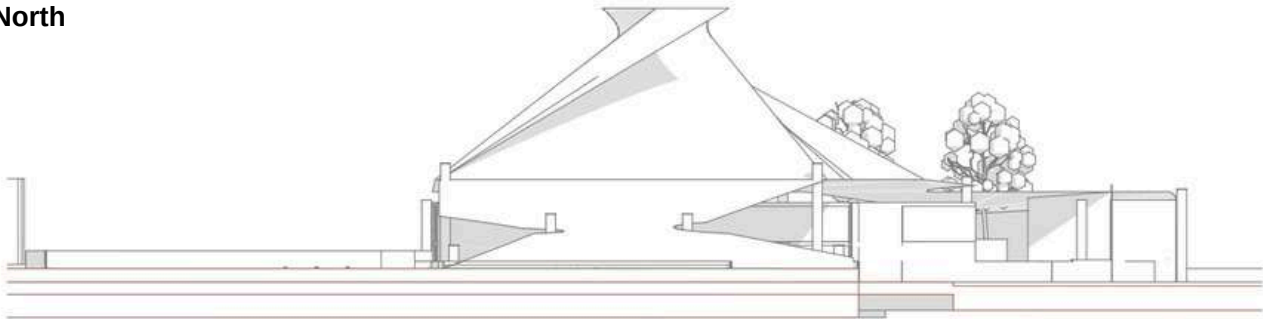
Section and elevations (showing the blocks)



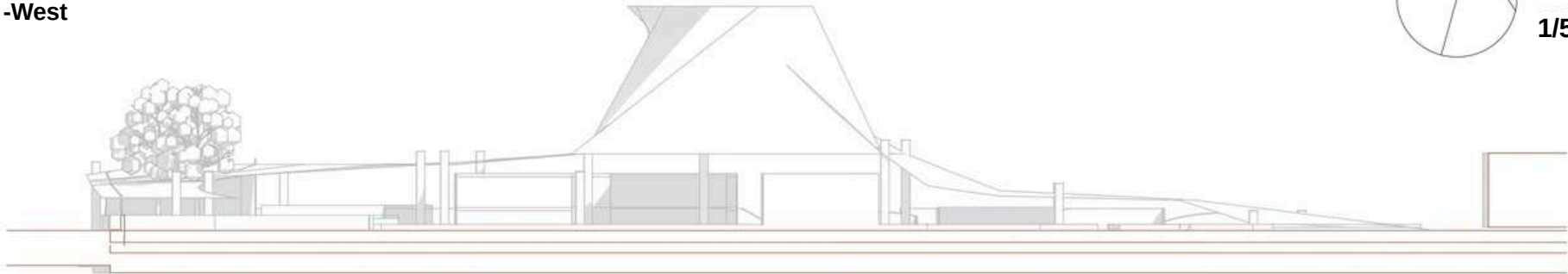
-East



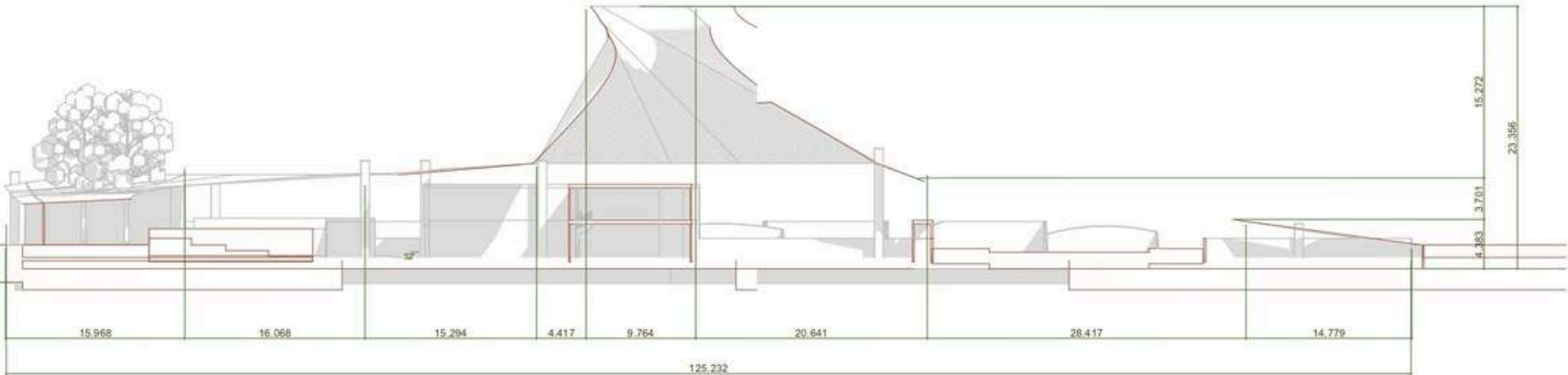
-North



-West



-South



-Section



Elevation Alternative 1

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Exploration 2

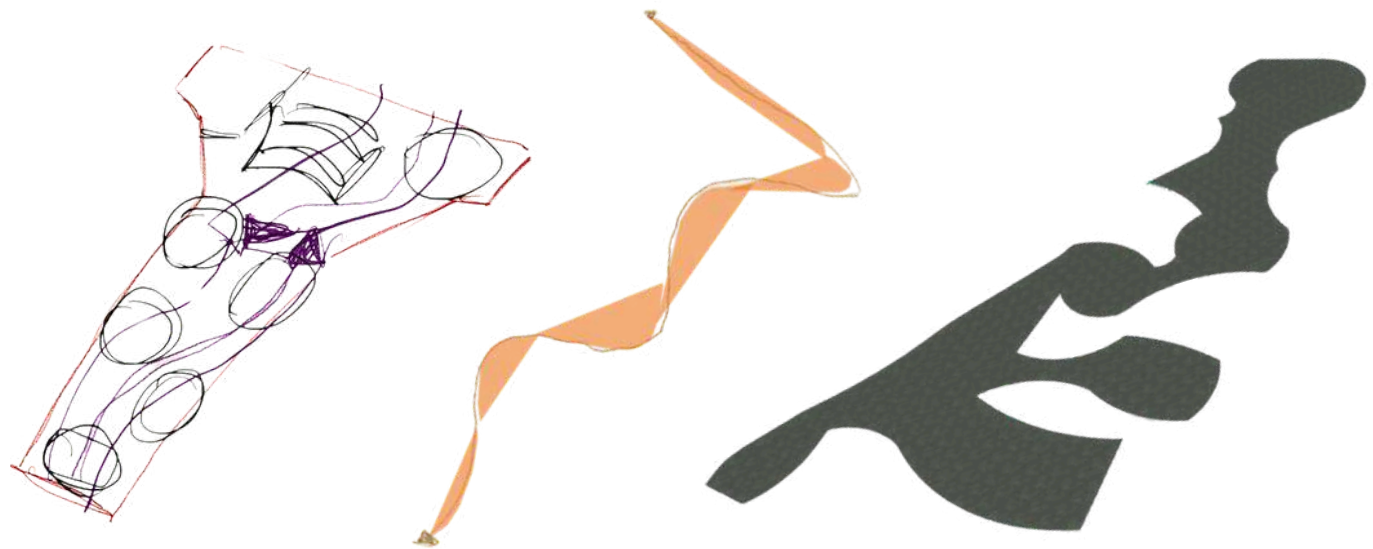
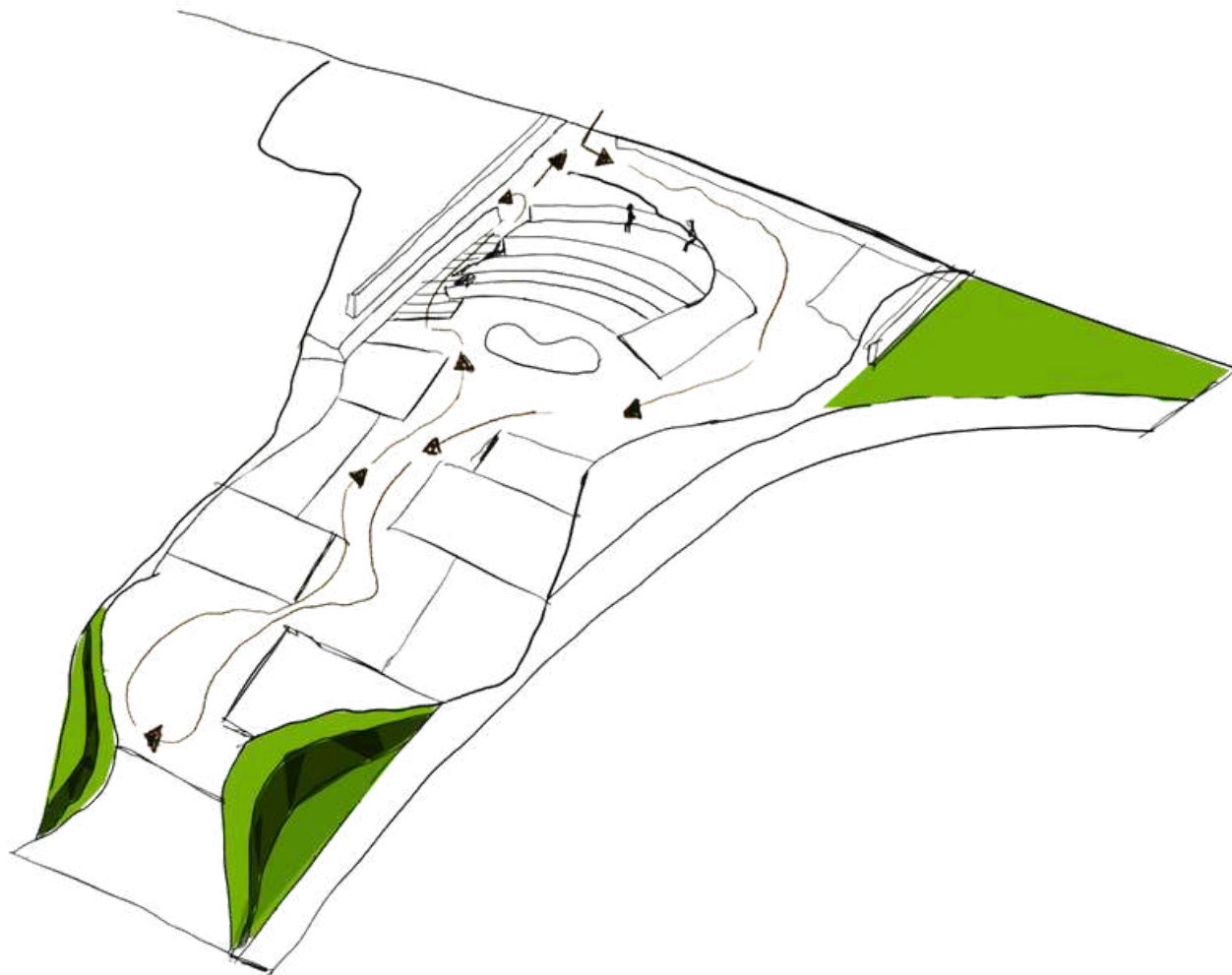
1ST ALTERNATIVE**SPATIAL RELATION****ROOF MOVEMENT****FLOOR PLAN AND SITE FLOW**

Figure 4.30 Floor plan and site flow
Source : Made by author

1ST ALTERNATIVE

Axonometric alternative 1



Figure 4.31 Axonometric alternative 1
Source : Made by author

1ST ALTERNATIVE

Render alternative 1

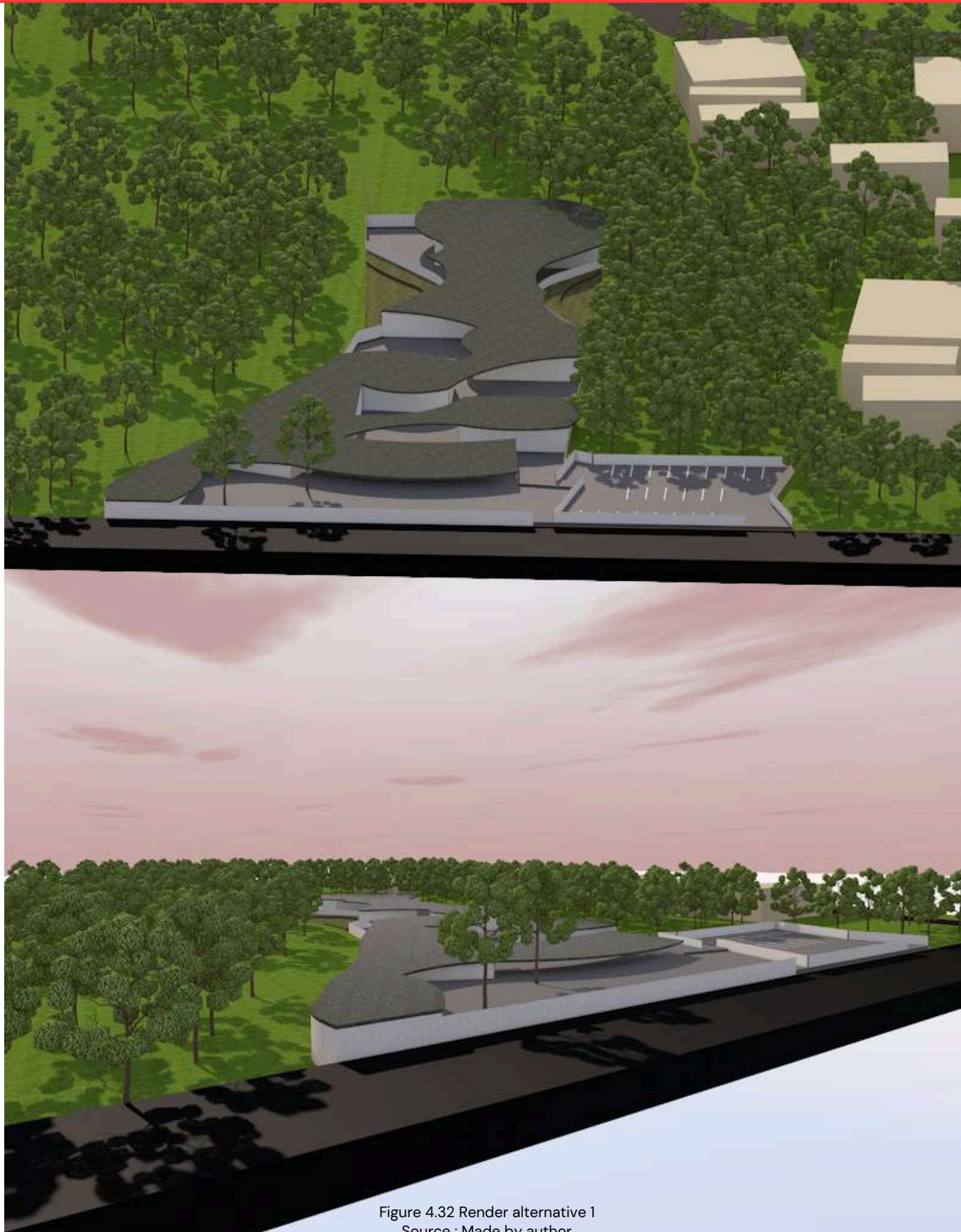
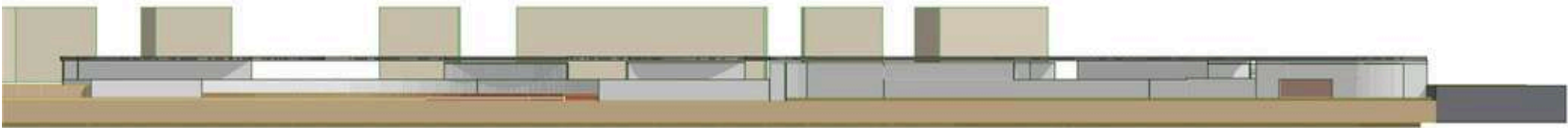


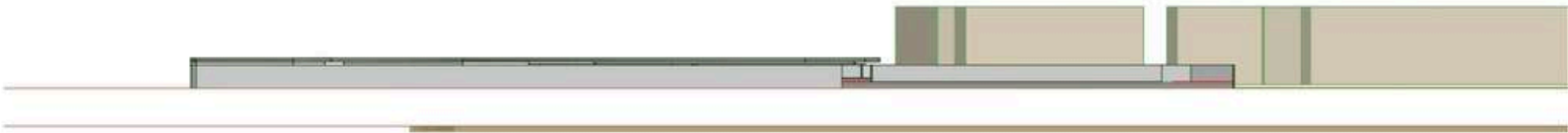
Figure 4.32 Render alternative 1
Source : Made by author

1ST ALTERNATIVE

Section and elevations (showing the blocks)



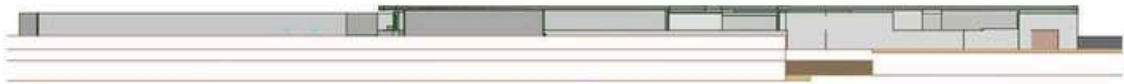
-East



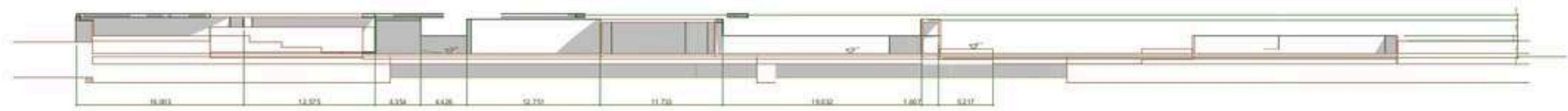
-North



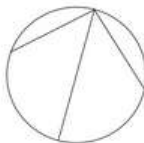
-West



-South

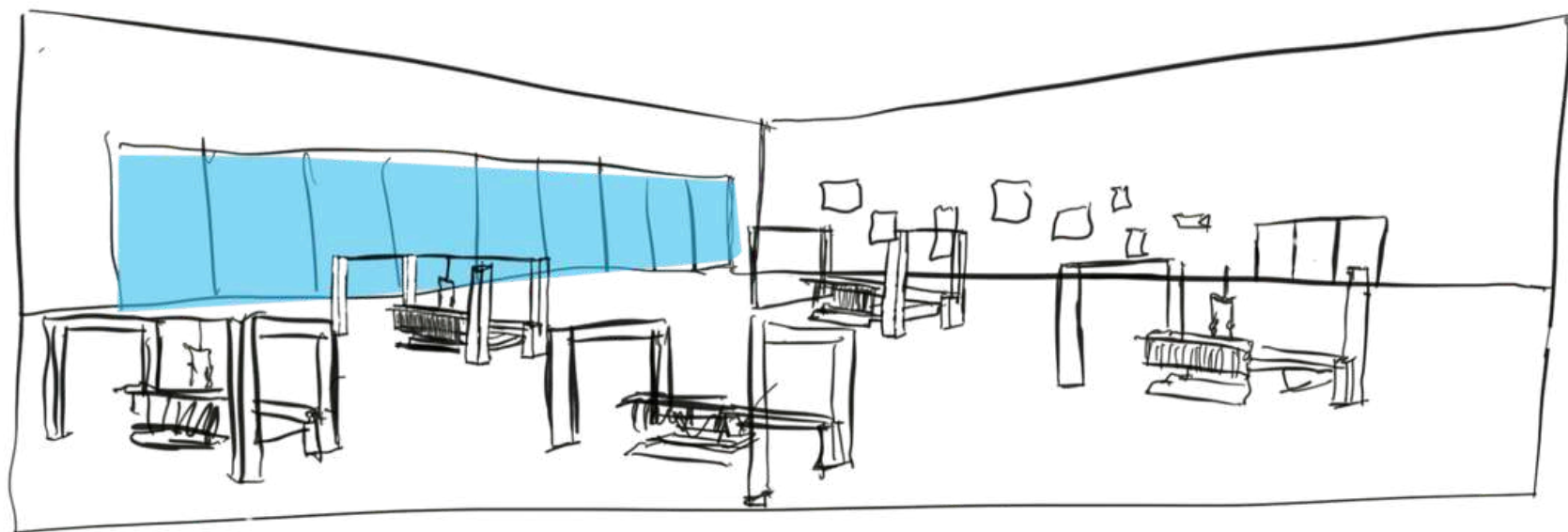


-Section



Design Problem solving

INTERIOR DESIGN SCHEME



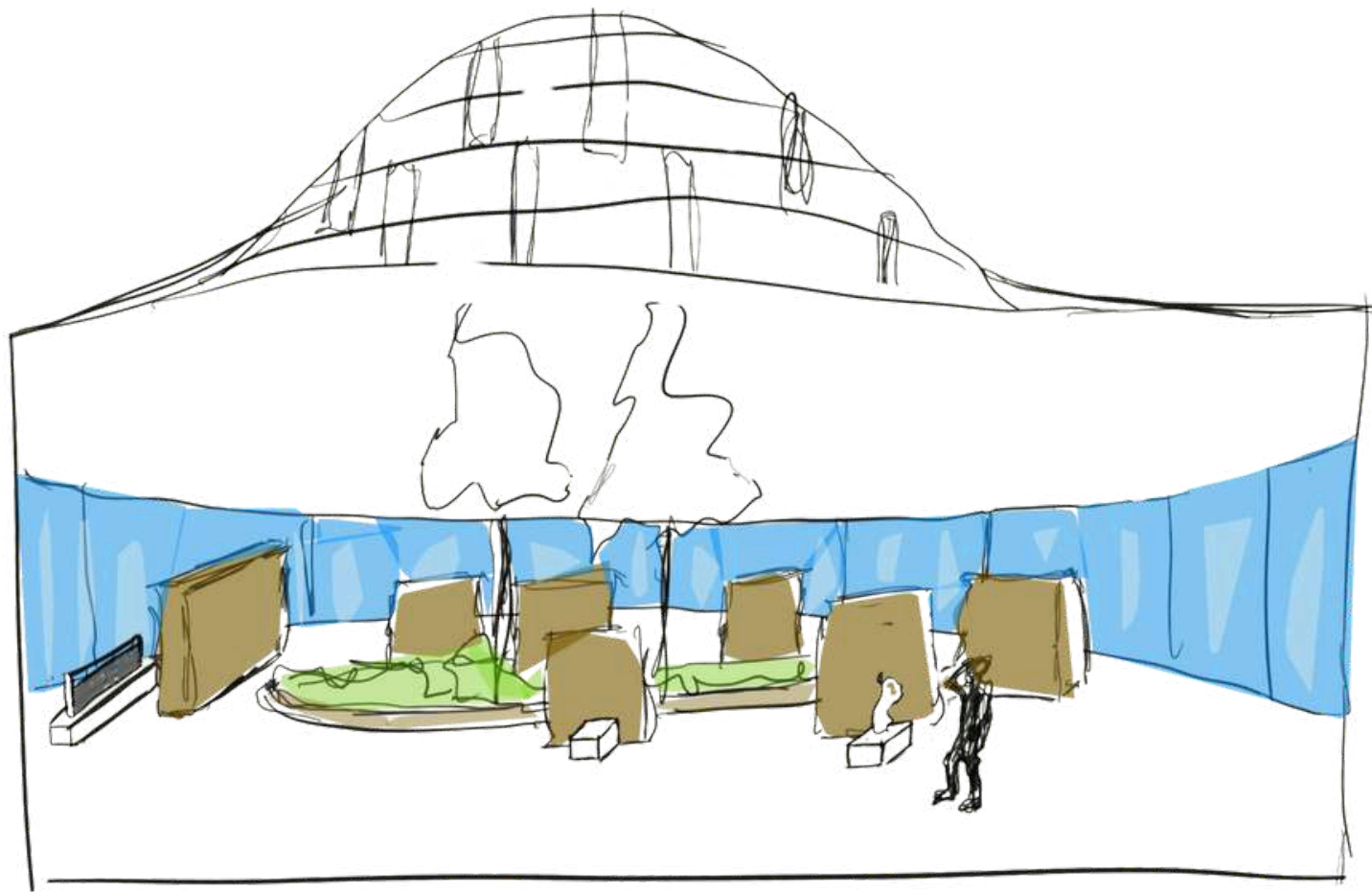
Production room

Figure 4.33 Production Room Interior Design Scheme
Source : Made by author

Design Problem solving

INTERIOR DESIGN SCHEME

7

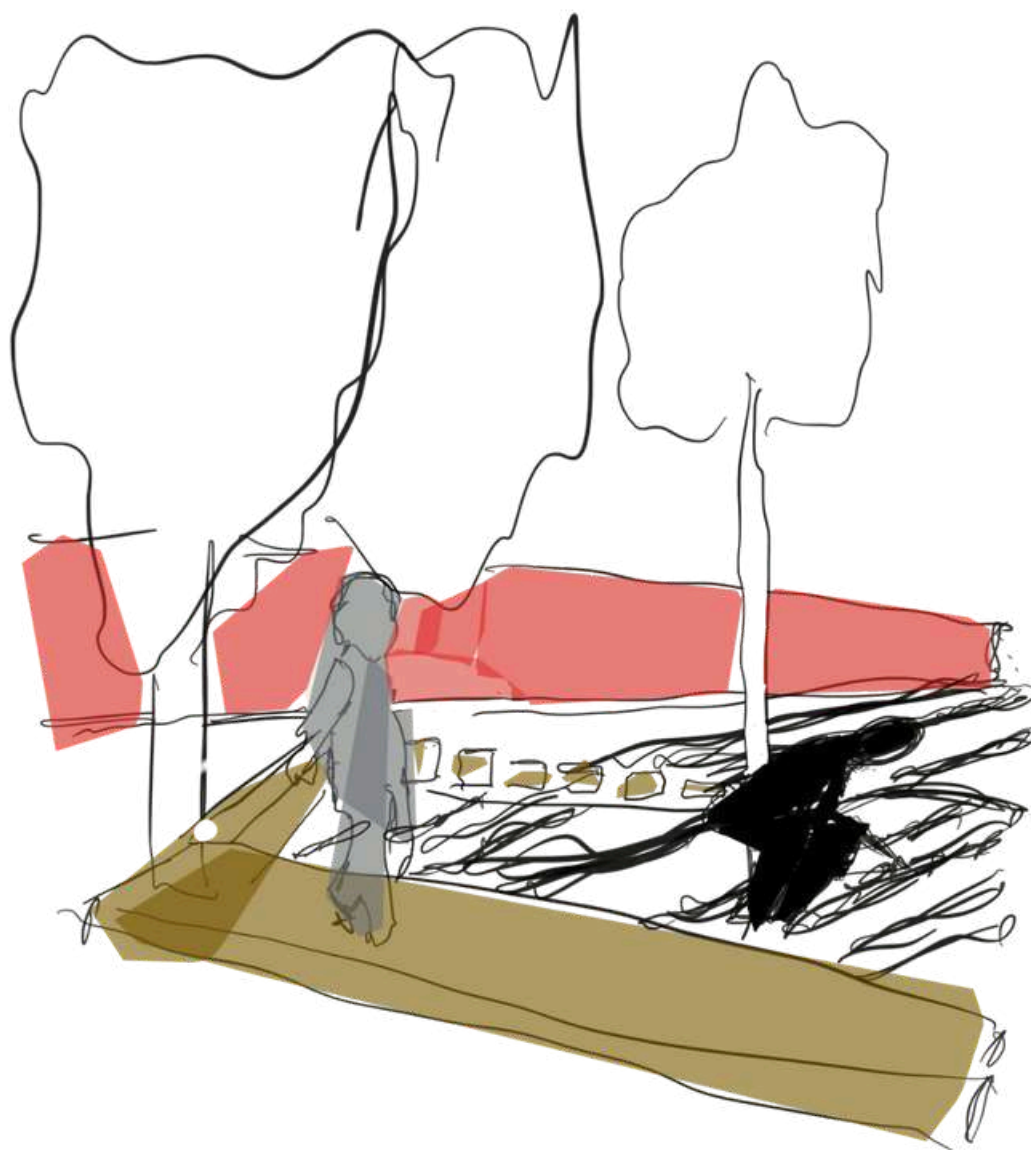


Open air Gallery

Figure 4.34 Open air gallery Interior Design Scheme
Source : Made by author

Design Problem solving

INTERIOR DESIGN SCHEME



Cultivating area

Figure 4.35 Cultivating area Interior Design Scheme
Source : Made by author

*"A culture is made — or destroyed — by
its articulate voices."*

by Ayn Rand





05.

DESIGN

DESCRIPTION

- **PROPERTY SIZE**
- **SITE PLAN**
- **FLOOR PLAN**
- **ELEVATION SECTION**
- **PARTIAL SECTION**
- **STRUCTURE ENVELOPE**
- **INTERIOR DETAIL**
- **UTILITIES**
- **PERSPECTIVE INTERIOR**
- **PERSPECTIVE EXTERIOR**

Space Requirements

By zones :

1. MATERIALS ZONE

Space

-  Paddy Field (introductory landscape)
-  Main Lobby / Orientation Room
-  Material Archive or Exhibition
-  Sensory Room (touch/smell)
-  Transitional Garden

2. TOOLS & EDUCATION ZONE

Space

-  Tool Gallery
-  Workshop Demo Space
-  Education Room / Mini Auditorium
-  Hands-on Learning Area
-  “Behind the Process” Wall

3. HUMAN ZONE

Space

-  Craft Stories Gallery
-  Cultural Symbolism Room
-  Community Exhibition Hall
-  Reflection Garden / Courtyard
-  Café / Discussion Lounge
-  Cultural Performance Platform
-  Gift & Craft Shop

Table 5.1 Space Requirements by zones
Source : Made By Author

Space Requirements

By area :

Room / Space	Area	Primary Users	Activities	Room Requirements	Design Proposal / Notes
Transitional Garden	357m2	Visitors	Arrival, transition from outside to inside	Shaded path, soft landscape, seating	Acts as a sensory space, uses local plants, natural light
Welcome Space	Stairs covering in between the blocks	Visitors	Orientation, waiting	Information board, seating, open circulation	Faces transitional space, visually open
Introductory Landscape	65 m2	Visitors	Visual introduction to site and theme	Curated landscaping, interpretive signage	Inspired by weaving, geometry
Main Lobby	116 m2	Visitors, Staff	Gathering, orientation, access	Reception desk, seating, signage	Double-height volume, natural ventilation
Sensory Room (Touch/Smell)	247	Visitors	Interactive experience of materials	Scent diffusers, tactile samples, dimmed light	Enclosed, climate controlled
Amphitheater	209	Visitors, Performers	Talks, performances, group presentations	Tiered seating, sound system	Semi-outdoor with natural cooling
Education Room	247	Students, Educators	Workshops, training	Tables, storage, AV equipment	Natural daylighting, sensory spaces
Behind Process Wall Path	247	Visitors	Guided movement, process storytelling	Curved corridor, visuals	Part of experiential journey, semi-enclosed
Production Area	247	Artisans	Weaving, crafting, dyeing	Workbenches, storage, ventilation	Openable façade, natural light filtered through screens
Archive & Souvenirs Zone	173	Visitors, Artisans	Displaying ongoing work	Display panels, open space	Flexible layout; integrated with loom frames
Staff room	126	Visitors	Storytelling, curated exhibitions	Lighting control, visual guides	Thematic curation, integration by cultural continuity
Archive & Souvenirs Zone	126	Visitors, Staff	Reading, shopping, preserving artifacts	Display cases, storage, transaction counter	Passive cooling; natural light gallery
Dance Zone	247	Performers, Visitors	Traditional dance, cultural performance	Wooden floor, open space	Semi-outdoor, shaded, acoustically responsive
Staff Rooms & Bathrooms	247	Staff	Rest, hygiene, administration	Desks, lockers, restrooms	Back of house access, separate staircases

Full Storyline Recap:

"Visitors arrive through a soft landscape of rice fields and material memory. They walk into the world of crafting's raw roots. Then, they witness the tools, the effort, and the techniques that shape tradition. Finally, they are immersed in the voices and stories of the people who keep this culture alive."

Figure 5.1 Exterior render
Source : Made by author



Design Issues Identified

The project addresses critical challenges threatening the continuity of local weaving and Indonesian craftsmanship traditions. The gradual loss of generational knowledge is evident as younger artisans either migrate to urban industrial jobs or disengage from heritage crafts entirely. This low youth interest in craftsmanship not only weakens community identity but also risks erasing intangible cultural heritage.

Furthermore, the region's economic dependence on tourism is over-reliant on seasonal visitors, offering little long-term empowerment for artisans. Without infrastructure that supports sustainable artisan livelihoods, the craft becomes a performance for tourists rather than a living tradition.

The absence of multifunctional, community-based cultural spaces limits opportunities for intergenerational skill transfer, experimentation, and public engagement. Existing facilities often focus on display rather than active making, resulting in a disconnect between production and appreciation.

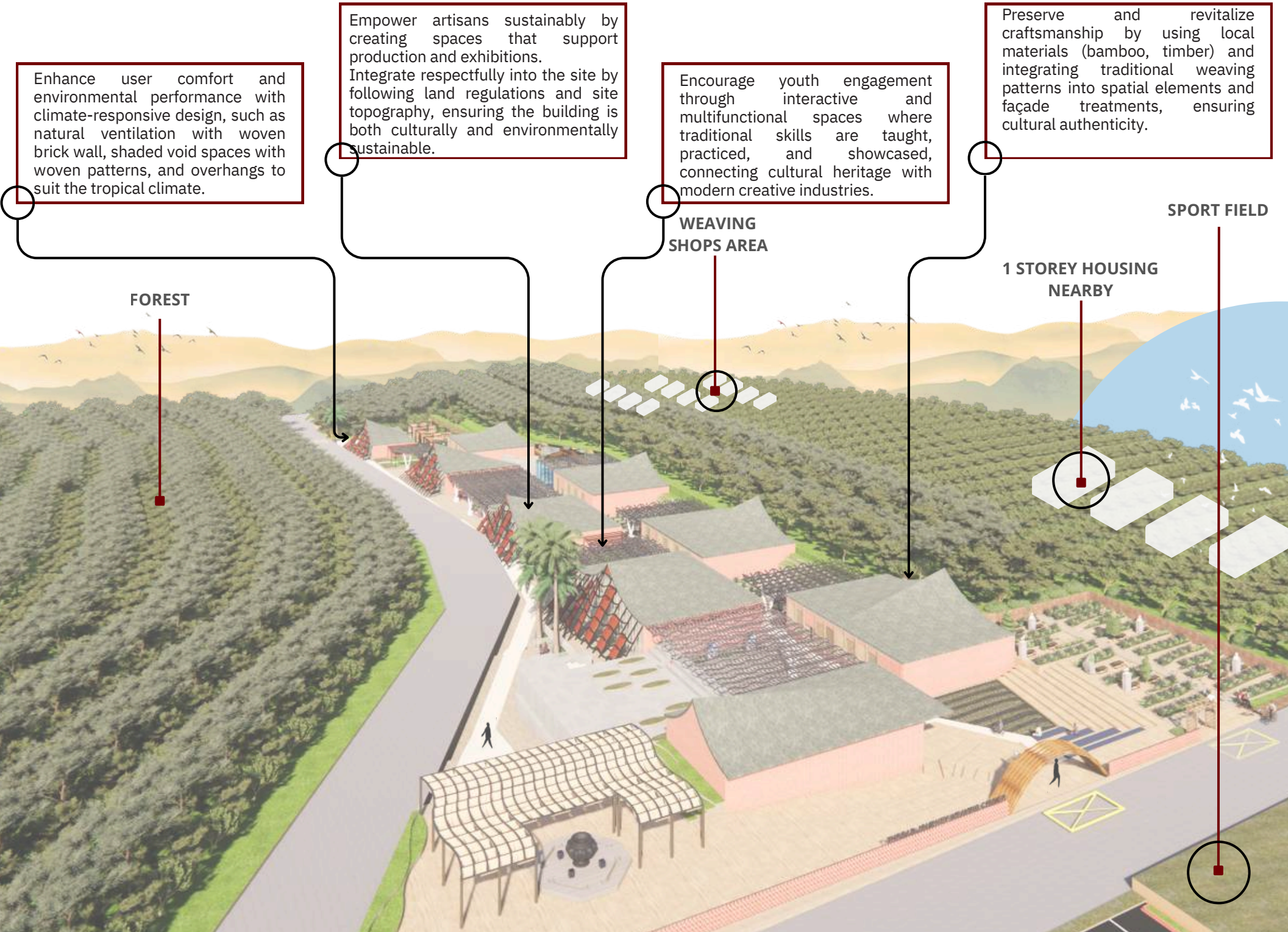
Finally, to attract cultural tourism while empowering local artisans, the architecture must be contemporary yet rooted in tradition—balancing modern spatial flexibility with symbolic references to weaving and bamboo culture. This requires a design that merges storytelling, functional infrastructure, and aesthetic appeal to serve both local needs and visitor curiosity.

Figure 5.2 Exterior render
Source : Made by author



Design Development

NARRATIVE AND SCHEMATIC ILLUSTRATION OF THE DESIGN RESULTS



Concept

1- CULTURAL INTEGRATION

The facade treatments and partial walls

They are inspired by traditional weaving patterns, translating the textures and interlacing motifs into architectural elements.

The shading elements on the exterior

They mimic woven textures, functioning both as cultural ornamentation and passive design strategies to manage sunlight and heat.

These choices celebrate local craftsmanship and support cultural preservation by making the building itself a canvas of woven symbolism.

The facade and partial wall

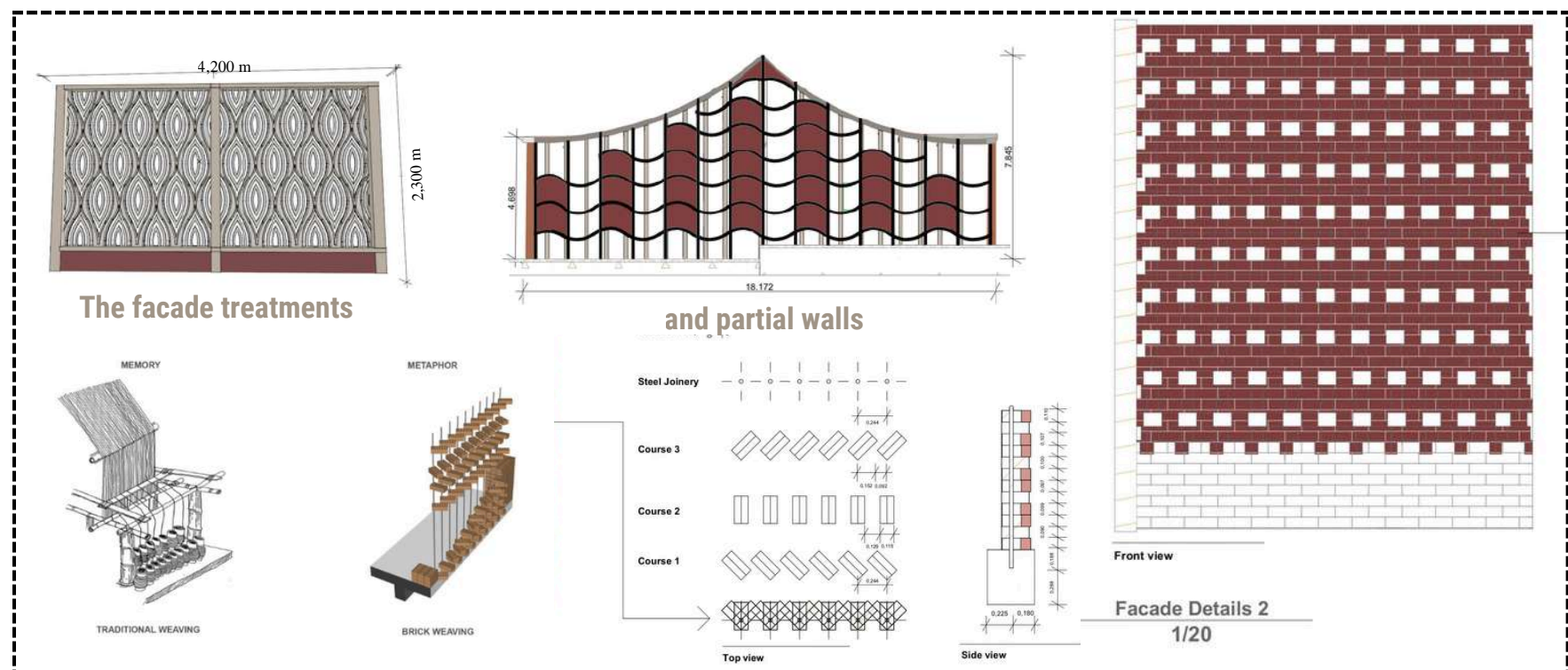


Figure 5.3 The facade and partial wall
Source : Made by author

Concept

4- PATTERN-INSPIRED SITE PLANNING

The blocks position

The zigzag positioning of blocks is inspired by weaving motifs, introducing a dynamic rhythm that guides movement and breaks visual monotony.

The communal side

This layout creates organic gathering spaces and semi-outdoor pockets, reinforcing the communal spirit of weaving.

These spatial sequences also echo the flow of the weaving process—structured yet flexible, tactile yet open.

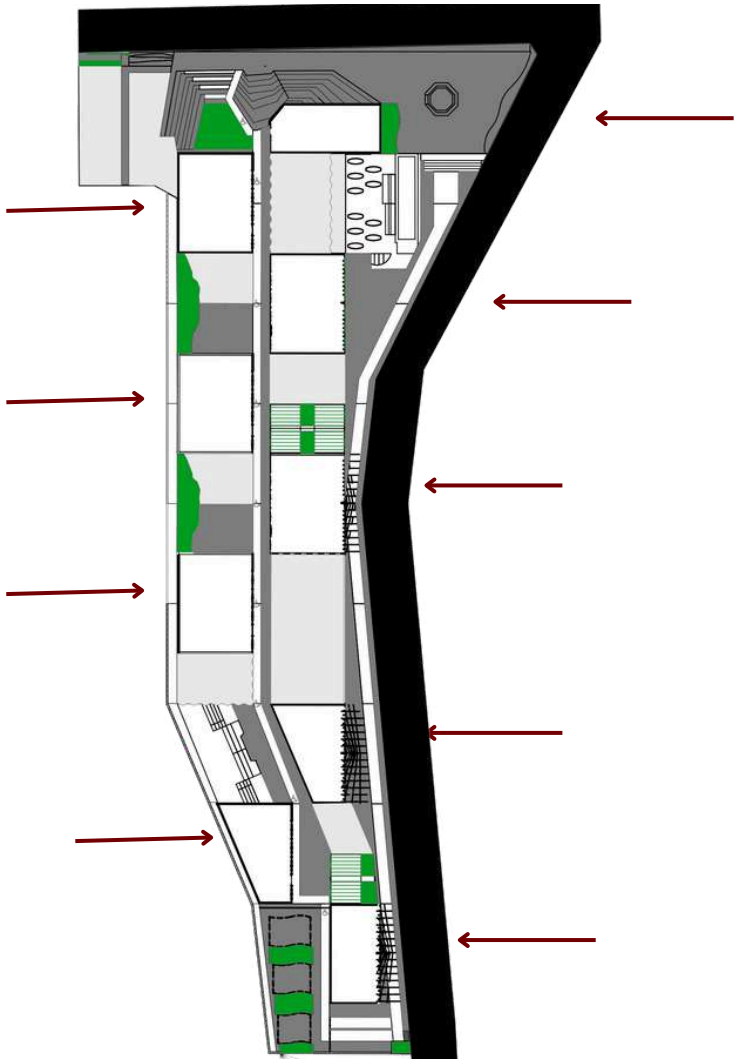


Figure 5.4 Site plan scheme
Source : Made by author

Following the transformation of the blocks and patterns also the positioning of the blocks follow the same patterns

Concept

6- CLIMATE SENSITIVITY**The facade of woven bricks**

The design maximizes natural ventilation through the facade inspired from woven , minimizes heat gain, and reduces dependence on mechanical cooling.

The roof direction and design

Roof forms, open-air corridors, and perforated wall systems allow for cross-breezes and passive cooling.

The weaving-inspired shading system is both culturally expressive and functionally critical—filtering light and softening interior temperatures in Yogyakarta's tropical climate.

The sloped roof is designed for climate sensitivity, rising on one side to allow ample natural light and cross-ventilation, reducing energy use while maintaining comfort.

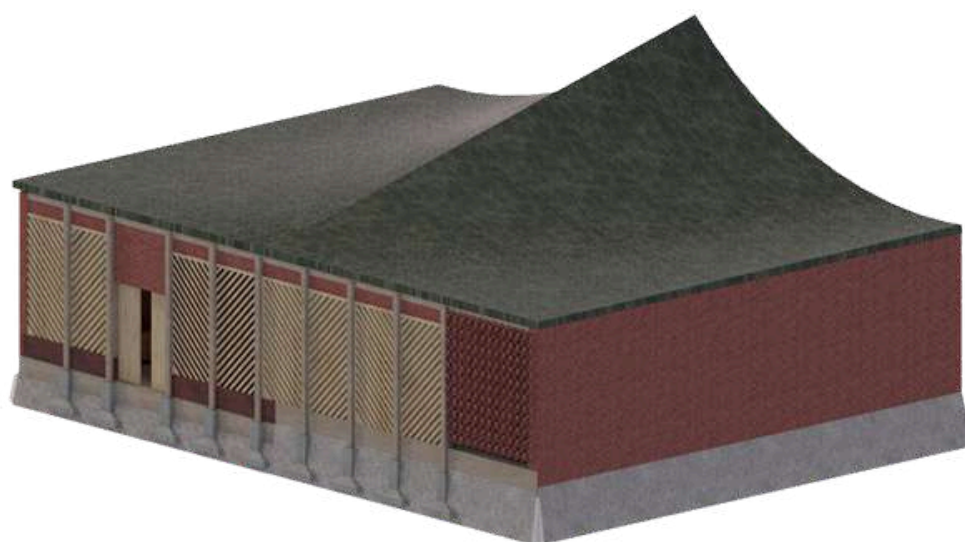


Figure 5.5 Axonometric Climate Sensitivity
Source : Made by author

Concept

SPATIAL FUNCTION: MATERIAL – TOOLS – HUMAN

Inspired by the zigzag patterns of woven fabrics, the spatial layout arranges blocks in a rhythm of interlocking functions, each narrating a different part of the weaving story:

Zone 1: Material

This is the entry sequence, introducing visitors to the core essence of weaving through nature and sensory experience.
Spaces: Transitional Garden, Welcome Area, Introductory Landscape, Main Lobby, Exit Walk, Sensory Room, Amphitheater, Education Room (behind the process wall).

Zone 2: Tools

This is the productive core, showcasing the transformation of raw material into form through tools and knowledge.
Spaces: Production Area, Community Exhibition Hall, Craftstories Gallery, Archive and Souvenir Zone, Dance Zone.

These choices celebrate local craftsmanship and support cultural preservation by making the building itself a canvas of woven symbolism.

Zone 3: Human

This zone emphasizes the community behind the craft, fostering rest, exchange, and interaction.
Spaces: Staff Room and Bathrooms, Coffee Shop, Cultivating Space and Outdoor Exhibition Area, Staircase Exits.

Design Development

SITUATION PLAN

The block plan situates the project within a rich contextual setting that informs its design approach. The site is bordered by a forest to one side, offering a natural backdrop and microclimatic benefits, while a nearby sports field provides an open recreational space for the community. In proximity lies the Gamplong Studio, a cultural and creative landmark that strengthens the area’s artistic identity. Surrounding the site are residential areas, ensuring accessibility for local inhabitants and maintaining a strong community connection. The project also acknowledges the presence of centralized weaving shops nearby, reinforcing its thematic link to traditional craftsmanship. On-site parking is strategically placed for easy access while maintaining pedestrian-friendly internal circulation.

LEGEND :

1 : Parking

2 : Sport field

3 : Forest

4 : Residential area

5 : Weaving shops area

6 : Gamplong studio



Figure 5.6 The block plan Scale 1/1000
Source : Made by author

Design Development

SITE PLAN

2- Site Respect & Topographical Sensitivity

The layout

The building layout follows the site's natural contours, minimizing land alteration.

The accessibility

Circulation paths and level transitions are aligned with the sloping terrain, preserving the existing environment while enhancing accessibility for disabled and elderly through the paths for disabled and other for normal public

This approach not only reduces the project's ecological footprint but also strengthens the relationship between architecture and landscape.

The site plan follows the weaving process from source to culture. The Material Zone near the entrance includes planting, receiving, displaying, and preparing raw materials. The Tool Zone is the compact production area with ATBM machines and the Yarns Preparation Zone. The Human Zone celebrates weaving heritage through souvenir and archive spaces, a dance area, staff facilities, a coffee shop, and a cultivating space leading to an outdoor exhibition. Shaded green areas and clear circulation connect the zones, with parking placed at the site's edge for pedestrian comfort.

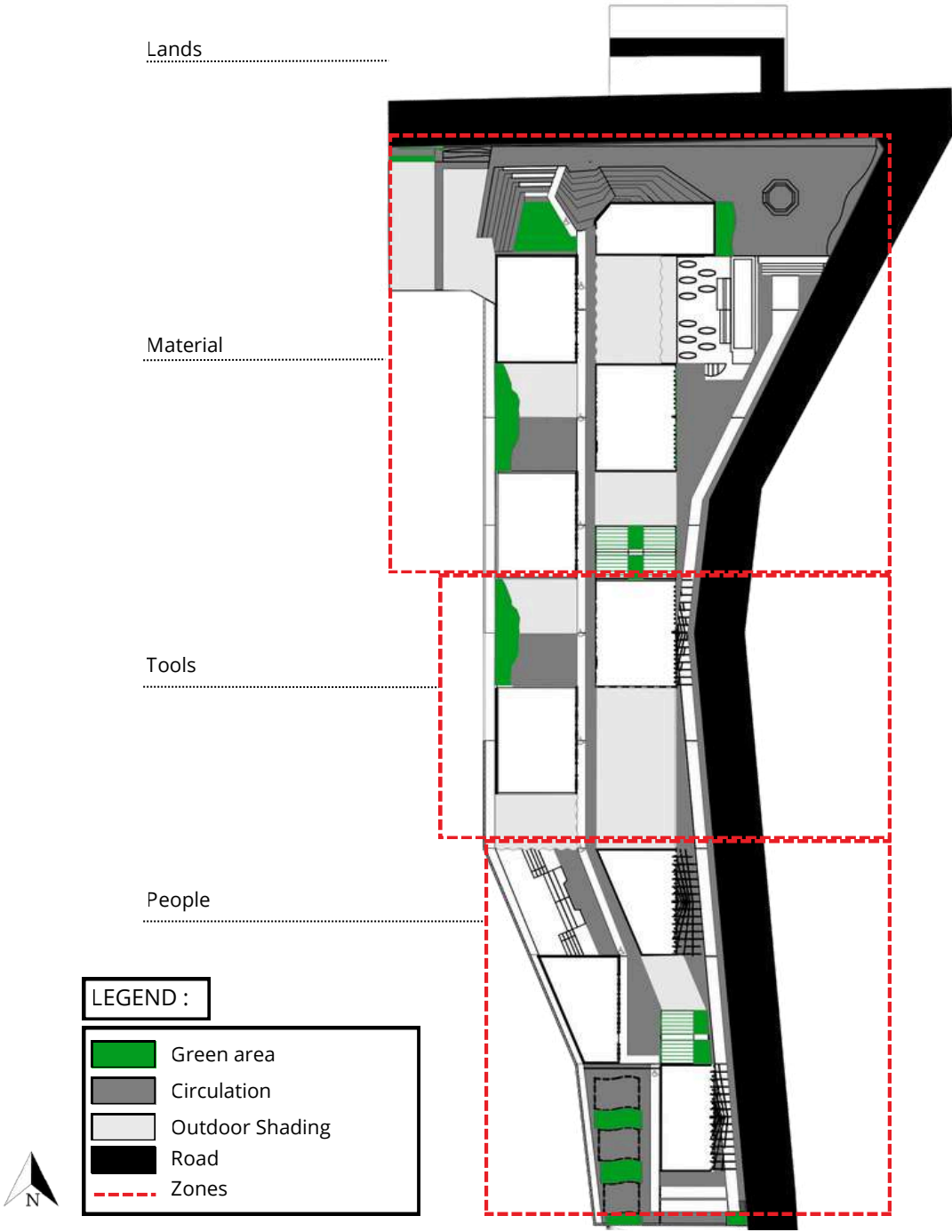


Figure 5.7 The site plan Scale 1/500
Source : Made by author

Design Development

SITE PLAN DETAILED



Figure 5.8 The site plan Scale 1/500
Source : Made by author

Design Development

CIRCULATION AND EVACUATION

2- Site Respect & Topographical Sensitivity

Accessibility for All Users :

- Two main ramps provide accessible entry:
 - a. Ramp to the Main Entrance, positioned adjacent to the main stairway.
 - b. Ramp to the Transitional Garden, paired with a separate stair set for able-bodied visitors.
- Continuous accessible routes for wheelchair users, elderly visitors, and people with limited mobility connect all public areas, looping through the site and ensuring they can enter and exit without barriers.

Main Public Circulation Flow :

- The main entrance leads directly into central activity zones, with primary paths branching toward different blocks.
- Circulation routes pass through public gathering spaces, gardens, and exhibition areas, ensuring smooth visitor flow without congestion.
- For blocks where entrances are positioned opposite the main route, the accessible path loops around to allow entry without stairs.

Evacuation & Safety Routes :

- Primary evacuation route for visitors follows the main circulation path toward the main exit, located near the main entrance.
- Secondary evacuation route connects to an emergency exit at the rear of the building, reserved primarily for staff but available in emergencies.
- Ramps are integrated into evacuation paths to ensure inclusivity in emergencies.

Staff & Service Circulation :

- A dedicated service and emergency access point is located at the back of the building for staff movement, deliveries, and waste management, separated from the public flow to avoid disruption. Evacuation distances are minimized by placing exits strategically, so all points in the building are within a short, safe travel time

LEGEND :

- Paths for disabled people
- Paths for the staffs
- Paths for the public
- Gate
- Shading for circulation zone
- 2m Set back



Figure 5.9 The Circulation And EVACUATION Scheme
Source : Made by author

Design Development

MAIN GROUND FLOOR PLAN

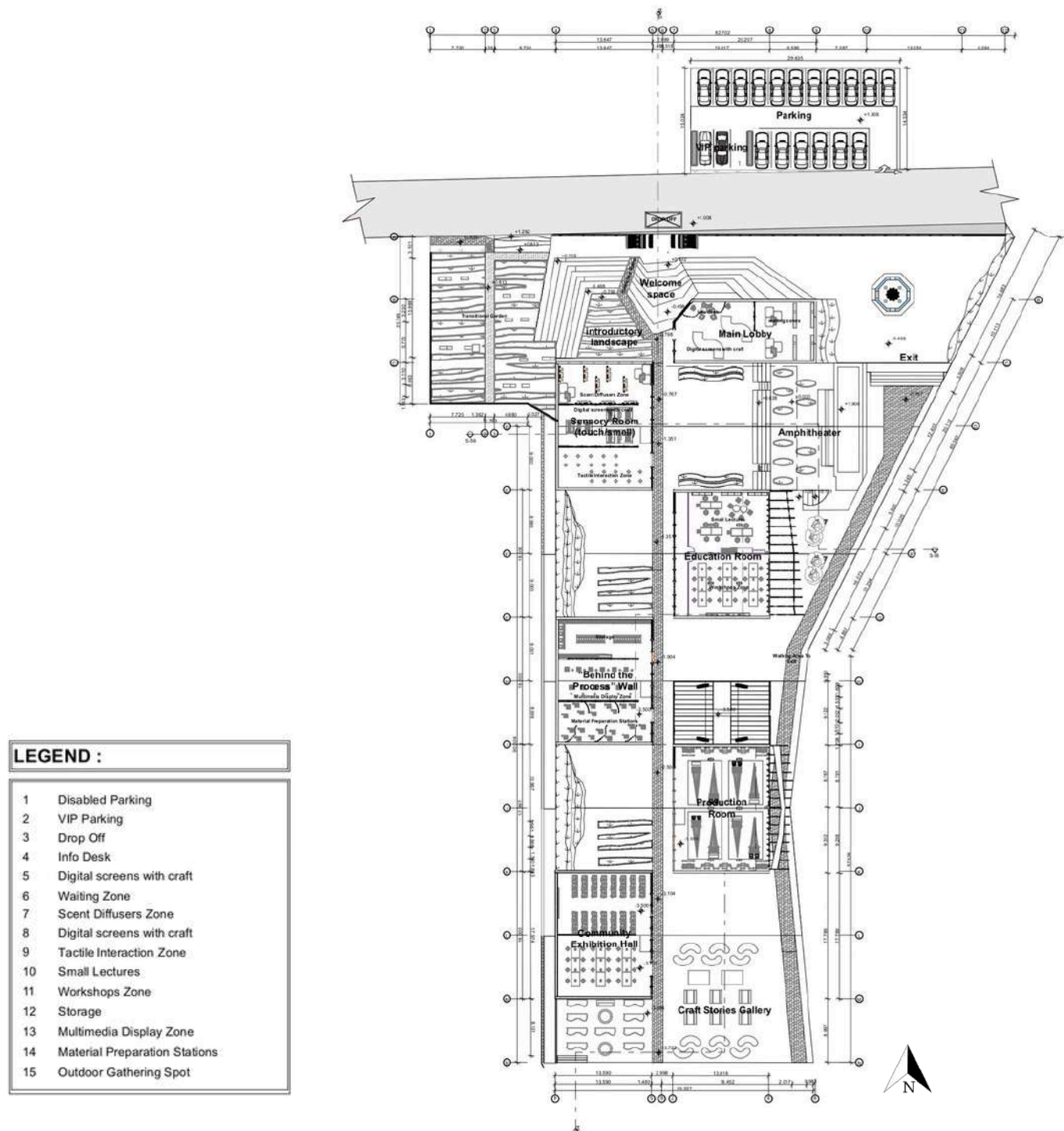


Figure 5.10 Main Ground Floor Plan Scale 1/500
Source : Made by author

Design Development

MAIN -1 LEVEL PLAN

LEGEND :	
16	Gift shop
17	Archive Zone
18	Male Bathroom
19	Woman Bathroom
15	Outdoor Gathering Spot
20	Oudoue Corner
21	Disabled Bathroom
22	Musuluh
23	Resting Room
24	Kitchen
25	Drop Off
26	Outdoor Corner
27	Dance Zone

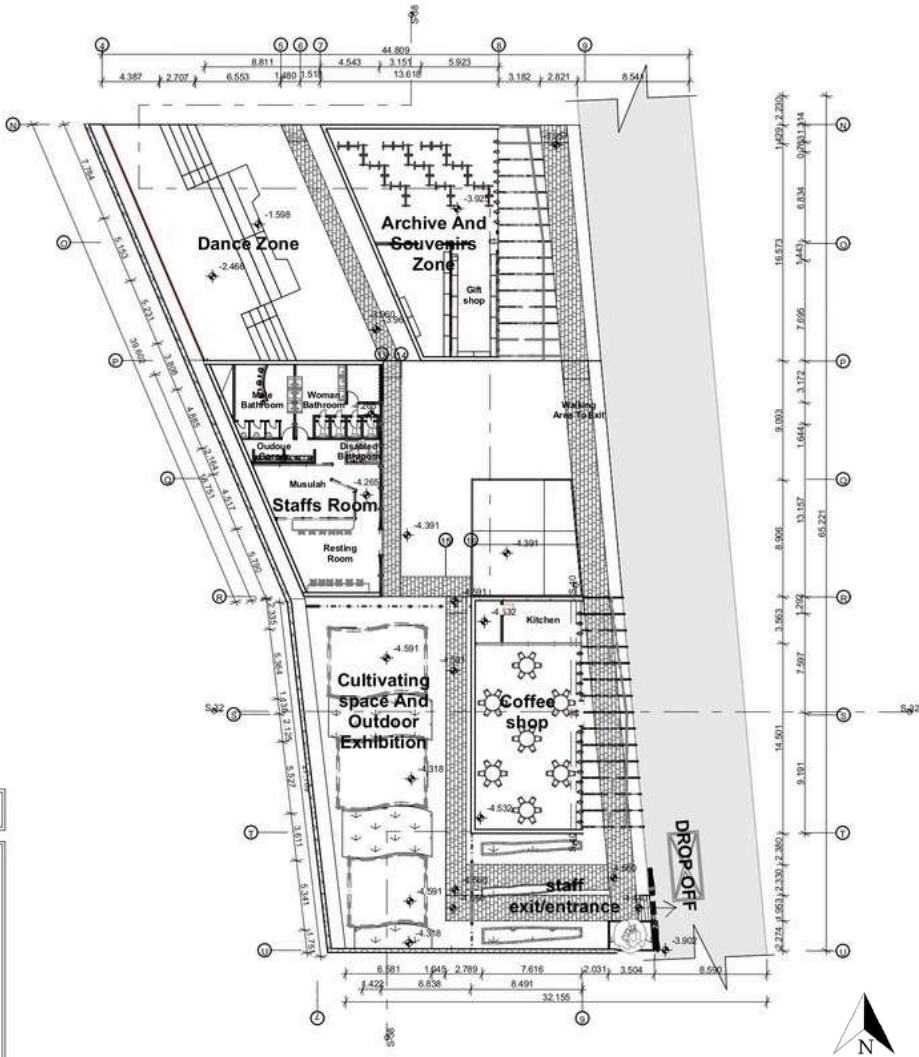


Figure 5.11 Main -1 level Floor Plan Scale 1/500
Source : Made by author

Design Development
MAIN GROUND PLAN

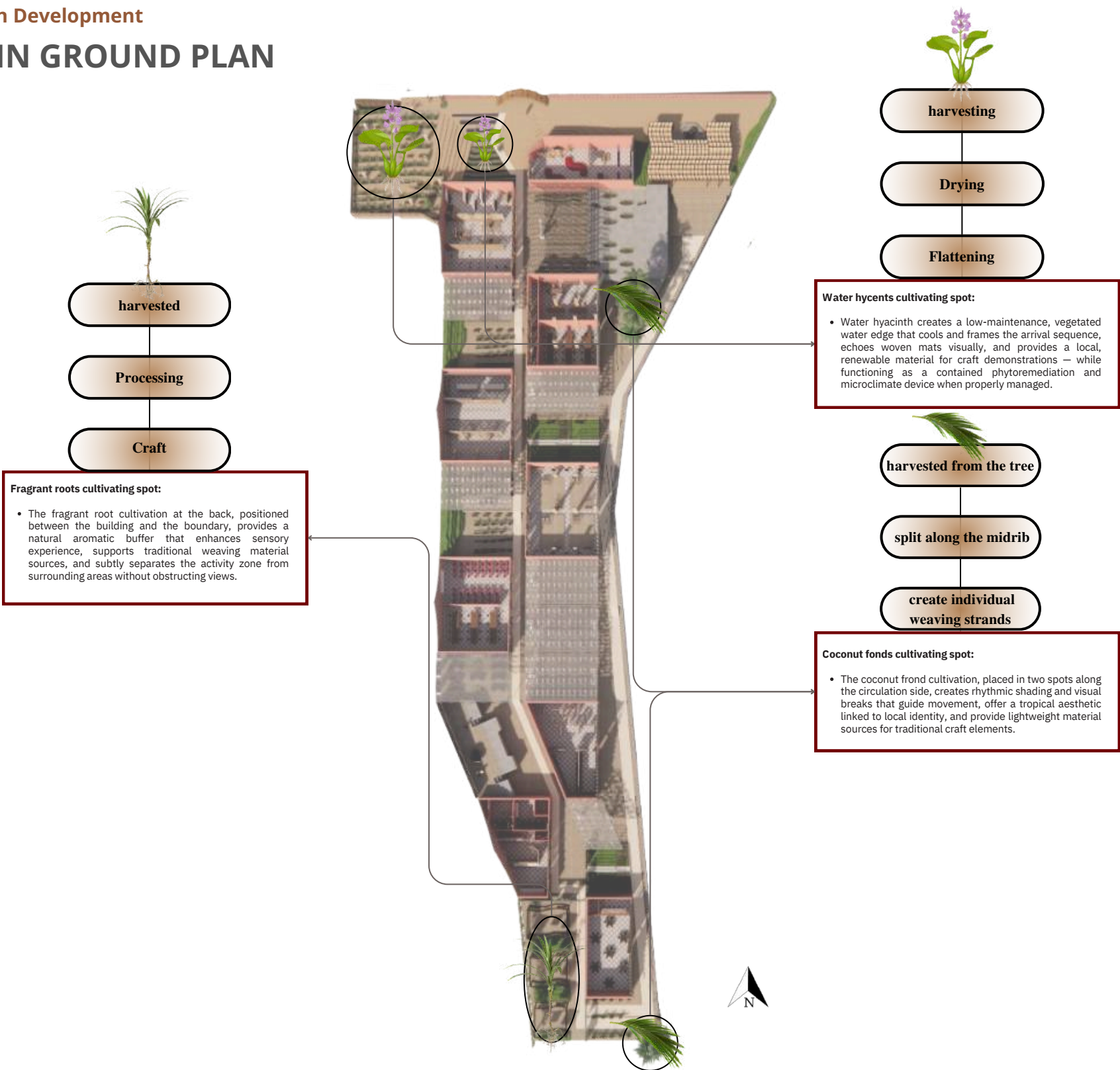


Figure 5.12 Main floor plan Render
Source : Made by author

Design Development

FLOOR PLAN

Production Area

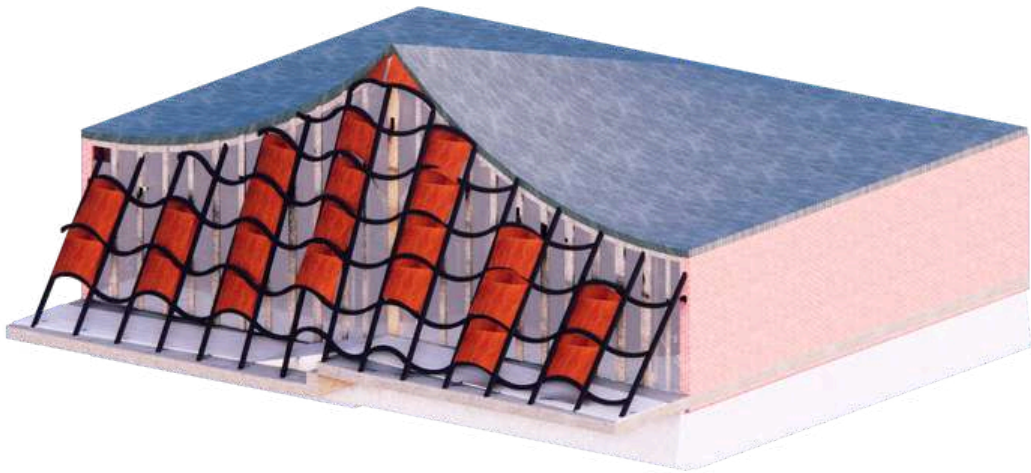
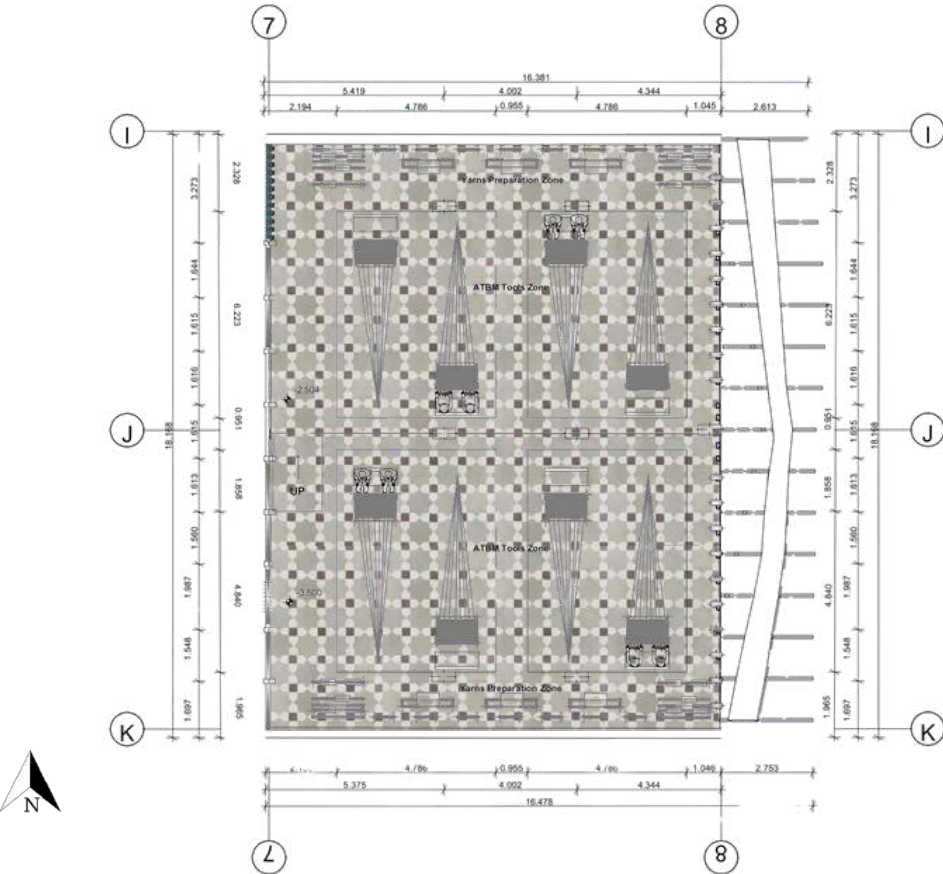


Figure 5.13 The Thread Journey Weaving Community Center Situation Scale 1/1000
Source : Made by author



The production area is organized into four dedicated ATBM (Alat Tenun Bukan Mesin) machine zones, each measuring 4.7m × 6.6m. Within each zone, two ATBM weaving machines are positioned to allow efficient movement and operational workflow. Adjacent to the weaving machines, space is allocated for thread preparation, ensuring a seamless transition between preparation and weaving stages. The arrangement promotes optimal circulation, maintains clear separation between workstations, and enhances productivity while respecting the spatial rhythm of traditional weaving processes.

Design Development

EXPLODED

Production Area

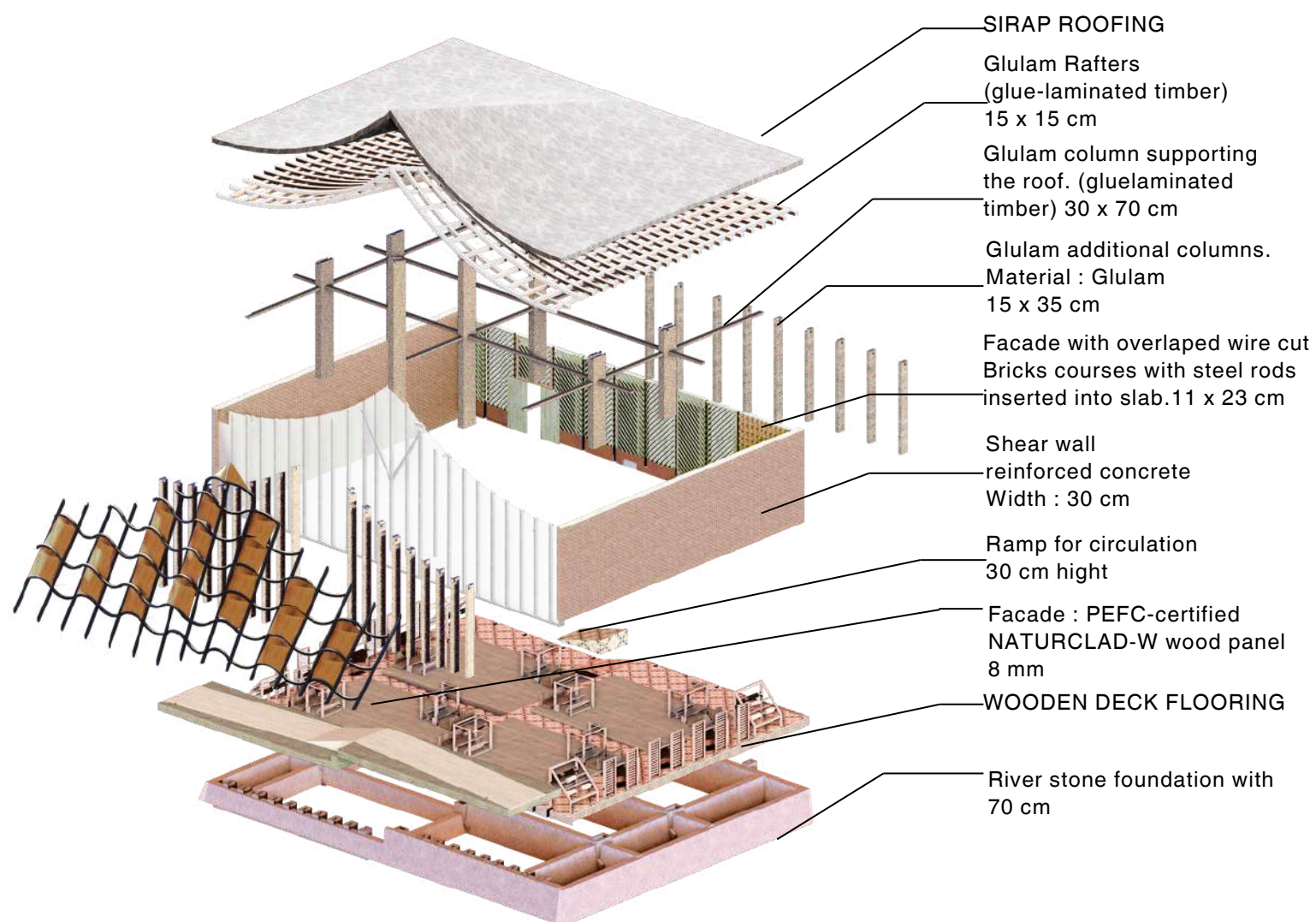


Figure 5.14 Production Area Exploded
Source : Made by author

Design Development

ELEVATIONS RENDER

Production Area

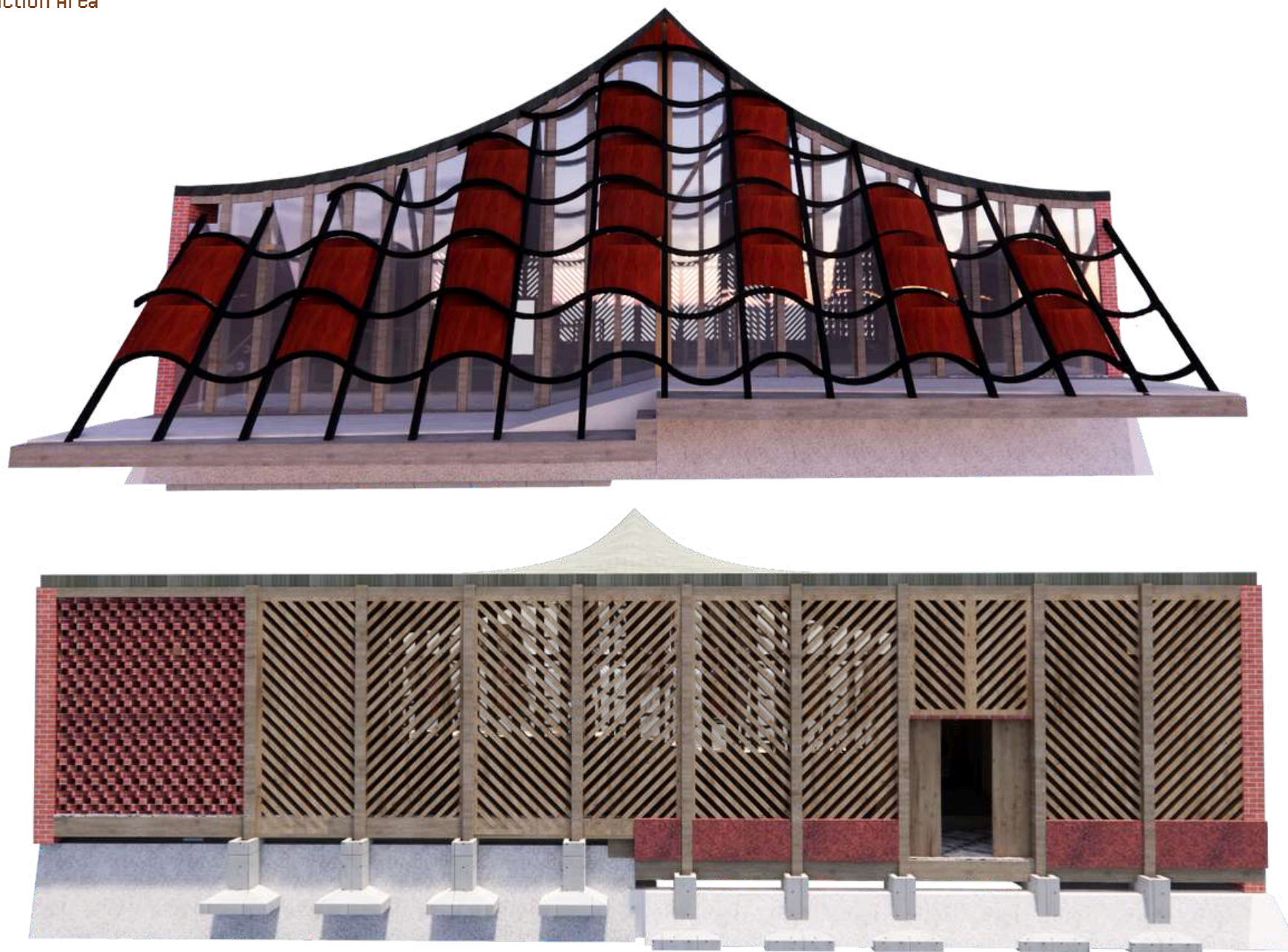


Figure 5.15 ELEVATIONS RENDER production area
Source : Made by author

Design Development SECTION

Production Area

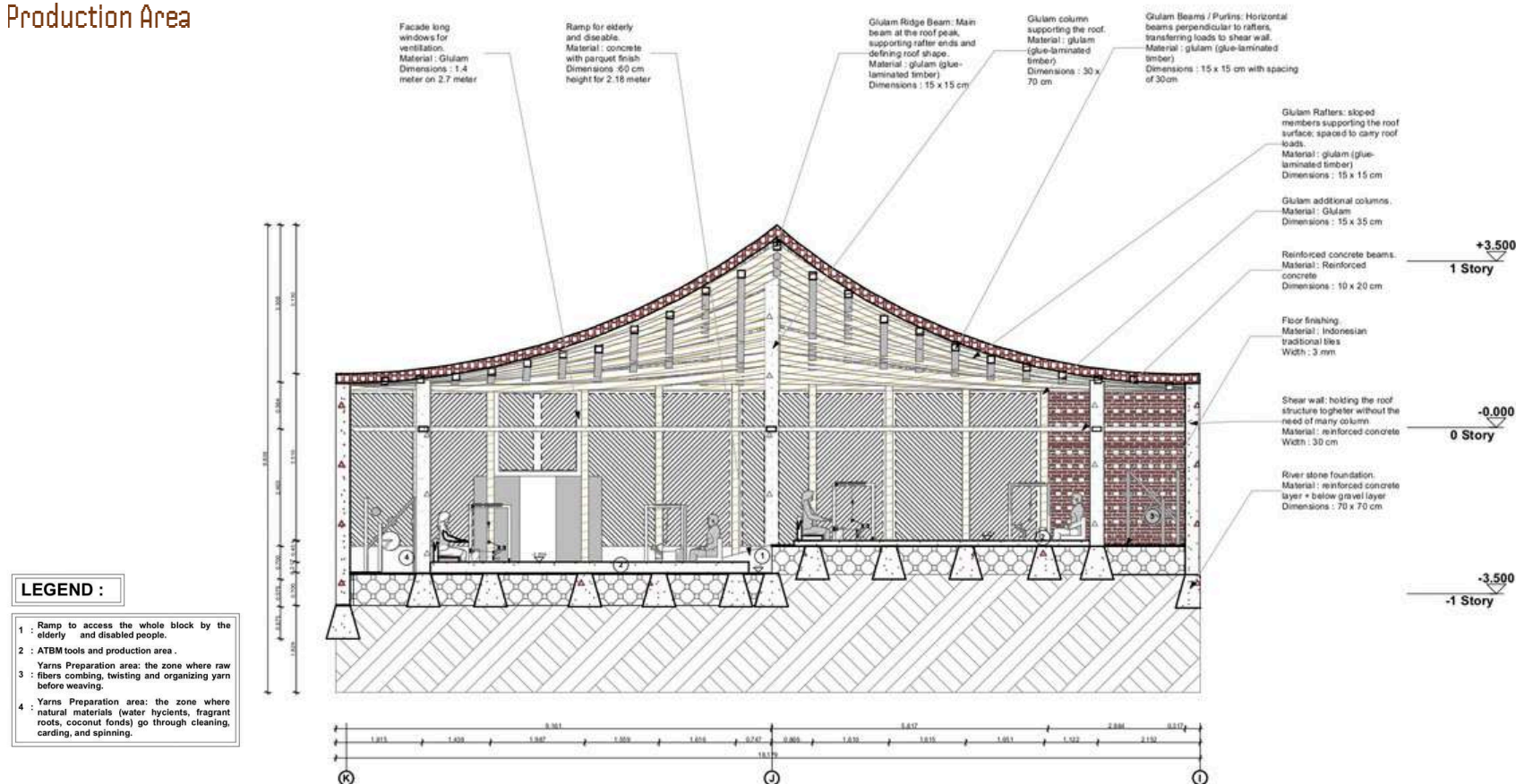


Figure 5.16 Production Area section
Source : Made by author

The sectional drawing illustrates the spatial arrangement of the production area, highlighting the placement of ATBM weaving machines alongside yarn preparation zones. These preparation areas accommodate both raw fiber processing and thread readiness before weaving. The foundation system is consistent throughout the space; however, the section reveals a difference in length between the higher and lower ground levels, with the elevated portion extending further to accommodate production needs. Above, the glulam roof structure spans the workspace, providing both structural stability and a warm, natural aesthetic. The facade incorporates woven exposed brickwork, serving as a functional and symbolic element, echoing the weaving patterns within the building's craft-focused identity.

Design Development

BUILDING INTERIOR DESIGN

Production Area

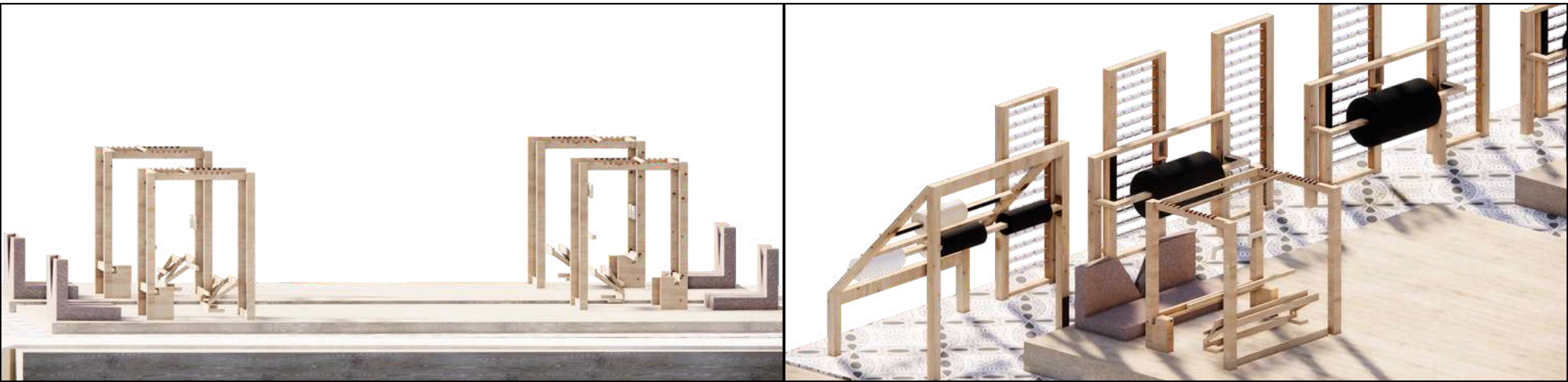
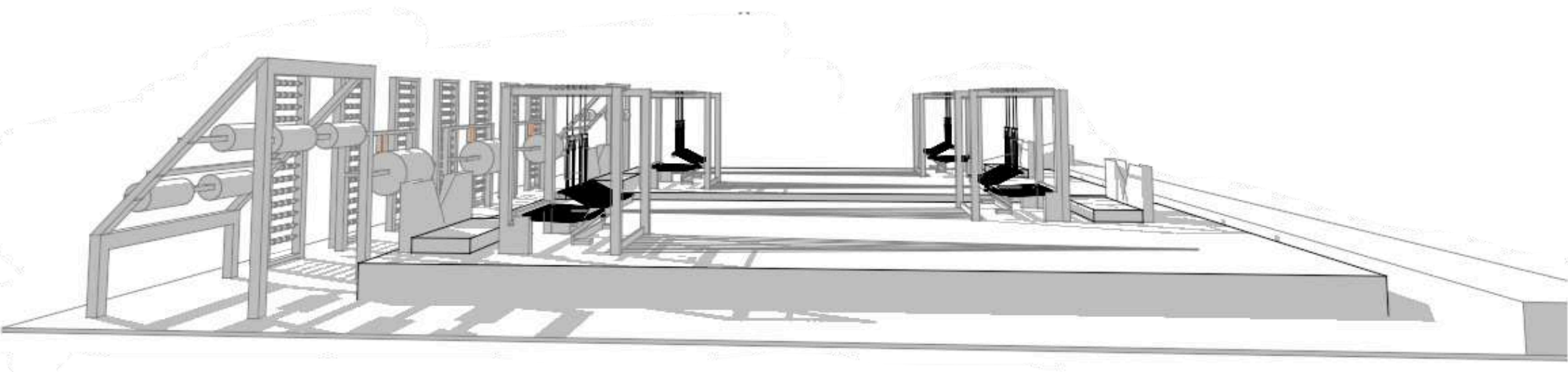


Figure 5.17 Production Area render
Source : Made by author



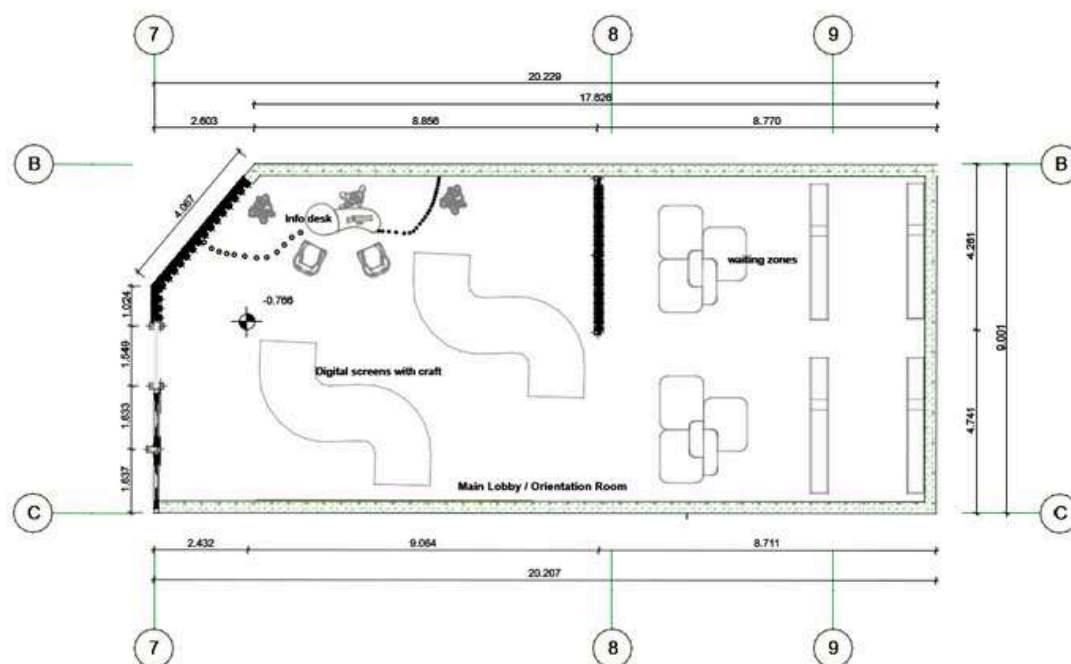
Design Development

FLOOR PLAN

Main Lobby



Figure 5.18 Main lobby Exploded render
Source : Made by author



The lobby is organized into three distinct functional zones to optimize visitor flow and engagement. The information desk is strategically placed near the main entrance, serving as the first point of contact and guiding circulation to other areas. Adjacent to it, a digital screen display showcases traditional weaving crafts and related content, integrating modern technology with cultural heritage. The waiting zone, furnished for comfort, is positioned to maintain visual access to both the information desk and display area, fostering an inviting and interactive reception environment. The spatial arrangement emphasizes accessibility, clear sightlines, and a welcoming atmosphere.

Design Development

RENDER ELEVATION

Main Lobby

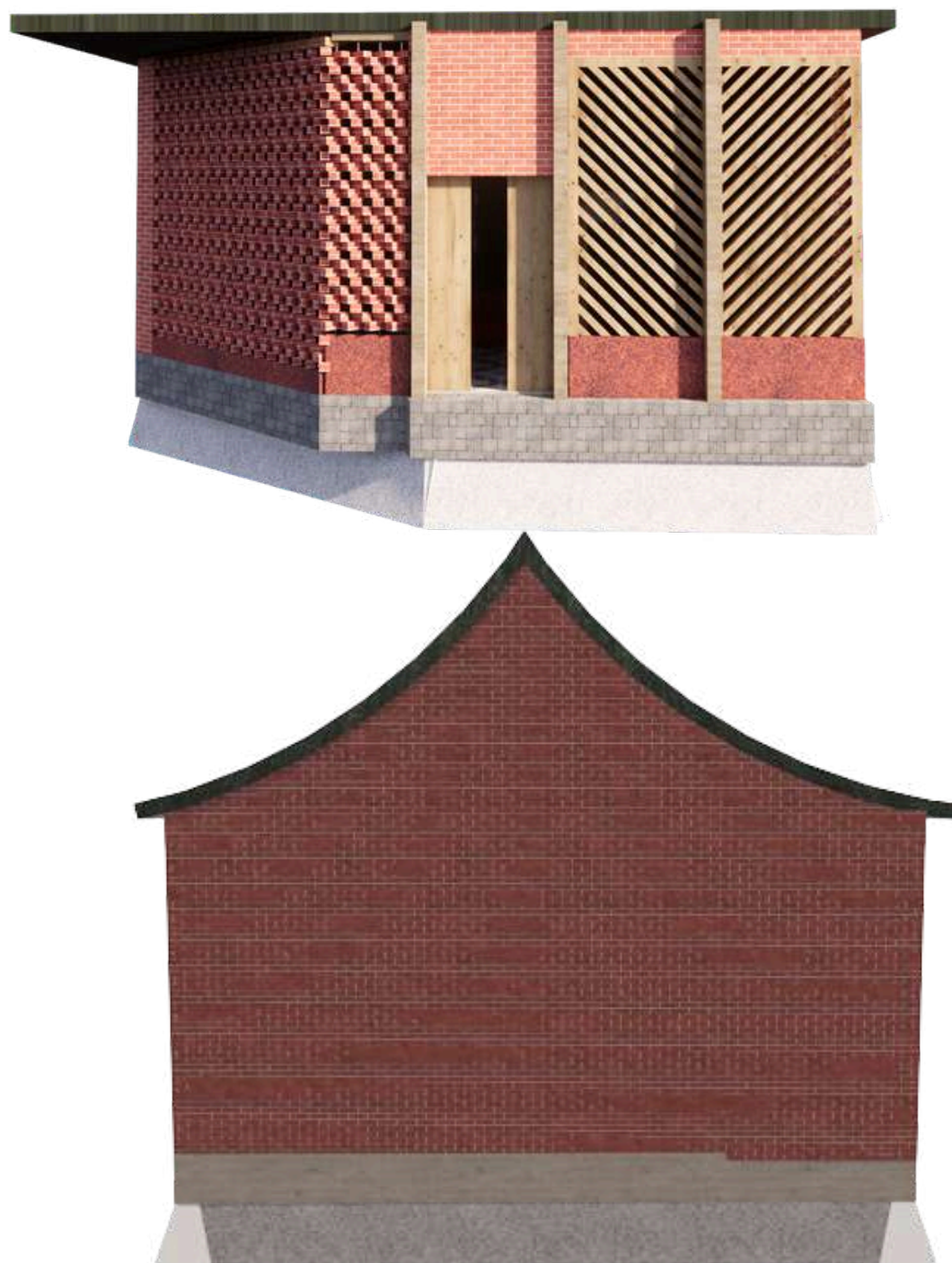


Figure 5.19 Main Lobby elevation render
Source : Made by author

Design Development

EXPLODED

Main Lobby

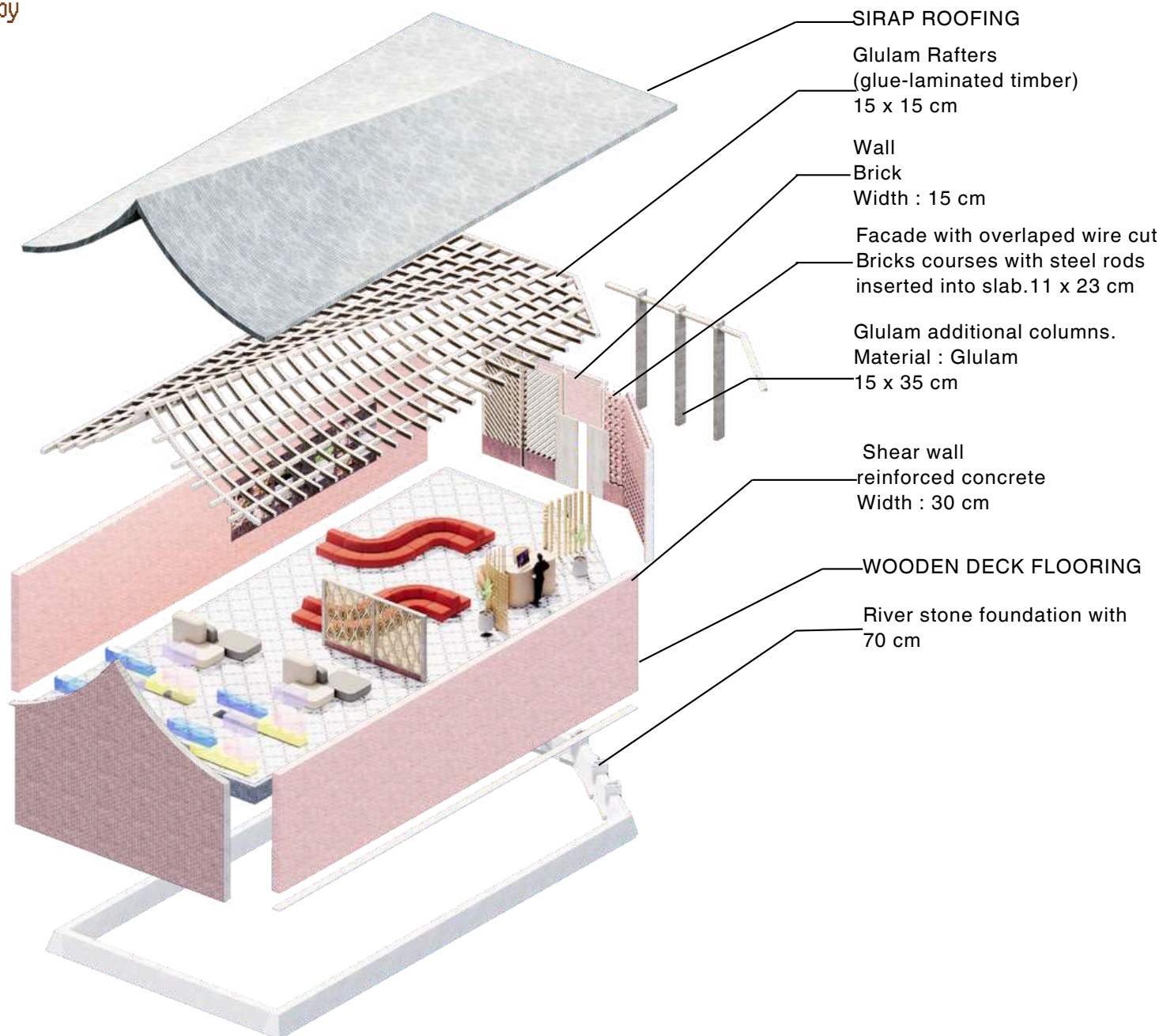


Figure 5.20 Main lobby Exploded
Source : Made by author

Design Development

SECTION

Production Area

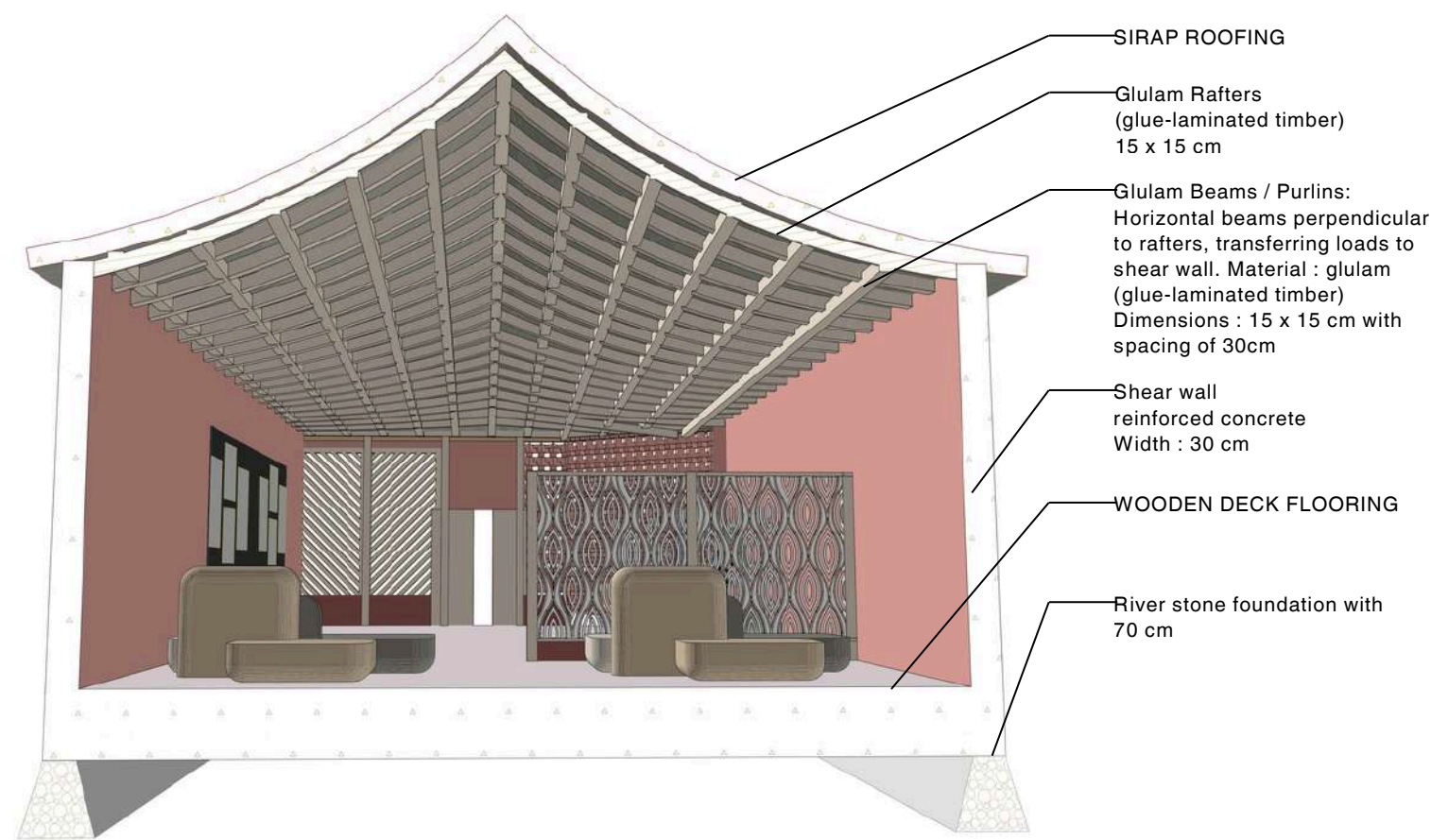


Figure 5.21 Production Area section
Source : Made by author

The lobby section reveals a structural composition that blends durability with warm, natural finishes. The sirap roofing provides a lightweight yet weather-resistant upper layer, supported by glulam rafters measuring 15 × 15 cm. Beneath them, glulam beams/purlins run perpendicular to the rafters, also 15 × 15 cm, spaced at 30 cm intervals to efficiently transfer roof loads to the reinforced concrete shear wall (30 cm thick). The floor is finished with wooden decking, elevated on a river stone foundation with a height of 70 cm, adding both thermal comfort and a tactile connection to nature. This section emphasizes structural clarity while integrating local materials for a harmonious architectural character.

Design Development

BUILDING INTERIOR DESIGN

Production Area

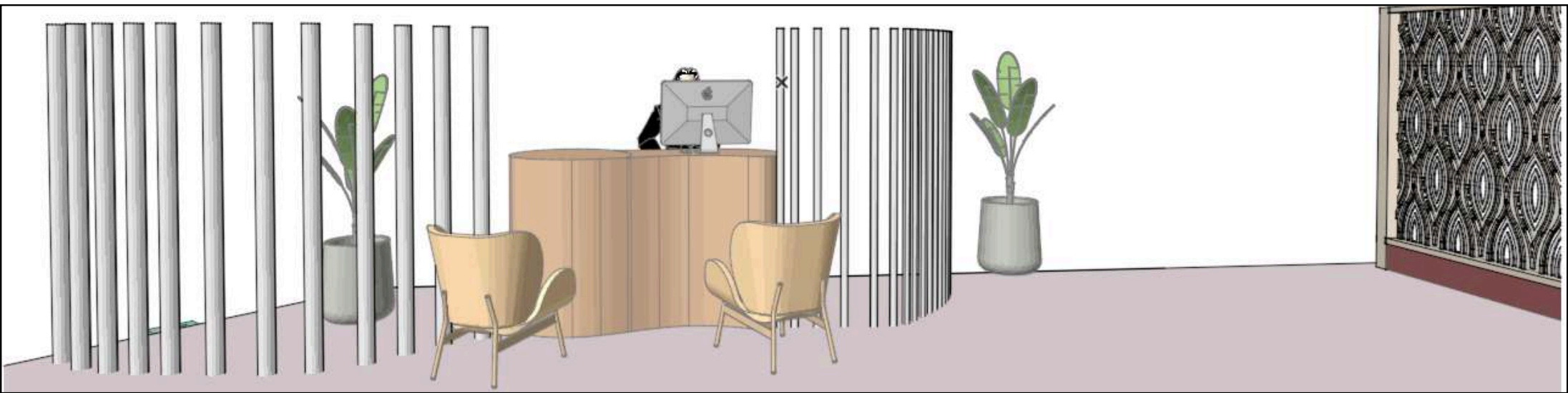
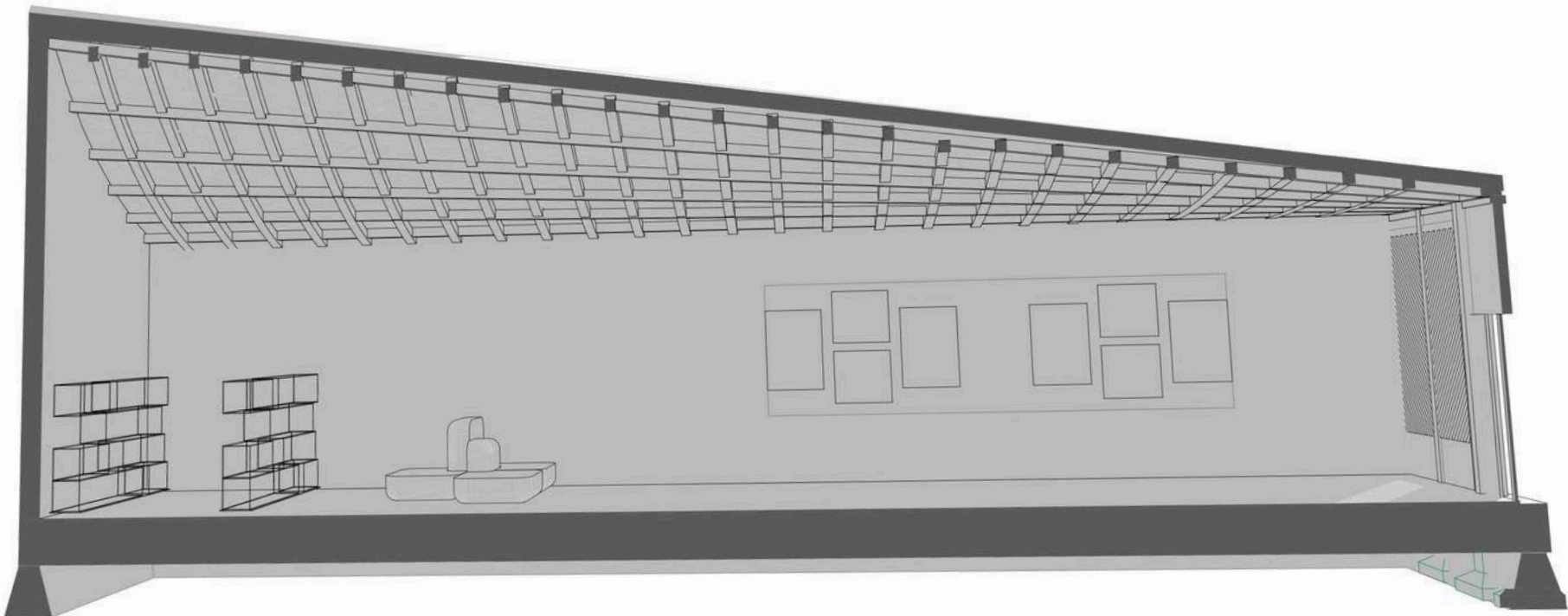


Figure 5.22 Production Area interior design
Source : Made by author



Design Development

EXPLODED

Sensory Room

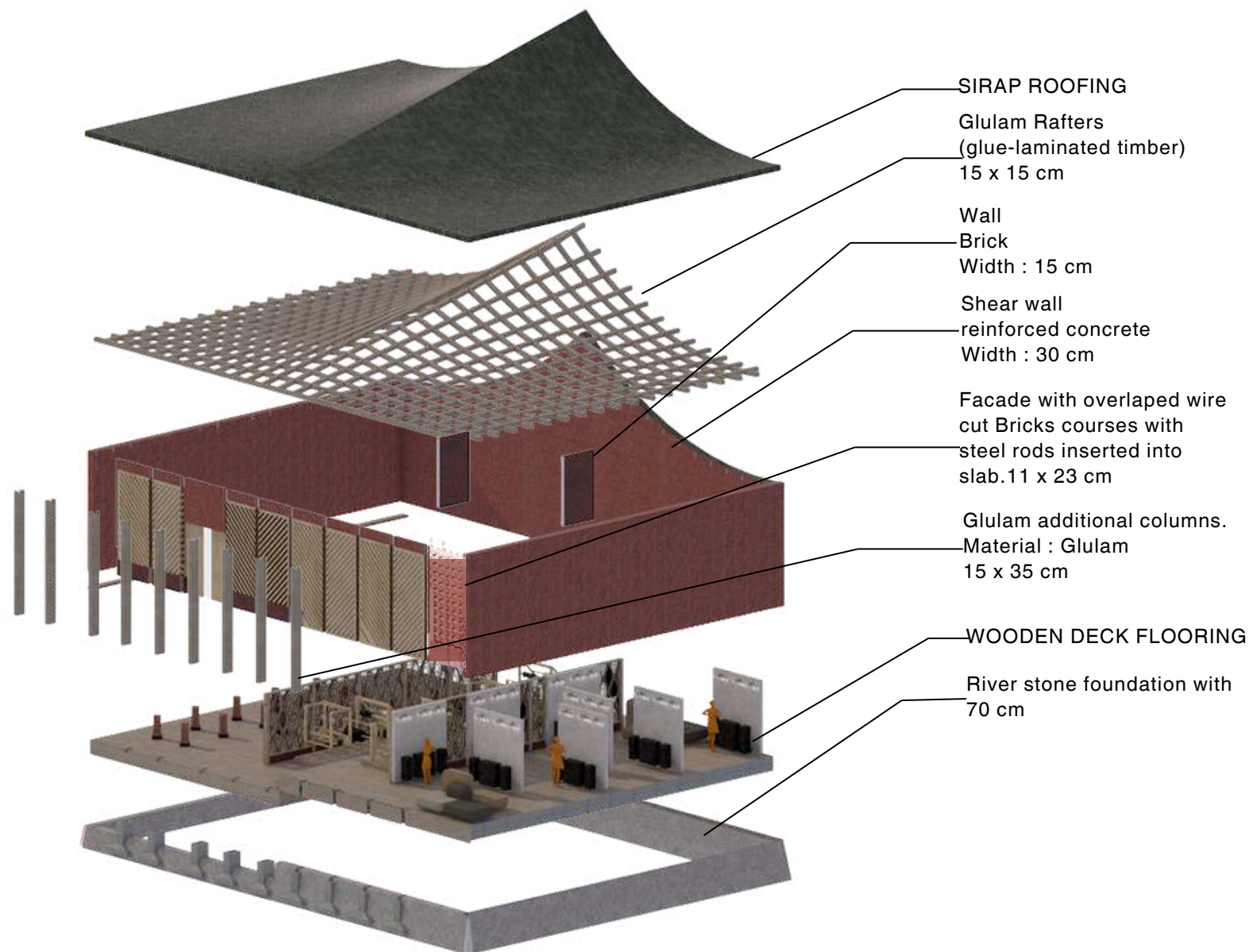


Figure 5.23 Sensory Room Exploded
Source : Made by author

Design Development

FLOOR PLAN

Sensory Room

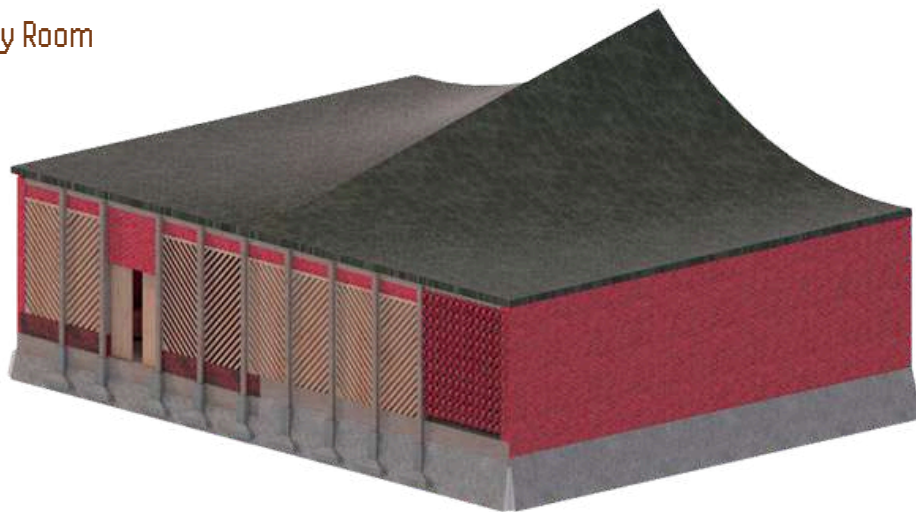
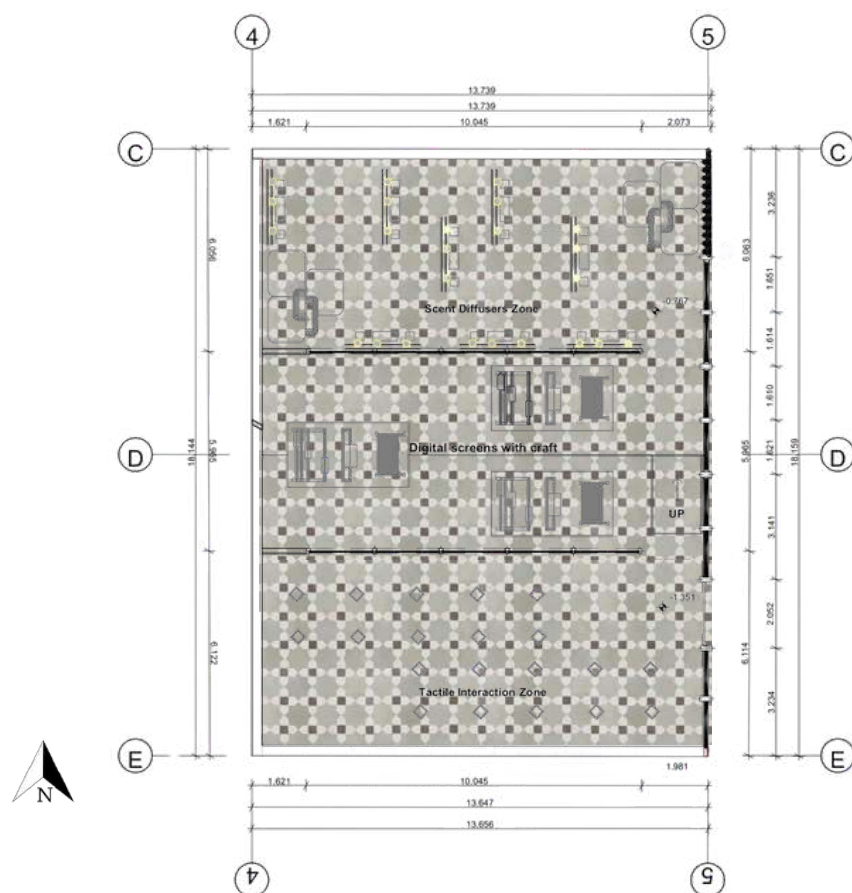


Figure 5.24 Sensory Room Exploded render
Source : Made by author



The Sensory Room is divided into three interactive zones, each designed to immerse visitors in the sensory and cultural essence of traditional weaving. The Scent Diffuser Zone fills the air with the natural aromas of original weaving resources—such as fragrant roots, plant fibers, and natural dyes—evoking the atmosphere of traditional workshops. The Digital Craft Screen Zone presents visual displays of weaving materials alongside the historical versions of ATBM (non-mechanical weaving looms), allowing visitors to explore the evolution of tools and techniques. The Tactile Interaction Zone invites visitors to touch and feel different weaving materials, from raw fibers to partially processed threads, deepening their appreciation of the craft's textures and manual artistry.

Design Development
ELEVATION

Sensory Room



Figure 5.25 Sensory Room elevation render
Source : Made by author

Design Development

SECTION

Production Area

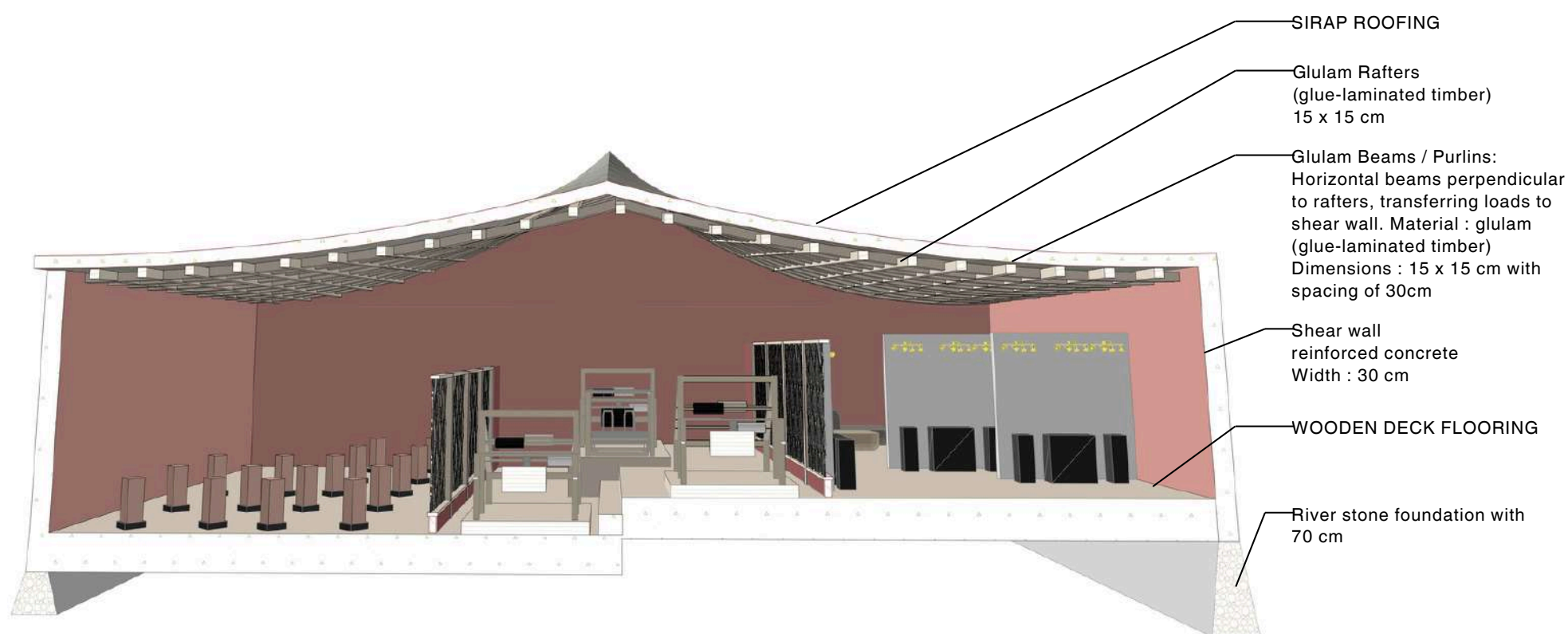


Figure 5.26 Production Area section render
Source : Made by author

Section illustrates the spatial arrangement of three zones: Scent Diffuser Zone (aromas of natural weaving resources), Digital Screen of Craft Zone (displaying materials and historical ATBM tools), and Tactile Interaction Zone. Roof structure uses sirap roofing over glulam rafters (15×15 cm) with glulam purlins (15×15 cm, 30 cm spacing). Walls are reinforced concrete (20 cm thick) with natural finish. Slab is reinforced concrete (15 cm) with wooden flooring. Foundation uses river stone (70 cm). Zones are positioned to create

Design Development

BUILDING INTERIOR DESIGN

Production Area

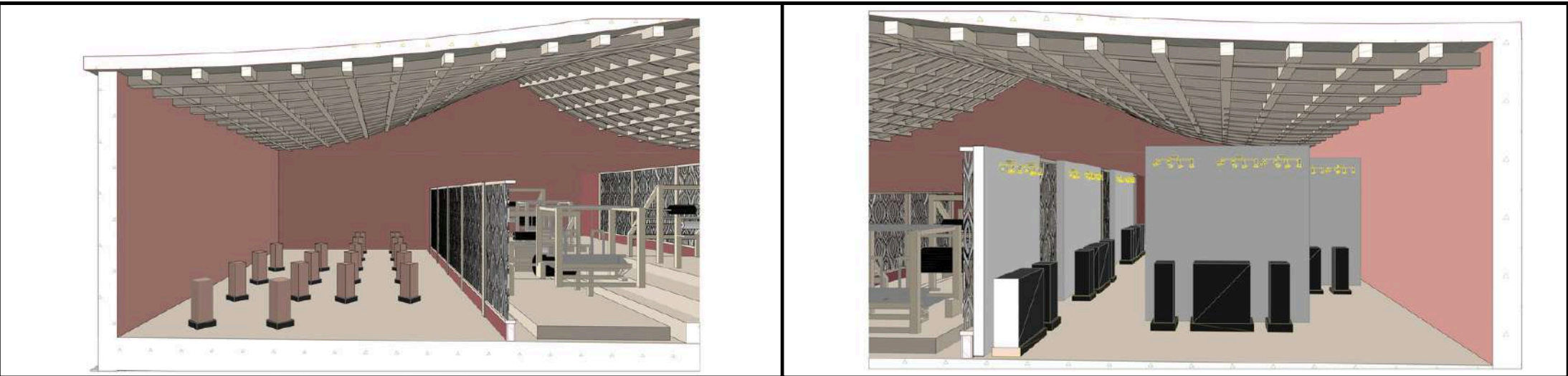
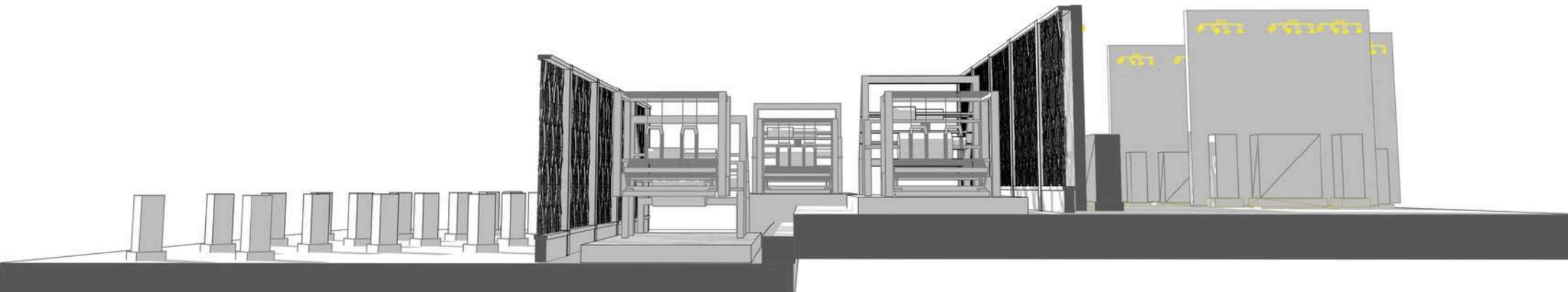


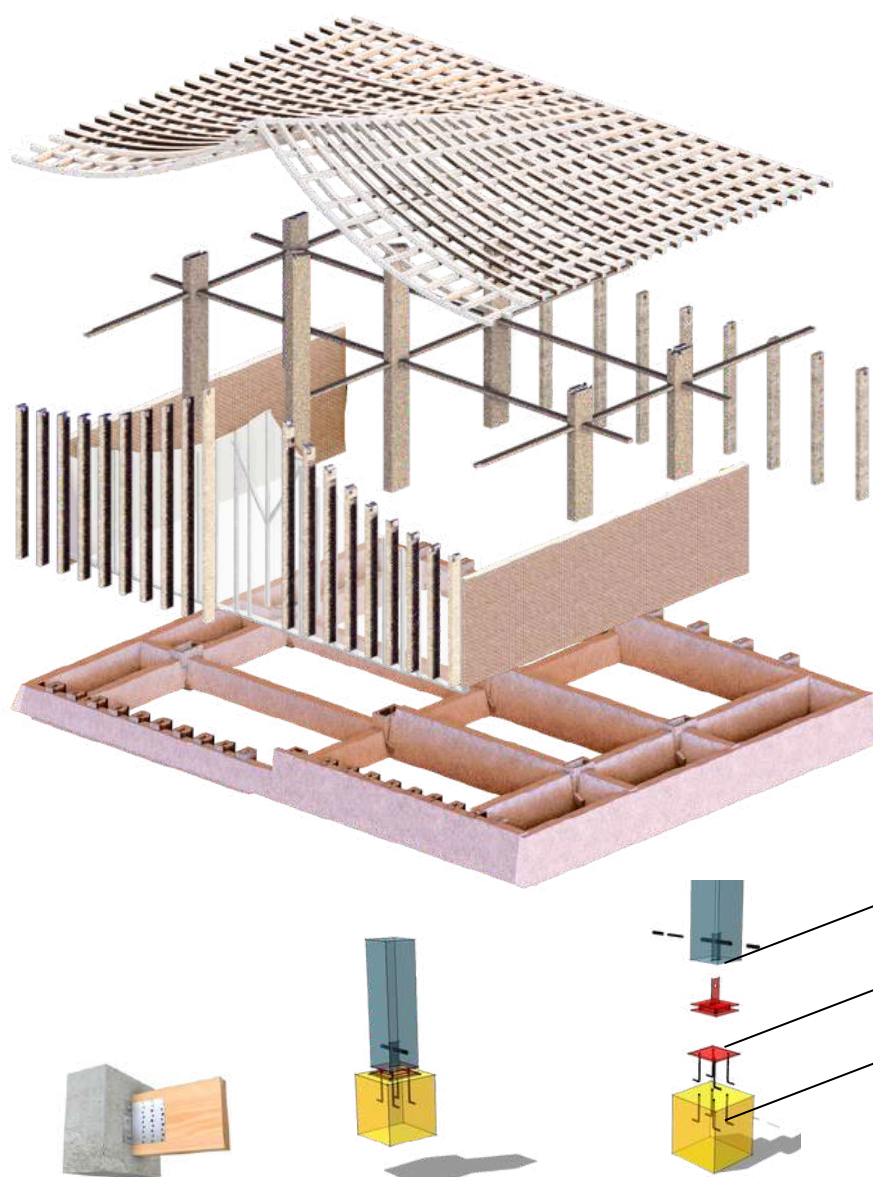
Figure 5.27 Production Area interior design render
Source : Made by author



Design Development

STRUCTURE - CONTEXTUAL STRUCTURAL EXPRESSION

Contextual Structural Expression =
Contextual Architecture + Structural
Expressionism



Structure Type A : Two Shear Walls [at the sides]

The structure combines reinforced concrete shear walls on both sides with glulam beams and columns in between. The shear walls provide lateral stability, while the glulam spans connect to embedded steel plates bolts cast into the concrete. This joinery ensures secure load transfer between timber and concrete, allowing for natural expansion of the wood without compromising structural integrity.

glulam structure for roof

steel plates

Reinforced concrete foundation

Figure 5.28 structure exploded render Type A : Two Shear Walls (at the sides)
Source : Made by author

Design Development

STRUCTURE - CONTEXTUAL STRUCTURAL EXPRESSION

Contextual Structural Expression =
Contextual Architecture + Structural
Expressionism

Structure Type B : Three Shear Walls

With an additional shear wall placed centrally or at the rear, the reinforced concrete elements share the lateral load more evenly, reducing stress on the glulam connections. Joinery is achieved through concealed steel connectors and bearing plates anchored to the shear walls, allowing the glulam to perform primarily in bending and compression while the concrete handles most of the seismic and wind forces.

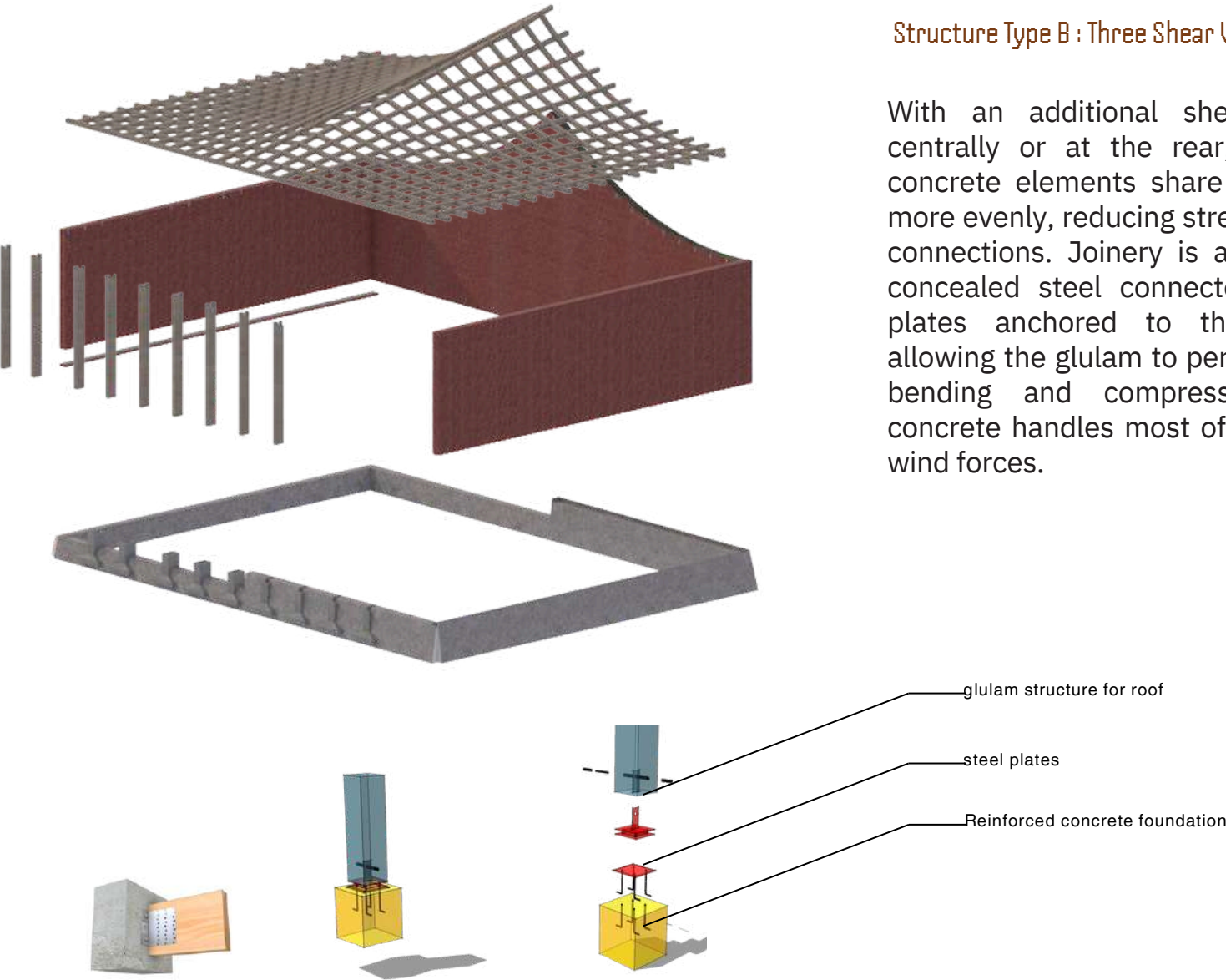
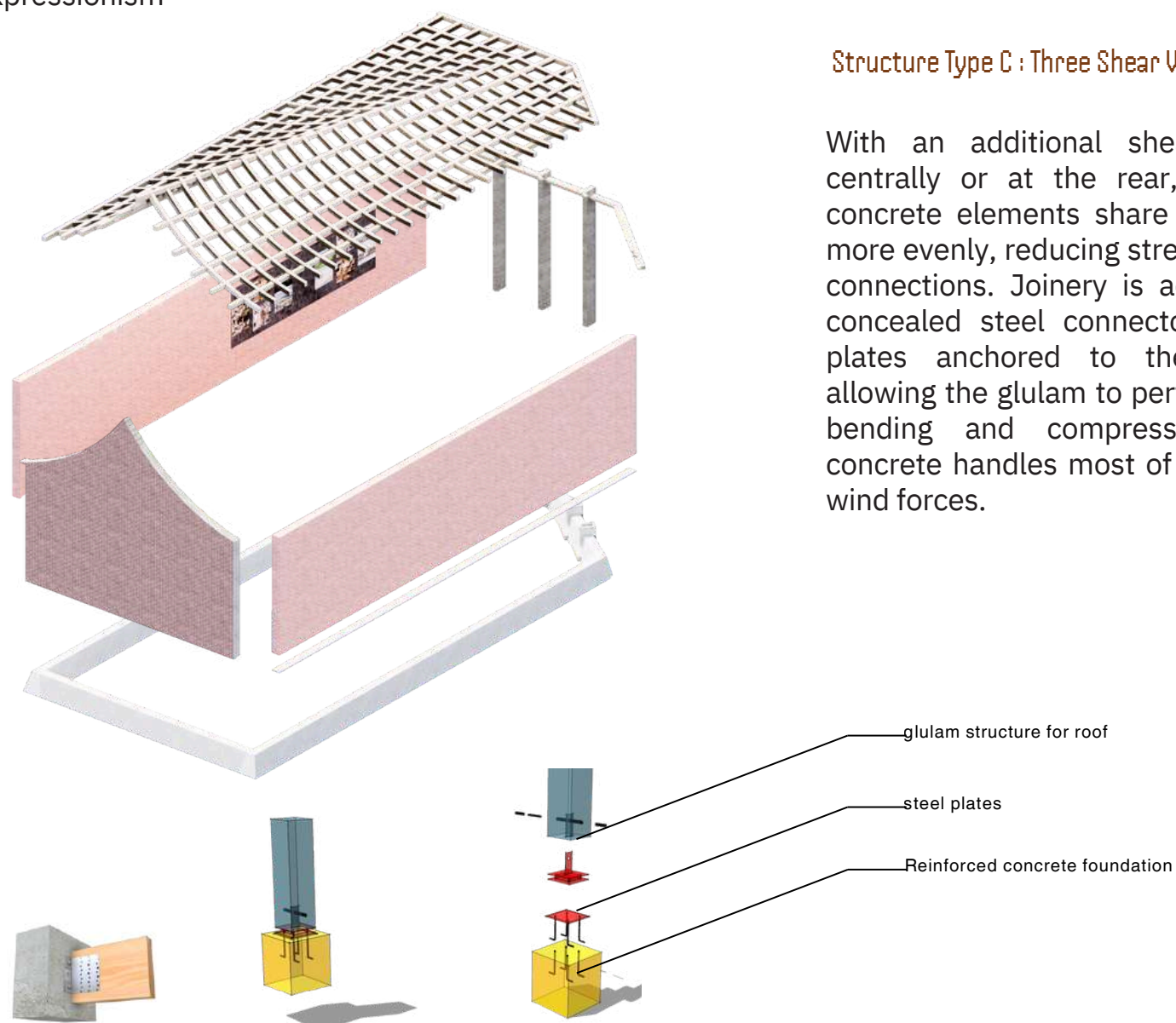


Figure 5.29 structure exploded render Type B : Three Shear Walls
Source : Made by author

Design Development

STRUCTURE - CONTEXTUAL STRUCTURAL EXPRESSION

Contextual Structural Expression =
Contextual Architecture + Structural
Expressionism



Structure Type C : Three Shear Walls

With an additional shear wall placed centrally or at the rear, the reinforced concrete elements share the lateral load more evenly, reducing stress on the glulam connections. Joinery is achieved through concealed steel connectors and bearing plates anchored to the shear walls, allowing the glulam to perform primarily in bending and compression while the concrete handles most of the seismic and wind forces.

Figure 5.30 structure exploded render Type C : Three Shear Walls
Source : Made by author

Design Development

STRUCTURE - CONTEXTUAL STRUCTURAL EXPRESSION

Structure plans

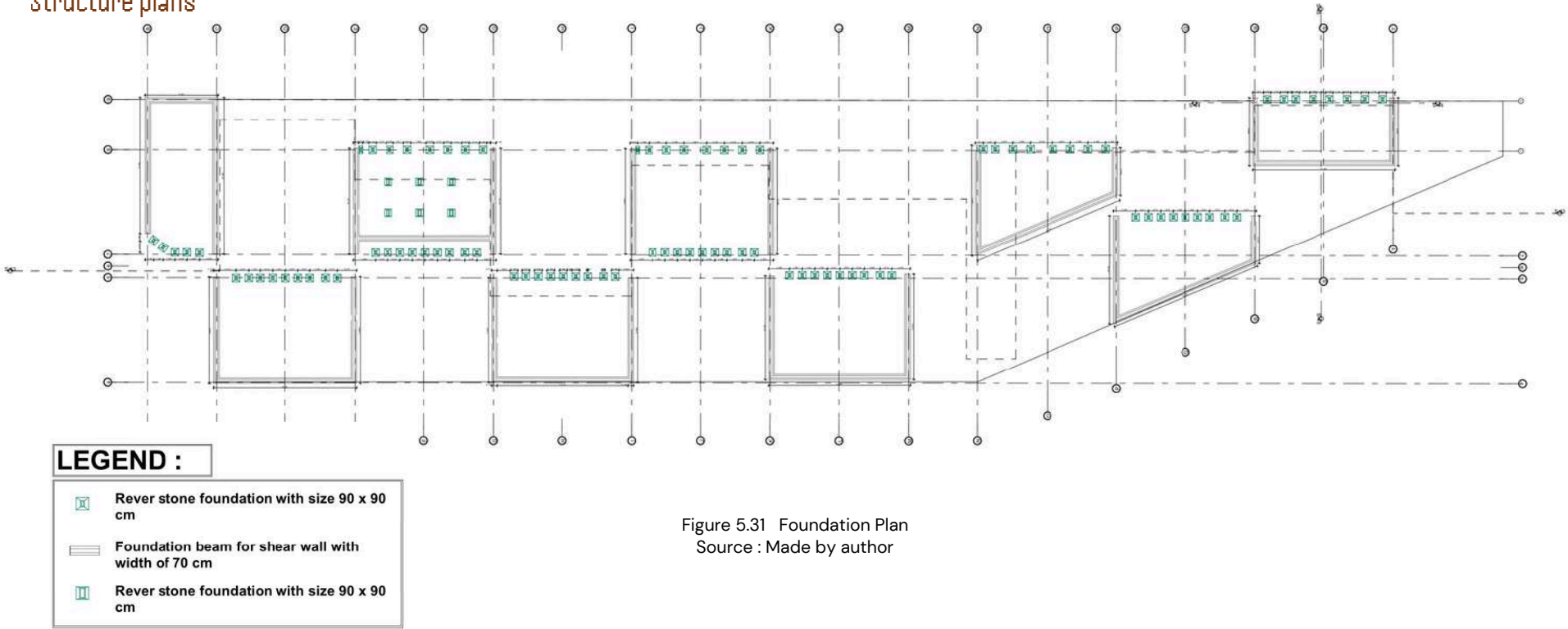


Figure 5.31 Foundation Plan
Source : Made by author

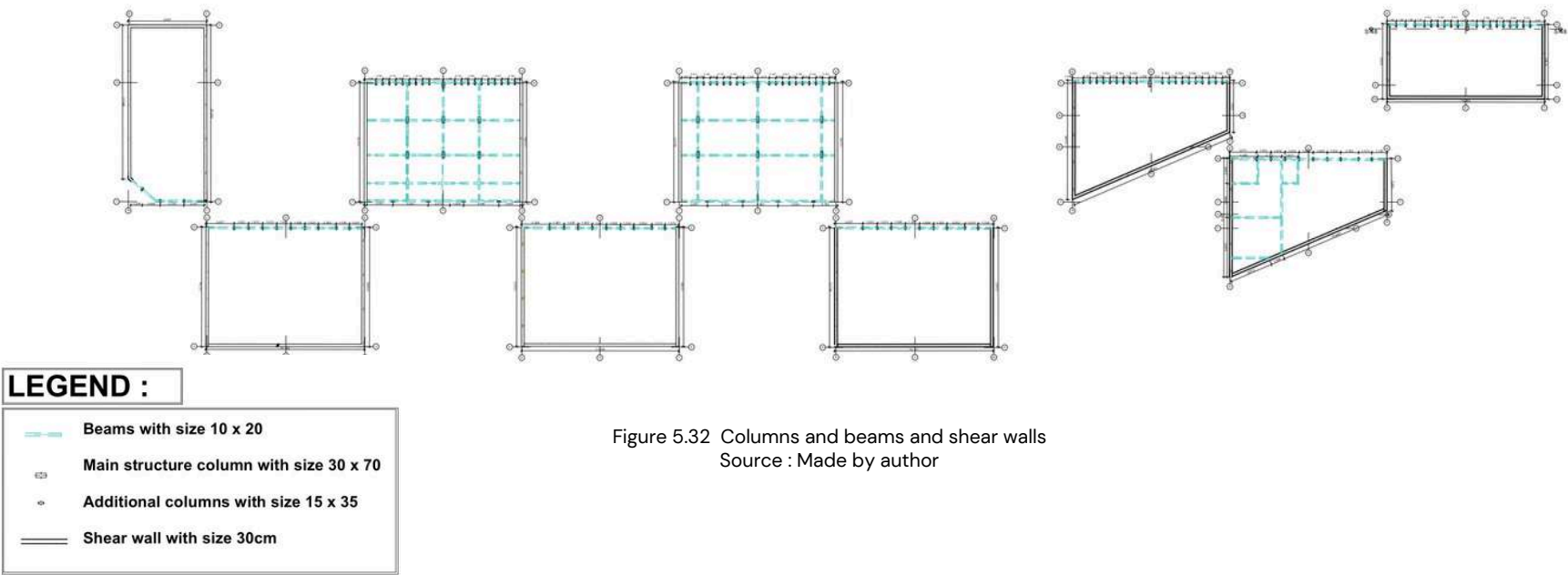


Figure 5.32 Columns and beams and shear walls
Source : Made by author

Design Development

STRUCTURE - CONTEXTUAL STRUCTURAL EXPRESSION

Roof plans

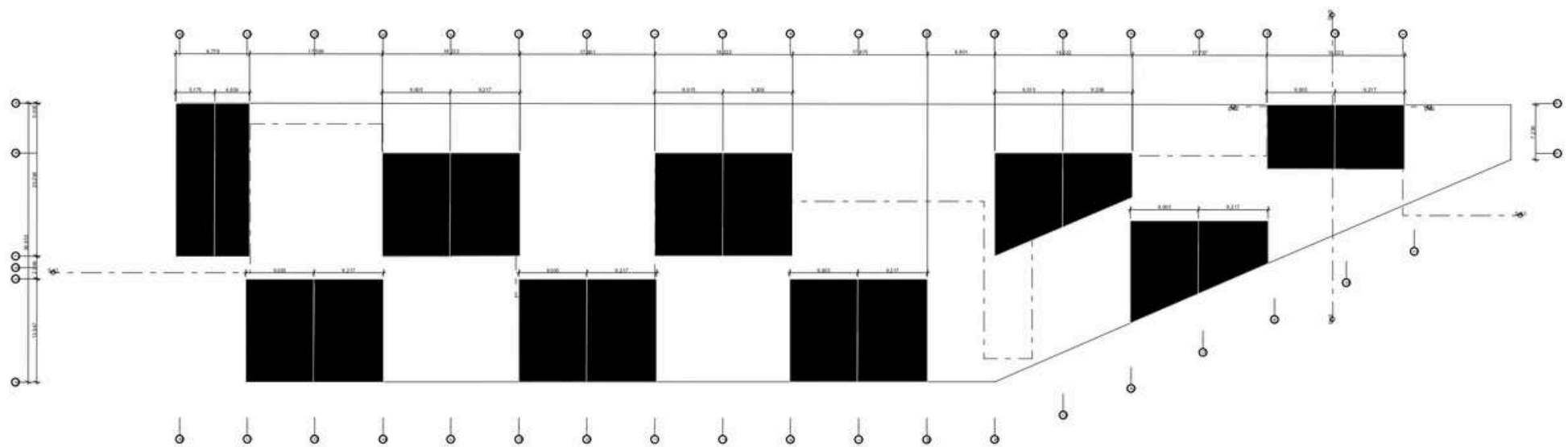
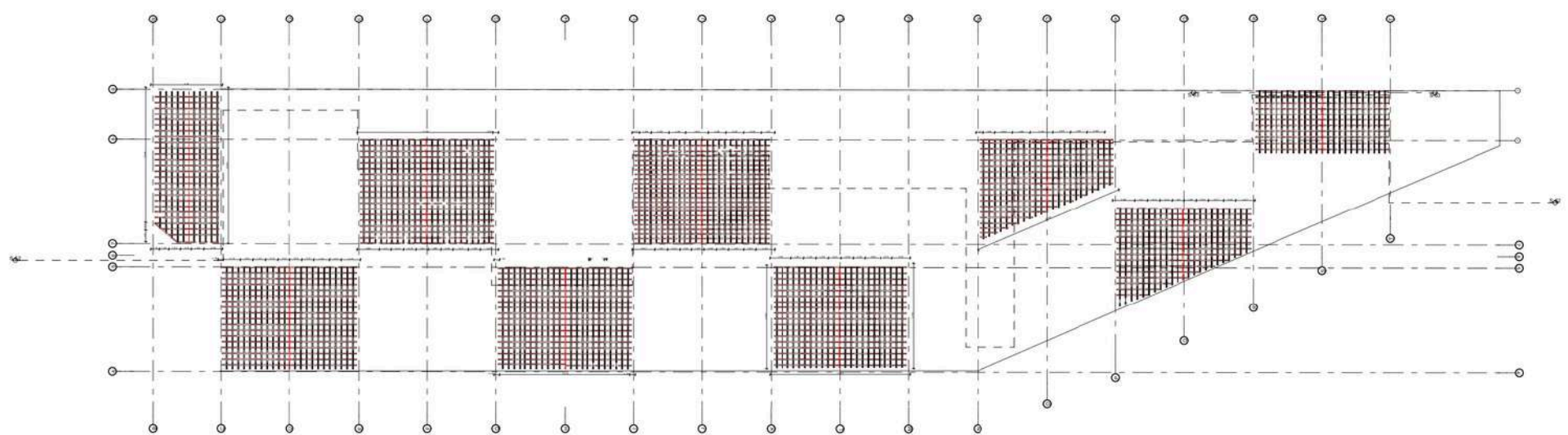


Figure 5.33 ROOF PLAN STANDARD TOP VIEW
Source : Made by author



LEGEND :

- | | |
|---|--|
|  | Glulam Rafters with glulam (glue-laminated timber) and size 15 x 15 cm |
|  | Glulam Beams / Purlins with glulam and size 15 x 15 cm and spacing of 30cm |
|  | Glulam Ridge Beam with glulam and size 15 x 15 cm and spacing of 30cm |

Figure 5.34 purlins and rafters structure
Source : Made by author

Design Development

BUILDING DESIGN (FLOOR PLAN)

Amphitheater

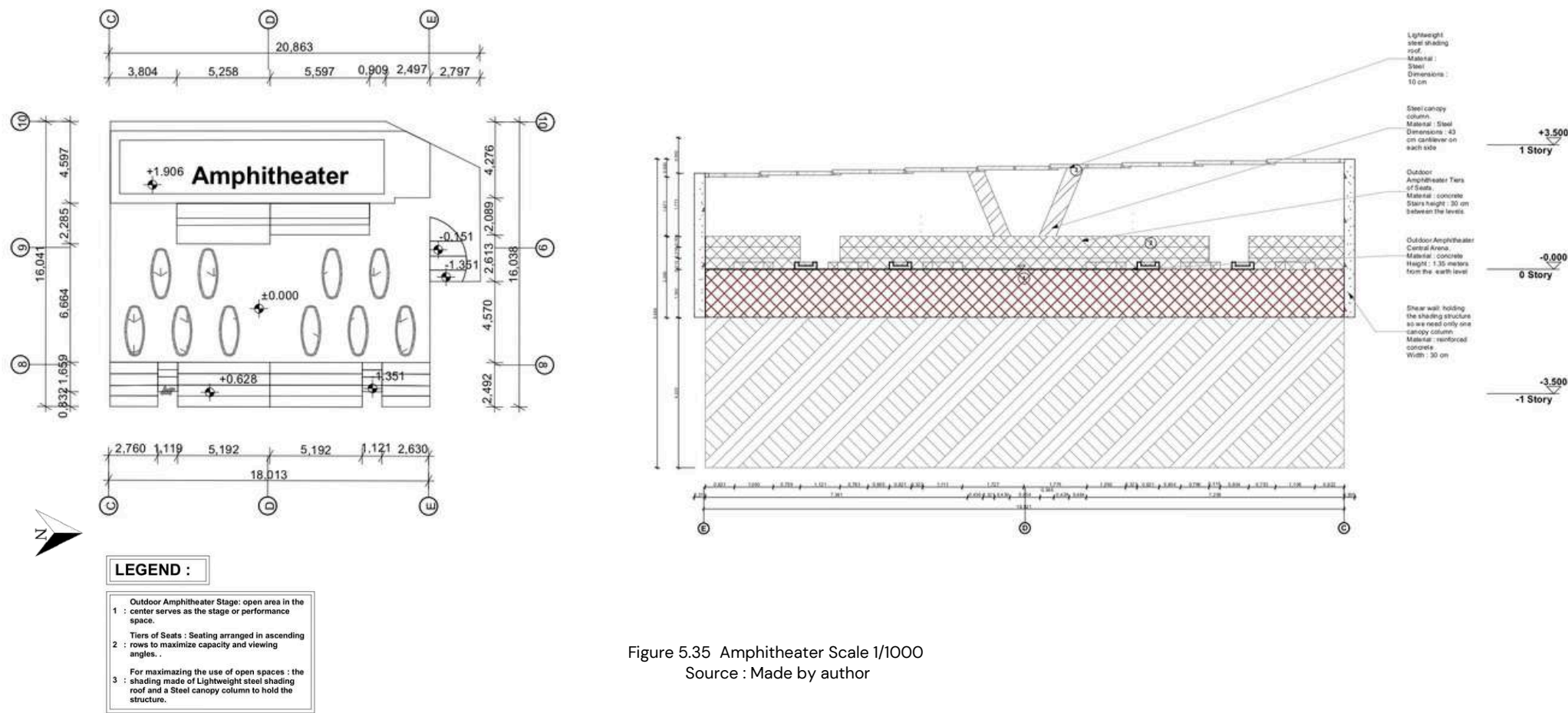


Figure 5.35 Amphitheater Scale 1/1000
Source : Made by author

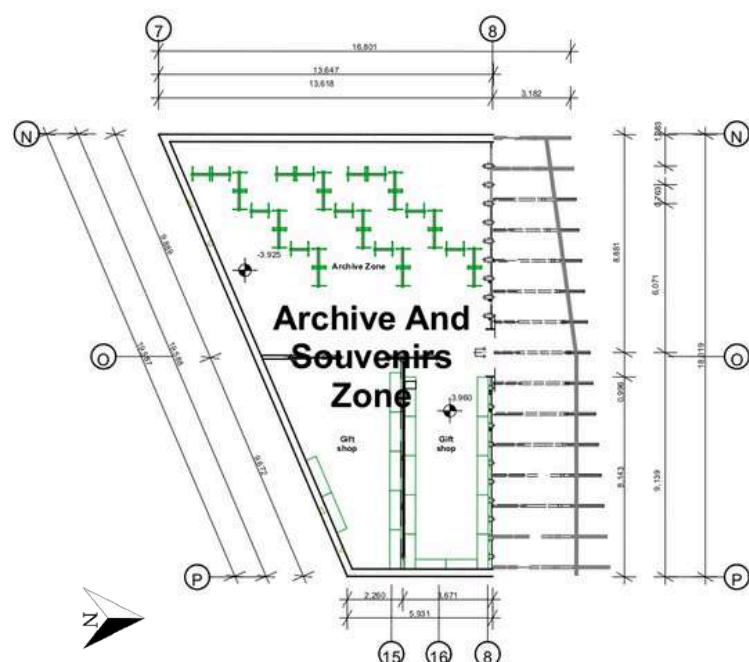
Amphitheater – Section & Floor Plan

Section shows three main zones: Outdoor Stage (open performance area), Tiers of Seats (stepped concrete seating, 40 cm riser, 80 cm tread), and Shading Structure (light steel frame with fabric canopy for sun protection). Floor plan indicates stage width 6 m, seating arc radius 12 m, and canopy span 14 m, maximizing open-air usability.

Design Development

BUILDING DESIGN (FLOOR PLAN)

Archive And Souvenirs Zone



LEGEND :

Archive and Display Zone : Zone to exhibit traditional tools and working surfaces used in the weaving process, allowing visitors to understand the craft's history and techniques..

2 : Souvenir Shop Zone : Zone to sell woven products and crafts made in the center, supporting local artisans and promoting cultural appreciation.

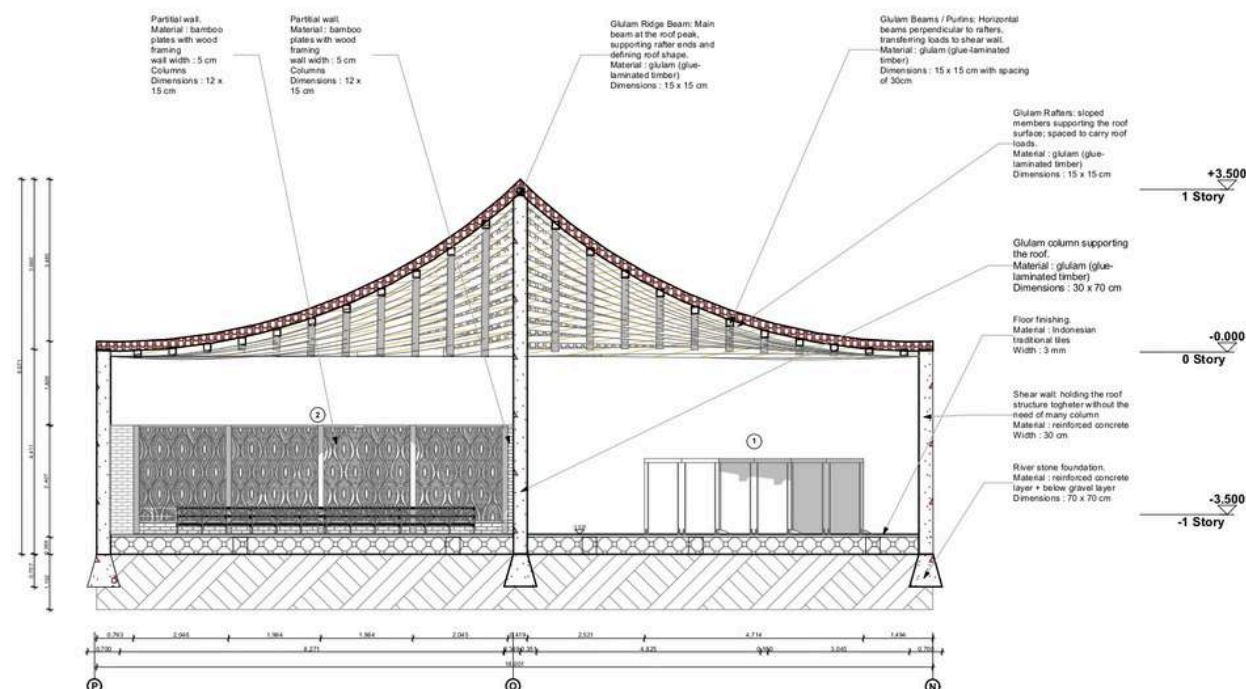


Figure 5.36 Archive And Souvenirs Zone Scale 1/1000

Source : Made by author

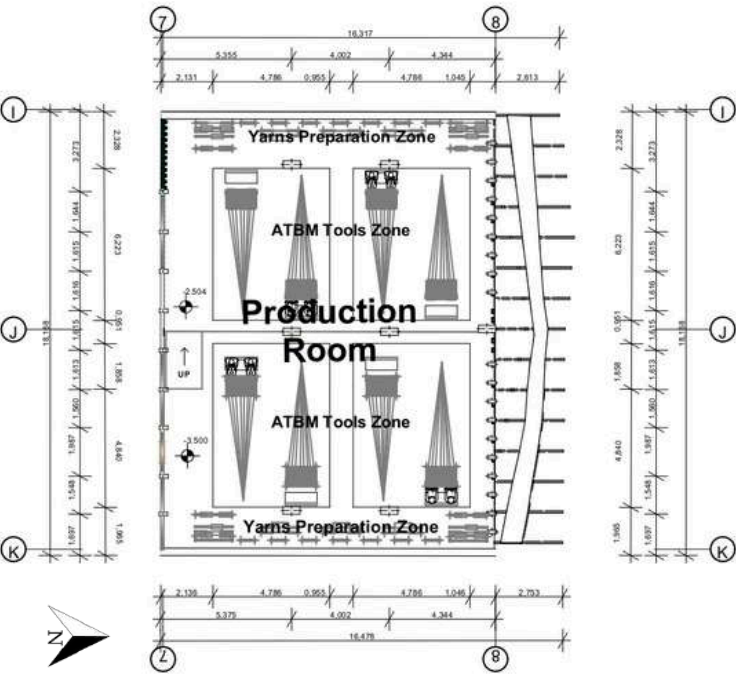
Archive & Souvenirs Zone – Section & Floor Plan

Section illustrates roof structure (light steel truss with timber beams, clay tile finish), main and additional steel columns, and layout of spaces: 1: Archive & Display Zone and 2: Souvenirs Shop Zone. Floor plan shows spatial arrangement and column positions for structural clarity.

Design Development

BUILDING DESIGN (FLOOR PLAN)

Production Room



LEGEND :

- 1 : Ramp to access the whole block by the elderly and disabled people.
- 2 : ATBM tools and production area .
- 3 : Yarns Preparation area: the zone where raw fibers combing, twisting and organizing yarn before weaving.
- 4 : Yarns Preparation area: the zone where natural materials (water hyacinths, fragrant roots, coconut fonds) go through cleaning, carding, and spinning.

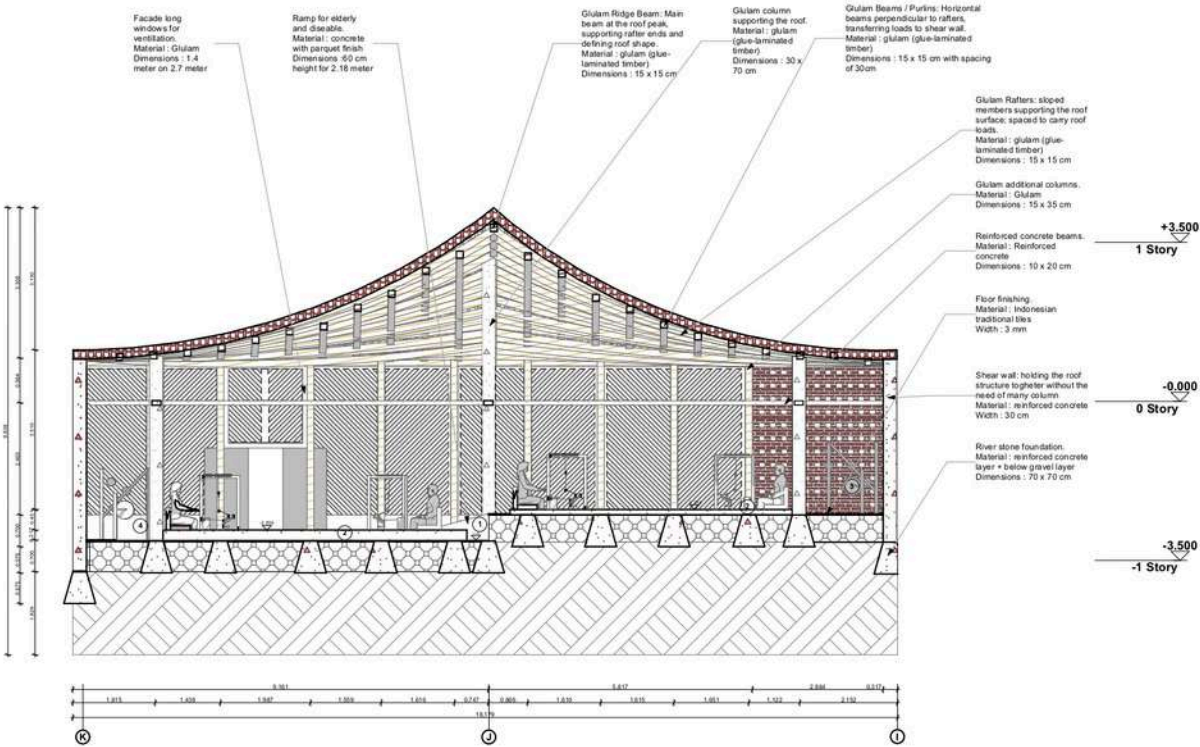


Figure 5.37 Production Room Scale 1/1000
Source : Made by author

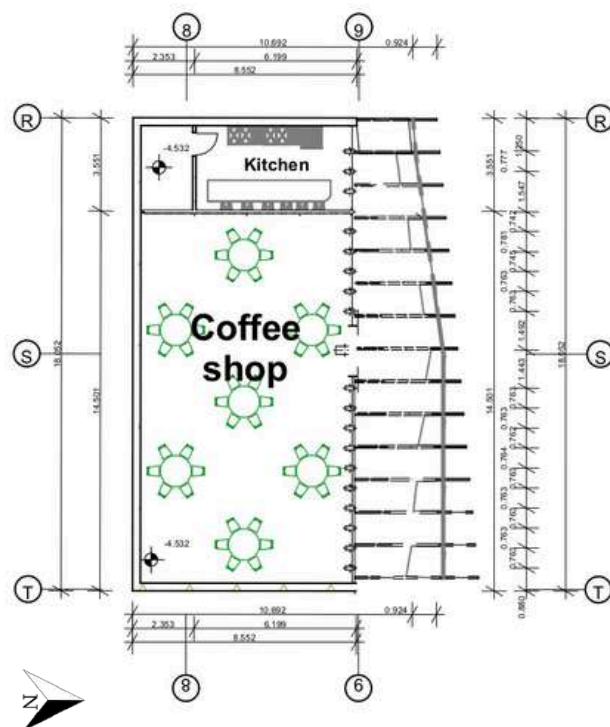
Production Room – Section & Floor Plan

Section shows roof structure with steel truss, timber beams, and clay tile covering, plus main columns and ventilation openings. Floor plan outlines the workspace layout, machinery placement, and column positions for efficient production flow.

Design Development

BUILDING DESIGN (FLOOR PLAN)

Coffee Shop



LEGEND :

Kitchen : Zone to prepare beverages and simple food items for the café, equipped with basic appliances and storage.

Coffee shop : Zone to serve drinks and light meals for visitors, providing a space to relax, socialize, and enjoy the surroundings.

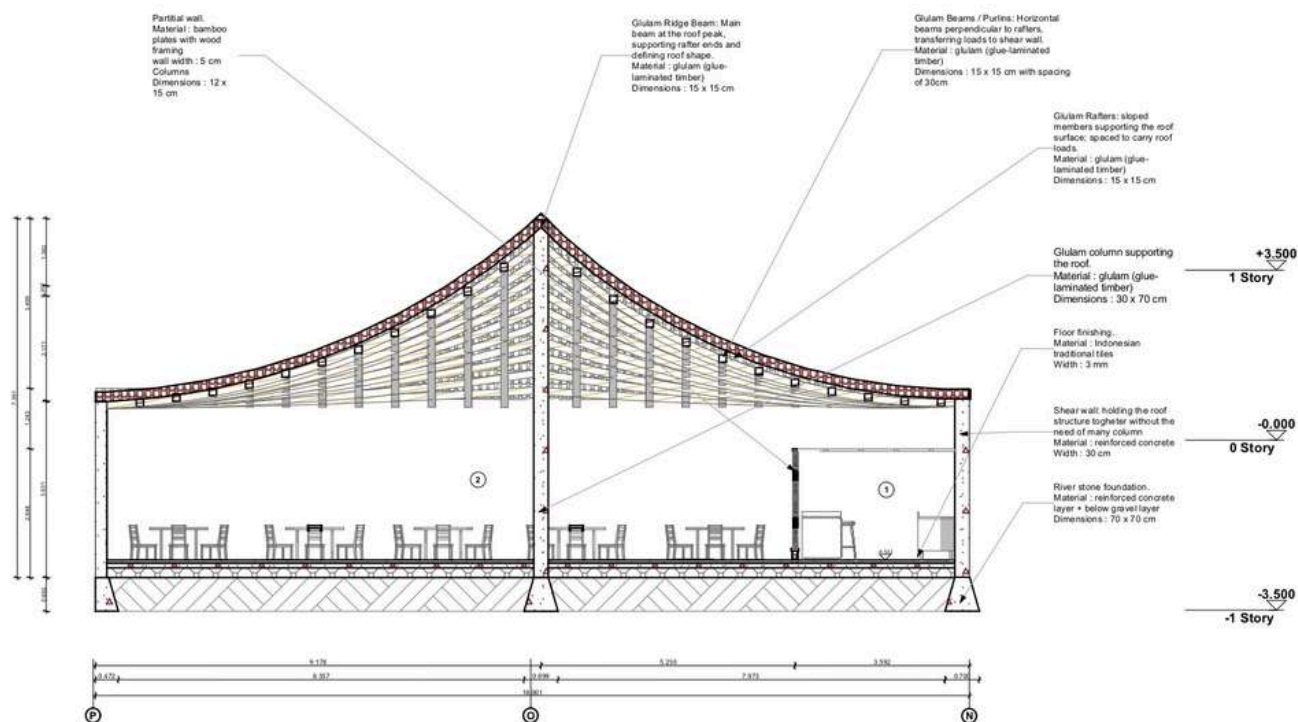


Figure 5.38 Coffee Shop Scale 1/1000

Source : Made by author

Coffee Shop – Section & Floor Plan

Includes two main zones: sitting area and kitchen. Section shows lightweight roof on timber beams, concrete foundation, and partial masonry wall for enclosure. Floor plan highlights seating arrangement and kitchen layout for functional service flow.

Design Development

BUILDING DESIGN (FLOOR PLAN)

Transitional Garden

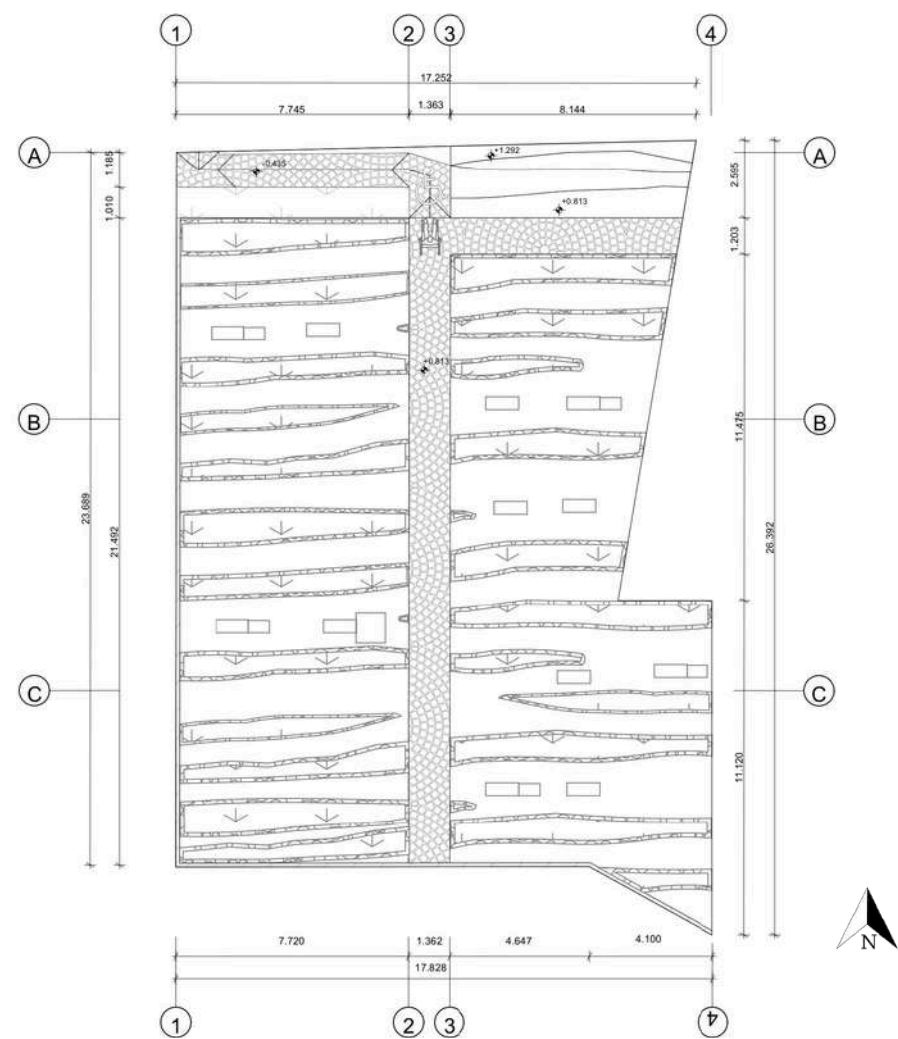


Figure 5.39 Transitional Garden Scale 1/1000
Source : Made by author

Transitional Garden – Plan View

Features a zigzag green strip dedicated to water hyacinth cultivation, serving as a natural filtration and aesthetic transition between zones.

Design Development

BUILDING DESIGN (FLOOR PLAN)

Sensory Room

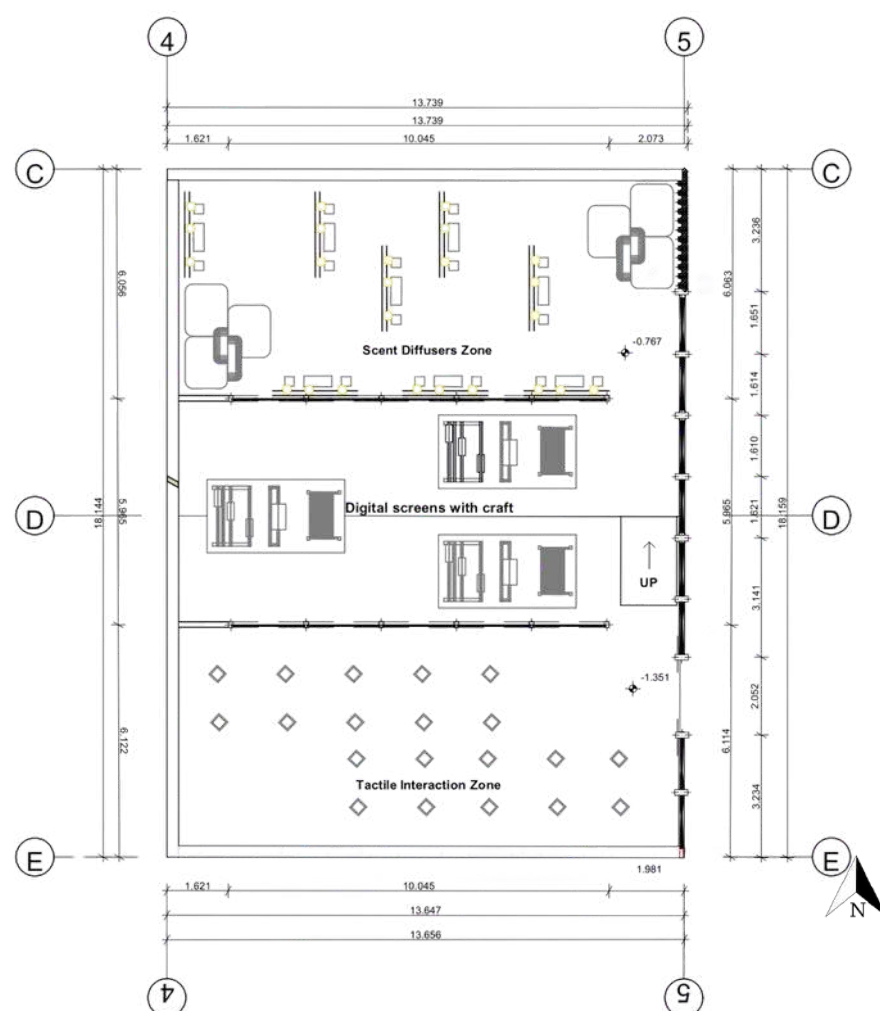


Figure 5.40 Sensory Room Scale 1/1000
Source : Made by author

Sensory Room – Floor Plan

The floor plan illustrates a carefully arranged layout dedicated to providing immersive tactile, visual, and auditory experiences. It features designated zones for various interactive elements, allowing visitors to engage with materials, colors, textures, and sounds in a controlled environment. The arrangement ensures smooth circulation, encourages exploration, and supports the room's purpose of stimulating multiple senses for a rich and memorable experience.

Design Development

BUILDING DESIGN (FLOOR PLAN)

“Behind the Process” Wall

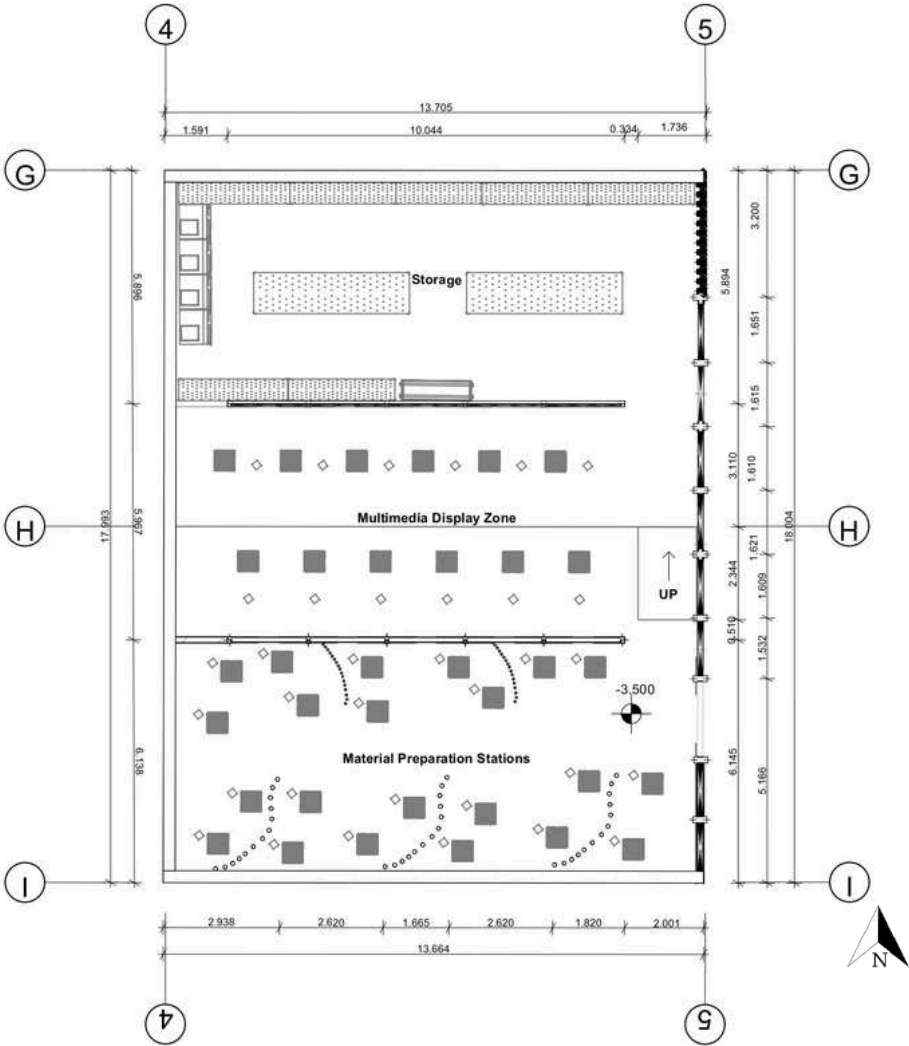


Figure 5.41 “Behind the Process” Wall Scale 1/1000
Source : Made by author

“Behind the Process” Wall – Floor Plan

The floor plan presents a linear arrangement divided into three functional zones: a storage area for safely keeping tools and materials, a multimedia display zone showcasing videos and visuals of weaving techniques, and a material preparation station where raw materials are processed before production. This layout offers visitors an insightful journey into the behind-the-scenes stages of weaving, combining practical functions with educational engagement.

Design Development

BUILDING DESIGN (FLOOR PLAN)

Staff room

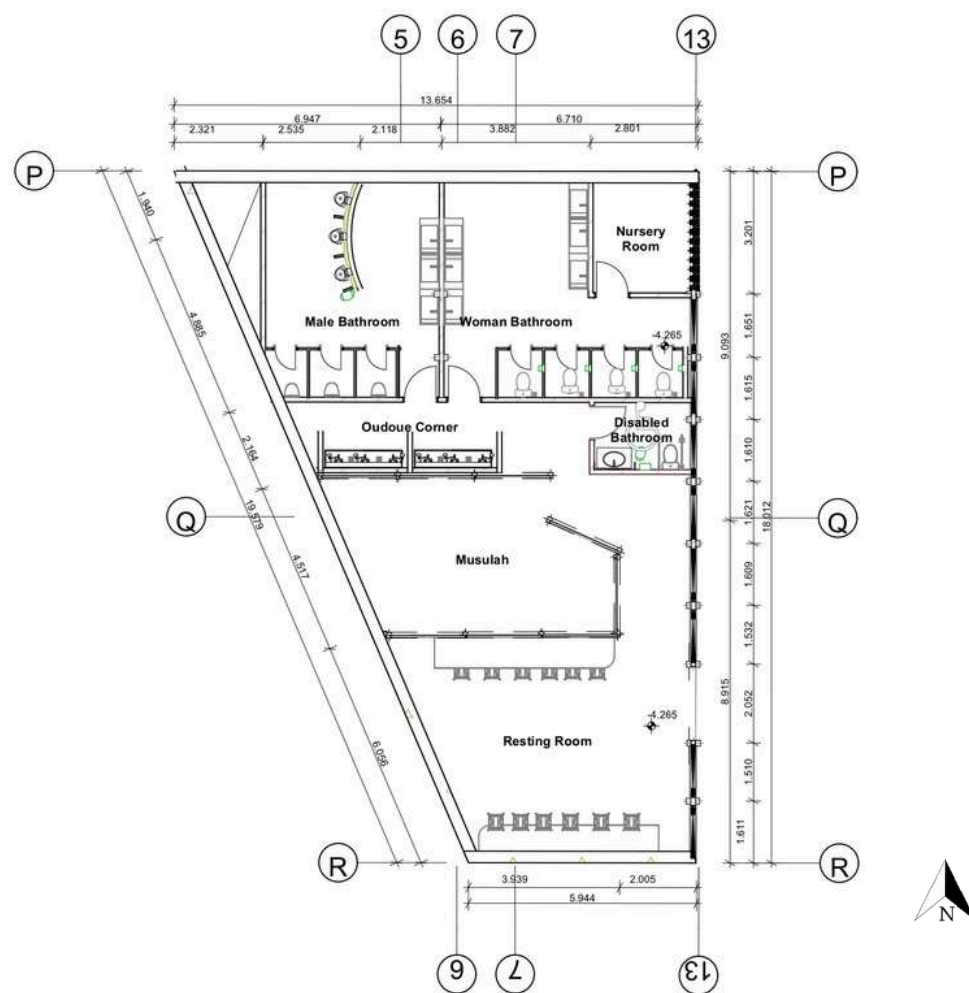


Figure 5.42 Staff room Scale 1/1000
Source : Made by author

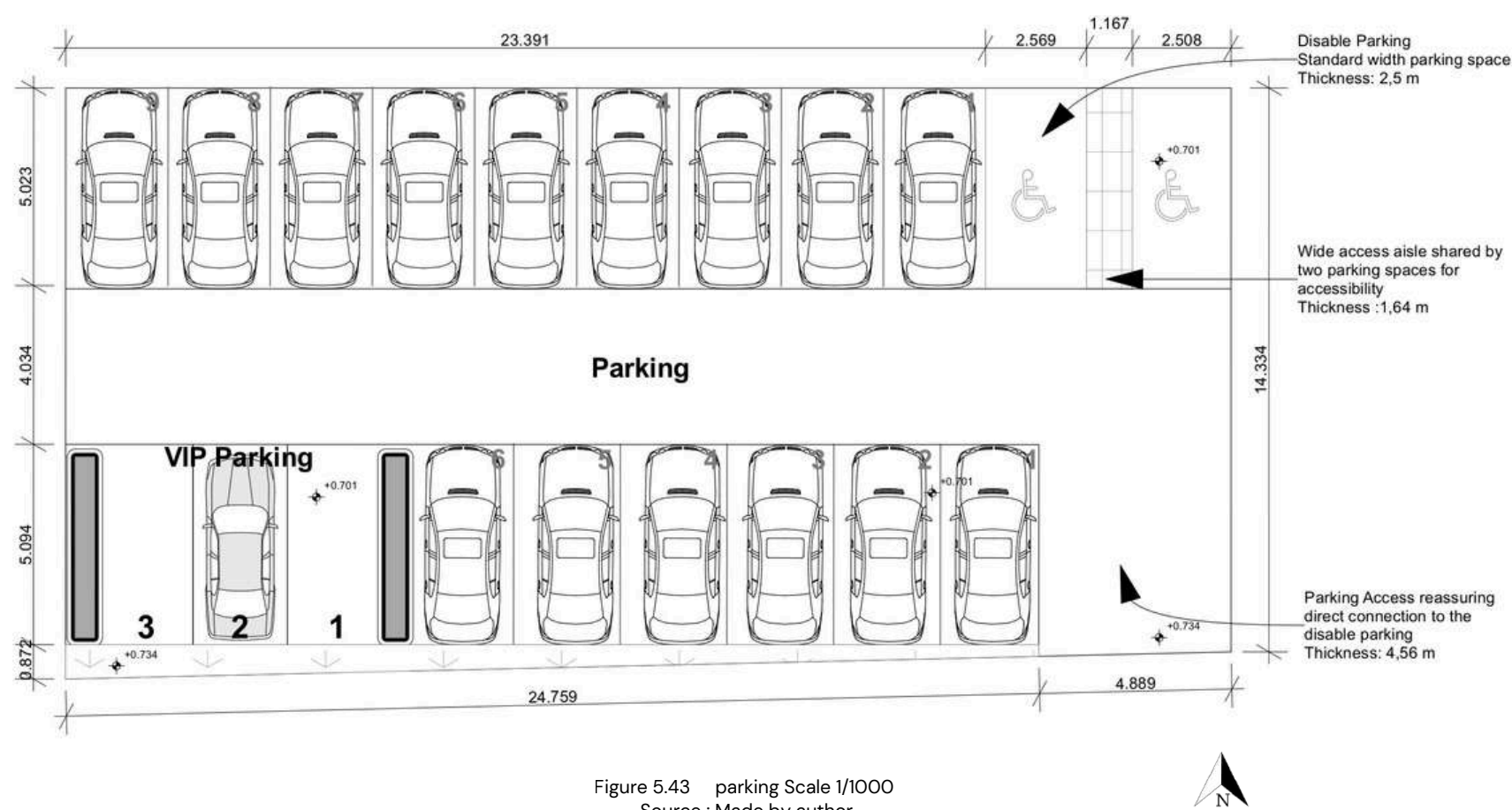
Staff Room – Floor Plan

The staff area is organized to integrate all essential utilities in one functional zone. It includes a disabled-friendly bathroom, separate men's and women's bathrooms, an ablution corner for prayer preparation, a dedicated prayer room, and a resting room exclusively for staff. This arrangement ensures accessibility, comfort, and convenience, supporting both the practical needs and well-being of the staff.

Design Development

BUILDING DESIGN (FLOOR PLAN)

Parking



Parking Area – Floor Plan

The parking layout provides two designated spaces for disabled users located near the main entrance for accessibility, while the remaining bays accommodate standard vehicles. A 5-meter-wide circulation lane ensures smooth car movement, easy maneuvering, and efficient traffic flow throughout the area.

Design Development

BUILDING ENVELOPE DESIGN

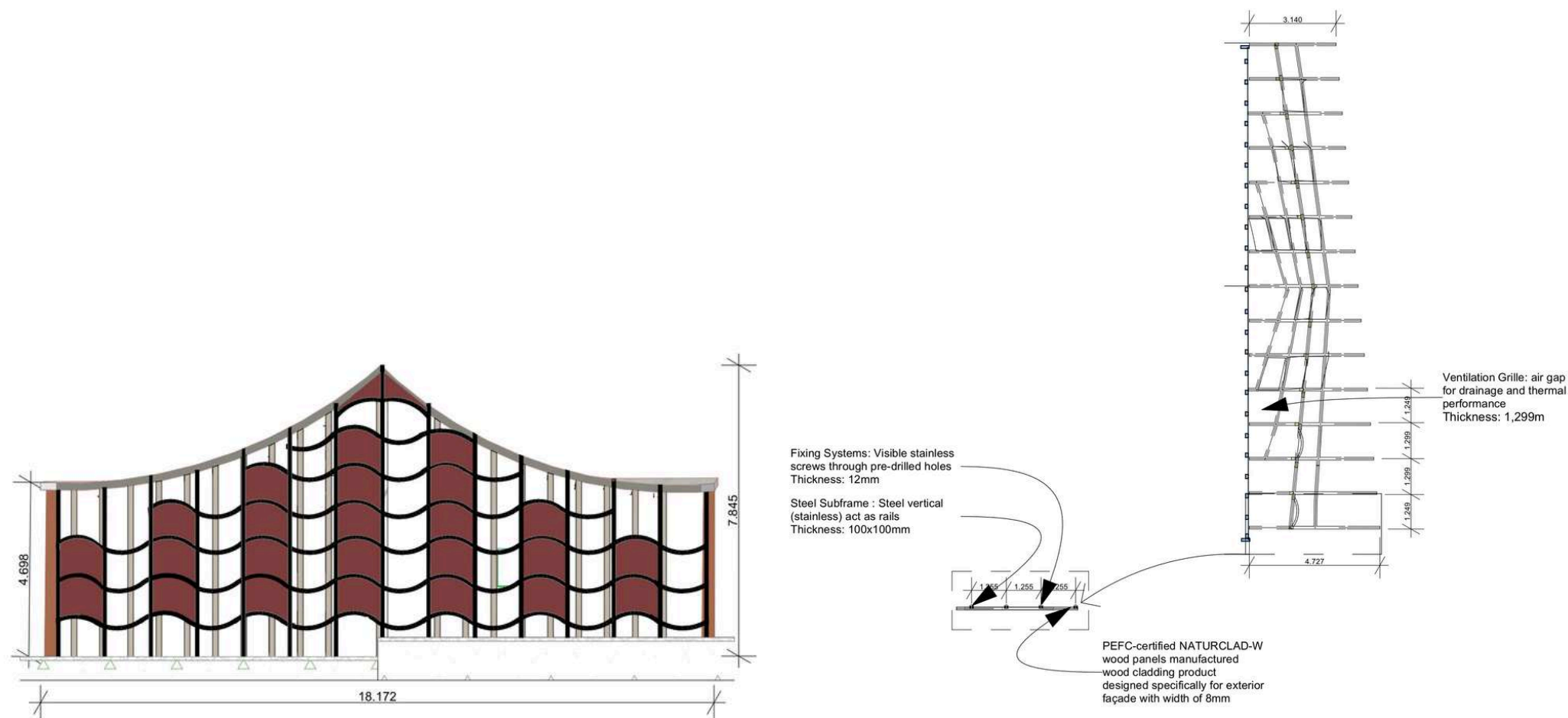


Figure 5.44 Building envelope design scale 1/200
Source : Made by author

East Façade Envelope – Secondary Skin Inspired by Weaving

The building's east side is protected by a secondary skin façade inspired by traditional weaving patterns, translating the interlacing technique into an architectural shading system. This woven-inspired envelope acts as a sun filter, reducing glare and blocking direct morning solar radiation while still allowing diffused daylight to enter the interior spaces. The design balances thermal comfort and visual interest, creating a façade that not only performs environmentally but also celebrates local craft heritage. Its modular construction allows for easy maintenance, while the interplay of light and shadow adds depth and texture to the building's appearance throughout the day.

Design Development

DETAILED DESIGN SOLUTION

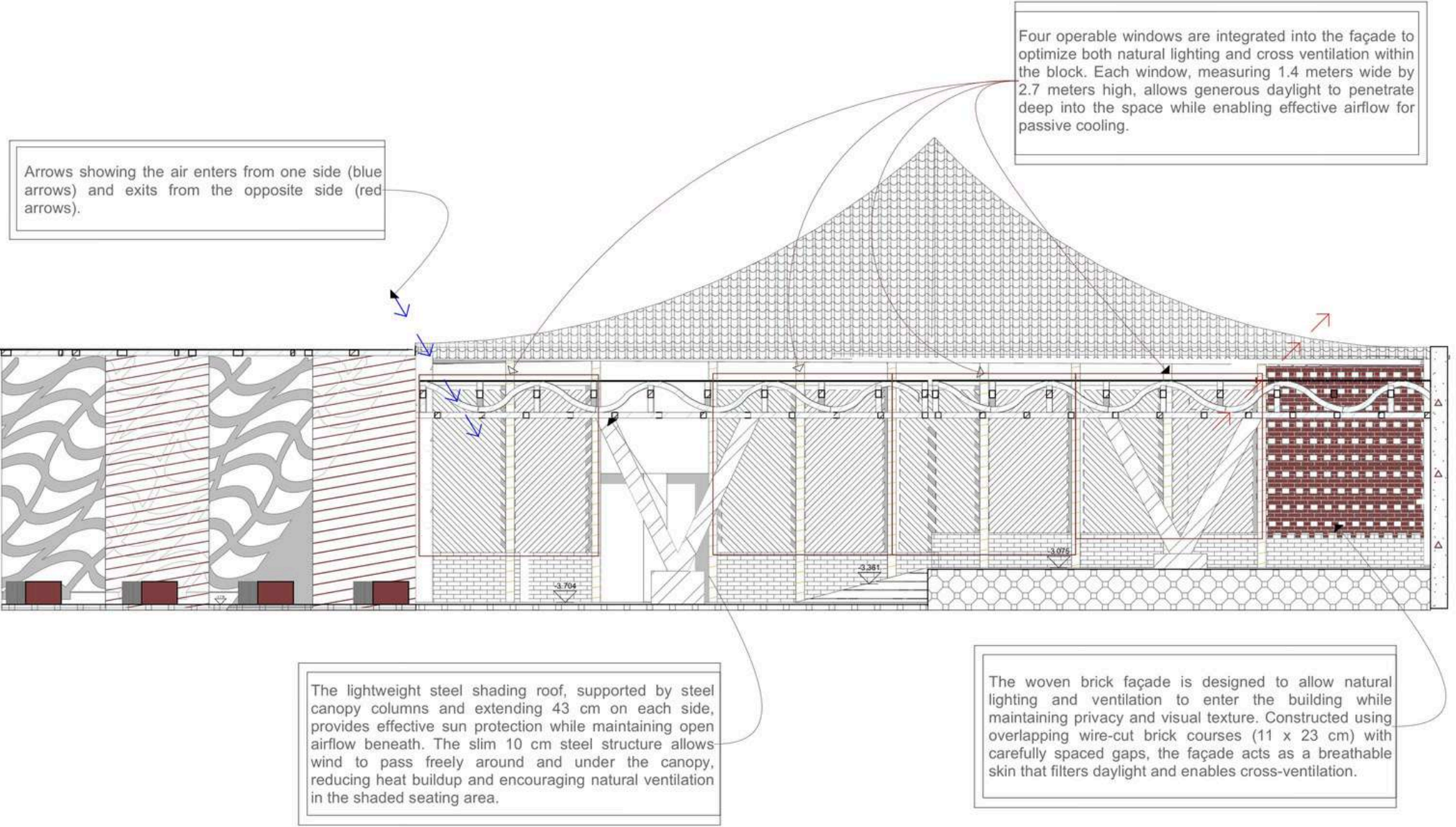
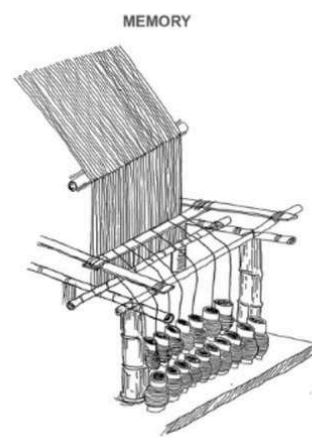


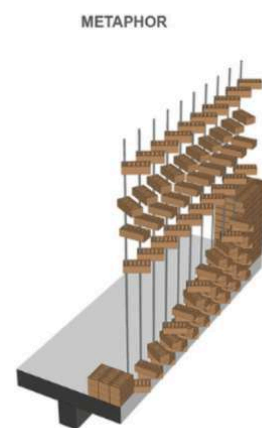
Figure 5.45 Natural ventilation scheme and natural lighting scheme Scale 1/50
Source : Made by author

Design Development

DETAILED DESIGN SOLUTION



TRADITIONAL WEAVING



BRICK WEAVING



Locally Sourced Wire cut Bricks



01-10mm MS Brille Rod
02-16mm MS Hexagonal threaded Coupling
03-10mm Reinforced Rods



Bricks Woven with Rods

Brick Woven Façade

A brick pattern inspired by weaving that provides shading, allows natural ventilation, and reduces heat while reflecting local culture.



Overlapped Brick courses



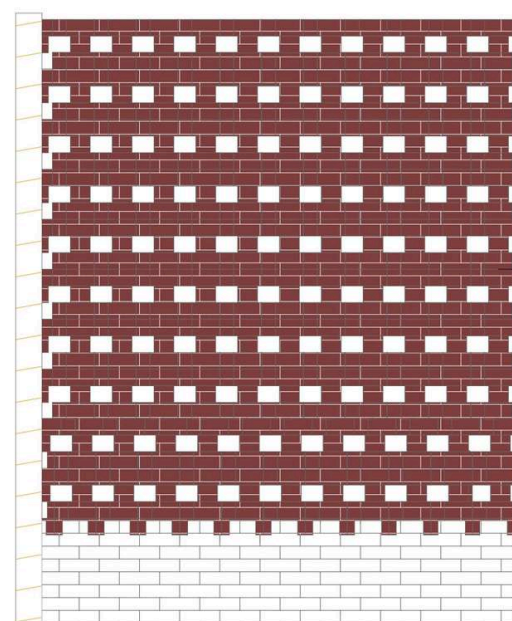
COURSE 3, 6, 9, 12..... - 135°



COURSE 2, 5, 8, 11..... - 90°



COURSE 1, 4, 7, 10..... - 45°



Front view

Steel Joinery



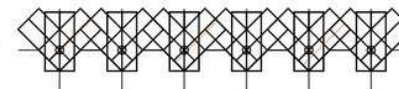
Course 3



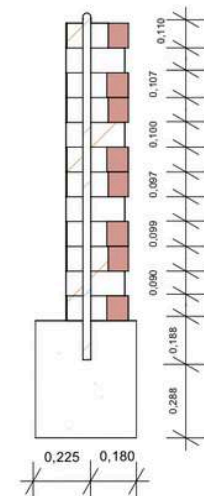
Course 2



Course 1



Top view



Side view

Facade Details 2

Figure 5.46 Facade details and process with section, elevation and top view
Source : Made by author

Design Development

BUILDING DESIGN (FLOOR PLAN)

Cultivating Space and outdoor exhibit

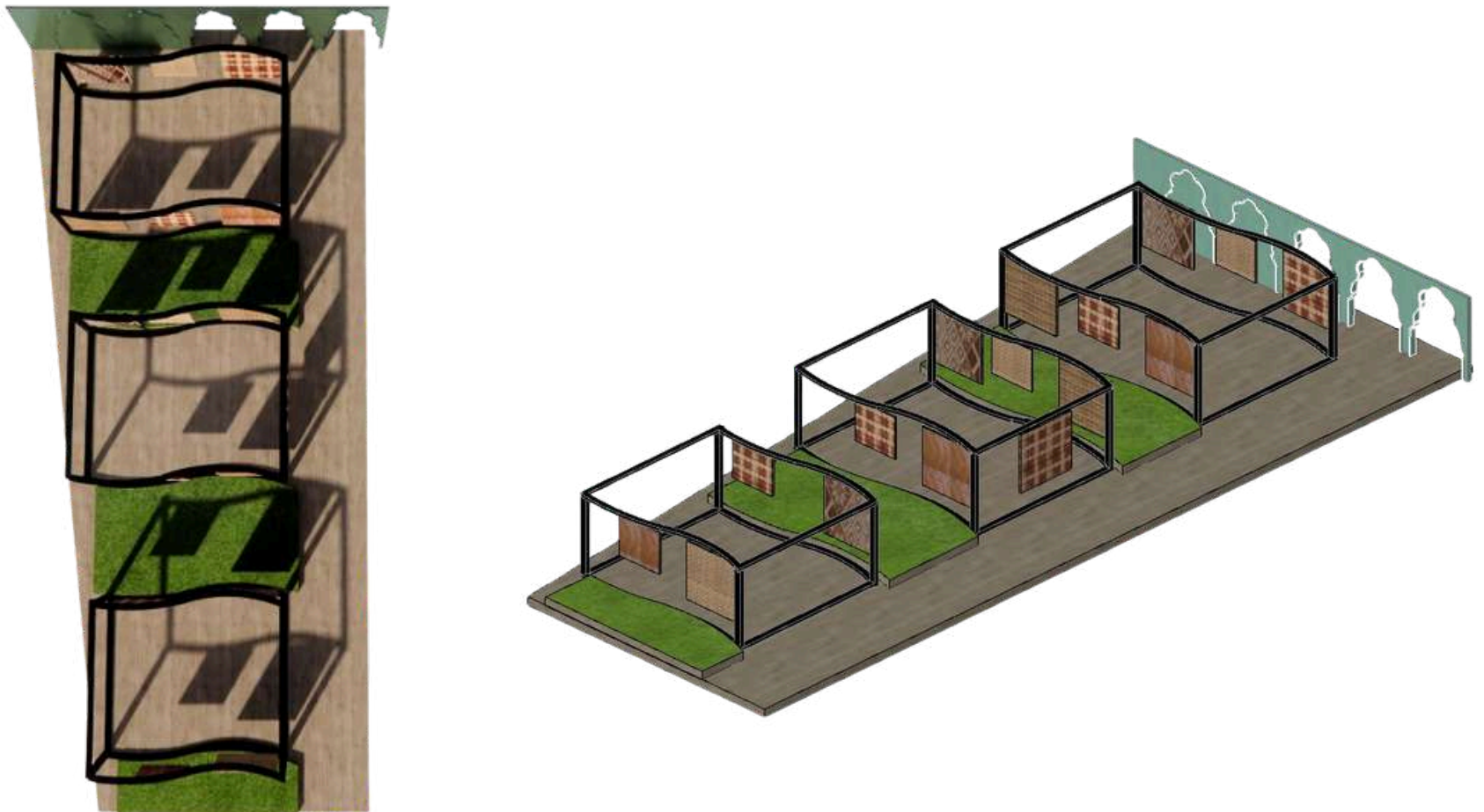


Figure 5.47 Cultivating Space and outdoor exhibit render
Source : Made by author

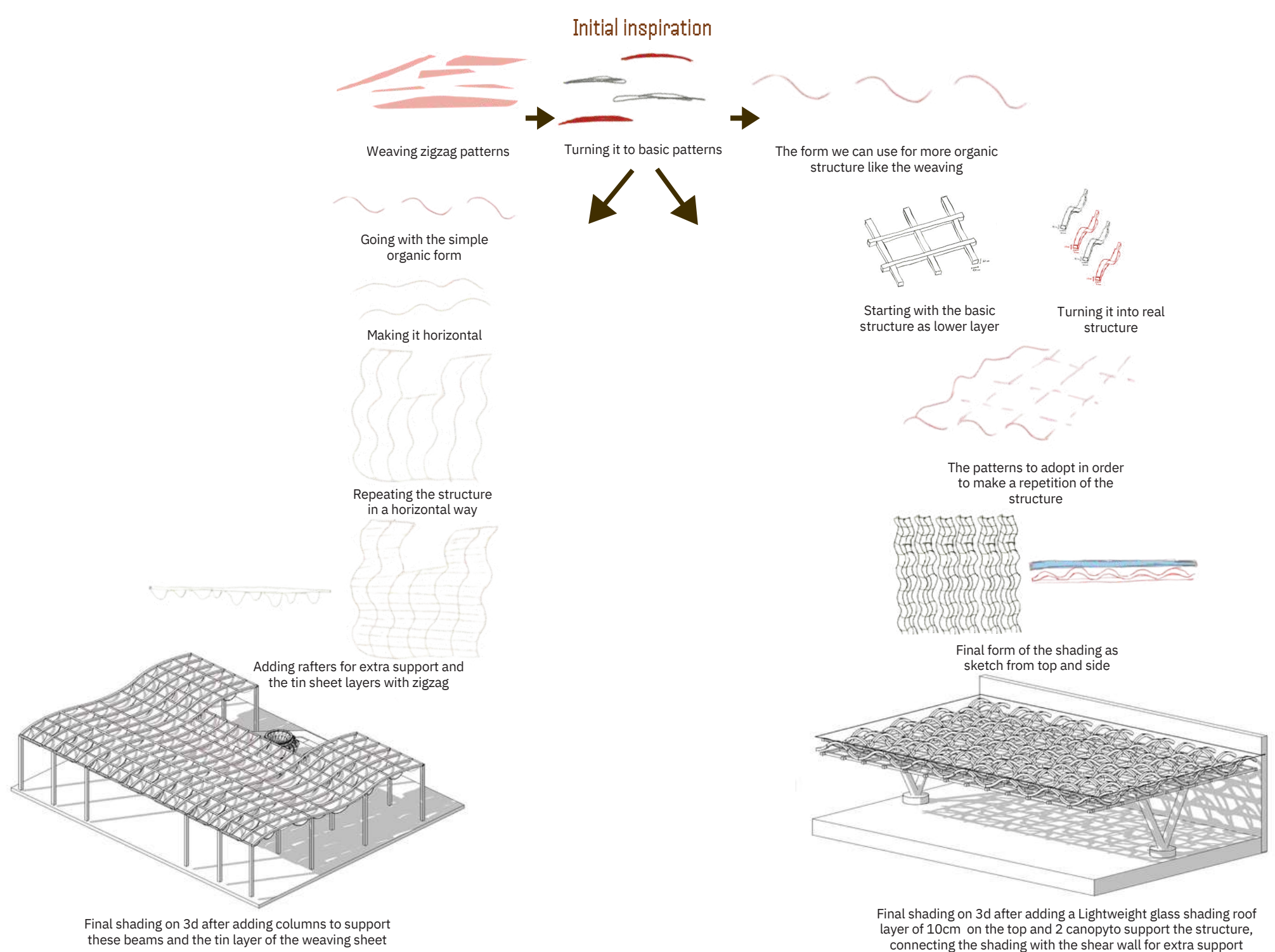
Cultivating Space & Outdoor Exhibit

An open area for growing natural dye plants and showcasing traditional weaving tools or artworks, creating an interactive link between craft, nature, and visitors.

Design Development

DETAILED DESIGN SOLUTION

Structure form transformation :



Design Development

DETAILED DESIGN SOLUTION

Shadin type 1

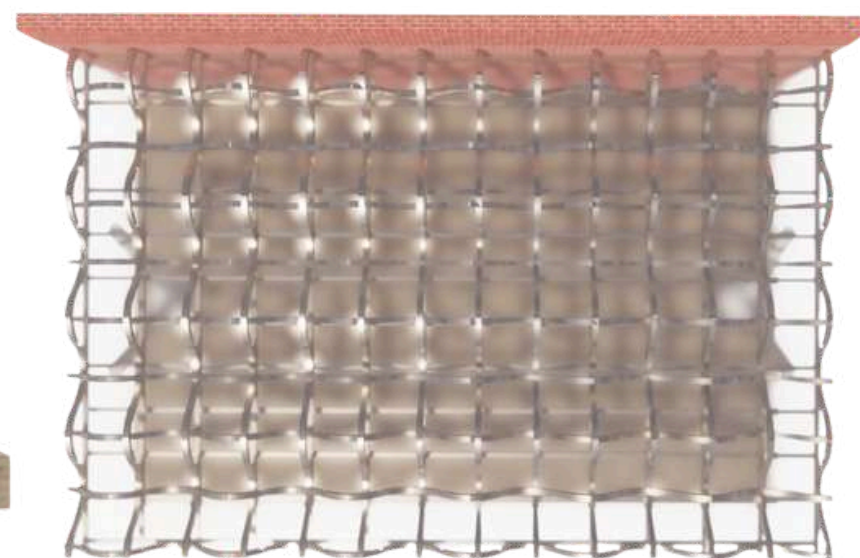
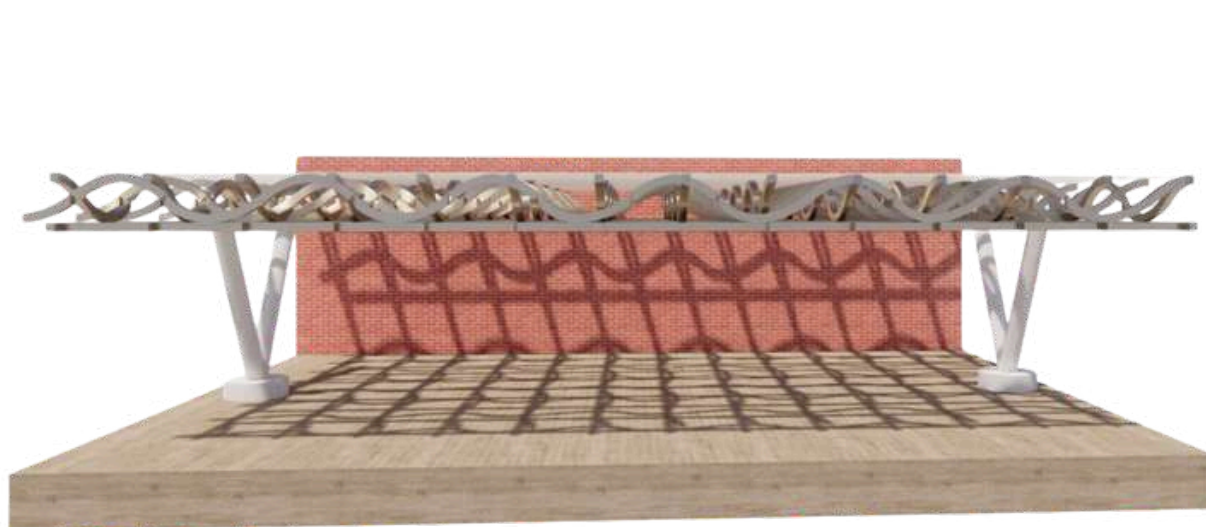
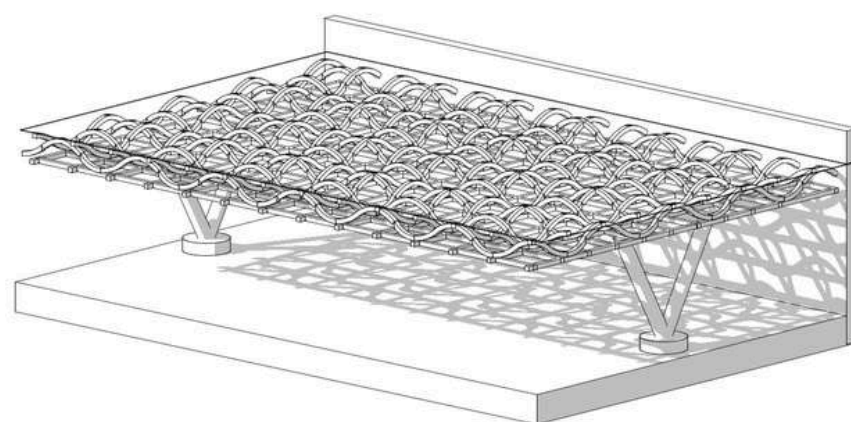


Figure 5.48 Shadin type 1 render top view and exploded
Source : Made by author

Zigzag Steel Canopy with Shear Wall Support – The final 3D configuration incorporates a 10 cm lightweight glass shading roof layer installed at the top to filter sunlight while keeping the structure visually light. Two canopies extend from the main frame to distribute the load, and the shading system is securely anchored to the shear wall, ensuring both structural stability and resistance against wind loads.



Design Development

DETAILED DESIGN SOLUTION

Shadin type 3

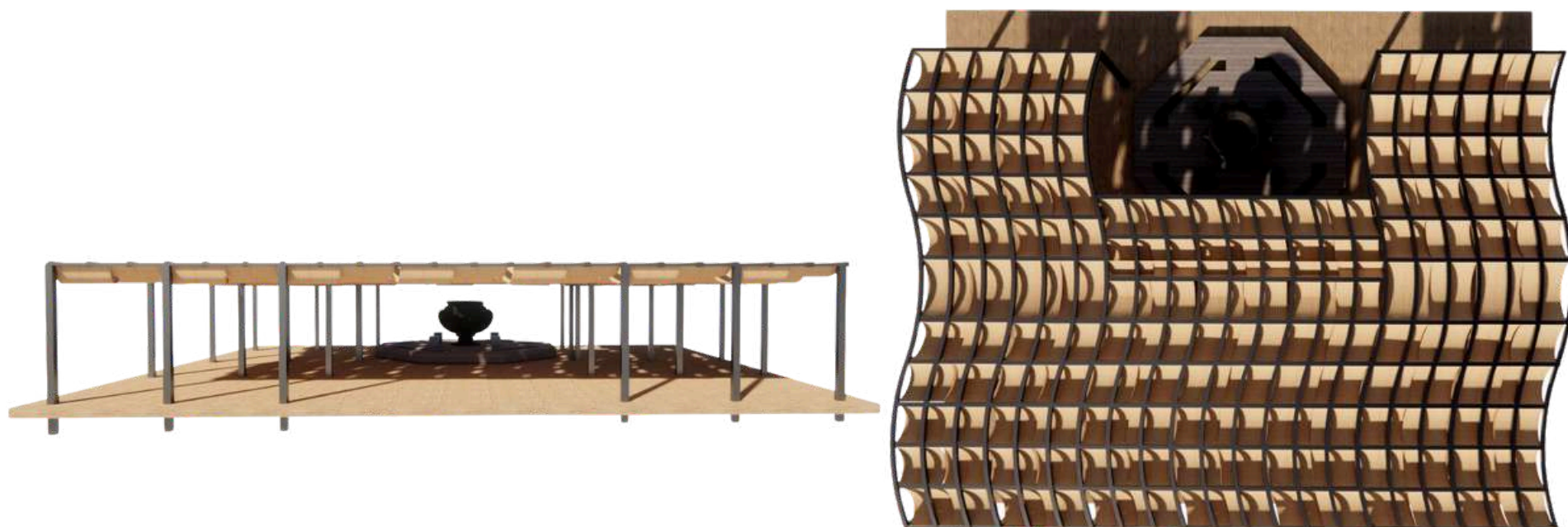
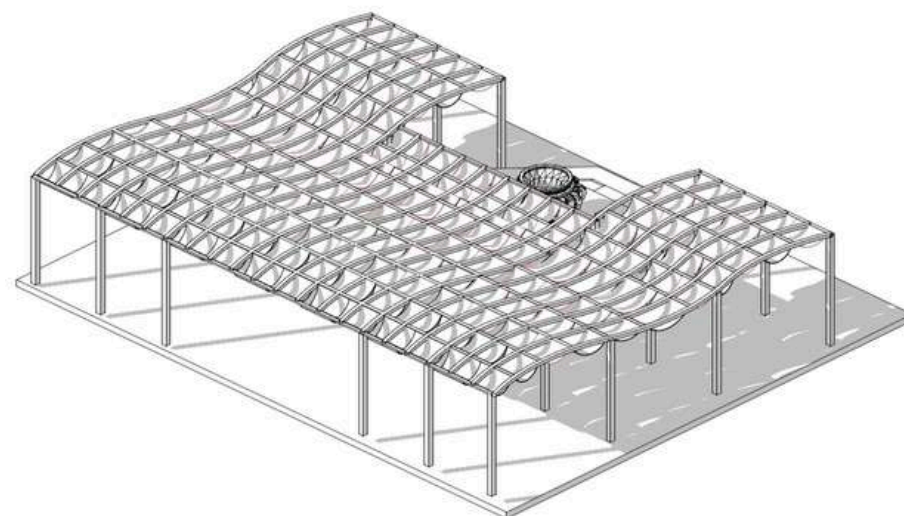


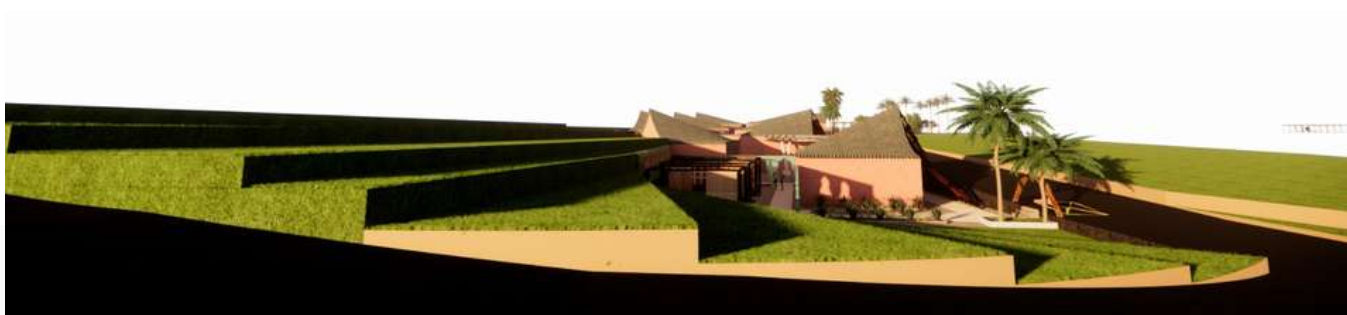
Figure 5.49 Shadin type 2 render top view and exploded
Source : Made by author

Zigzag Frame with Decorative Weaving Sheet – The final 3D shading solution introduces vertical columns strategically placed to support the existing zigzag beam system. Above this framework rests a tin layer patterned with a weaving motif, providing filtered shade while referencing traditional weaving techniques. The combination of structural clarity and cultural symbolism creates both practical shelter and a distinctive landmark element.



Design Development ELEVATIONS

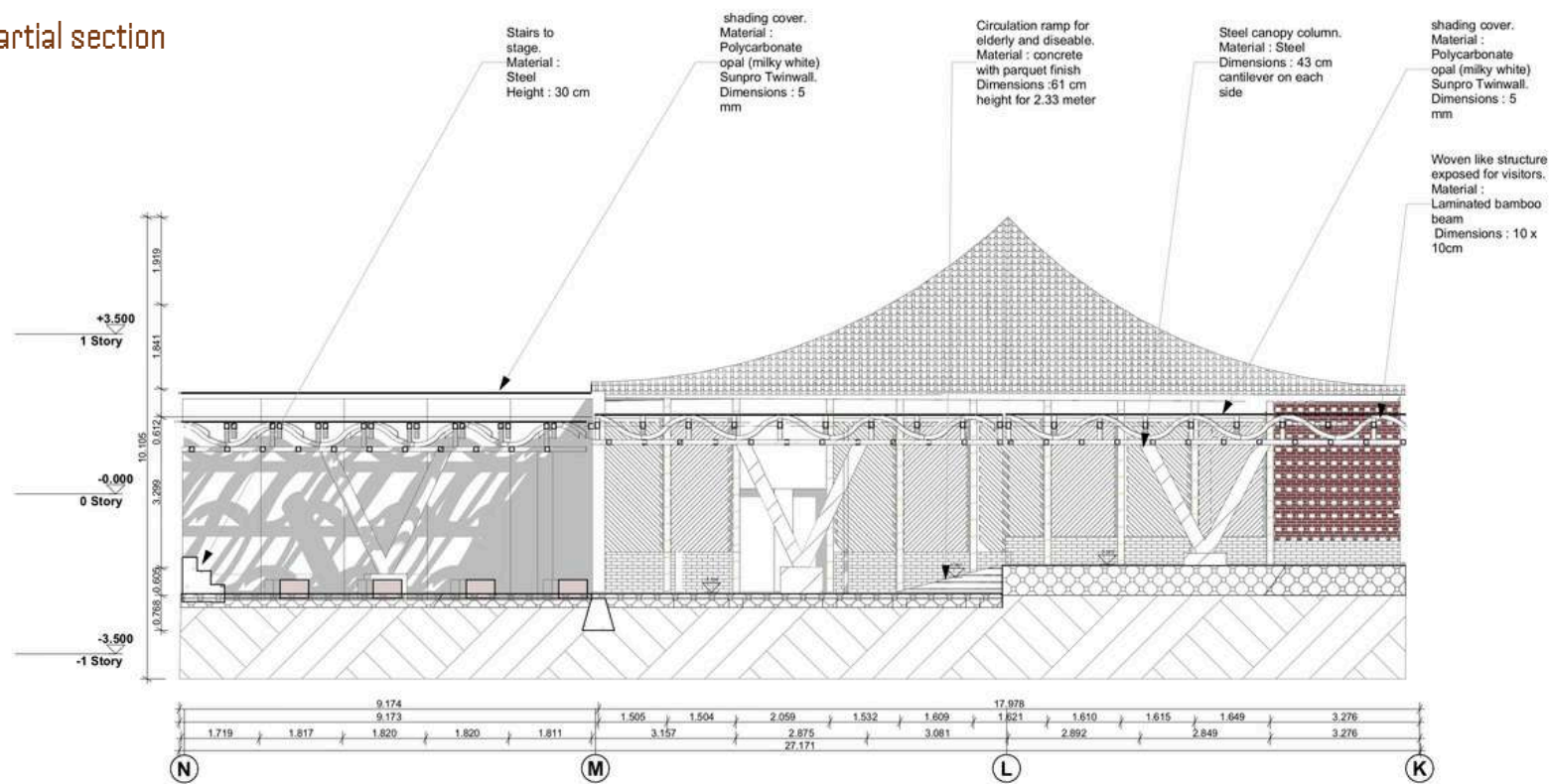
Figure 5.50 render elevations
Source : Made by author



Design Development

SECTIONS

Partial section



Partial section

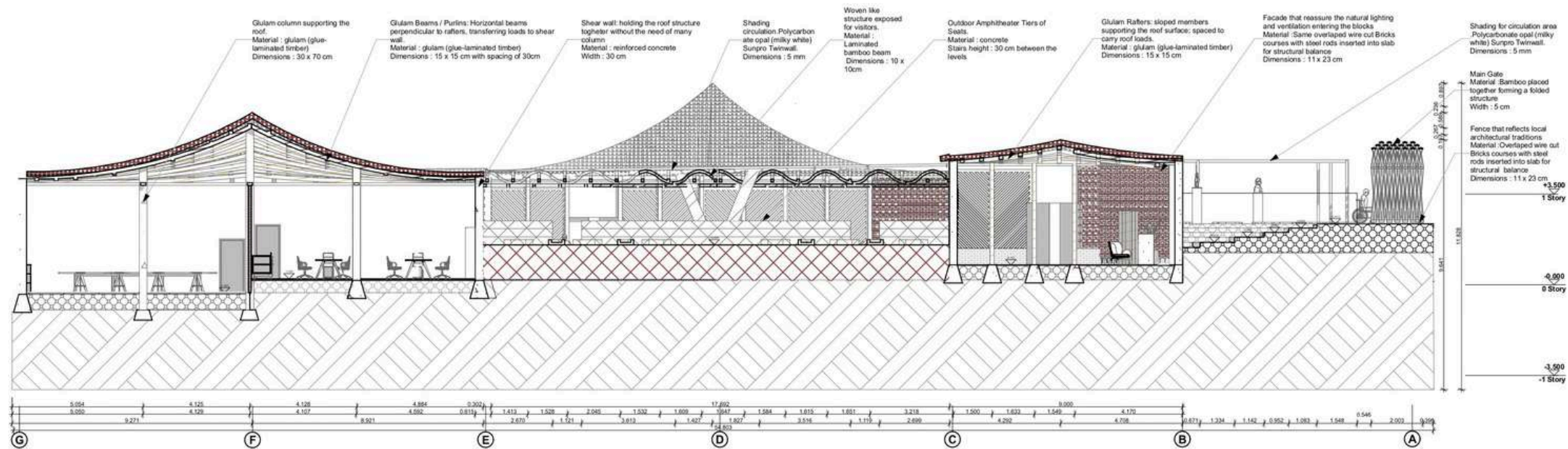


Figure 5.51 partial section
Source : Made by author

Design Development

SECTIONS

Main Section

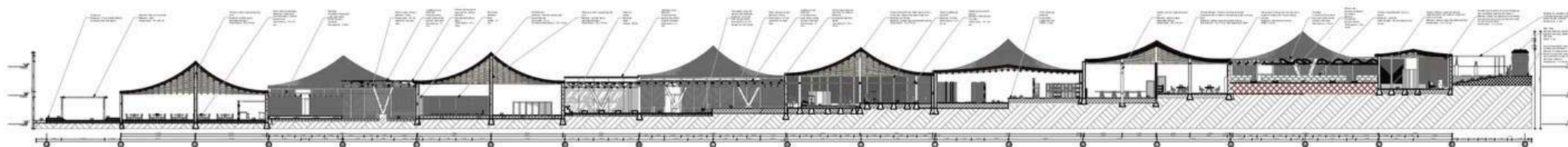


Figure 5.52 Site Section on Scale 1/500

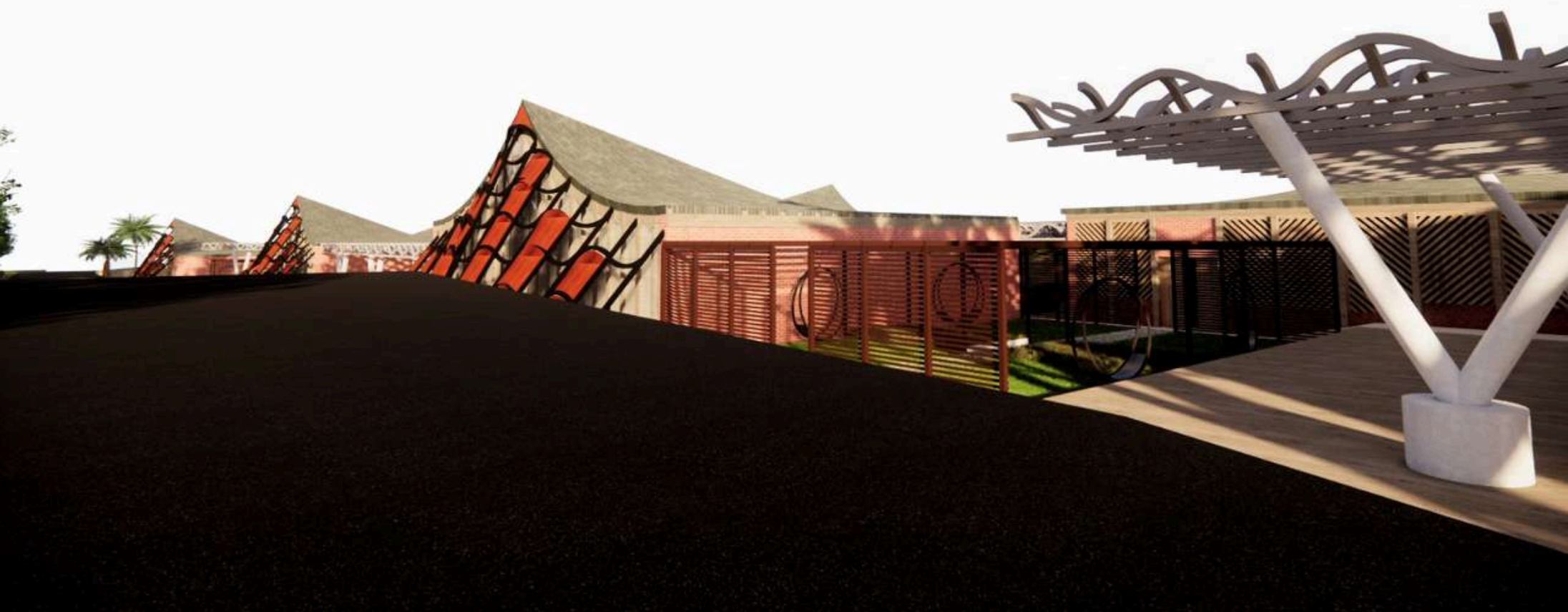
Source : Made by author



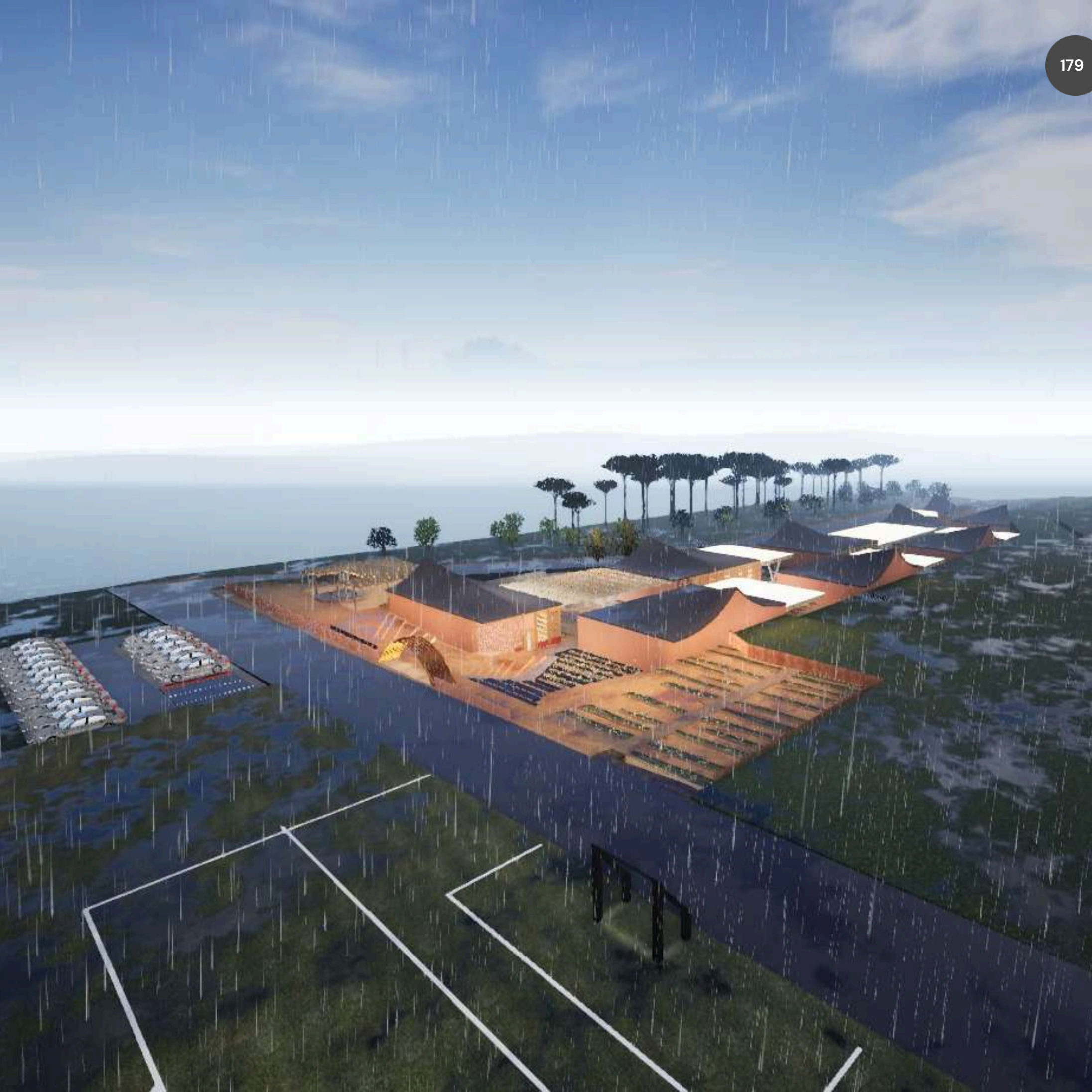
Figure 5.53 Site Section on Scale 1/500
Source : Made by author

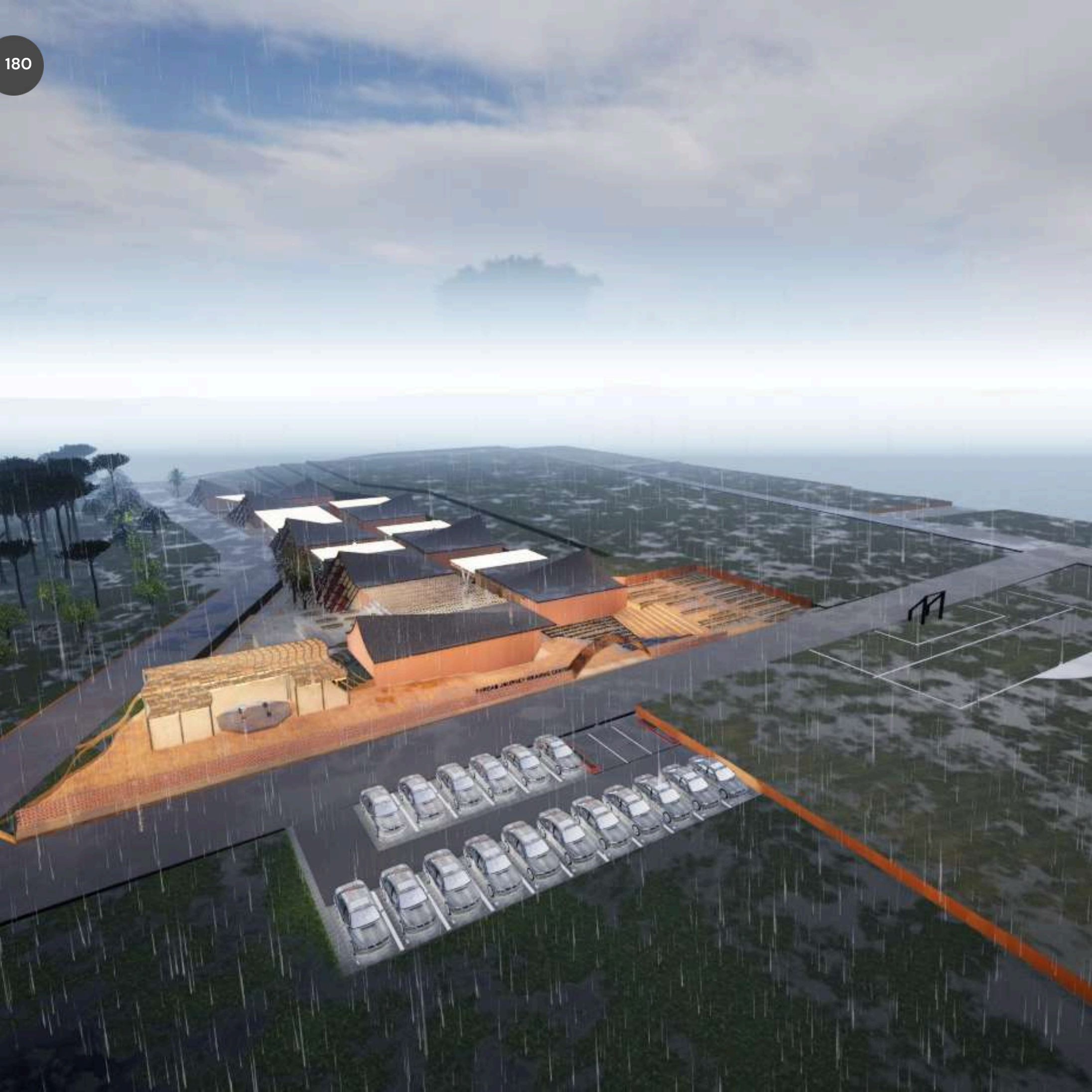




















***You have to accept to be exposed
to criticism.***

by Renzo Piano





06.

Design Reflections

- THE SHADING'S MATERIAL
- DESIGN STRATEGY
- THE SHADING'S ON SITE PLAN
- THE SETBACK AND BOUNDARIES
- RAINFALL STRATEGY IN TROPICAL CLIMATE

The design shows an interpretation of weaving culture into a variety of layers (landscape, roofing, facade, etc). However, it seems rather "excessive" -- too much."

– Prof. Dr.-Ing. Ir. Ar. Ilya Fadjar Maharika, MA., IAI. –

THE SHADING'S MATERIAL

1) The material to use as cover for shading;

Polycarbonate (opal/twinwall) as canopy cover

- Why: Light, UV-protected, cheaper than glass, common in Indonesia (brands: Twinlite, Solarlite, Alderon), Looks like glass but stronger and lighter.
- Use:
 - For rain cover its is opal (milky white) 5 mm → diffuses daylight, avoids glare.
 - Can be cold-bent onto organic frames up to a radius.
 - Sheet Width: Standard width is 1.2m or 2.1m, length up to 12m.
- Feeling under: Bright but soft daylight, cooler than clear glass, rainproof.
- Specific brand : Polycarbonate Sunpro Twinwall 4.2mm - White Opal

Pros:

UV and impact-resistant.

Great for pergolas, garden roofs, outdoor shading.

Structure Spacing: Support beams every 0.6–1m, depending on thickness and wind exposure.

2) Core: Laminated Bamboo Beam:

At the structural heart is engineered bamboo, pressed and laminated into square beams. This dimension (100×100 mm) makes it comparable to common timber or light steel members, ensuring both familiarity in construction and sufficient load-bearing capacity for shading or façade framing. Using bamboo as the core material keeps the structure lightweight, renewable, and rooted in tropical building traditions.

Wrap: Thin Aluminum Cladding Panel (Powder-Coated Black/Grey)

The bamboo core is then wrapped with aluminum panels that are powder-coated in matte black or dark grey. The aluminum layer does not add much structural weight, but it changes the surface character completely: to the eye, it resembles painted steel, with clean edges and a modern finish. The powder coating also protects the aluminum from corrosion, scratches, and weather exposure, ensuring durability in a tropical outdoor setting.

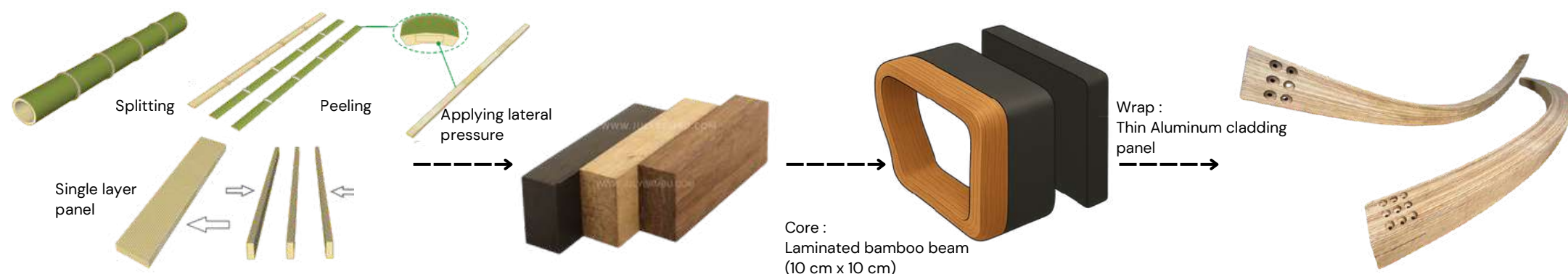


Figure 6.1 Laminated Bamboo Beam process
Source : Made by author

The design shows an interpretation of weaving culture into a variety of layers (landscape, roofing, facade, etc). However, it seems rather "excessive" -- too much."

- Prof. Dr.-Ing. Ir. Ar. Ilya Fadjar Maharika, MA., IAI. -

THE SHADING’S MATERIAL

• **Natural + Tropical Inside**

Bamboo is abundant in Southeast Asia and associated with vernacular architecture, giving the project a cultural and sustainable identity. Instead of hiding it completely, its use as the structural core addresses the jury’s request for suitability in tropical climates and sensitivity to local materials.

• **Steel Look Outside**

Many contemporary architectural juries (and clients) want a modern, “industrial” look. By wrapping the bamboo in black aluminum, the appearance mimics steel without the environmental and thermal disadvantages of real steel. The outside reads minimalist and modern, while the inside remains tropical and ecological.

• **Lightweight + Sustainable**

Real steel is heavy, costly, and energy-intensive. Bamboo, on the other hand, is fast-growing and renewable. The aluminum wrap adds only a thin layer, making the system much lighter and more sustainable. This hybridization balances strength, aesthetics, and efficiency.

• **Jury Benefit: Local + Modern Integration**

This material strategy bridges local tradition (bamboo) with modern architectural aesthetics (black steel look). It demonstrates innovation in material use, which juries often appreciate: not only choosing a material but also transforming it into a new hybrid identity. The key is how you render it—because bamboo wrapped in aluminum won’t automatically look like steel unless your textures and details clearly communicate that clean, flat, metallic finish.



Bamboo Beams High-Density Strand Woven Bamboo Rail

Category Bamboo Beams

Tags anti-corrosion, anti-mold, dimensionally stable, moth proof

Bamboo beams are ideal for a wide range of applications, including commercial and residential projects. Whether used in outdoor benches, wall cladding, or decorative features, they perform beautifully offering both aesthetic appeal and functional excellence.

Product No.	DG01
Length	1860mm, 2000mm
Width	100 mm, 120mm, 150mm, 60mm, 80mm
Thickness	18mm, 20mm, 30mm, 45mm, Custom

ASK FOR A QUOTE



Polycarbonate Sunpro
Twinwall 4.2mm
- White Opal

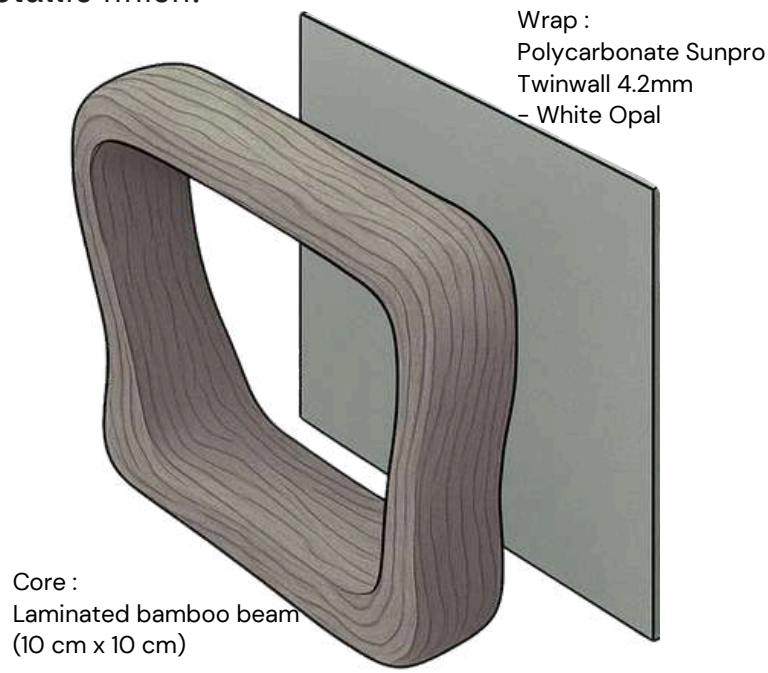


Figure 6.2 Polycarbonate and Laminated bamboo beam detailed
Source : Made by author

The design shows an interpretation of weaving culture into a variety of layers (landscape, roofing, facade, etc). However, it seems rather "excessive" -- too much."

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DESIGN STRATEGY

1) Main Weaving Pattern (Primary)

- Apply to facade shading, and weaving like facade.
- Use one strong, recognizable weaving-inspired pattern (not too complex).
- Consistency → makes it the project's "signature."

2) Secondary Pattern (Support)

- Apply to circulation zones (ramps, walkways, shaded paths), outdoor canopies, and semi-public areas..
- Simpler geometry (straight/slanted lines, open rhythm).
- Prioritize comfort → more airflow, slightly wider openings.
- Acts as "functional shading" without competing with the main motif.

3) Hierarchy in Expression

- Main shading = cultural + iconic.
- Circulation shading = supportive + functional.
- Everything else (roof, landscape) = clean and minimal.

Secondary Pattern Transformation

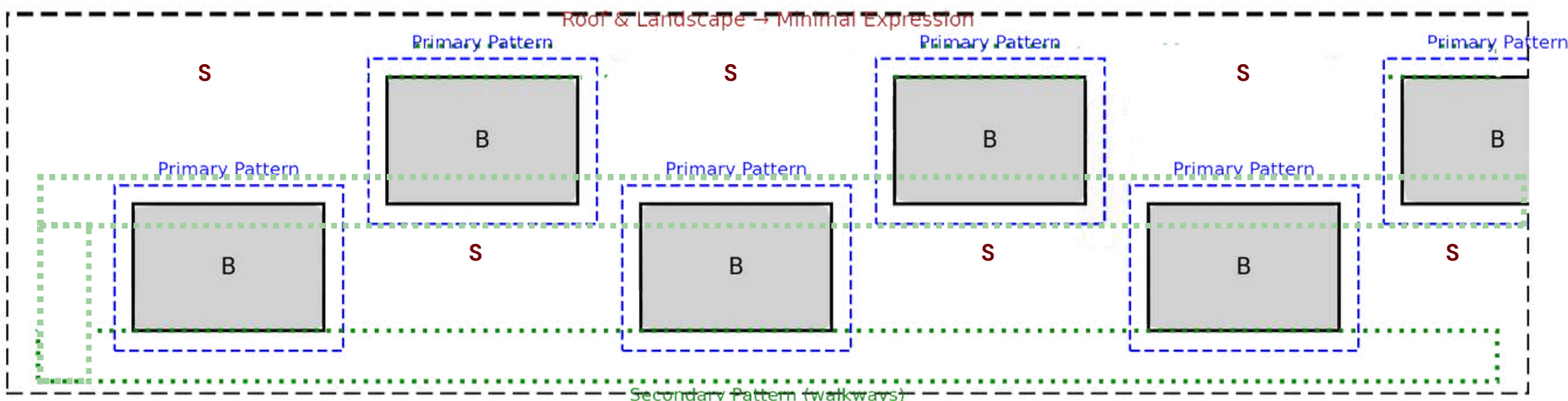
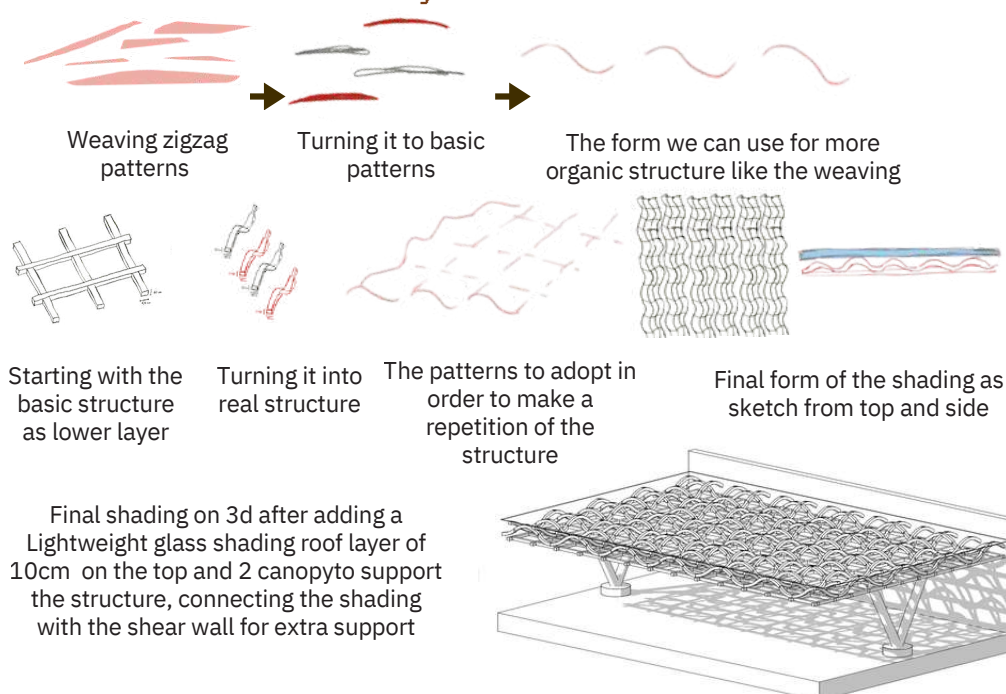
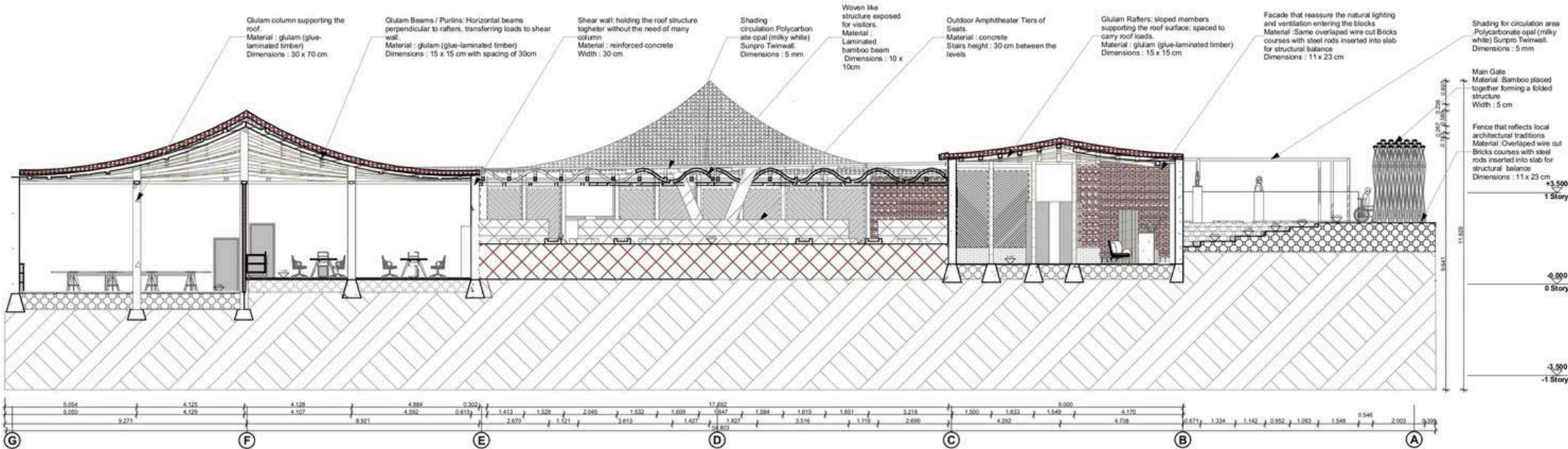


Figure 6.3 Design Strategy and placement of weaving
Source : Made by author

Students need to demonstrate the suitability of the design to a tropical climate.
- Arif Budi Sholihah, S.T., M.Sc., Ph.D -

PARTIAL SECTION SHOWING THE CIRCULATION SHADING

I've decided to refine the weaving interpretation by focusing mainly on the shading system. I will use one consistent weaving-inspired pattern across the site to unify the design, while applying a simpler secondary pattern only on the shading of circulation zones, particularly those used by disabled individuals and pedestrians. This way, weaving still defines the project identity but in a more restrained, elegant, and functional way.



Patial Section
1/100

Figure 6.4 Patial Section
Source : Made by author

Students need to demonstrate the suitability of the design to a tropical climate.

– Arif Budi Sholihah, S.T., M.Sc., Ph.D –

A building setback must be implemented between the building and the land. The cost of the construction must be feasible and promote sustainability.

Shaded corridors are required in the tropical climate. Overhangs are nonexistent, and so must be added.

– Dr.-Ing. Putu Ayu Pramanasari A., S.T., M.A. –

ADDAPTATION TO TROPICAL CLIMATE SITE PLAN

1. Shading Along Circulation :

Problem:

In a tropical climate, circulation areas are often exposed to direct sunlight and heavy rain, making movement uncomfortable.

Solution:

I extended the roofline and introduced overhangs supported by woven-like secondary structures. This provides continuous shade and shelter while reducing heat and glare on adjacent walls.

2. Building–Nature Relationship :

Problem:

The building was previously placed directly against the higher landscape, creating tension, poor ventilation, and water runoff issues.

Solution:

I introduced a 2-meter setback between the building and the natural edge. This buffer space improves airflow, manages water naturally through planting, and creates a softer transition between built form and nature.

3. Material Redesign for Climate + Culture :

Problem:

The original circulation cover was designed with steel and glass, which overheats under tropical sun and feels detached from local culture.

Solution:

I replaced it with a woven-like shading cover. The structure uses laminated bamboo beams (10×10 cm) as the exposed framework, paired with a polycarbonate opal (milky white) Sunpro Twinwall sheet, 5 mm thick. This combination provides lightweight, diffused shading, reduces heat gain, and at the same time celebrates local craft traditions with the bamboo weave expression.

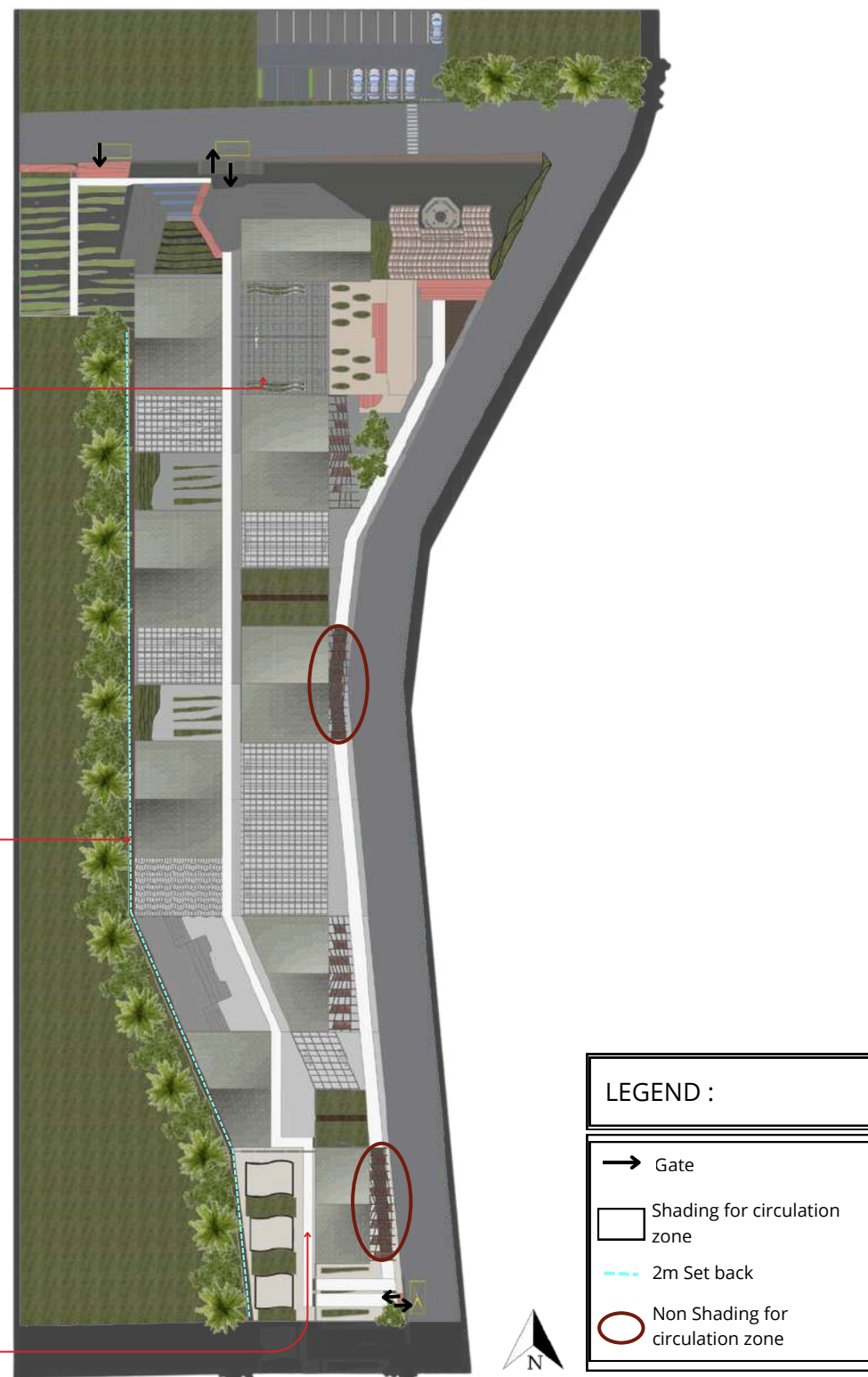


Figure 6.5 Site plan
Source : Made by author

Students need to demonstrate the suitability of the design to a tropical climate.
- Arif Budi Sholihah, S.T., M.Sc., Ph.D -

THE SETBACK AND BOUNDARIES

On the nature-facing side of the site, I introduced a clear boundary wall to protect the building edge while still respecting the natural landscape. A 2-meter setback is left between the building and the wall, creating a buffer zone that prevents the architecture from “pressing” directly onto the greenery. This distance also allows natural ventilation, visual breathing space, and a transitional area between the built environment and the natural environment. The wall functions as a soft threshold rather than a hard separation—framing views while maintaining privacy and control over circulation.

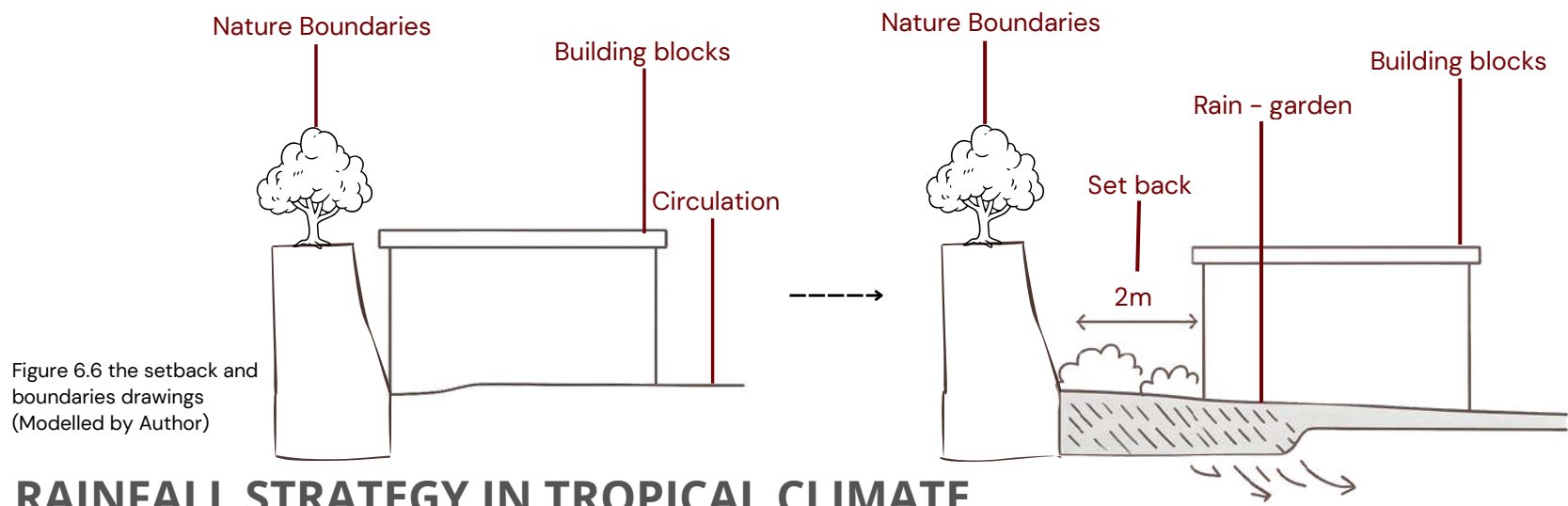


Figure 6.6 the setback and boundaries drawings (Modelled by Author)

RAINFALL STRATEGY IN TROPICAL CLIMATE

Indonesia’s heavy and frequent rainfall requires careful consideration for this buffer zone. Between the boundary wall and the building, I placed a rain garden + drainage channel system that absorbs runoff and prevents flooding near the circulation areas. The 2-meter setback becomes multifunctional: planted with permeable surfaces (grass, gravel, bamboo groves) to slow down rainwater, and integrated with surface drains that guide excess water away. Additionally, shading elements from the facade and circulation roofs extend slightly into this buffer, reducing splash-back onto walls and walkways. This ensures the setback not only acts as a visual and spatial buffer but also as a resilient rain management strategy suitable for the tropical climate.



Students need to demonstrate the suitability of the design to a tropical climate.

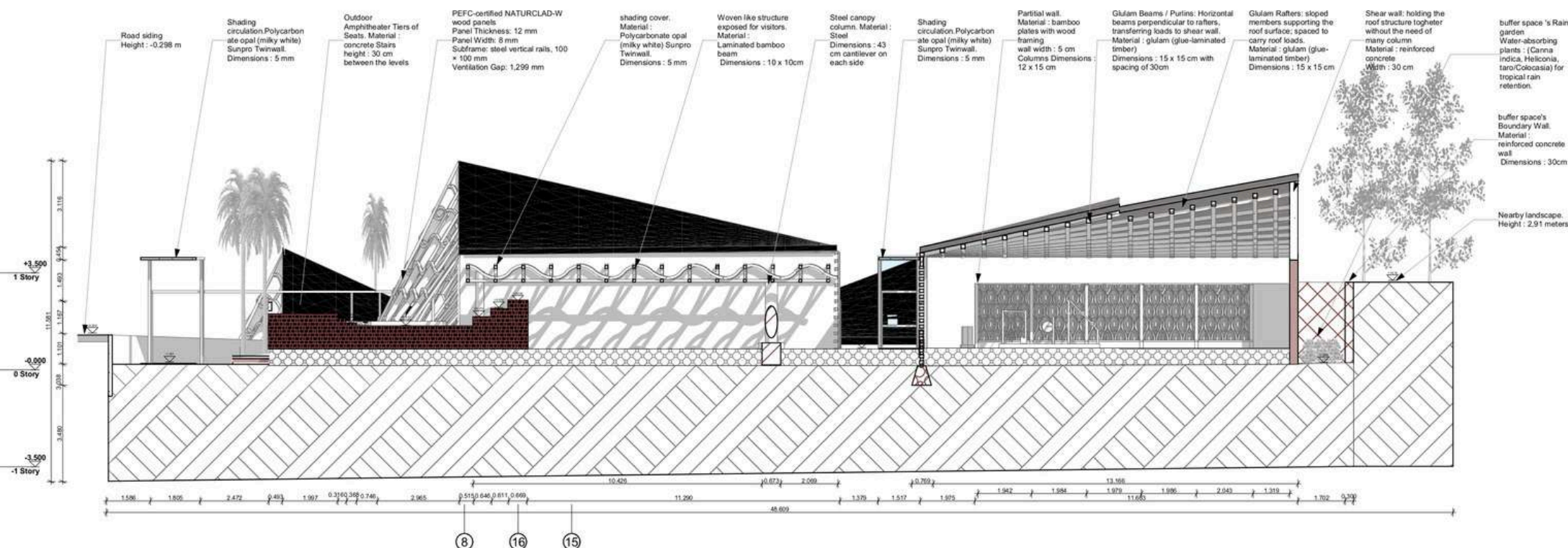
– Arif Budi Sholihah, S.T., M.Sc., Ph.D –

A building setback must be implemented between the building and the land. The cost of the construction must be feasible and promote sustainability.

Shaded corridors are required in the tropical climate. Overhangs are nonexistent, and so must be added.

– Dr.-Ing. Putu Ayu Pramanasari A., S.T., M.A. –

PARTIAL SECTION SHOWING THE SETBACK AND RAINFALL STRATEGY



Full Section 2
1/100

Figure 6.7 Full section 2
(Modelled by Author)

Water-Absorbing Plants for Rain Retention :

Within the rain garden, I used water-absorbing tropical plants such as Canna indica, Heliconia, and Taro (Colocasia esculenta). These species thrive in wet conditions, making them ideal for Indonesia's high rainfall.

- **Canna indica:** With its tall, upright form and vibrant flowers, it not only absorbs excess water but also brings seasonal color and biodiversity by attracting pollinators (butterflies, bees).
- **Heliconia:** Known for its broad leaves and tropical inflorescences, it intercepts rainfall, slows down splash erosion, and adds a striking vertical texture. Its rhizomes also help stabilize the soil in waterlogged zones.
- **Taro (Colocasia):** A plant traditionally familiar in Indonesian landscapes, its large, shield-like leaves capture and direct rainwater toward the soil, increasing infiltration. Its tuberous root system stores water and reduces surface runoff during heavy downpours.

Together, these species function as a natural sponge system: they hold rainwater during storms, gradually release it into the soil, and reduce stress on the drainage channels. Beyond hydrology, they reinforce a tropical and culturally resonant landscape character, making the buffer zone both ecologically resilient and visually engaging.

Students need to demonstrate the suitability of the design to a tropical climate.

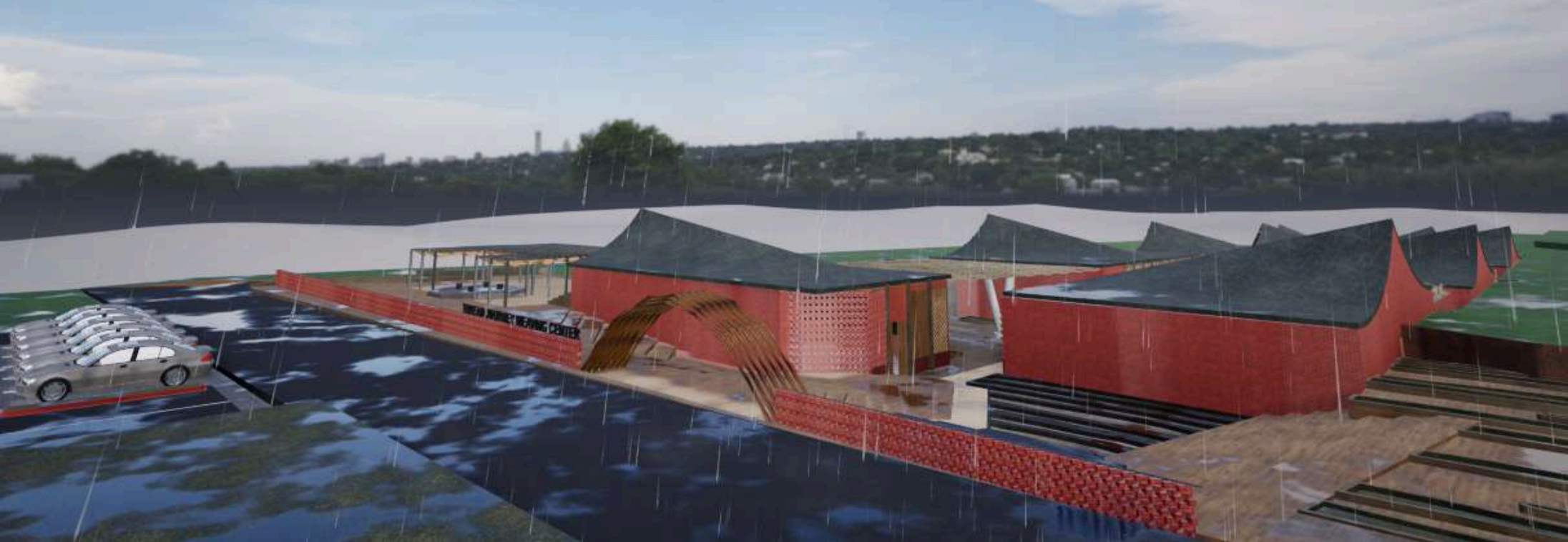
– Arif Budi Sholihah, S.T., M.Sc., Ph.D –

UP CLOSED VIEW ON FACADE

1. Entrance and garden side :



2. Entrance and parking side :





07. ATTACHMEN T

- PLAGIARISM CHECK ARCHITECTURAL
- PRESENTATION BOARD TECHNICAL
DRAWING
- SEPARATE ATTACHMENT REFERENCES

Plagiarism Check Architectural



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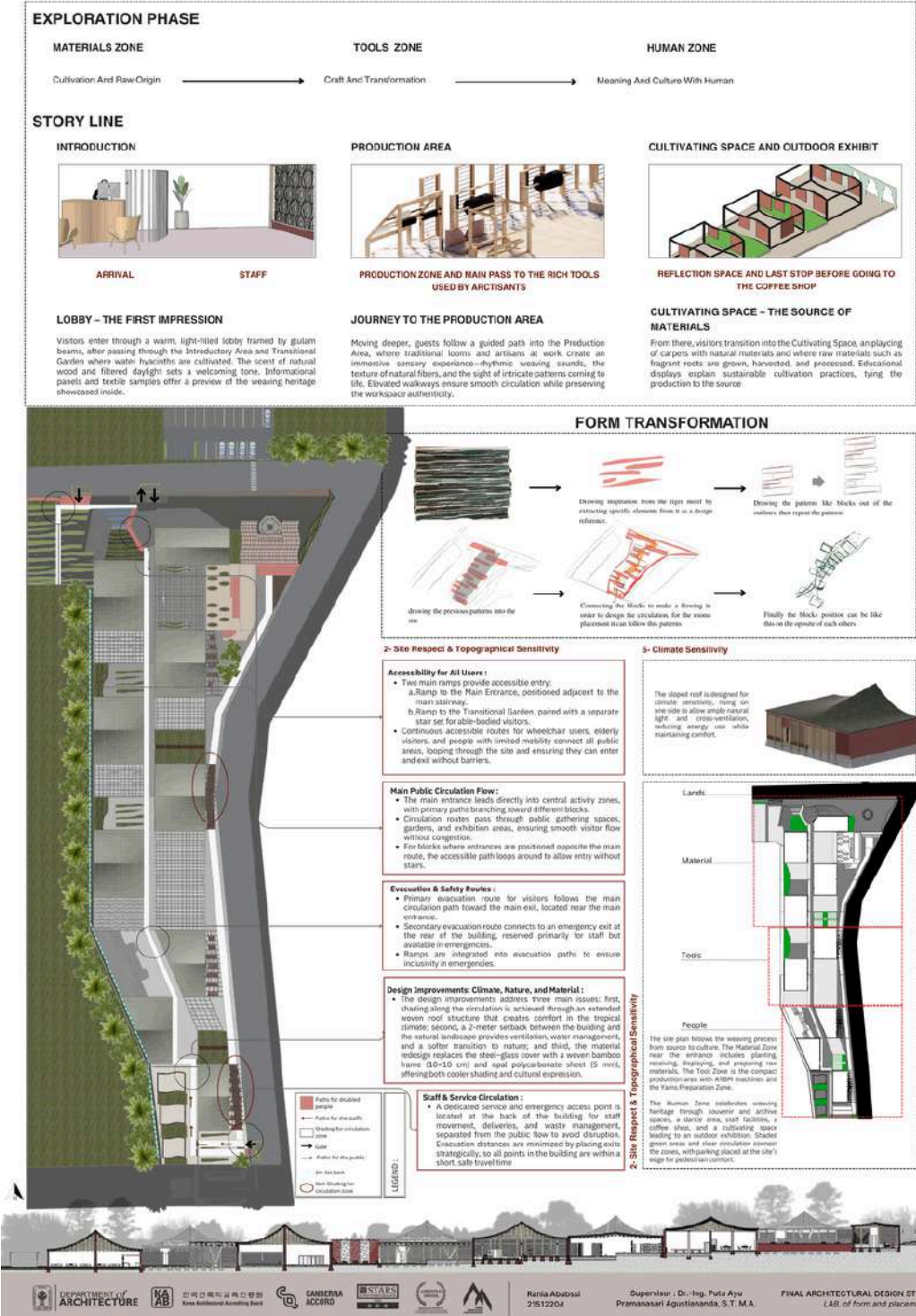
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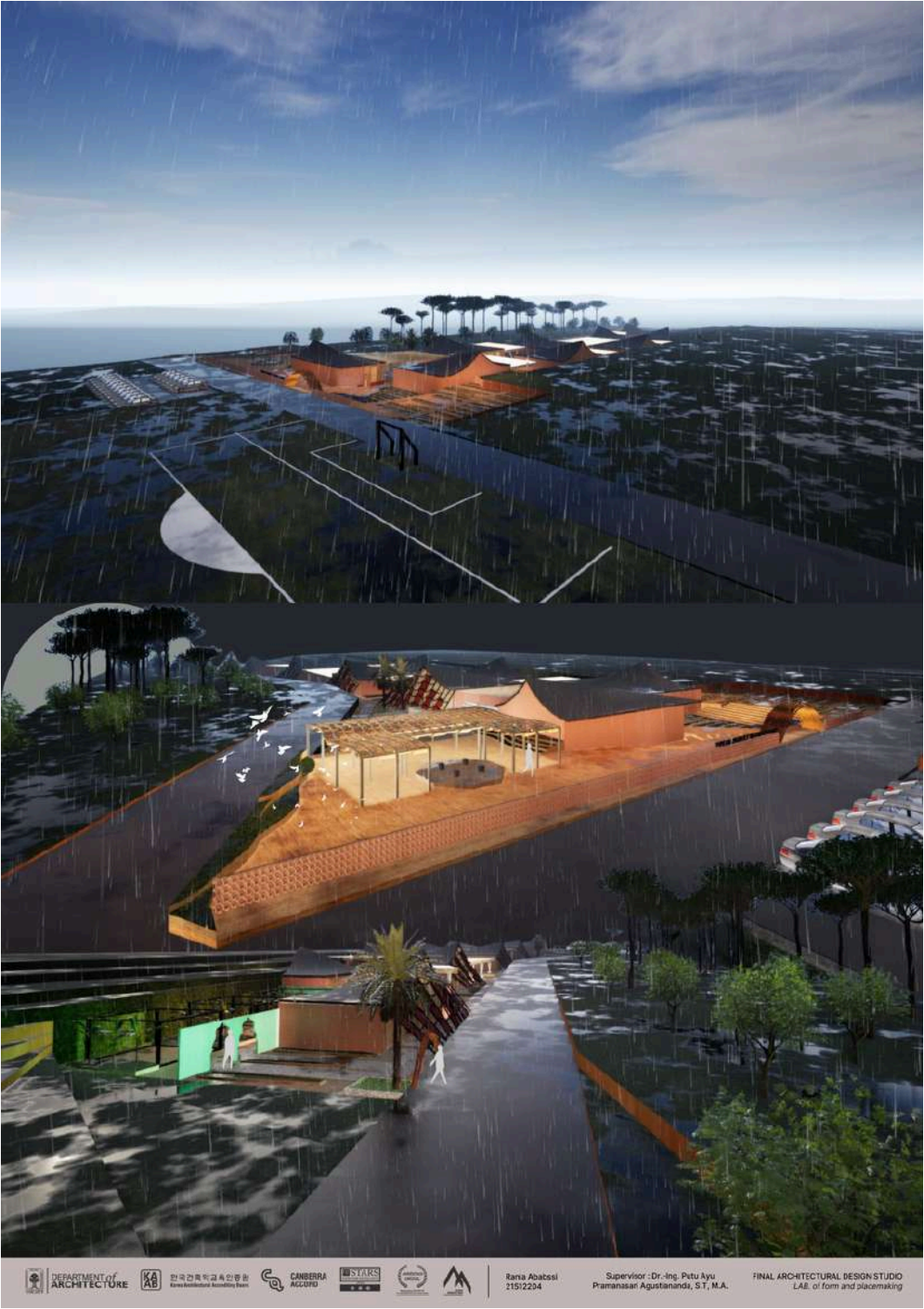


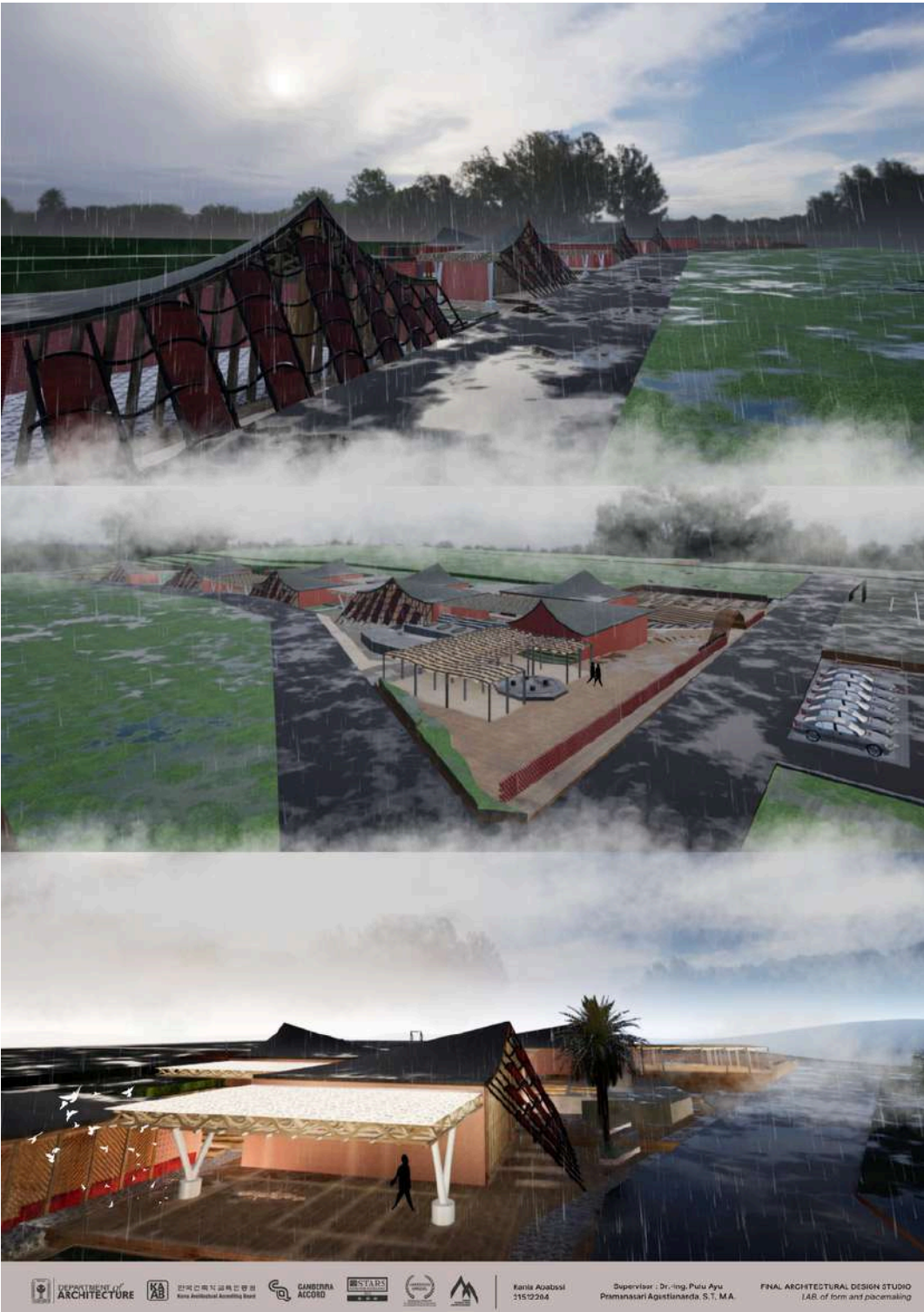
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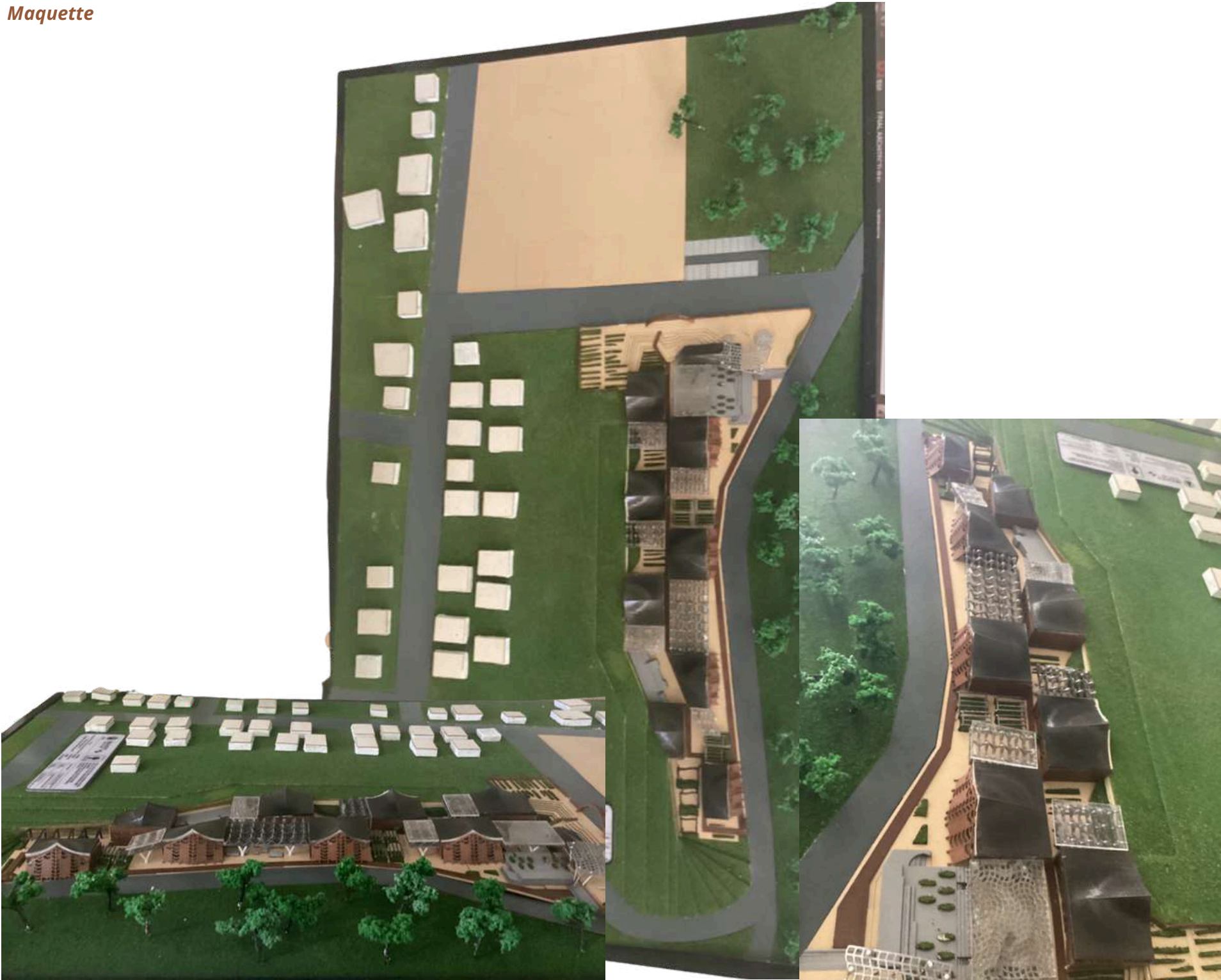
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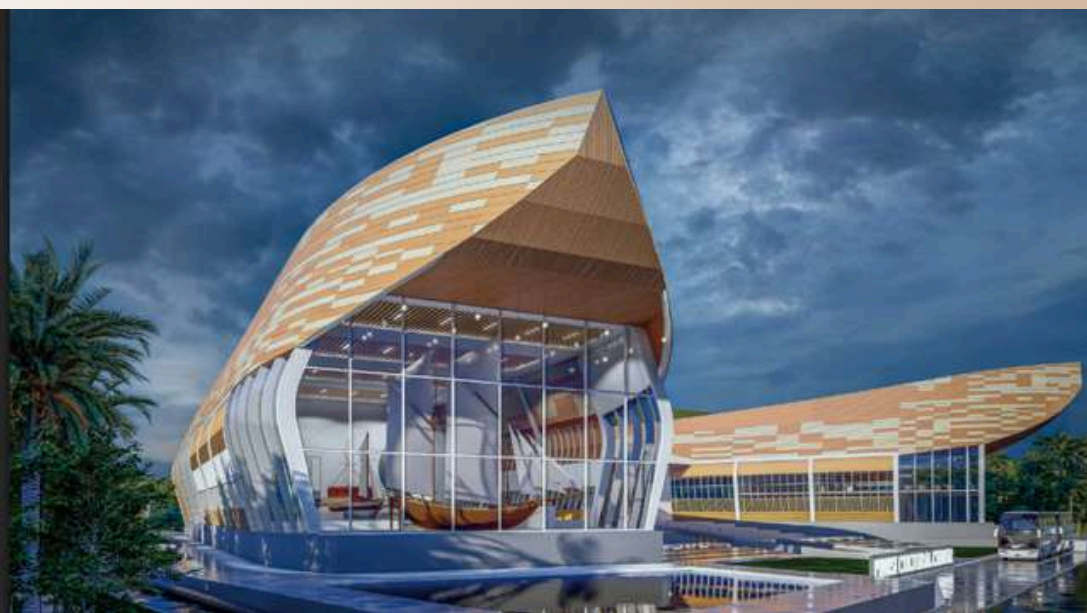
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REFERENCES:

KBBI official website

UPH Scientific Paper (SNDS 2019)

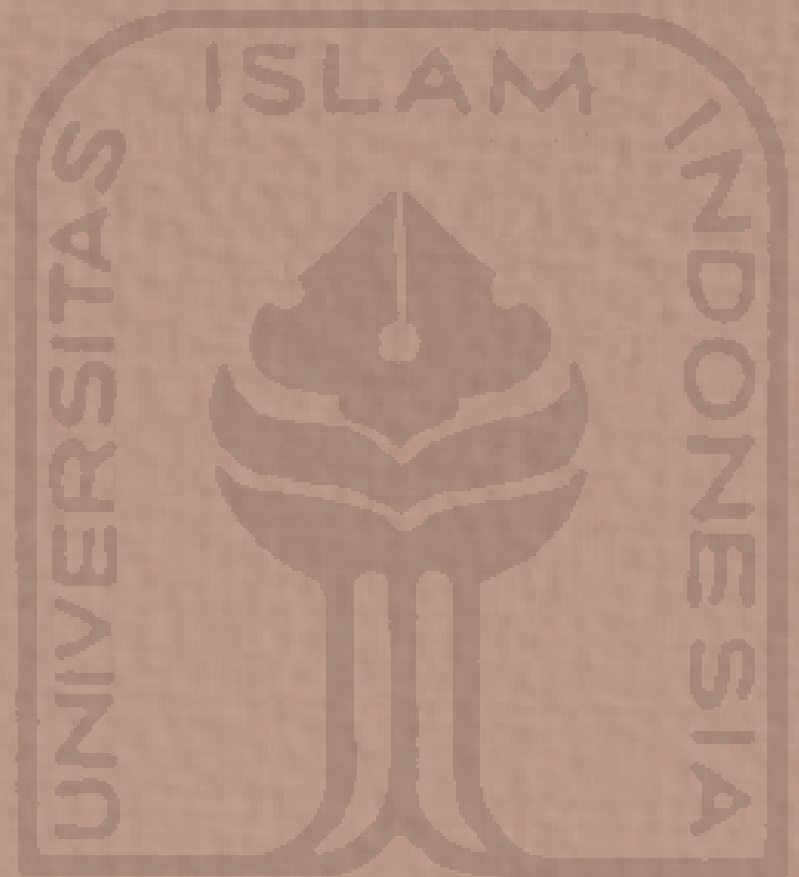
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