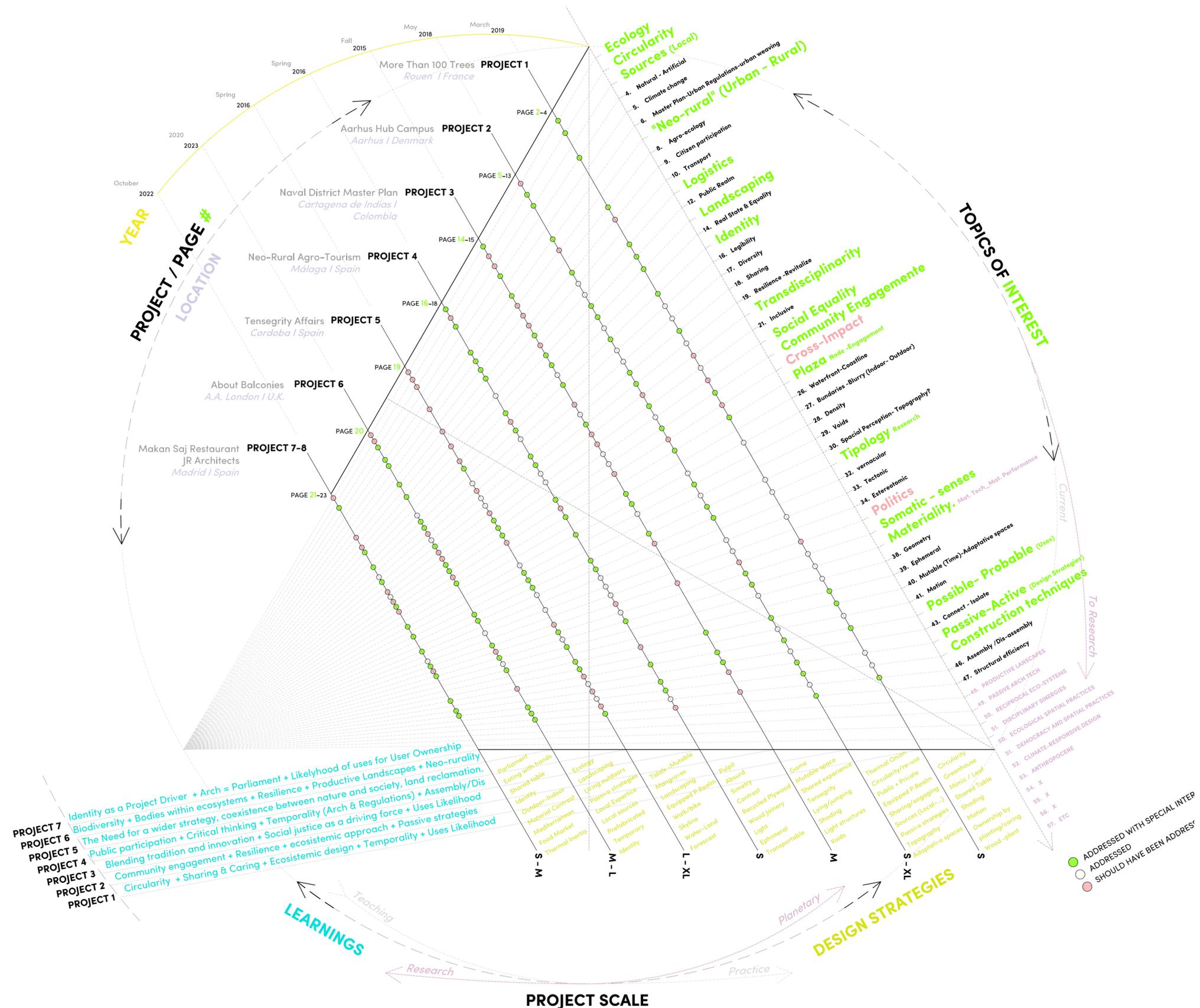


INDEX

+ Research Affirmations



01

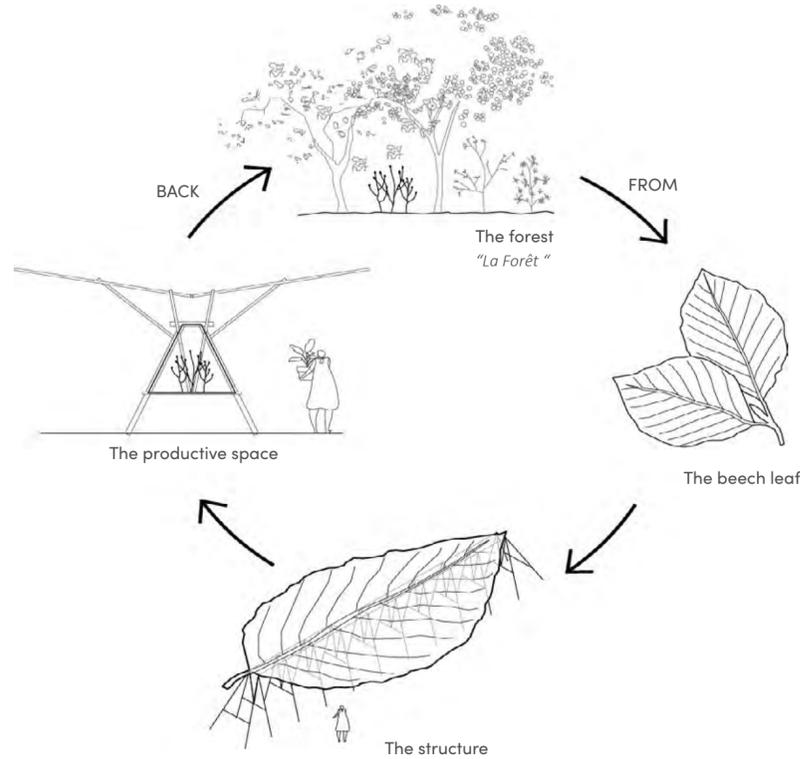
More Than 100 Trees Ephemeral pavilion

March 2019
La rioja | Spain- Rouen | France

Competition:
Concéntrico - La Forêt Monumentale
Authors (throughout all phases)
Santiago del Aguila | Clara Álvarez |
Manuel Bouzas | Juan Álvarez-Vijande

International Competition

03. PAVILION CYCLE + CONCEPT / CICLO PABELLÓN + CONCEPTO



01. BACKGROUND

International competition organized by the Concéntrico festival in collaboration with Métropole Rouen Normandie, on the occasion of La Forêt Monumentale, an art biennial focused on the integration of art and the forest in Rouen, France. Candidates are invited to create a temporary installation lasting one month in a pedestrian, popular, and multicultural public space located at the intersection between the Church Square and a commercial street.

The aim is to promote coexistence between the natural and the artificial.

02. SITE / EMPLAZAMIENTO



01. ANTECEDENTE

Concurso internacional organizada por el festival Concéntrico en colaboración con Métropole Rouen Normandie, con motivo de La Forêt Monumentale, una bienal de arte centrada en la integración del arte y el bosque en Rouen, Francia. Se invita a los candidatos a crear una instalación temporal que durará un mes en un espacio público peatonal, popular y multicultural ubicado en la intersección entre la Plaza de la Iglesia y una calle comercial.

El objetivo es promover la convivencia entre lo natural y lo artificial.

Juan Álvarez-Vijande Landecho

04. MAIN GOAL / OBJETIVO PRINCIPAL

The goal is to prompt reflection on urban domain and the appreciation of natural heritage by integrating it into the city. This will be achieved by establishing a dialogue that fosters a shift in perspective among citizens and visitors. Through the implementation of two public facilities: a nurturing greenhouse and a social gathering table.

El objetivo es fomentar la reflexión sobre el entorno urbano y la apreciación del patrimonio natural al integrarlo en la ciudad. Esto se logrará estableciendo un diálogo que promueva un cambio de perspectiva entre los ciudadanos y visitantes. A través de la implementación de dos instalaciones públicas: un invernadero de cuidado y una mesa de reunión social.

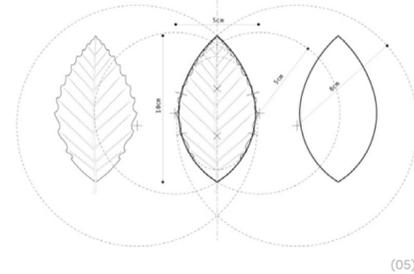
In Normandy, there was a vast forest containing thousands and thousands of beech trees. As autumn began, two of its leaves flew with the wind through the woods, eventually landing in the middle of a square in the center of a town. Initially surprised by their size, the inhabitants began to occupy them: one was a greenhouse, while the other was a table. Both pieces became part of their daily lives.

Under the first leaf, they planted seeds, participated in workshops, and learned about gardening and ecology. On the second leaf, all the residents displayed shows, played games, and interacted with each other.

One month later, the leaves disappeared at the beginning of winter, and the only trace they left behind was the multiple plants that the citizens took care of.

Consequently, they decided to transplant those trees into the same forest to help them grow. They hoped that two more leaves would appear on the same square in the following autumn.

05. GEOMETRY / GEOMETRÍA



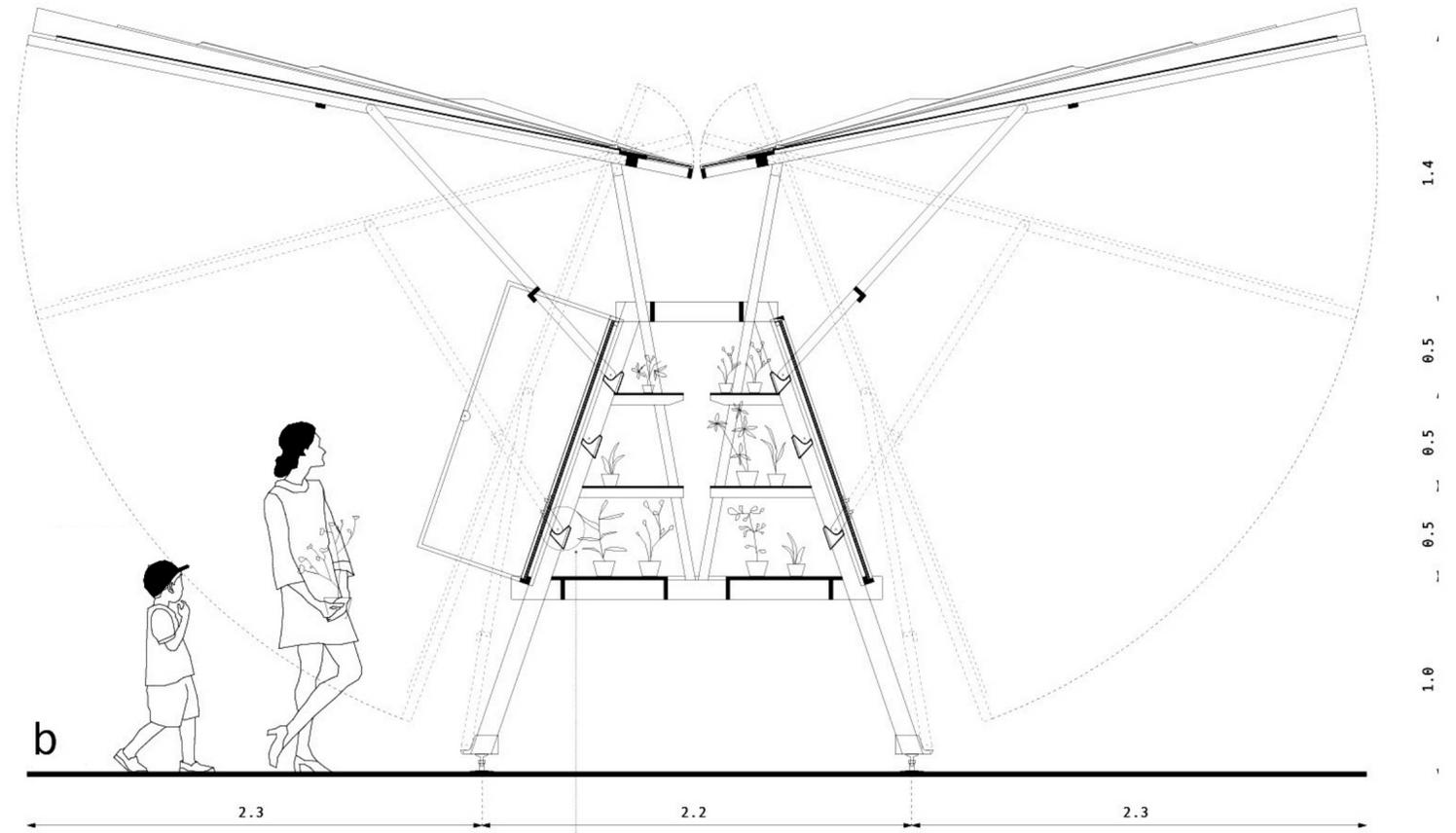
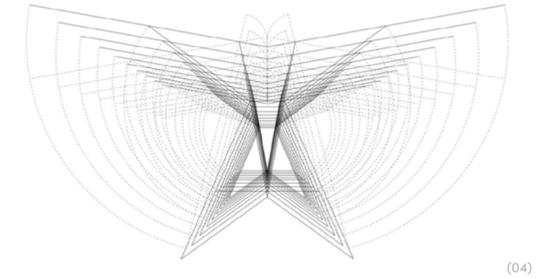
En Normandía, había un vasto bosque que contenía miles y miles de hayas. A medida que comenzaba el otoño, dos de sus hojas volaron con el viento a través del bosque, aterrizando finalmente en medio de una plaza en el centro de un pueblo. Inicialmente sorprendidos por su tamaño, los habitantes comenzaron a darles uso: una se convirtió en un invernadero, mientras que la otra se convirtió en una mesa. Ambas piezas pasaron a formar parte de sus vidas.

Bajo la primera hoja, sembraron semillas, participaron en talleres y aprendieron sobre jardinería y ecología. En la segunda hoja, todos los habitantes realizaron espectáculos, jugaron e interactuaron entre sí.

Un mes después, las hojas desaparecieron al comienzo del invierno, y la única huella que dejaron atrás fueron las múltiples plantas de las que los ciudadanos se ocuparon.

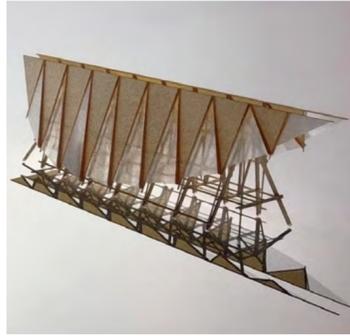
En consecuencia, decidieron trasplantar esos árboles de vuelta al mismo bosque para ayudarlos a crecer. Esperaban que dos hojas más aparecieran en la misma plaza de la misma ciudad en el otoño siguiente.

07. MOVEMENT SCHEME / ESQUEMA DE MOVIMIENTO



06. CROSS-SECTION B / SECCIÓN TRANSVERSAL B

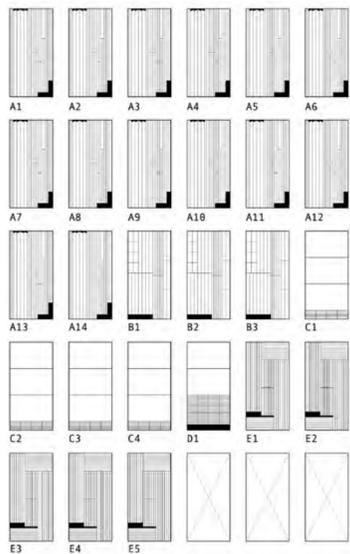
06. NIGHT PROTECTION
/ PROTECCIÓN NOCTURNA



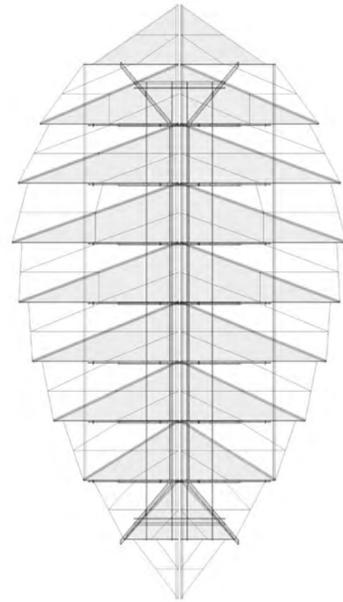
07. SHADING
/ SOMBREAMIENTO



08. BOARD CUTTING AND MATERIAL LOSS
/ DESPIECE TABLEROS Y PERDIDA DE MATERIAL

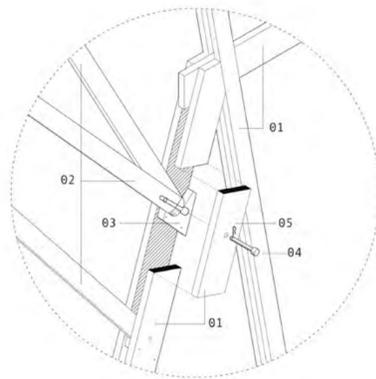


09. COVERINGS PLAN VIEW
/ PLANTA REVESTIMIENTOS



(09)

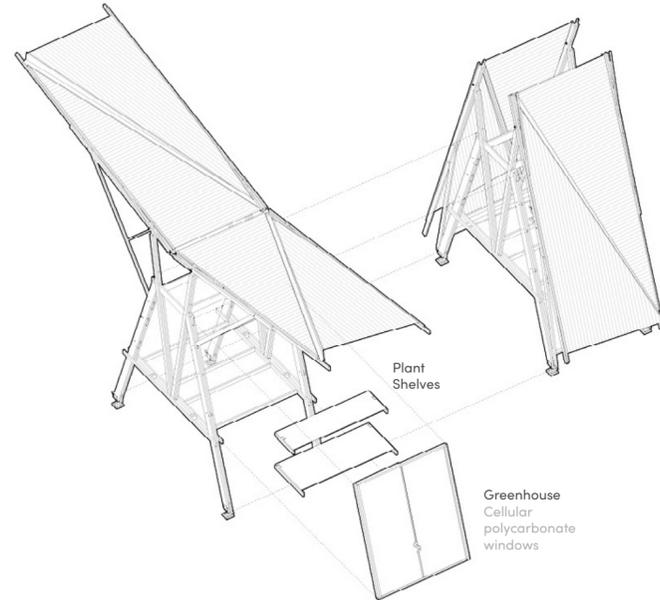
11. COVER MOVEMENT SYSTEM
/ SISTEMA DE MOVIMIENTO DE LA CUBIERTA



- | | |
|--------------------------------|-------------------------------------|
| 1. Plywood Strip 100 x 20 mm | 1. Listón contrachapado 100 x 20 mm |
| 2. Plywood Strip 50 x 20 mm | 2. Listón contrachapado 50 x 20 mm |
| 3. Rotation support | 3. Soporte de rotación |
| 4. Stainless Steel Bolt Ø 20mm | 4. Tornillo de acero Inox. Ø 20 mm |
| 5. R-type Spring Cotter Pin | 5. Chaveta tipo "R" |

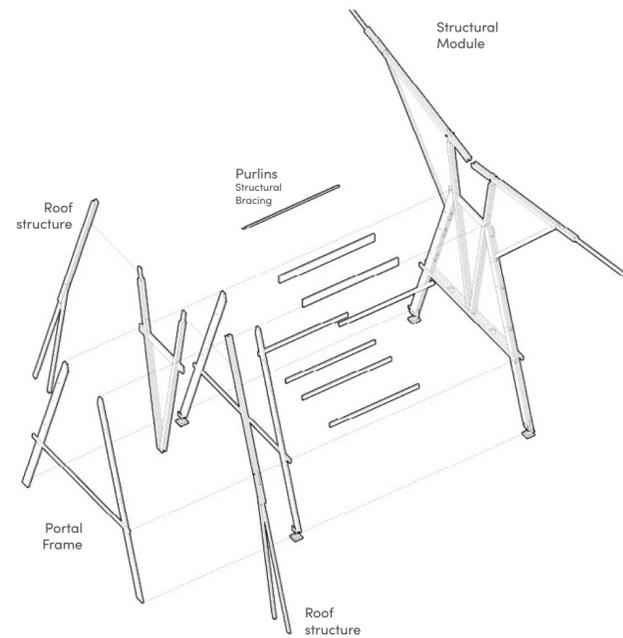
(011)

10. COVERINGS & SHELVES
/ REVESTIMIENTOS Y BALDAS



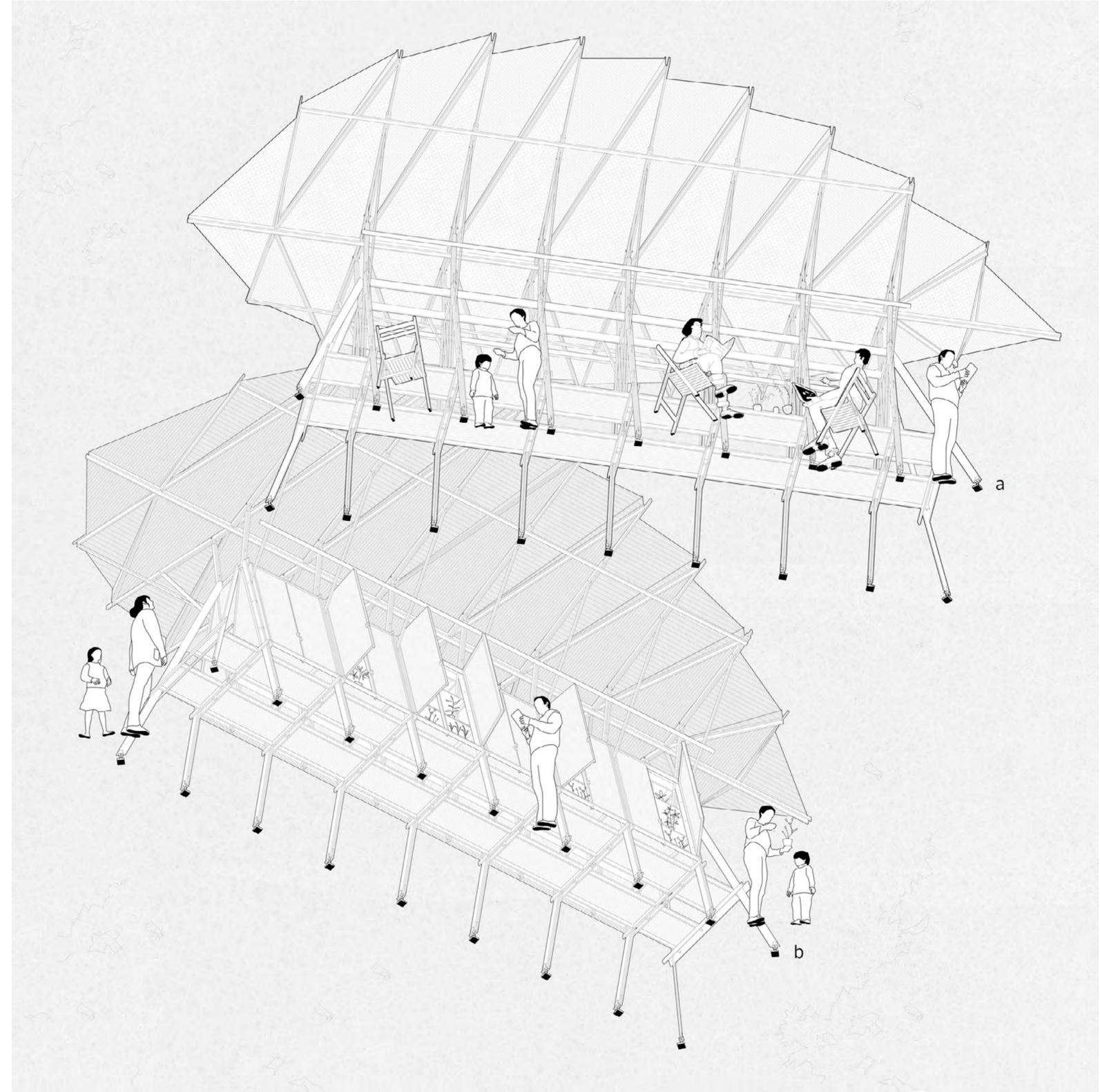
(010)

12. ASSEMBLY / ENSAMBLAJE

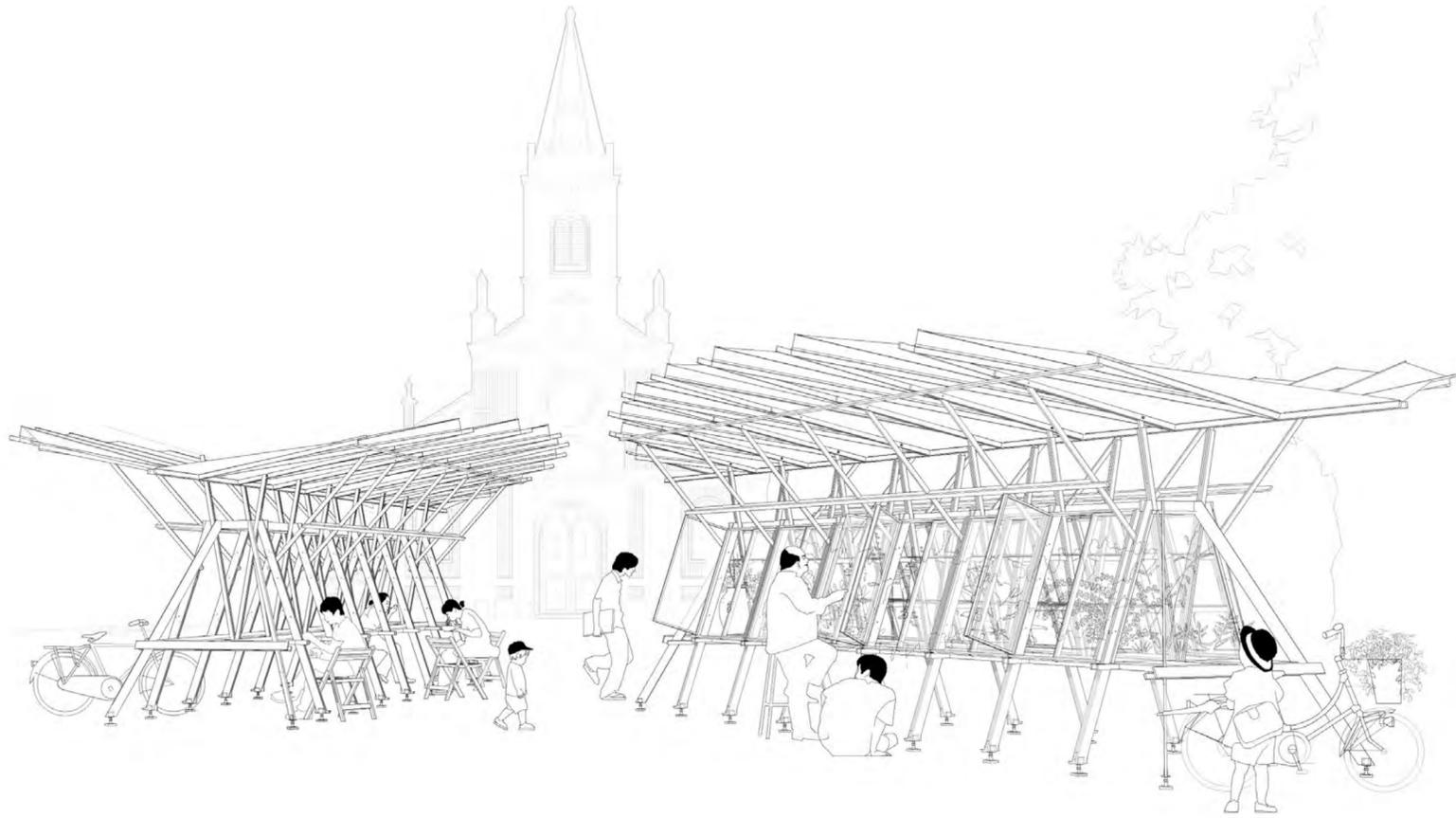


(012)

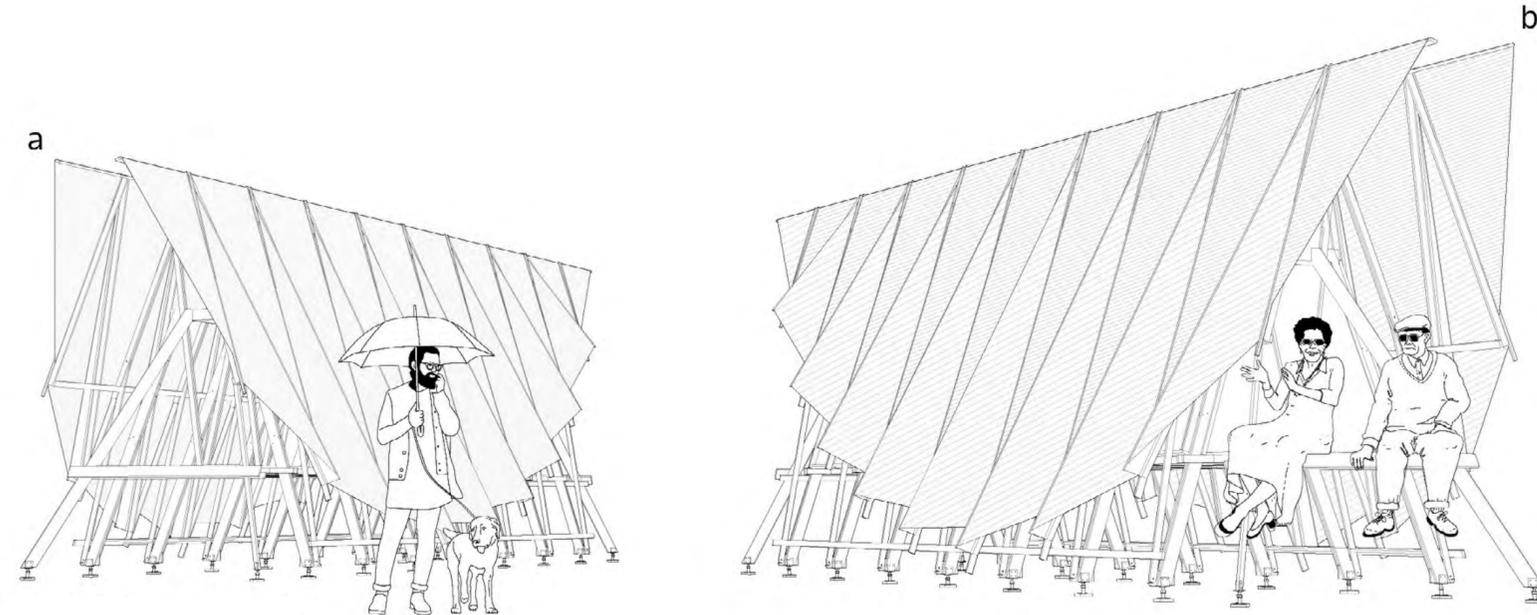
13. BOTTOM AXONOMETRIC / AXONOMÉTRICA INFERIOR



14. OPENED COVERS | PERSPECTIVE VIEW
/ COBERTURAS ABIERTAS | PERSPECTIVA

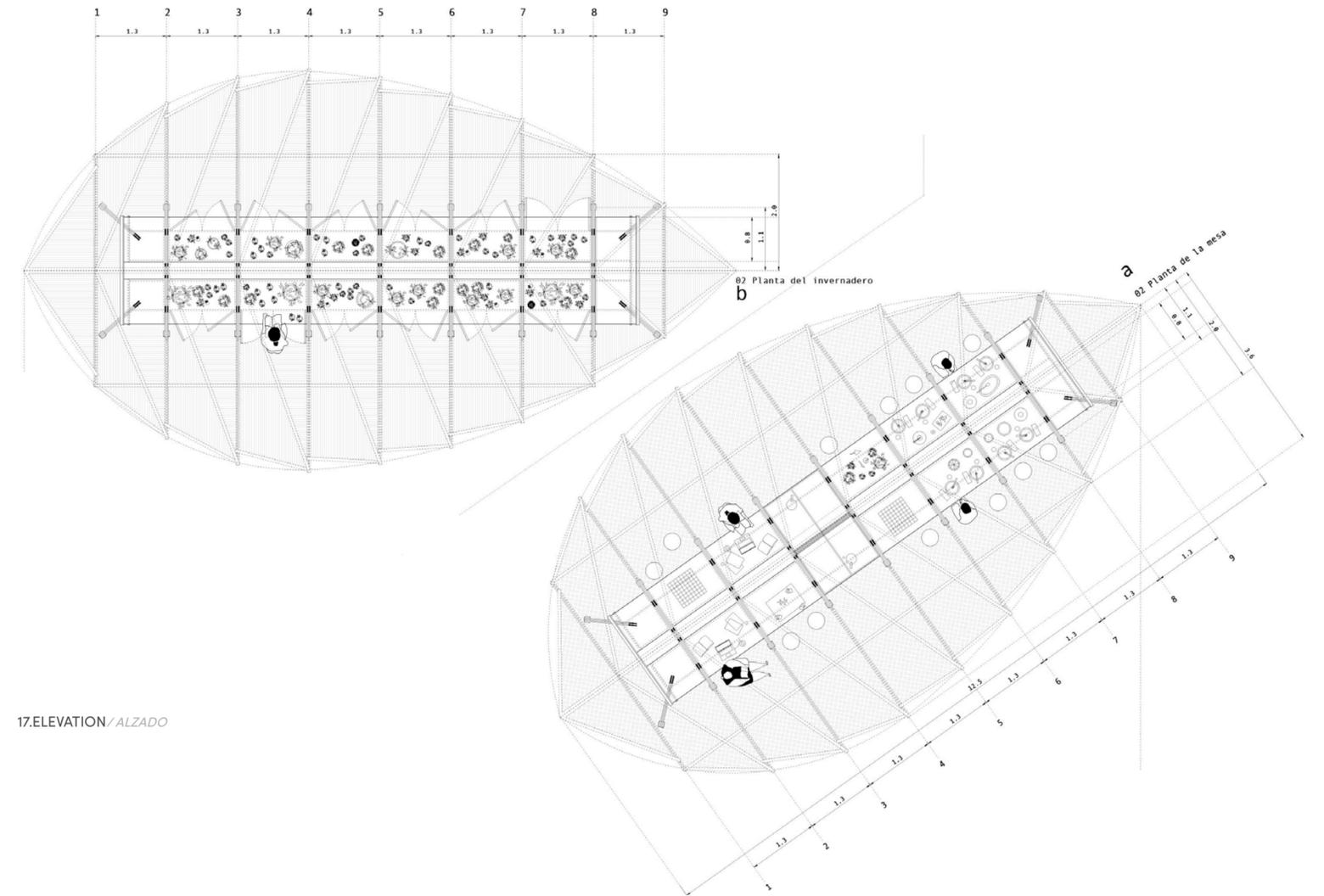


15. CLOSED COVERS | PERSPECTIVE VIEW
/ COBERTURAS CERRADAS | PERSPECTIVA

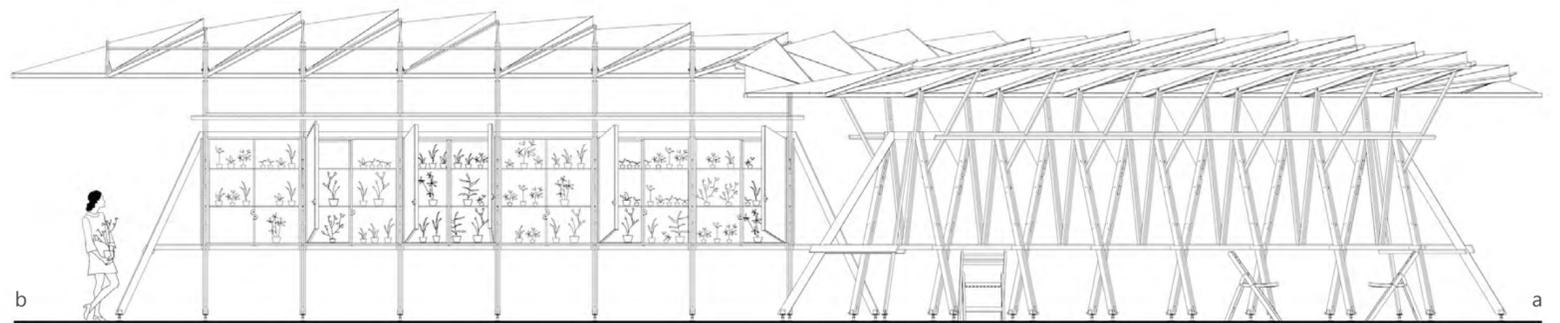


16. FLOOR PLAN / PLANTA

- (a) The table / La mesa
- (b) The greenhouse / El invernadero



17. ELEVATION / ALZADO



02

Professional Practice

Makan Libanese Restaurant Saj Manoushe

October 2022
Complejo Caleido, Madrid (Spain)

Authors:
Rafael García-Monge Pozo
Juan Álvarez-Vijande Landecho

Collaborators:
Gabriel Muñoz Moreno (Architect)

Photography:
Amores Pictures (Alberto Amores)

Situated in a bustling commercial square, **Makan frames Lebanese architecture and gastronomy as intertwined material practices** shaped by tradition and historical rupture, where locally sourced resources and their transformation mediate the dynamics of contemporary life.

The choice of raw materials and their exposure to light seeks to express the ruggedness and honesty of traditional Lebanese construction, through mortar and intricately crafted family-produced tiles, in contrast with the abstraction of pure geometries in glass, wood, metal, or polished concrete.

The façade is designed with large openings that enable environmental exchange, blurring boundaries and evoking the spatial and social intensity of Mediterranean markets.

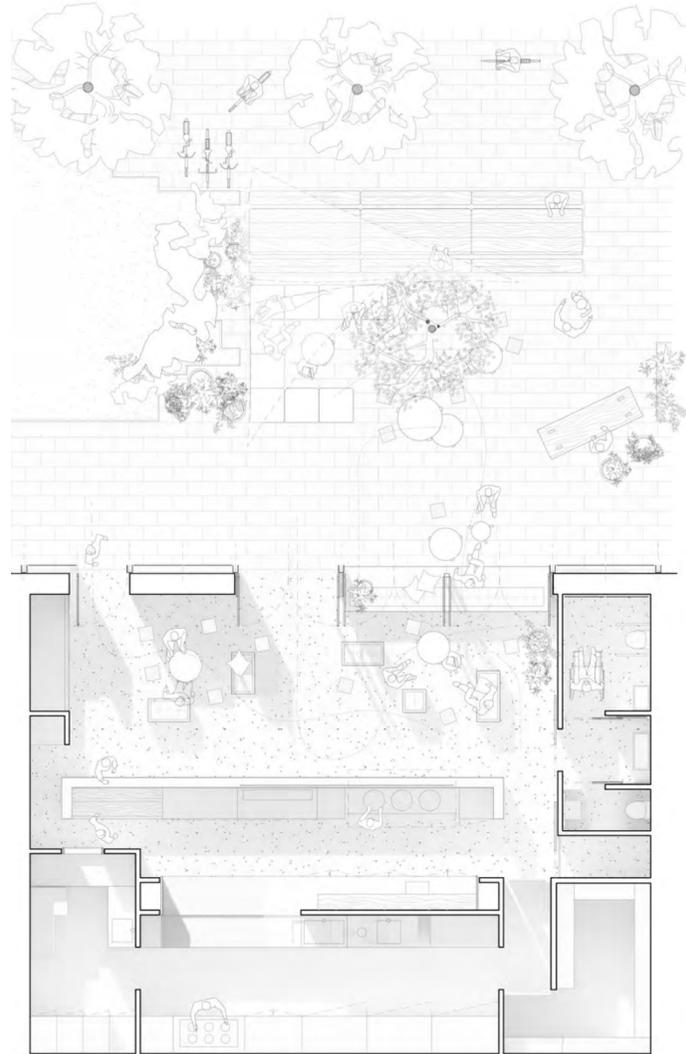
Mediterranean cuisine is a social act. At **Makan**, food takes center stage, and diners orbit around it, forming relational nodes. "Eating with hands" allows the furniture to transform, generating multiple situations.

Makan is the story of a Lebanese family, their food, their culture, and their way of life.



Juan Álvarez-Vijande Landecho

01. GROUND FLOOR
INTERIOR/EXTERIOR



02. TRADITIONAL LEBANESE TILES | MANUFACTURING PROCESS
Produced by BlattChaya (family business)

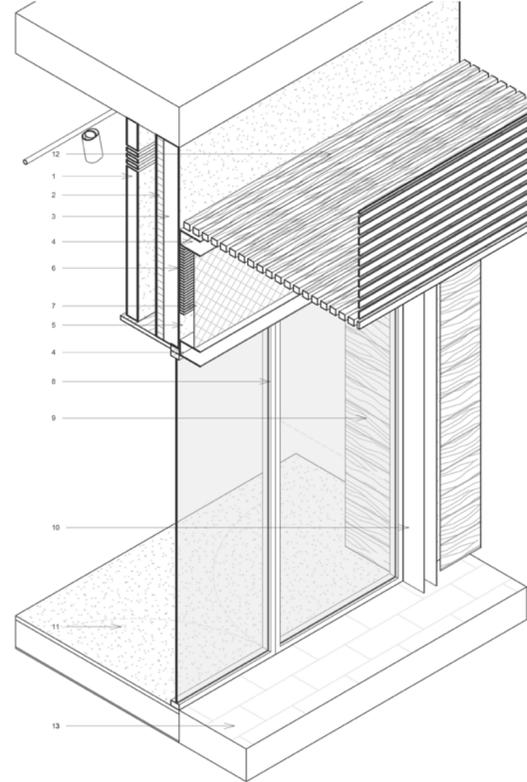


Makan Lebanese Restaurant | Madrid (SP)

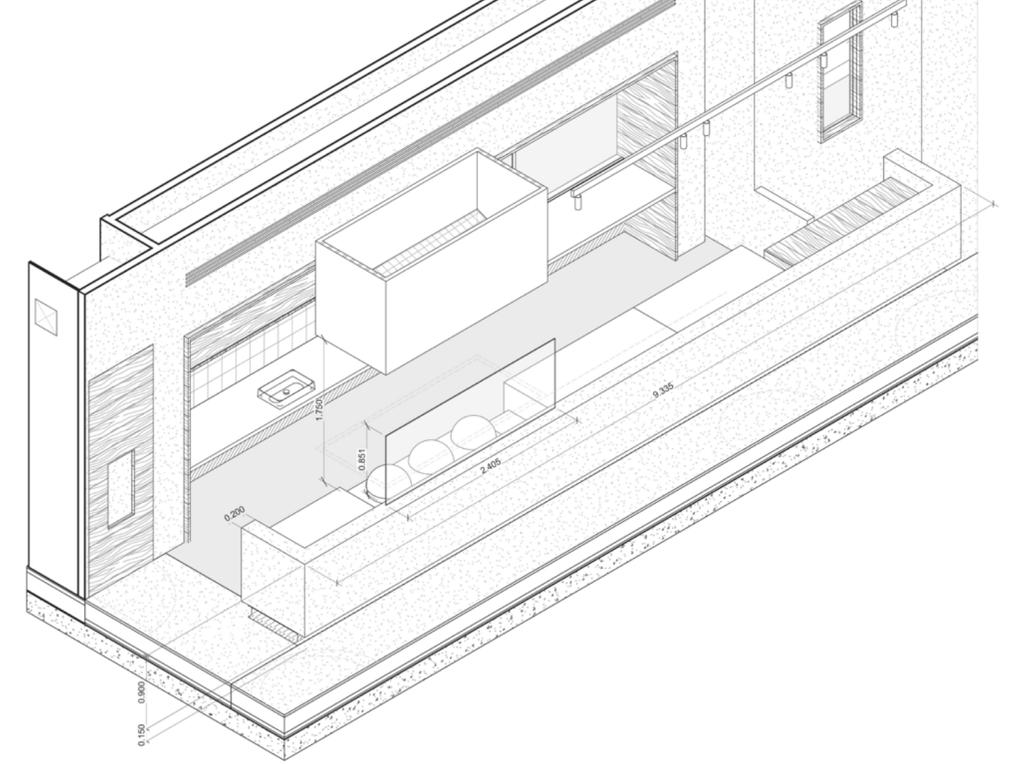
07. INFORMAL DINING SPACE & FOOD PREPARATION COUNTER



09. CUSTOMER ENTRANCE - FAÇADE CONSTRUCTION DETAIL



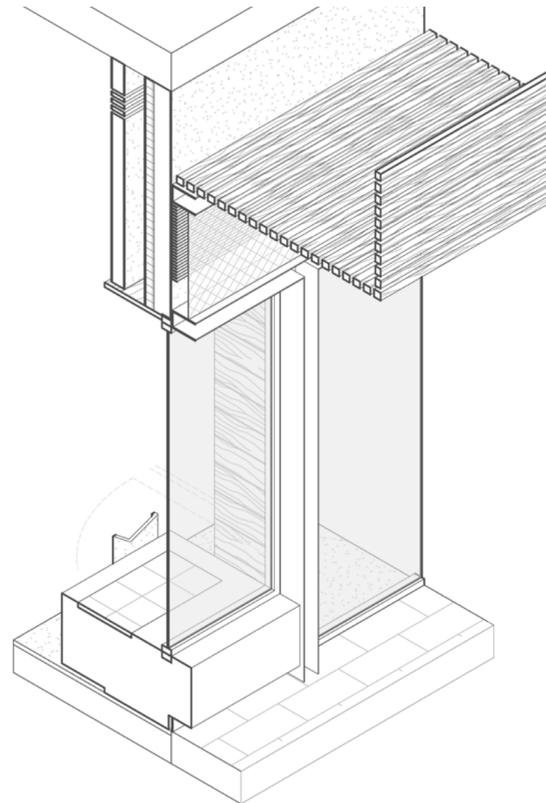
11. BAR COUNTER AXONOMETRIC - SANITARY PROTECTION & CLEARANCE



08. ORDER COUNTER & BEVERAGE SELF-SERVICE AREA



10. SEATING & COUNTER - FAÇADE CONSTRUCTION DETAIL



12. SERVICE CORRIDOR - KITCHEN, WASTE DISPOSAL & RESTROOMS



03. USERS' FREEDOM OF USE

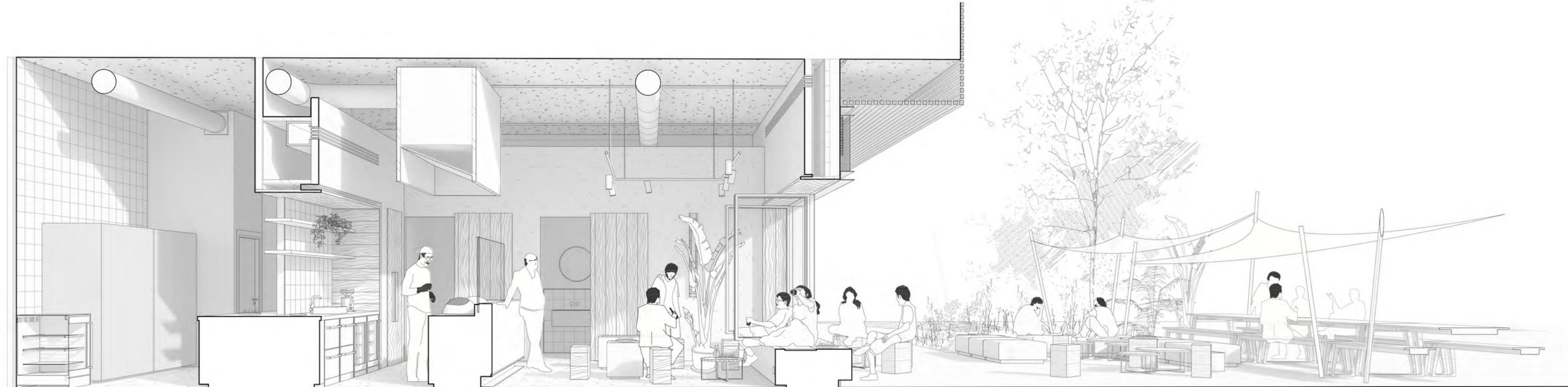
In Makan, there are intentionally no table manners. Similarly, in Lebanon, Saj food is prepared and enjoyed on the streets. Placing the main cooking area in the center emphasizes this experience, further enhanced by dining on urban furniture. Social interaction is encouraged, so tables and stools are continuously shared among different diners, even with strangers if they wish.

This proposal incorporates finishes inspired by traditional outdoor materials in Lebanon while also evoking the rawness of areas debased after war conflicts. Nevertheless, it is accompanied by joyful music and Mediterranean food that calls for a renaissance.

Makan hosts discussions about Lebanon, the Mediterranean, and culture. It serves as a venue for contemporary and traditional musical performances, much like a living room. People are respectful but daring in Makan.



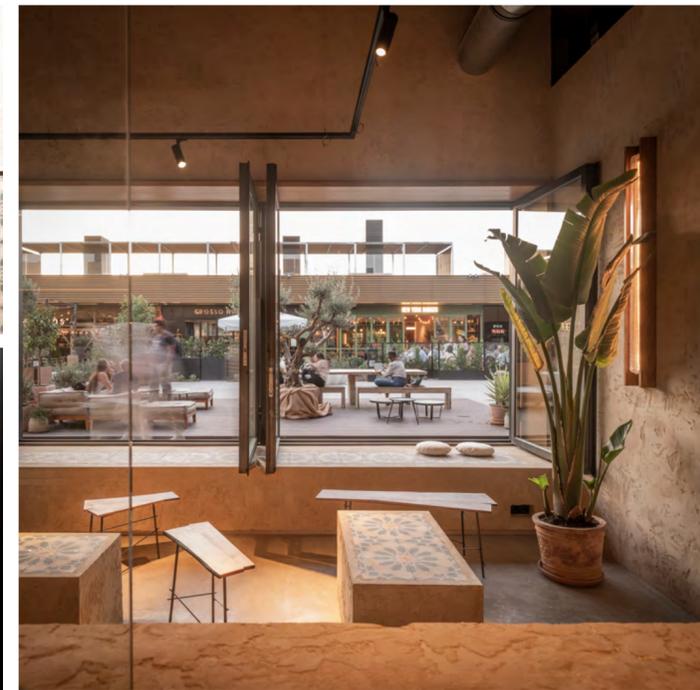
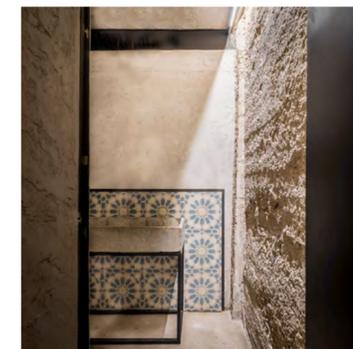
04. PERSPECTIVE SECTION - DYNAMIC THRESHOLD "GRAPHICAL ANATOMY"



05. PERSPECTIVE VIEW - TERRACE AREA



06. INTERIOR IMAGES - RAW MATERIALS - EXTERIOR - INTERIOR



03

Regenerative Arch From Measured Energy to Embodiment Material Metabolism | Energy | Matter

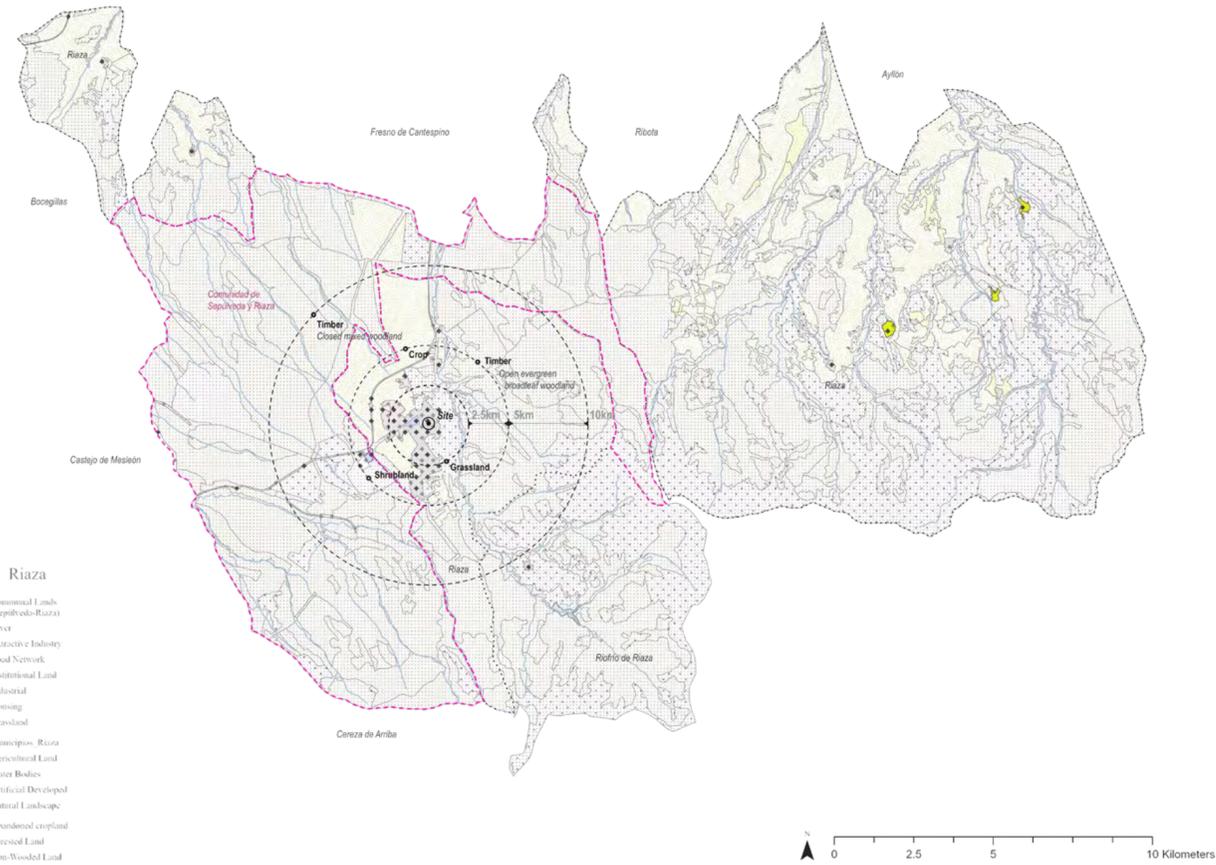
Fall Semester 2025
Harvard Graduate School of Design
Cambridge, MA | U.S.A.

Instructor: Javier García-Germán
Location: Riaza | Spain
Author: Juan Álvarez-Vijande

[Link to Paper](#)

Selected Research

BIOREGION RESOURCES Riaza, Segovia, Castilla y León



FROM MEASURED ENERGY TO EMBODIMENT Beyond the Metrics of Modern Comfort

Rooted in the premise that architecture is not merely an act of calculation but one of relation, precision, and negotiation, **this work challenges the reduction of sustainability to operational energy efficiency and standardized modern comfort.** It argues that the prevailing carbon paradigm has transformed architecture into an encapsulated hydrothermal system calibrated for equilibrium, producing passive users and neglecting material and energetic cycles tied to extraction, production, and accumulation.

By recalling that **"matter is but captured energy"** and that architecture operates within **hierarchies of energy quality**, the study redirects attention from conservation toward exergy and entropy. Rather than focusing on abstract energy efficiency, it foregrounds the degradation of energy quality and the capacity of architecture to intervene within dissipative processes.

The **Riaza Farmer's House** serves as an operative lens through which to examine a **low-entropy, maximum-power feedback system grounded in bioregional resources.** Through the orchestration of material metabolism, environmental management, and embodied cognition, the project demonstrates how low-tech vernacular intelligence can mediate recursive feedback loops between soil, vegetation, animals, domestic life, and building form.

By tracing thermodynamic, material, and cultural dimensions, the work does not seek nostalgic reproduction but rather repositions making as an open, precise, and adaptive ground for post-carbon practices. Ultimately, it calls for a thermodynamically informed tectonic capable of engaging planetary energy hierarchies while restoring agency to both architecture and its users.

The project advances a situated, bioregional material practice grounded in the recognition that matter is captured energy and that architecture participates within broader planetary energy hierarchies.

Rather than abstracting materials into geographically dispersed logistics networks, the Riaza Farmer's House draws from regionally available stone, clay, straw, and timber, allowing material and energy flows to remain legible and integrated within **local ecosystem cycles.**

Extraction, processing, and reuse occur at compatible spatial and temporal scales. This compatibility is critical: systems endure when they maximize useful power without undermining the regenerative base from which they draw, in accordance with Odum's Maximum Power Principle. Materials are therefore not inert commodities but active participants in regional metabolisms.

Within this framework, **regeneration time** becomes central. Biobased materials—such as straw and timber—operate within ecological cycles capable of replenishment, unlike fossil fuels whose combustion short-circuits geological timescales and produces highly entropic systems.

The concept of **transformity** sharpens this distinction by tracing the amount of energy invested in generating available energy. Burning fossil fuels releases stored chemical energy accumulated over geological time, collapsing energy hierarchies and accelerating entropy. By contrast, bioregional materials operate within shorter regenerative loops.

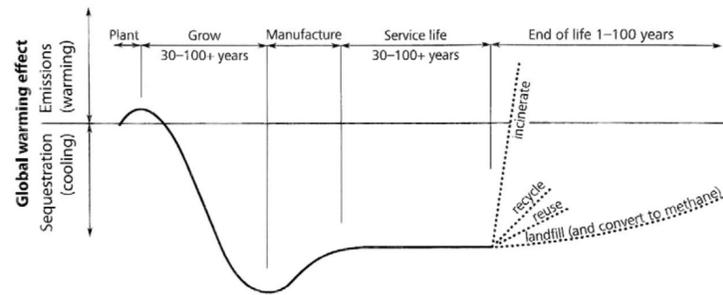
Carbon, in this sense, is not merely an emission metric but part of a broader radiation budget driven by solar influx. **Exergy**, measured in solar emjoules, traces material transformations back to this planetary input, situating architecture within Earth's thermodynamic field.

The Riaza ecology functions as a **semi-closed system of feedback loops:** livestock, manure, soil, straw storage, thermal buffering, and construction materials **reinforce one another across scales.**

Residual energies are re-fed into the system, autocatalyzing productivity rather than dissipating explosively.

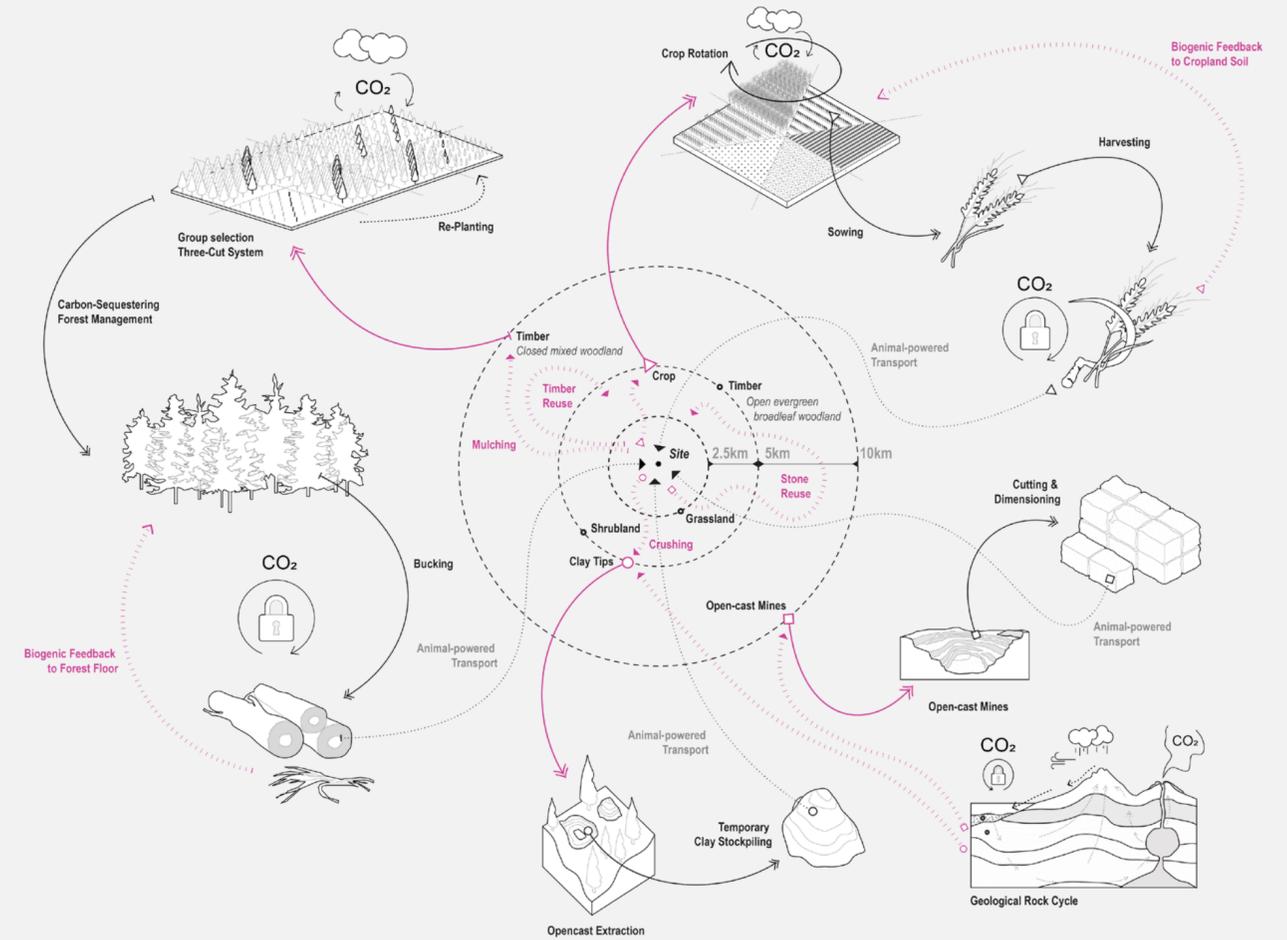
Thus, the bioregion becomes both material source and metabolic field. **Low-exergy flows are orchestrated to perform low-grade work**, preserving higher-quality energy for necessary tasks.

Material selection is guided not only by performance but by ecological continuity, reinforcing a regenerative architecture embedded within its landscape rather than externalized from it.

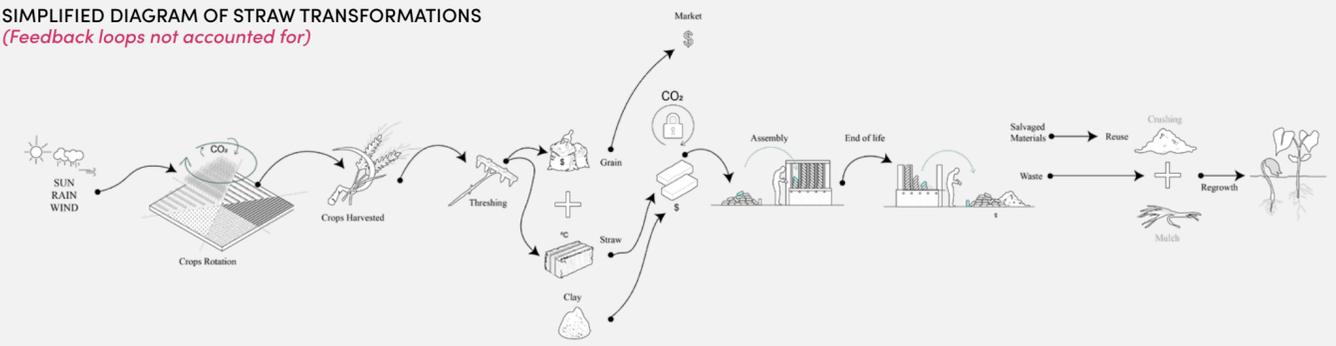


Global Warming Effect
Bruce King, *The New Carbon Architecture: Building to Cool the Climate*, 1st ed. (New Society Publishers, 2017), 42.

INTERNALIZED MATERIAL CYCLES Bioregional Resources



SIMPLIFIED DIAGRAM OF STRAW TRANSFORMATIONS (Feedback loops not accounted for)



Riaza's material palette—stone, clay, straw, and timber—emerges from its regional lithology and agricultural cycles. These materials are sourced from the surrounding landscape, processed locally, and integrated into construction through **low-technology means.** Because extraction, transformation, and reuse occur within compatible scales, material cycles remain internalized rather than externalized.

Stone and clay form stereotomic, high-inertia adobe walls capable of storing solar and metabolic heat. **Straw**, once harvested and dried, serves multiple roles: seasonal thermal buffer beneath the roof, agricultural residue, and carbon-storing biomass. **Timber** structures mediate ventilation, structural logic, and material continuity.

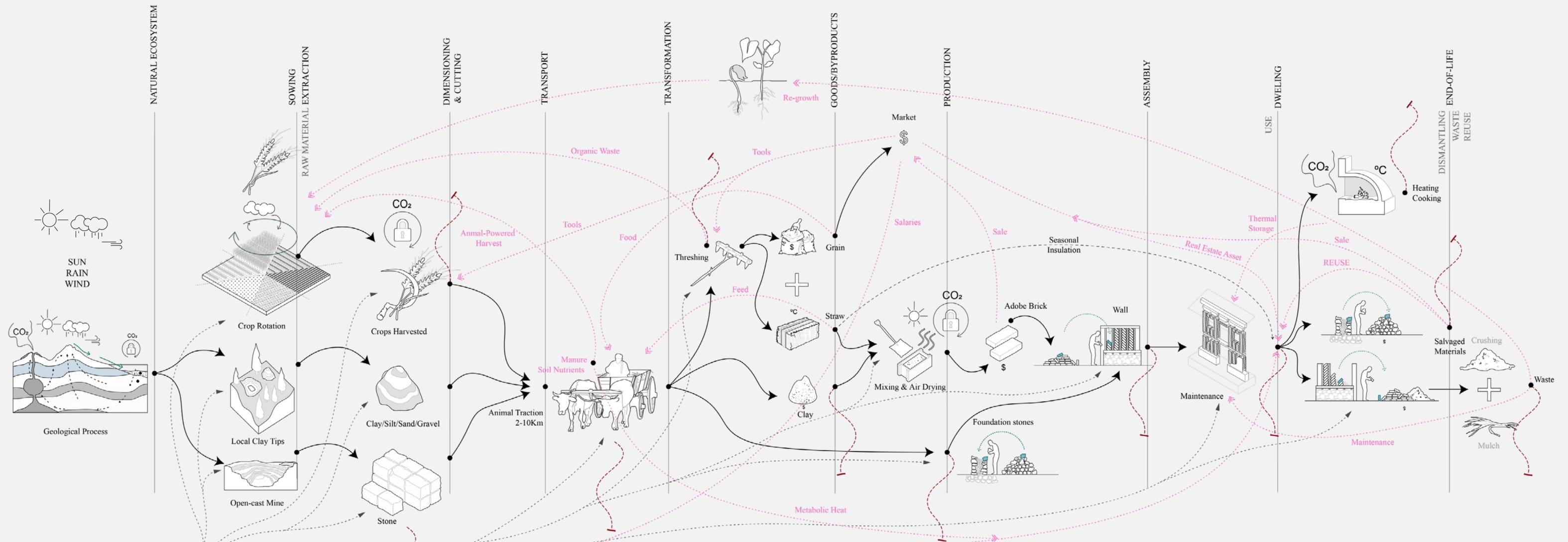
Material metabolism is evident in how **residual energies and by-products circulate.** Livestock sheltered on the ground floor release metabolic heat, which rises through wooden floorboards, tempering living spaces. Manure is turned by chickens, reinforcing soil productivity. Straw functions both as agricultural by-product and architectural insulator. **Waste is not discarded but reintegrated into productive cycles.**

Maintenance, within this framework, is not merely repair but **cyclical** adaptation. Materials are capable of reintegration into ecological systems at the end of their useful life. Their decay does not constitute explosive dissipation but gradual reinsertion into soil or biomass cycles.

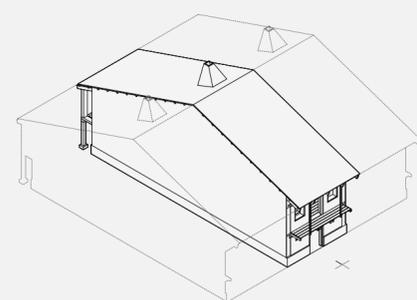
These **recursive interactions form low-entropy feedback loops.** The building is not an isolated object but a node within a wider contingent system.

Through maximum-power organization, species, materials, and domestic practices enhance the power utilization of the whole network.

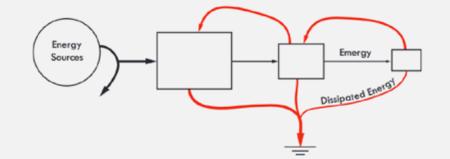
Thus, **material metabolism** becomes a **design strategy:** selecting resources whose extraction does not sever ecological continuity, whose transformation aligns with regeneration time, and whose end-of-life reenters the bioregional system without producing irreversible entropic waste.



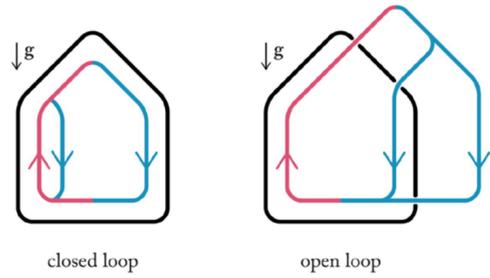
Riaza Farmer's House
 A Party-Wall Vernacular Dwelling



Dissipation and Feedbacks
 Kiel Moe, "Convergence: An Architectural Agenda for Energy," in *Convergence: An Architectural Agenda for Energy* (Taylor & Francis Group, 2013), 42.



THERMODYNAMIC INTELLIGENCE
On Progressively Constructed Meanings

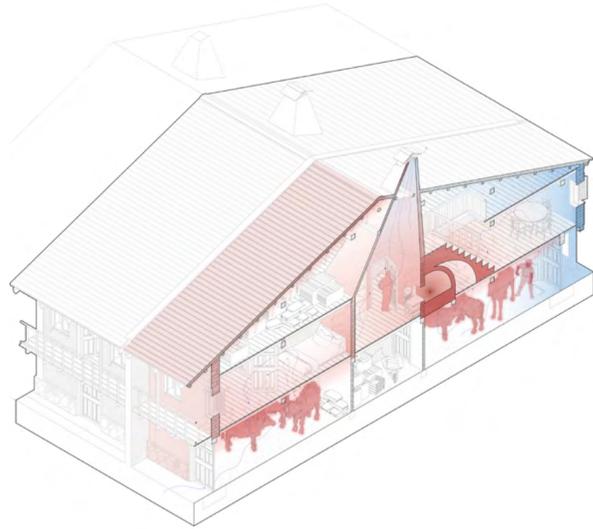


E-Flux. n.d. "After Comfort: A User's Guide - Salmaan Craig - **Lost Loops.**"

The thermodynamic intelligence of the Riaza Farmer's House lies in its **orchestration of energy hierarchies rather than in energy conservation** alone. Contemporary HVAC systems inject high-exergy energy—*electricity or fossil fuels*—into low-grade tasks such as space conditioning, collapsing hierarchies and generating unnecessary entropy. These systems operate as one-directional dissipative flows. By contrast, Riaza mediates energy exchanges through dynamic thresholds, where energy is not preserved in abstract terms but where the **degradation of exergy is delayed**. *Low-quality energy performs low-quality work*. **Residual heat cascades downward through the hierarchy before dissipation.**

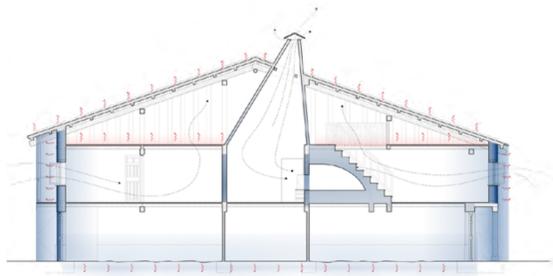
The building engages directly with its milieu. Rather than sealing boundaries, it maintains porous, dynamic exchanges—*thermodynamic thresholds* where change occurs. **Energy flows from low-entropy to high-entropy states, yet architecture intervenes within that gradient.**

Material intelligence complements thermodynamic intelligence. High thermal mass, seasonal straw buffering, façade selectivity, and chimney buoyancy operate through simple means—*geometry, orientation, inertia, permeability*—rather than complex mechanical systems.

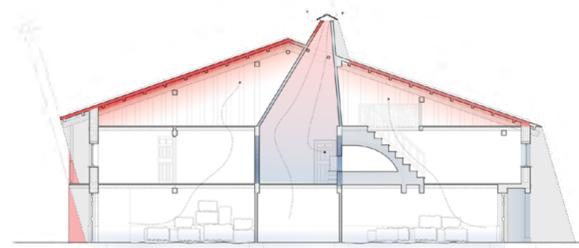


Ultimately, the enthalpy of the overall system remains constant, but **building and occupants become active mediators of energy transformation**. By attuning energy quality to actual needs, the design minimizes entropy generation and preserves exergy through low-tech, materially situated strategies.

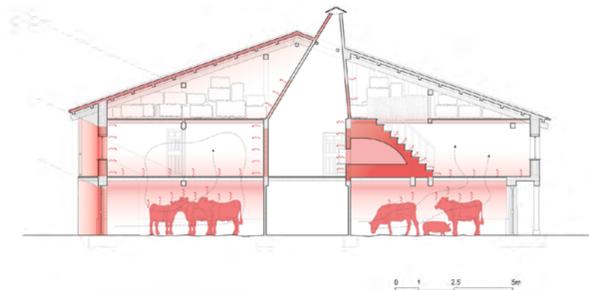
This constitutes **a thermodynamically informed tectonic**: simpler yet more intense, embedded within planetary energy hierarchies, and capable of engaging both matter and meaning—where thermodynamic performance is inseparable from **embodied perception** and cultural constructions of comfort, and where energy flows, material thresholds, and climatic gradients become not only physical processes but lived, cognitively mediated experiences.



Summer Night
 At night, windows and shutters were opened to enable nocturnal ventilation. Massive walls radiated long-wave heat to the night sky, while chimney-driven buoyancy enhanced convective cooling. Together, these processes cooled the building's mass for the following day.



Summer Day
 After the summer harvest, once fully dried, straw was stored at ground level under more stable thermal conditions. Keeping the roof free of straw maintained vertical permeability, allowing warm air to rise through stack-driven flow. Façades were shaded and openings closed, enabling walls cooled by nocturnal flushing to delay heat exchange.



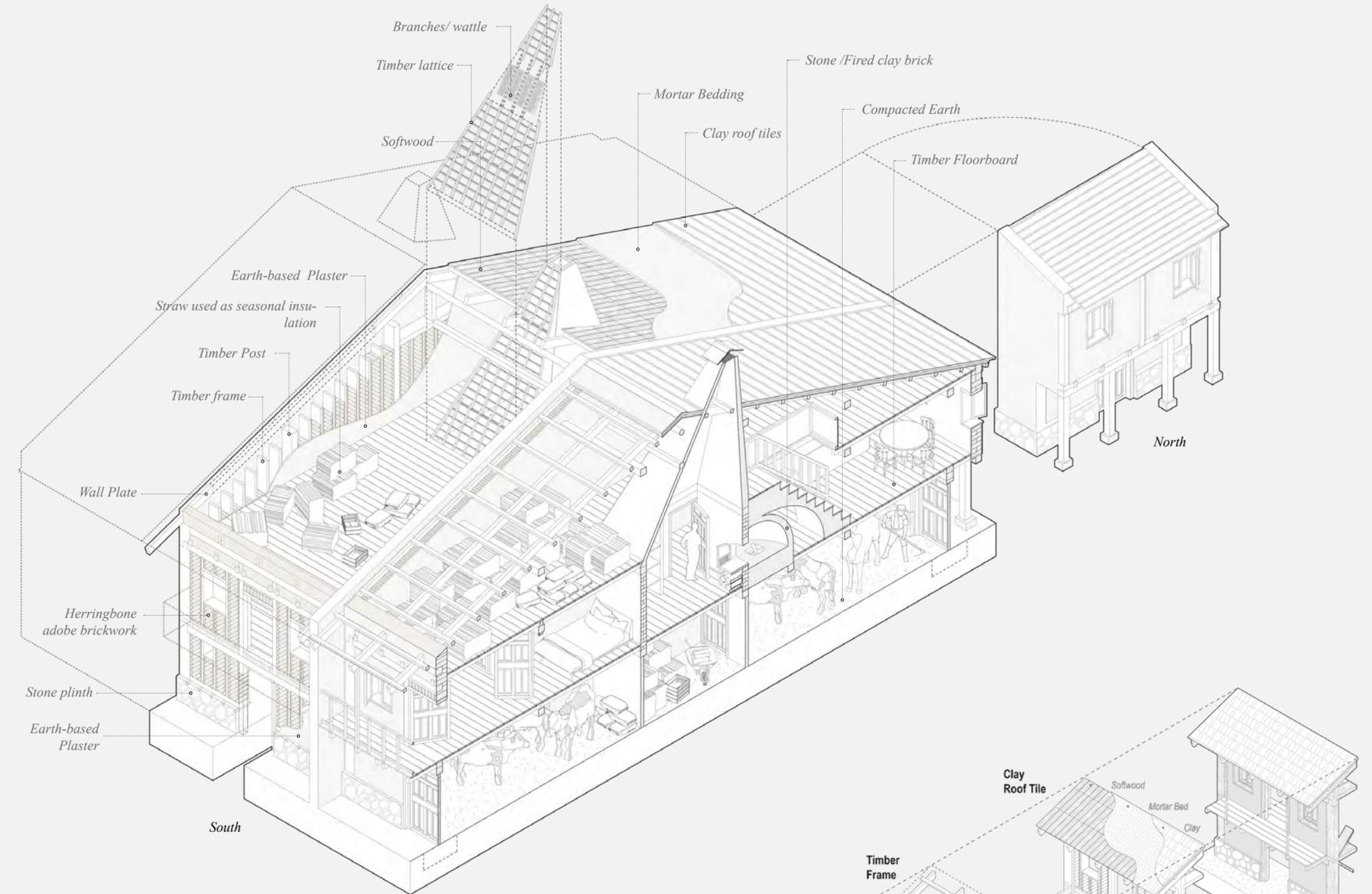
Winter Day-Night
 During winter, residual heat from domestic fire, animal metabolism, and solar radiation on south-facing façades was absorbed by massive walls and released at night, softening thermal swings and delaying heat exchange with the exterior. Beneath the roof, straw acted as a seasonal thermal buffer during autumn and winter, slowing heat loss and reducing thermal gradients.

Family Gathered in a Traditional Extremaduran Kitchen

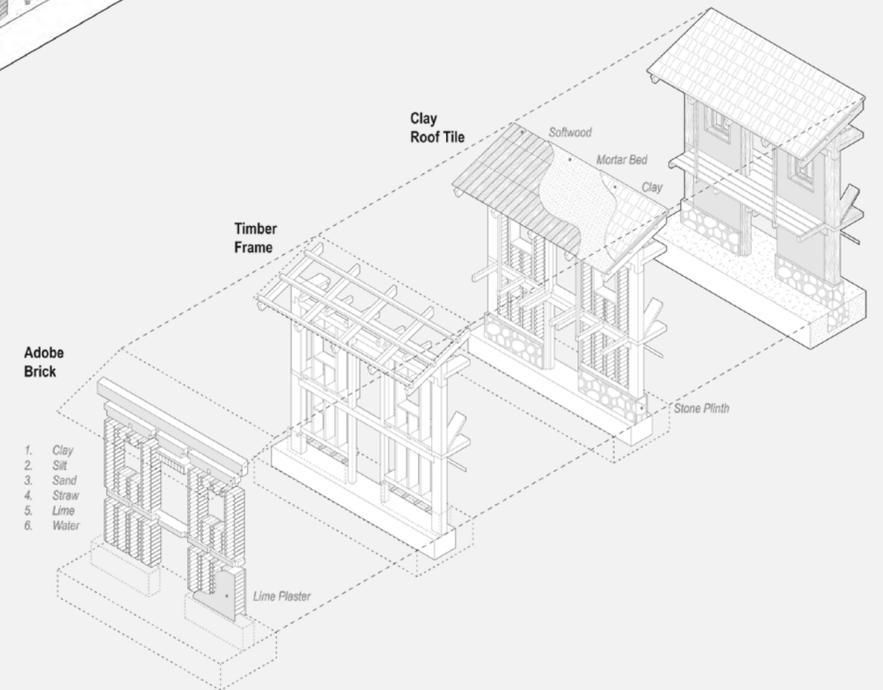
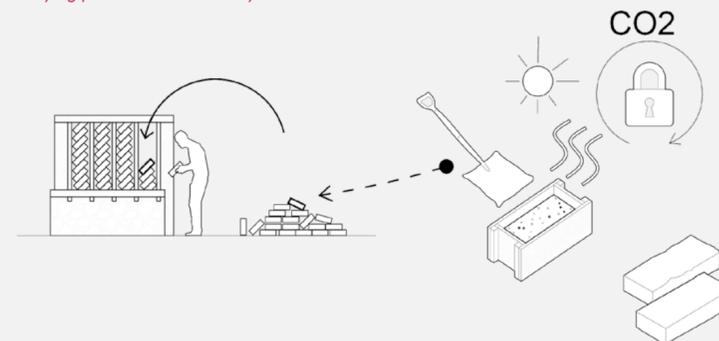


Garrarena, F. (1929). Photograph reproduced in González Rodríguez, A. *In Arquitectura tradicional en España*. Ministerio de Cultura, 2014, p. 261.

TECTONIC CULTURE
Riaza, Segovia, Castilla y León



ADOBE BRICKS
Air-drying process and assembly



04

Agro - Tourism Proyecto de Actuación Rural Development Plan

March 2020 - Present
Benagalbón I Rincón de la Victoria
Málaga (Spain)

Authors:

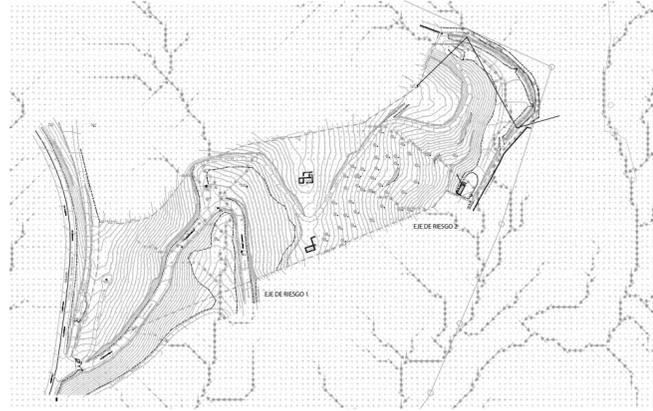
Rafael García-Monge Pozo
Juan Álvarez-Vijande Landecho

Collaborators:

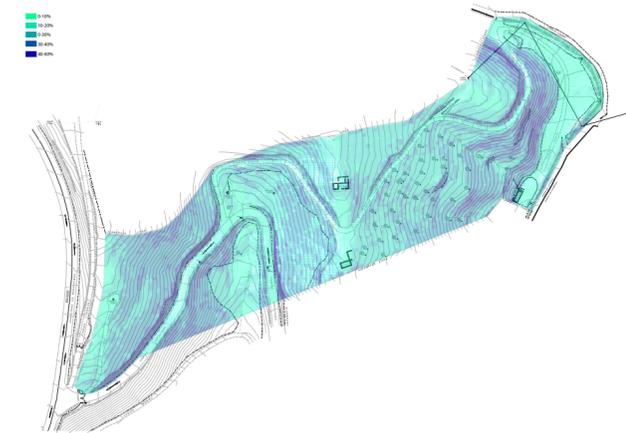
José Luis Zabala (M.E.P)
Mariano Molina Iniesta (M.E.P)
Gabriel Muñoz Moreno (Architect)

Professional Practice

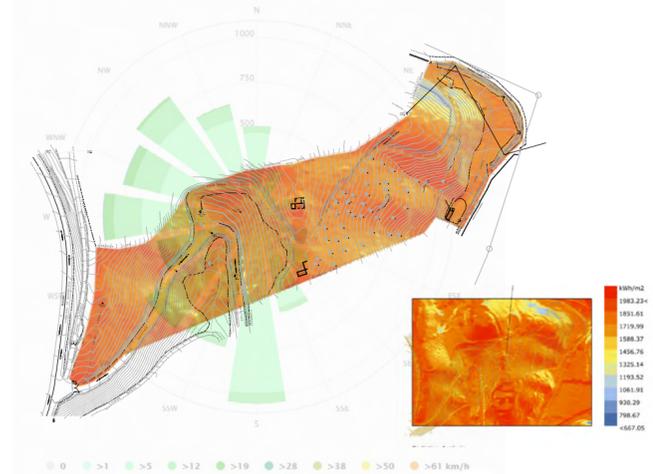
04. RAINWATER RUNOFF ANALYSIS / Analisis escorrentía de lluvias



05. CLINOMETRIC ANALYSIS / Analisis Clinométrico



06_A. SOLAR RADIATION ANALYSIS * PV / Analisis Radiación Solar PS 06_B. PREVAILING WINDS / Vientos predominantes



07. PROPOSED PROGRAM

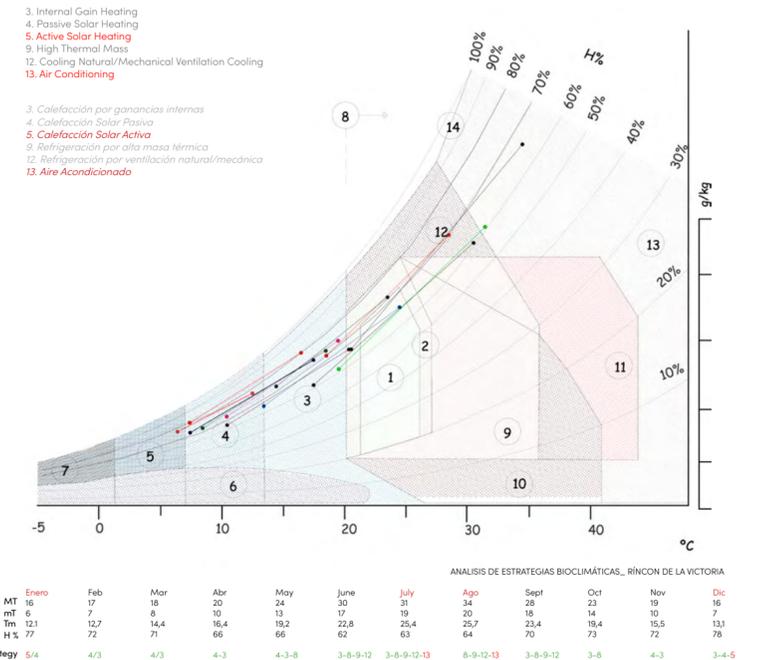
1. Social Area
2. Natural Pool + Bar + Yoga Pavilion
3. Accommodation Zone
4. Accessible Accommodation
5. Employee Quarters
6. Orchard with Fruit Trees/Olive Grove/Carob Orchard/Vegetable Garden/Herb Garden
7. General Parking Area
8. Accessible Parking Area
9. Reception Building + Retail Space
10. Restaurant Facility
11. Restaurant Parking Lot
12. Volunteer/Researcher Housing
13. Service Access + Agricultural Storage Facility + Stable Complex

08. LANDSCAPE DESIGN: ENHANCED BIODIVERSITY

- A. Fruit Trees
- B. Aromatic, Grass (*gramineas*), and Shrub Plants
- C. Vegetable Garden
- D. New Olive Trees
- E. Existing Olive Trees
- F. Carob Trees
- G. Palm Trees and Cacti
- H. Wisteria
- I. Bougainvillea



11. GIVONI BIOCLIMATIC DIAGRAM / Diagrama bioclimático de Givoni Thermal Comfort à Passive design strategies



01. DESIGN ISSUE/BACKGROUND:

The project is located in a rural environment in the South of Spain where, until now, olive farming has been the predominant agricultural activity. Currently, intensive production models of non-native plantations with excessive water demand are emerging. This situation is leading to the disappearance of native products, altering the Mediterranean gastronomic and agricultural production scheme, and posing a risk to local small farmers who cannot compete with large consortia and monopolies. The project aims to revitalize and reconfigure the area to ensure the continuity of this activity over time, preserving the local agricultural practices.

02. DESIGN GOAL:

The intervention consists of establishing an educational tourist complex focused on promoting sustainability in agricultural resources and production methods. Through agroecology, both agricultural practices and a social movement are integrated, aiming to foster the identity and culture of the region, as well as the revitalization and self-sufficiency of rural areas. The project encourages community participation and equitable access to agricultural resources by adopting a collaborative model involving various stakeholders such as local producers, employees, and customers.

03. DESIGN CONCEPT:

The proposal advocates for a low-impact architecture, emphasizing minimal interior built spaces and integrating small interventions and facilities in the natural surroundings.

The accommodation units will be constructed with lightweight wooden post-and-beam structures and traditional permeable enclosures, facilitating local production and on-site assembly. Meanwhile, service buildings will follow traditional load-bearing wall construction methods, utilizing thermo-clay blocks and local aggregate rendering to blend harmoniously with the landscape and enable construction by local workers without specialized skills.

Passive strategies derived from the Givoni diagram are adopted, including natural ventilation from prevailing winds, shading systems, and thermal inertia from the terrain. Additionally, water recirculation systems for irrigation and waste collection for composting are implemented.

The site's slope is thoughtfully considered to position vegetation and architecture in alignment with the landscape's topography. Local stone terraces are introduced for planting fruit trees, ensuring accessibility while preserving the traditional productive landscape. New species are incorporated for specific situations, enhancing the landscape's color and functionality to optimize the program.

09. PRODUCTIVE LANDSCAPE DESIGN AND POLLINATION STABILIZED MAINTENANCE/ENHANCED BIODIVERSITY

Incorporating productive landscape design strategies and introducing pollinating species, such as honeybees, into an agrotourism complex establishes a symbiotic relationship between landscape design and pollinators. This synergy contributes to the creation of a resilient and self-sustaining ecosystem. Aligned with broader environmental objectives, these strategies champion ecological balance, address issues like food security, and promote habitat preservation.

The intentional inclusion of pollinating species, particularly honeybees, goes beyond enhancing agricultural productivity through effective pollination. It serves as a poignant demonstration of the indispensable role that pollinators play in sustainable farming practices.

The agrotourism complex becomes a dynamic showcase of sustainable land use, ecological equilibrium, and the intrinsic beauty arising from the interplay of productive landscapes, pollinators, and agrotourism. These landscapes not only bolster local food production but also enrich biodiversity, supporting the surrounding ecosystem and ensuring successful pollination for adjacent vegetation.

10. EMBRACING LOGIC: PASSIVE DESIGN STRATEGIES

The Givoni diagram empowers informed decision-making by aligning with specific climatic conditions, thereby facilitating the effective implementation of passive design principles to achieve thermal comfort for occupants, all while concurrently minimizing the overall energy consumption of the building.

When applying these passive design strategies to Málaga, characterized by a Mediterranean climate featuring hot, dry summers and mild, wet winters, the primary focus is directed towards the optimization of natural cooling mechanisms, sun blocking during hot seasons to reduce the energy consumption.

This approach encourages adaptation to the varying hygrothermal conditions presented by different seasons and daily situations. Occupants are expected to adopt appropriate clothing choices, fostering a deeper comprehension of how architectural elements should be utilized. For example, the utilization of brise-soleils for blocking the sun during sunsets not only enhances comfort but also allows for effective cross-ventilation, contributing to a sustainable and comfortable living environment.

13. SOCIAL AREA AND AROMATIC PROMENADE - SOCIAL AREA - SEMI-OUTDOOR MULTIPURPOSE SPACE



14. AROMATIC PROMENADE - RESILIENT ECOSYSTEM

Rainfed Plants & Drought-Tolerant Plants

Enhancing insect/Fauna populations + Improving pollination + Honey production + Signifying specific uses by floral Color and Odor

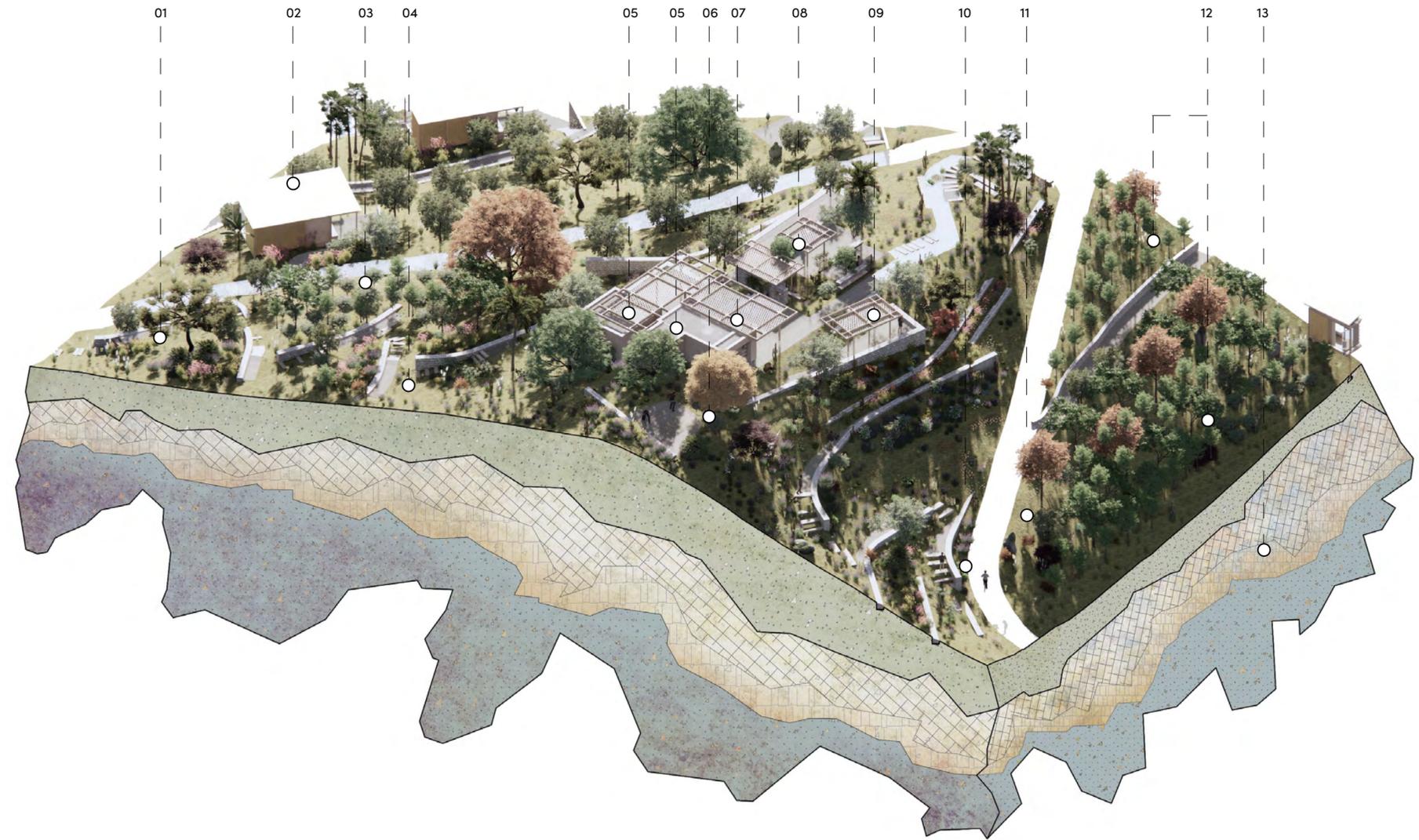


15. SOCIAL AREA AND PRODUCTIVE LANDSCAPING

AXONOMETRIC VIEW

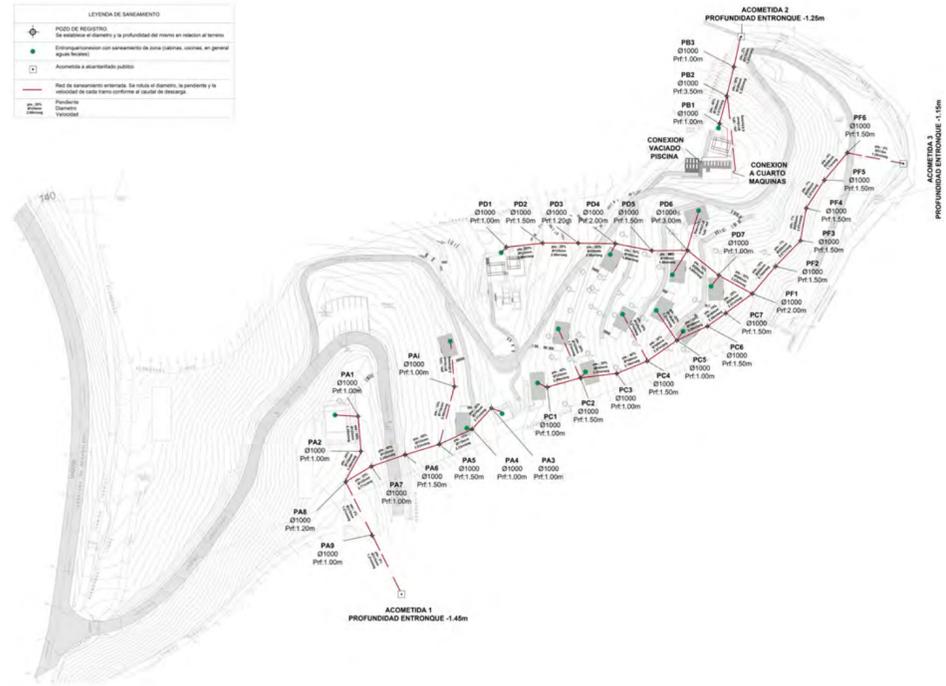
1. Contemplation Spaces - Meaningful Trees
2. Accommodation
3. Olive Grove
4. Path through Fruit trees (Social Area - Natural Pool)
5. Indoor Multipurpose Room
6. Bathrooms
7. Bar, Restaurant, and Agricultural Market
8. Shaded Terraces
9. Sunset Terrace
10. Aromatic Promenade
11. Main Path and Detour to Accommodation Areas
12. Cultivation of Fruit Trees and Olive Trees
13. Rock massif of phyllite type with dikes of meta-sandstones and siliceous conglomerates

16. SITE
Social Area And Productive Lanscaping



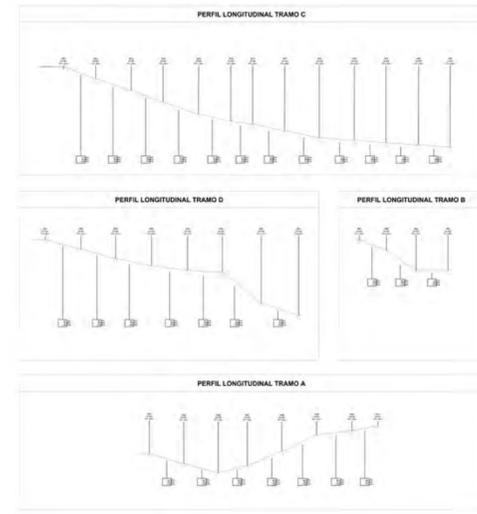
16.A. SANITARY DRAINAGE NETWORK

CONNECTIONS, MANHOLES, PIPE DIAMETER, DEPTH, SLOPE (%) & FLOW VELOCITY/DEPTH, SLOPE (%) & FLOW VELOCITY

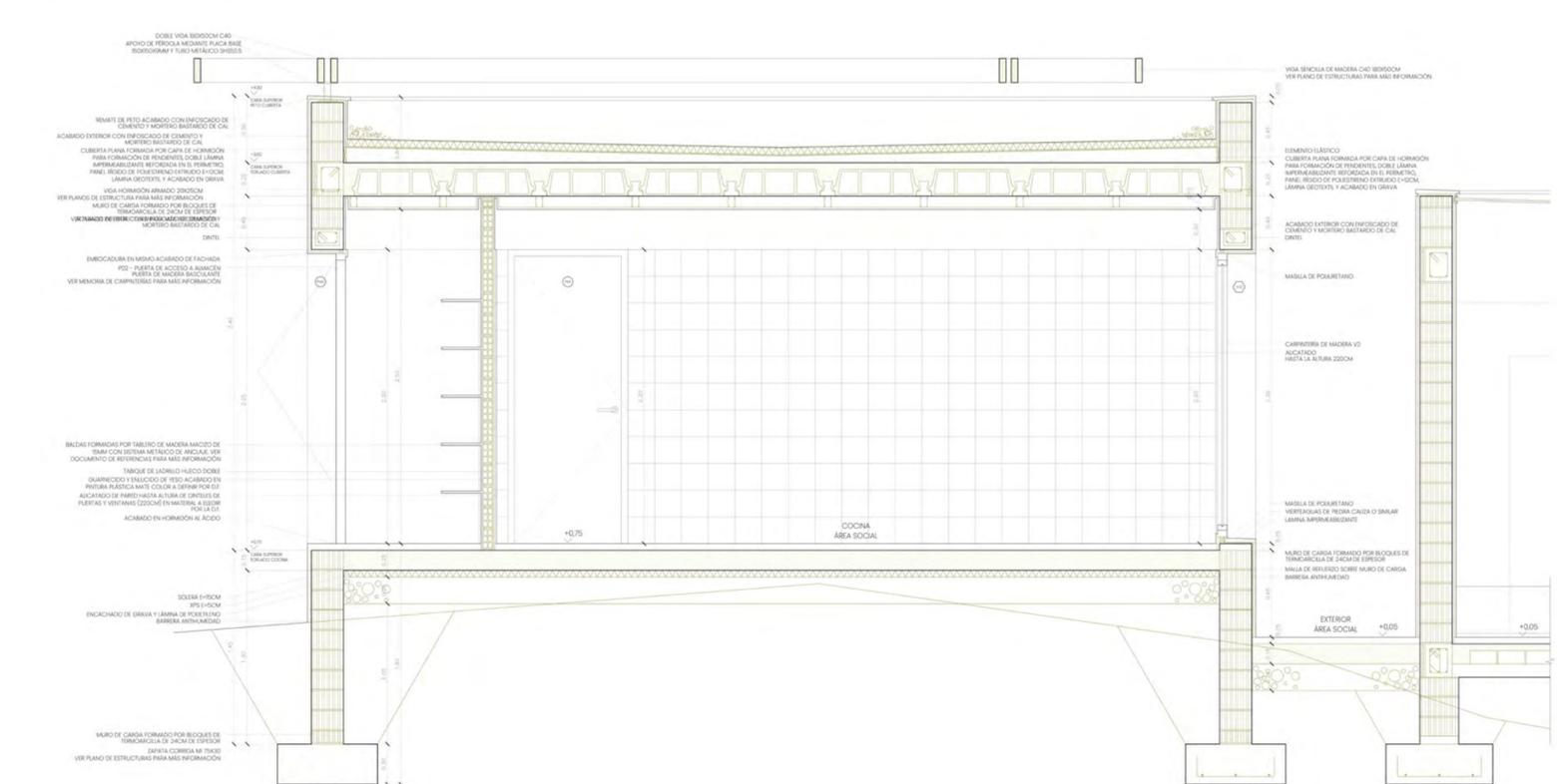


16.B. SANITARY DRAINAGE NETWORK

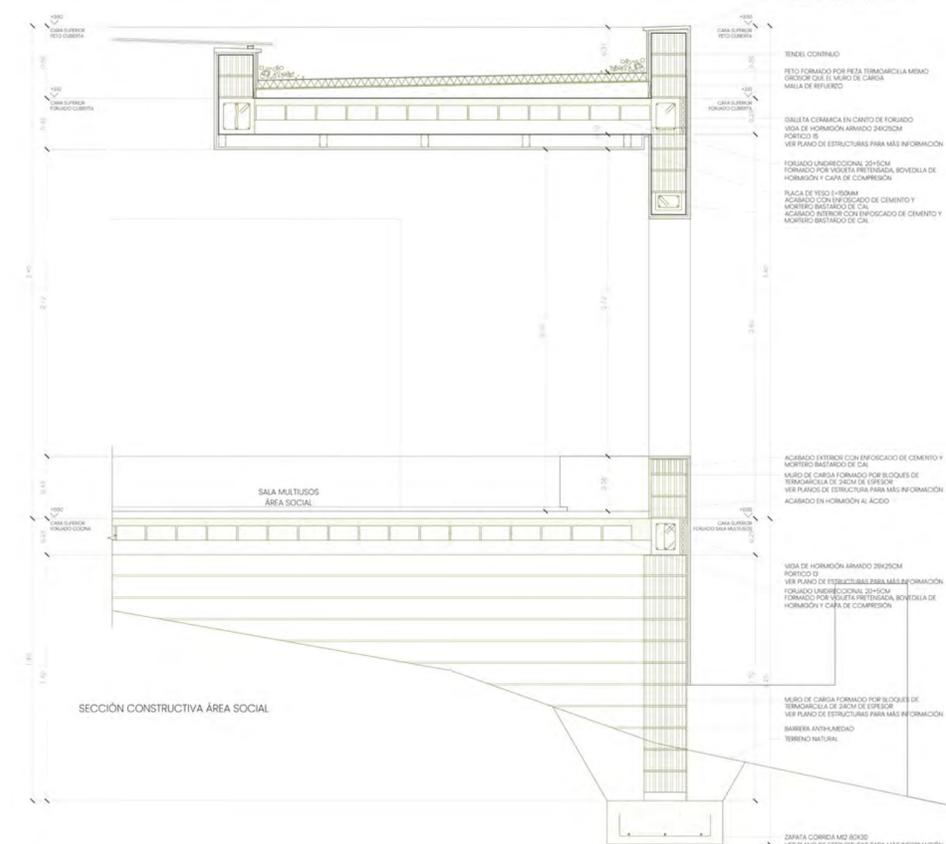
LONGITUDINAL PROFILE (BY PIPE SEGMENTS)



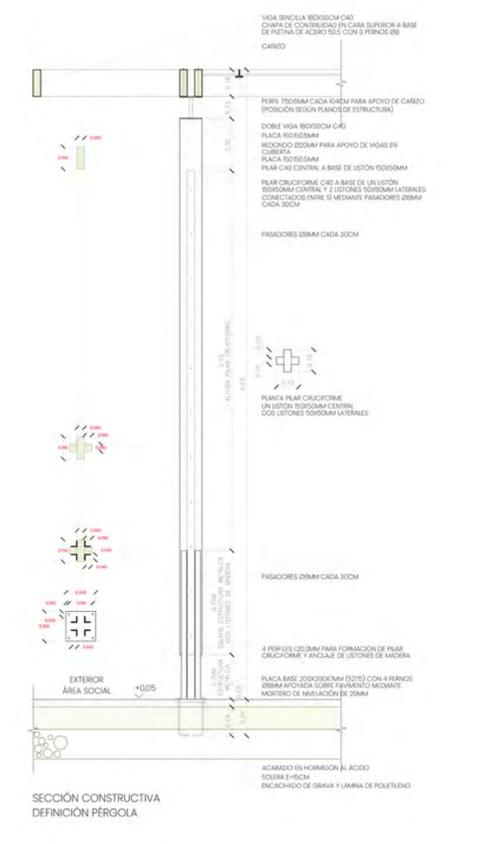
18.B. CONSTRUCTION SECTION - SOCIAL AREA - SEMI-OUTDOOR KITCHEN & FRESH PRODUCE SHOP/EXHIBITION IN THERMOCLAY BLOCKS



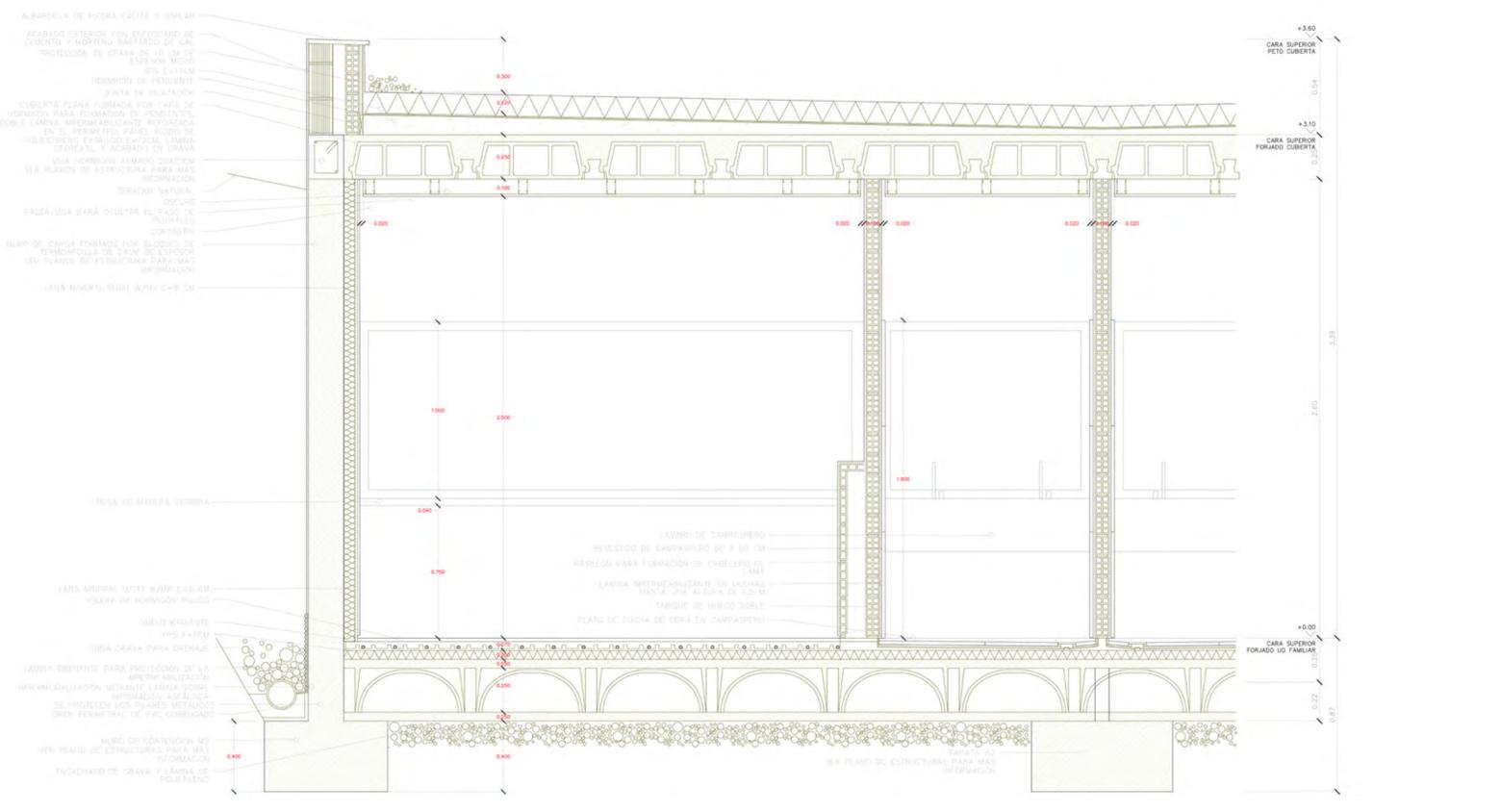
17. CONSTRUCTION SECTION - SOCIAL AREA - SEMI-OUTDOOR MULTIPURPOSE SPACE



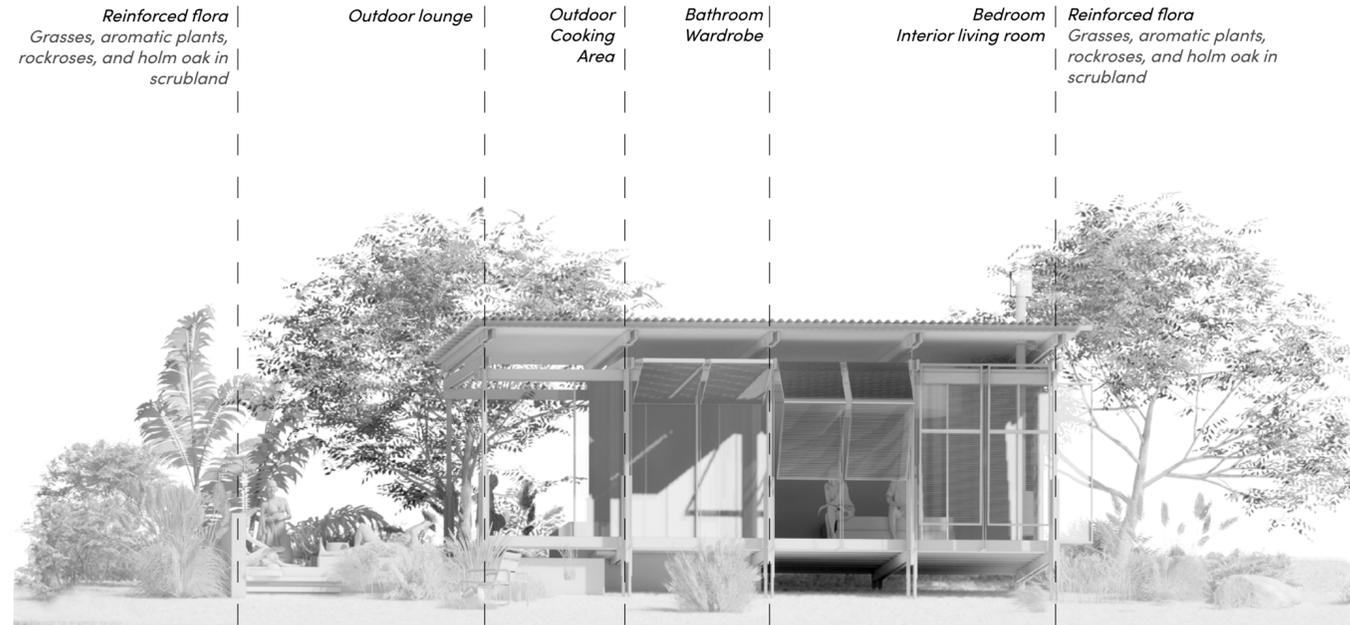
18.A. CONSTRUCTION SECTION - PERGOLA DETAIL



19. CONSTRUCTION SECTION - FAMILY UNIT - THERMOCLAY BLOCK HOUSING



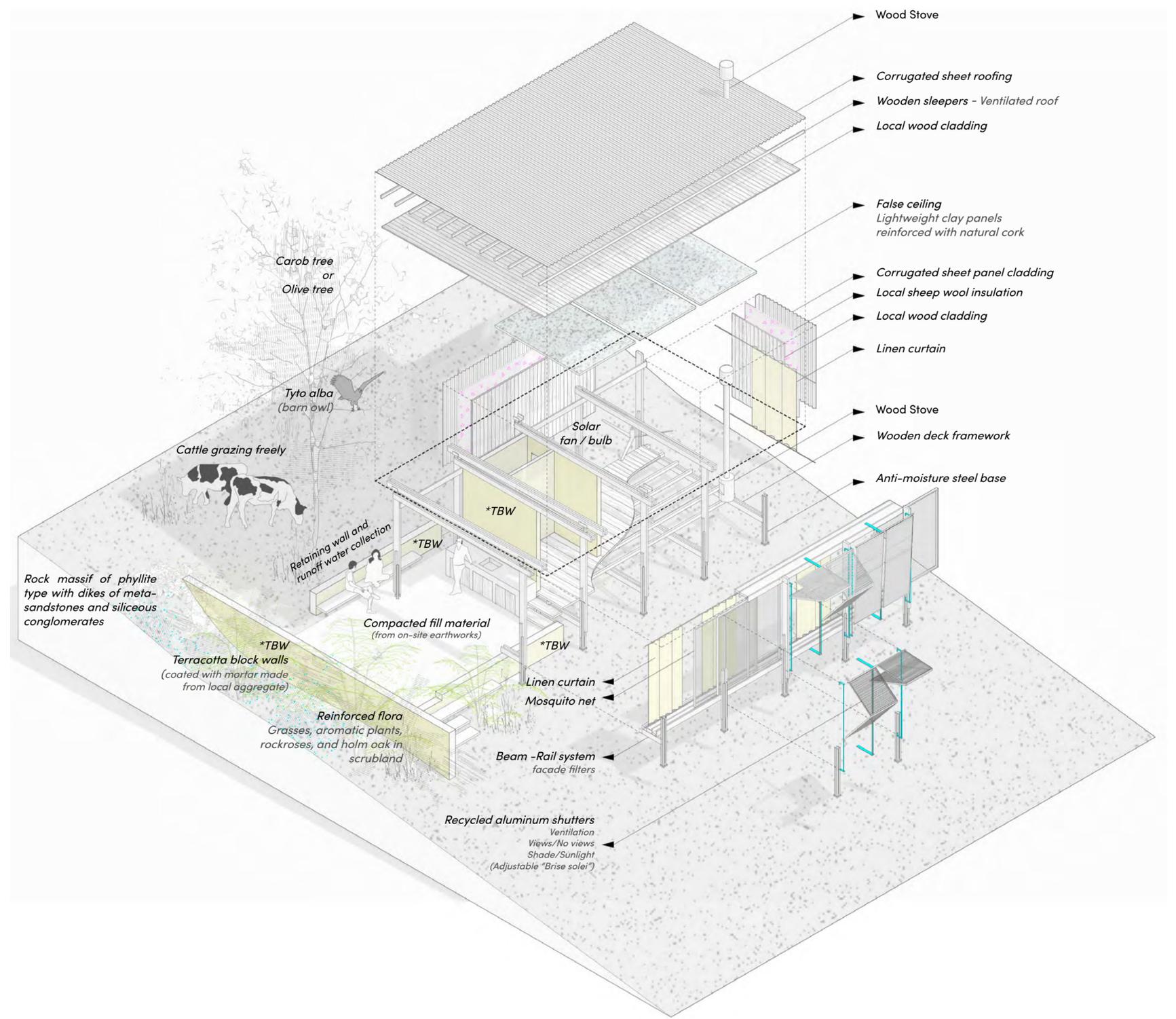
20. ELEVATION VIEW - CABIN AREA - Proposed uses
South-east façade



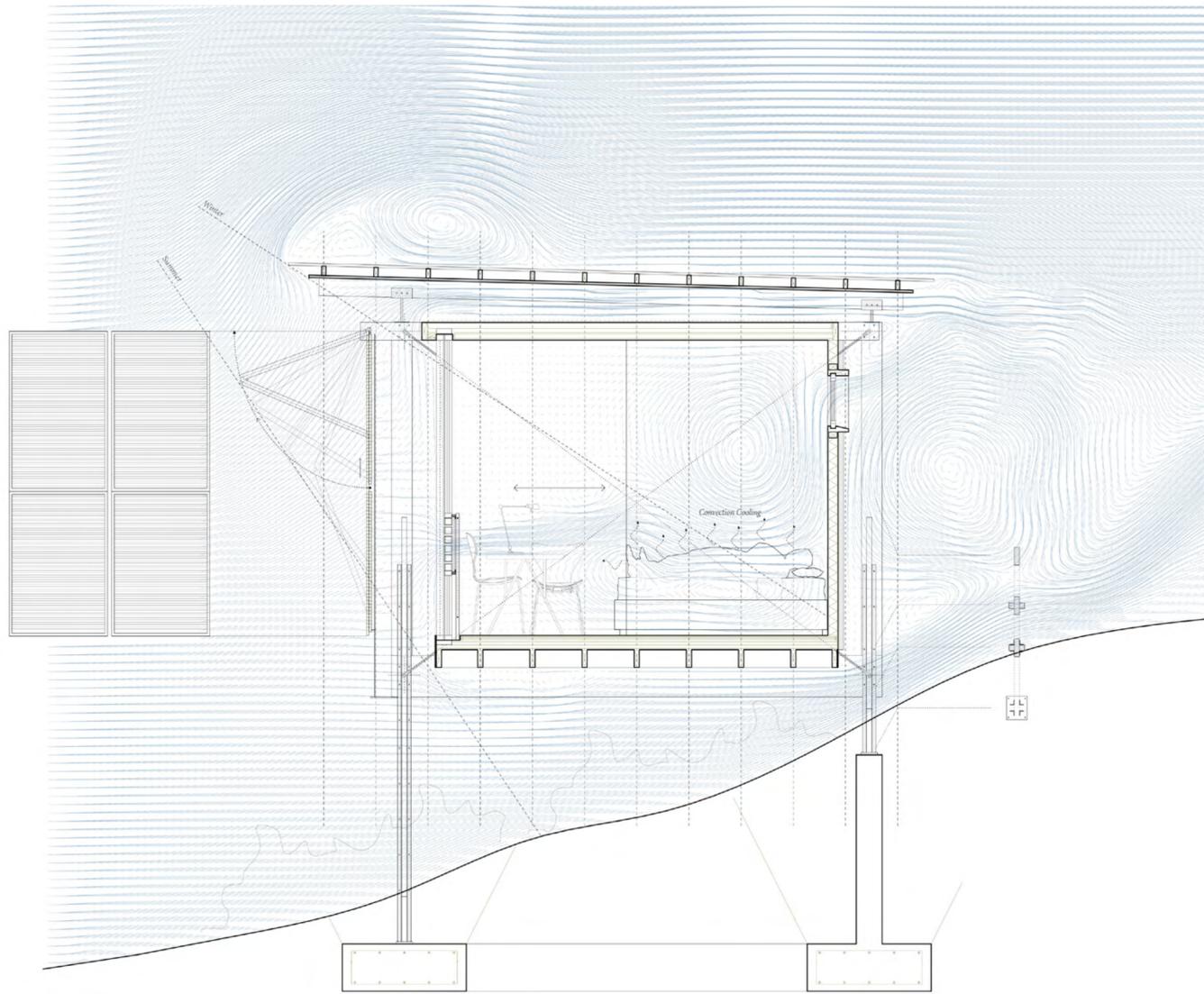
21. PERSPECTIVE VIEW - CABIN AREA -



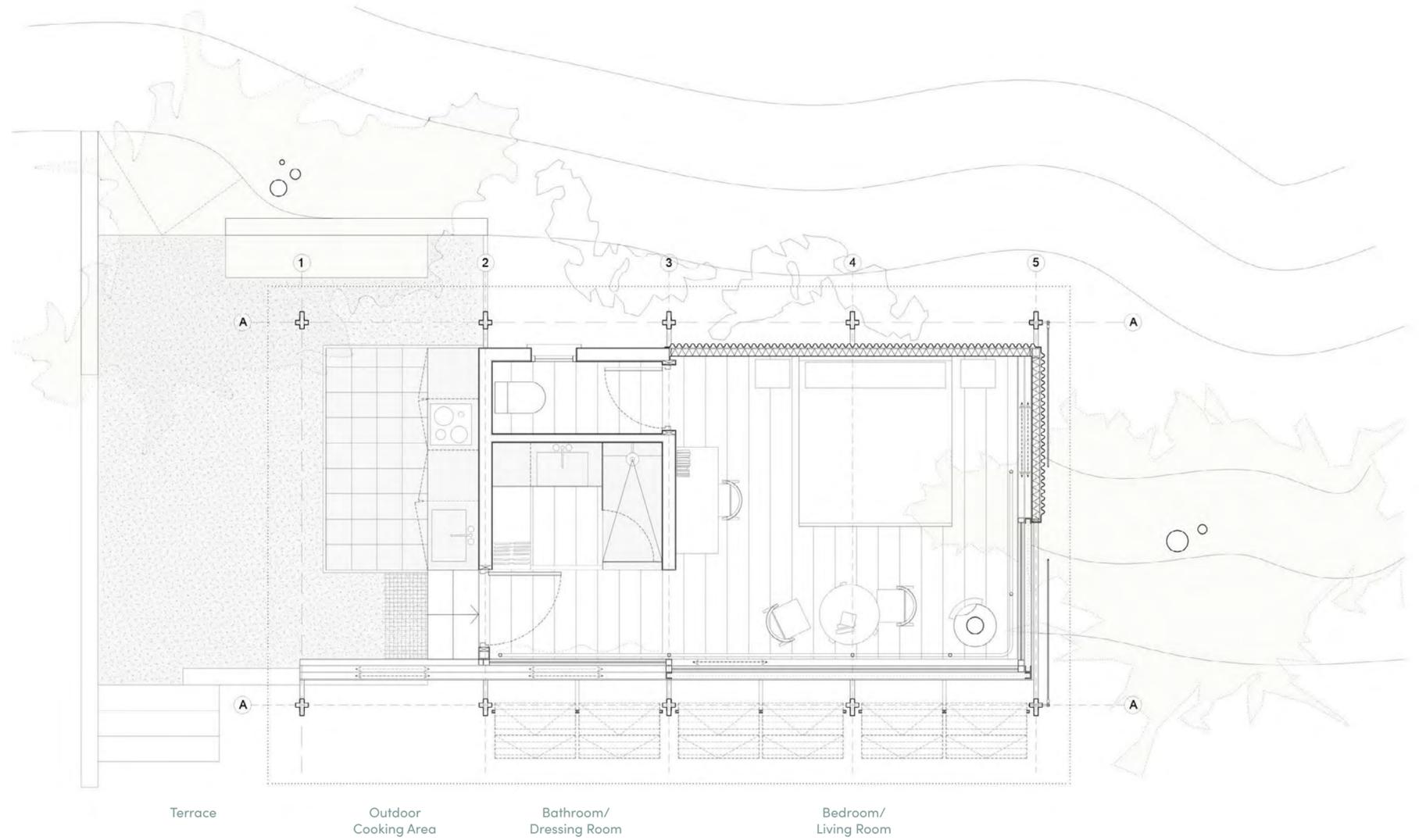
22. EXPLODED AXO - CABIN - ECOSYSTEM
- Abiotics & Biotics Agents-



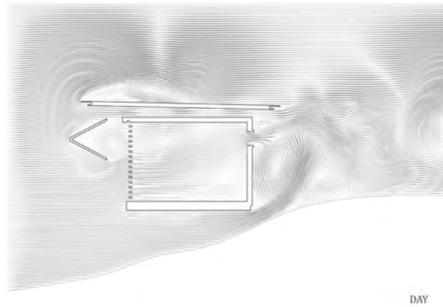
23. SECTION A-A' - CABIN AREA - AIRFLOW SIMULATION



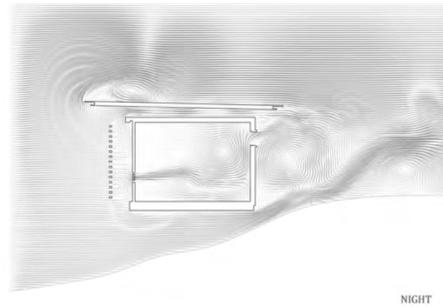
25. STANDARD ACCOMMODATION UNIT PLAN - CABIN AREA - Lodging Unit Plan - Module C



24. AIRFLOW ANALYSIS - DAY/NIGHT



DAY



NIGHT

05

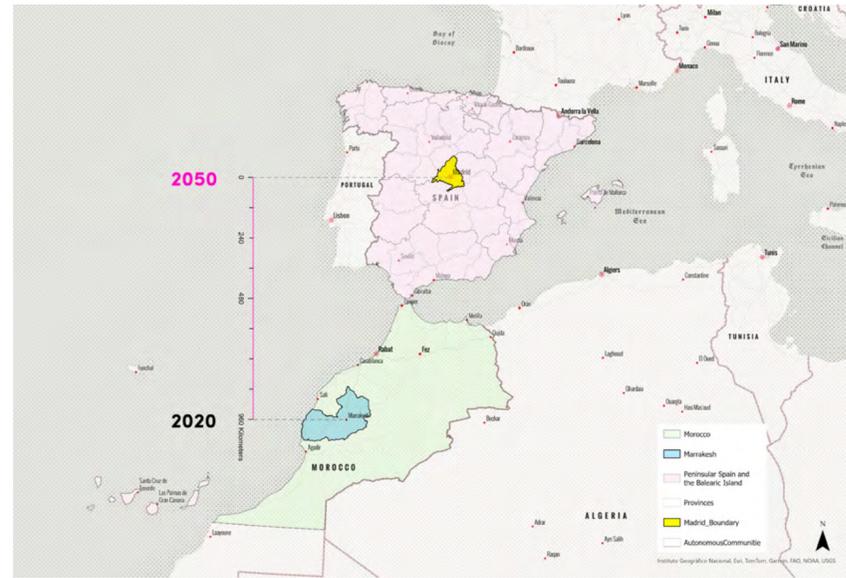
Urban Heat Island Socio-Climatic Vulnerability Analysis

Fall Semester 2024
Harvard Graduate School of Design
Master in Design Studies | Ecologies

Instructors:
Connie (Kanglin) Chen
Location: Madrid | Spain
Team: Individual Work

Selected Research

02. MADRID - MARRAKECH | By 2050

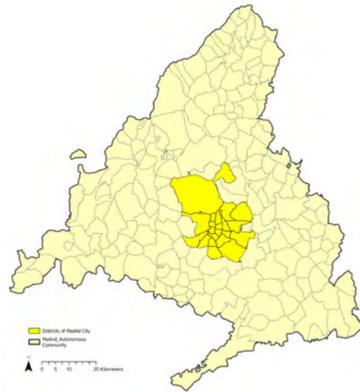


A Call for Holistic Vulnerability Assessments

This situation underscores the need to rethink vulnerability assessments by integrating seasonal, social, and ecological factors. Policymaking should aim to bridge the gap between official records and on-the-ground realities, ensuring that all communities, especially the most vulnerable, are included in resilience strategies. By embracing a more regenerative and inclusive framework, we can foster a healthier relationship between urban systems and their inhabitants, promoting both ecological and social regeneration while advancing equity.

- Coverage gaps: Official data often exclude informal settlements like "La Cañada Real", leaving critical areas of vulnerability unaddressed.
- Averaged results: Official metrics, such as household income or population density, can mask inequalities by presenting generalized averages, which overlook isolated or extreme cases of vulnerability.
- Dynamic variables: Informal data may include seasonal atmospheric indicators (e.g., NDVI changes, humidity levels) that reveal hidden risks not captured in static official datasets.
- Granularity: Informal mapping can provide finer details at the neighborhood or sub-neighborhood level, uncovering microclimates and specific risks within smaller communities.

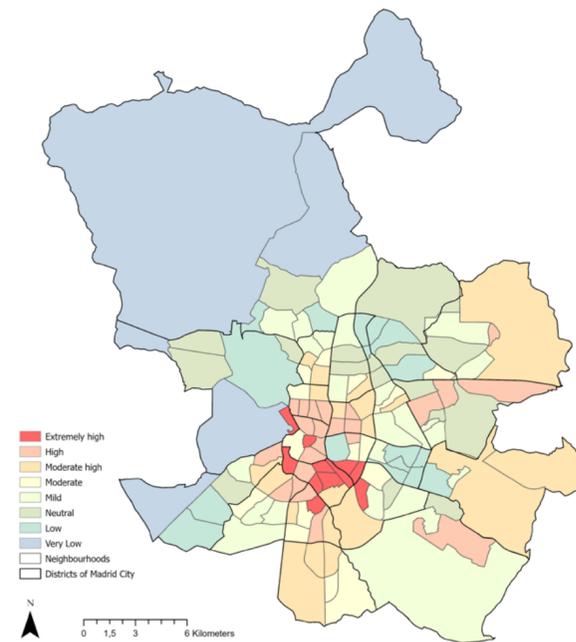
02. MADRID



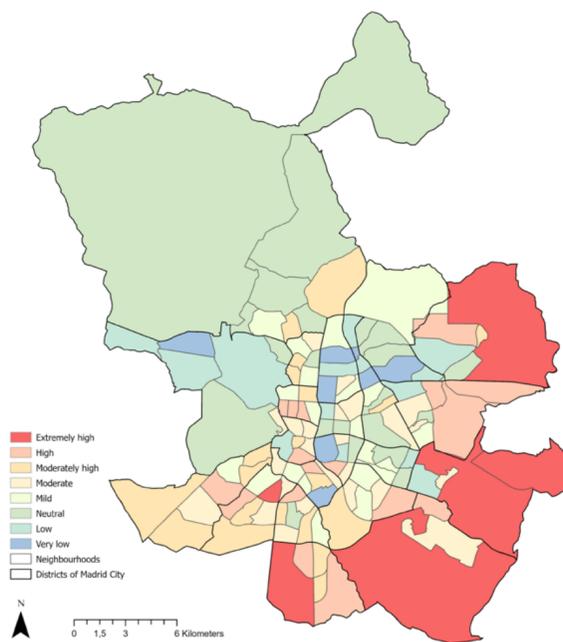
MADRID'S MOST VULNERABLE NEIGHBORHOOD | OFICIAL VS. INFORMAL MAPPING

Madrid's Climatic Vulnerability
Official Map Published in 2022

Madrid's Socio - Climatic Vulnerability
Current Proposal



VS.



SOCIO-CLIMATIC URBAN HEAT ISLAND ANALYSIS

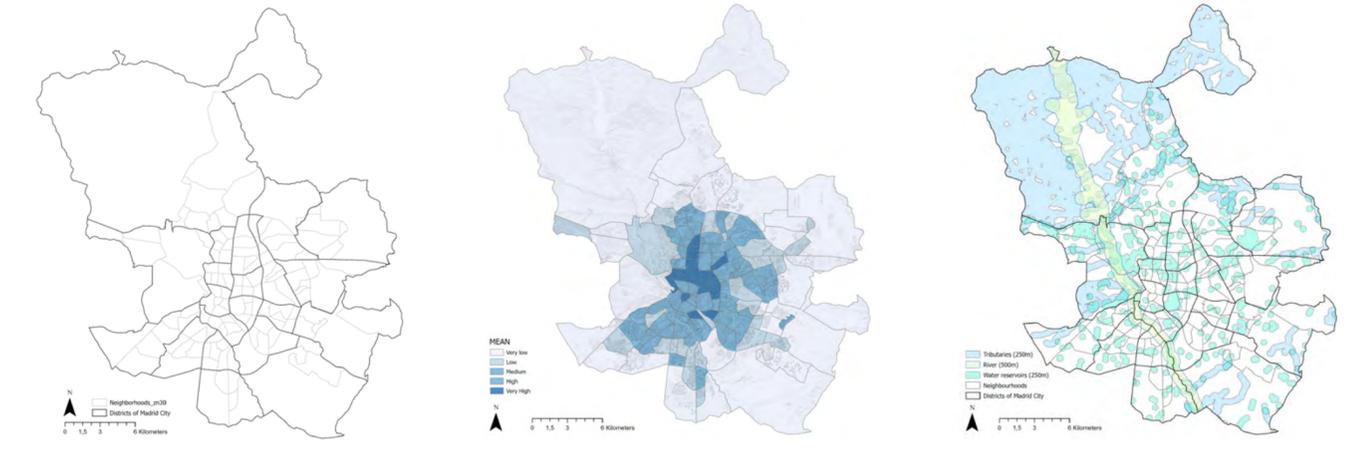
A growing body of research warns that, without rapid emission reductions, Spain's Mediterranean climate could shift toward a steppe climate by 2050.

By mid-century, Madrid's climate is expected to resemble Marrakech's in 2020 (Figure 1), reflecting a broader trend in which cities increasingly experience climates unlike their historical norms, with implications for urban livability, public health, and environmental equity.

In response, this study builds on *Madrid's official Urban Heat Island map (2022)* by integrating both official and non-official datasets into a socio-climatic vulnerability analysis. The methodology combines **GIS-based data**—including census information, Sentinel satellite imagery, and environmental indicators—with **informal and field-based sources** from areas such as the Cañada Real, where formal data is often limited.

The main contribution lies in incorporating indicators of social vulnerability—such as dependency ratios, income thresholds, and exposure of at-risk populations—into the climatic analysis, revealing uneven capacities to cope with extreme heat.

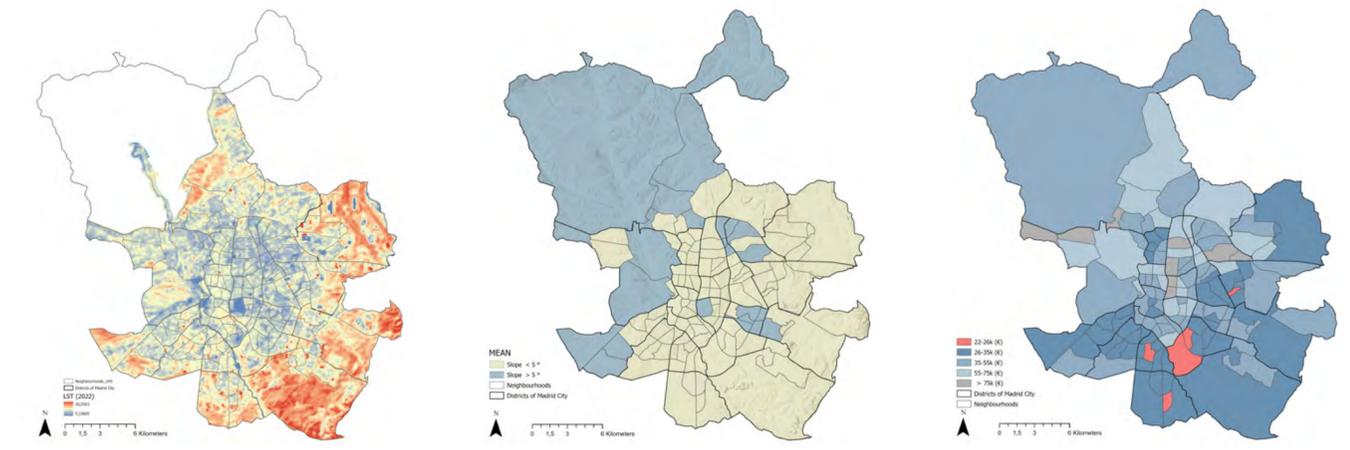
Its goal is to identify priority areas for adaptation, improving safety and comfort during extreme heat events while informing more inclusive and resilient urban planning strategies.



Neighbourhoods | Unit of Analysis

Shade | Impact Factor (1-4)

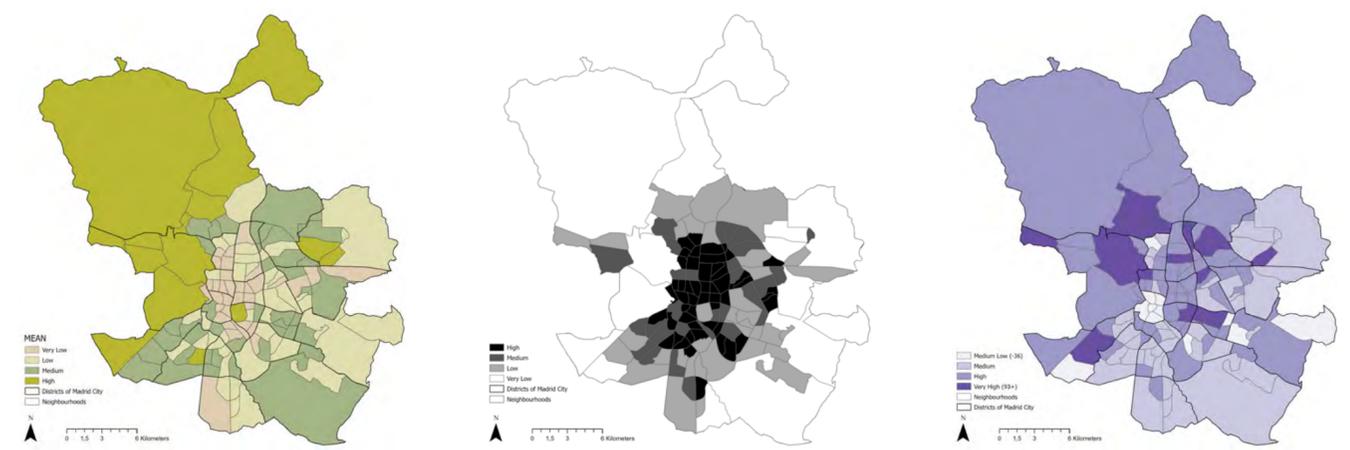
Water Bodies | Impact Factor (1-4)



Land Surface Temperature | Impact Factor (1-6)

Slopes/Wind Potential | Impact Factor (1-2)

Household Income | Impact Factor (1-4)



Normalized Difference Vegetation Index | Impact Factor (1-4)

Urban Compactness | Impact Factor (1-4)

Dependency Ratios | Impact Factor (1-4)
(Pop. 0-15 + Pop. 65+ / Pop. 16-64)

Team:

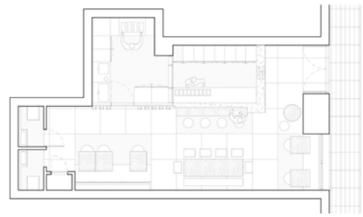
Juan Álvarez-Vijande Landecho
JR + Arquitectos y Asociados
[More \(Link\)](#)

Photography:

Amores Pictures (Alberto Amores)

www.regenesyst.com

Saint Kuro
Japanese Restaurant | Madrid (E.S.)



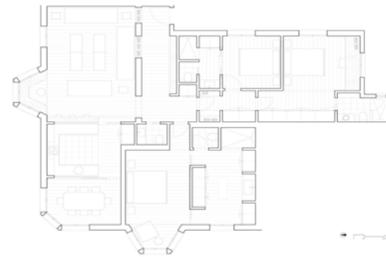
Situated in the heart of Madrid, Kuro, meaning dark, stands as a distinguished sushi restaurant. Aesthetically, it embodies a harmonious fusion of urban sophistication with Japanese tradition.

The design of Kuro draws inspiration from the familiar lines found in metropolitan settings, incorporating elements like cement finishes, concrete bricks, and metal mesh.

These industrial touches are thoughtfully juxtaposed with the natural elegance of materials rooted in Japanese heritage, including bamboo, wood, and natural fibers. This intentional contrast creates a dynamic visual narrative, where the raw, modern edges seamlessly coalesce with the organic warmth of traditional Japanese aesthetics.



Padilla
Residential | Madrid (E.S.)

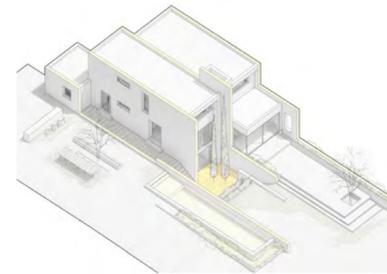


This apartment is organized around a central circulation spine that mediates between collective and private domains. One side unfolds as a continuous living space where kitchen, dining, and living areas merge, positioning the kitchen as a social core for gatherings rather than a purely functional workspace. The layout responds to a single occupant seeking a degree of privacy from two additional bedrooms, which are arranged along a more secluded wing and accessed through a corridor that filters movement and gradates intimacy.

Angled façade geometries extend the interior outward, capturing light from multiple orientations, while openings and aligned views allow light to penetrate deep into the plan.



Boadilla del Monte
Residential | Madrid (E.S.)



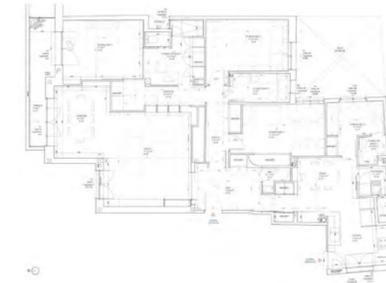
The most resource-sustainable architecture is one that endures and can adapt over time. Sliding panels will enable a flexible distribution of spaces, providing different privacy filters to compartmentalize or merge the space. Transitional spaces blur to incorporate possible and probable uses.

To address the needs of young homeowners throughout different life stages, adaptive spaces will be created to maximize functionality, making the most of every corner.

Permeability will be encouraged to allow for air circulation and natural light entry, considering solar incidence and its various tones that will softly filter through materials, enhancing their texture and continuity.



Viriato
Residential | Madrid (E.S.)



In this project, the amalgamation of spaces takes center stage, as the bathroom, dressing room, hallway, and bedroom are conceived as a unified and versatile "ambulatory" room.

The design allows for a seamless transition between these spaces, adapting and sectioning uses based on the user's needs throughout the day and night.

The result is characterized by its adaptability and the creation of a dynamic living area that evolves harmoniously with the rhythms of daily life.

This intentional blurring of boundaries not only maximizes functionality but also fosters a sense of fluidity and openness.



06 A

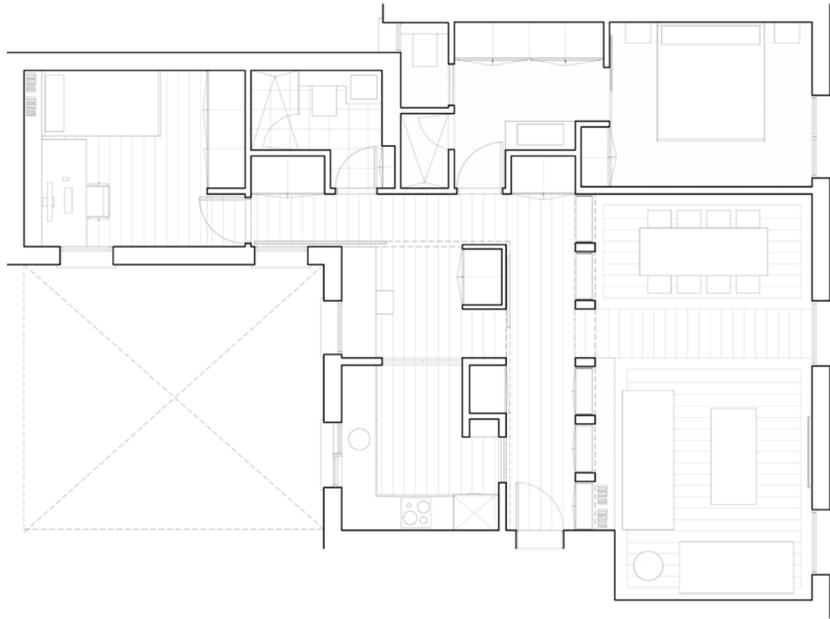
Fragments of Practice Work Overview

June 2024
Private Residence, Madrid (Spain)

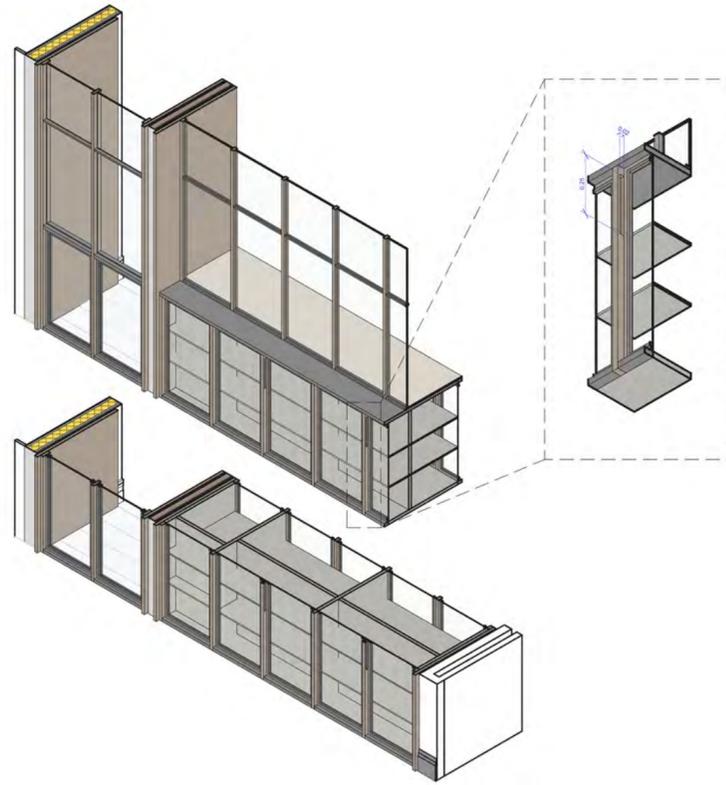
Authors: Juan Álvarez-Vijande
Collaborators: JR Arquitectura
Contractor: Ekan Construcciones
Photography: Amores Pictures

Professional Practice

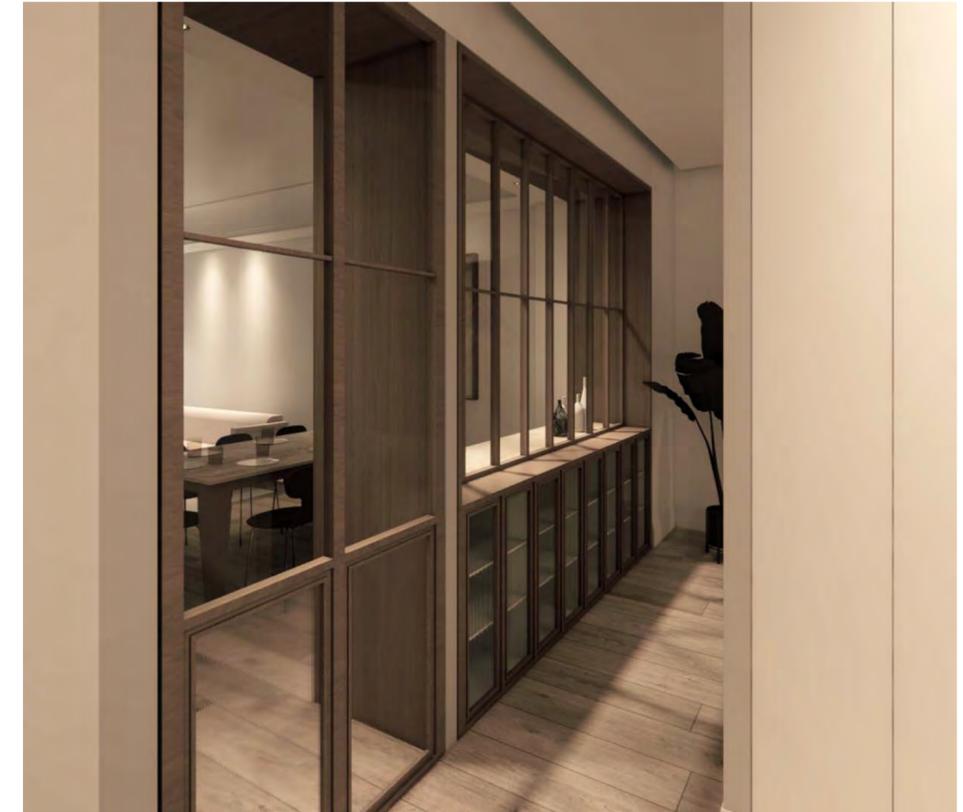
01. FLOOR PLAN – LAYOUT



04.B. AXONOMETRIC VIEW (REVIT) – ROOM DIVIDER FURNITURE



04.A. RENDER (REVIT/ENSCAPE) – ROOM DIVIDER FURNITURE



RegeneSyst is an architectural practice focused on **full-cycle project delivery**, where design, technical development, and construction are managed as an integrated process.

The office operates as a single point of accountability, coordinating clients, consultants, and contractors across all project phases: from early feasibility and strategic definition to permitting, technical documentation, and on-site execution.

In residential projects, this approach translates into rigorous control over budget, timeline, and construction quality. Projects are developed from initial investment analysis and spatial definition through to detailed design and construction supervision, ensuring alignment between concept and built outcome. The role involves leading multidisciplinary teams (structures, MEP, energy consultants), managing permitting processes, negotiating with contractors, and resolving technical challenges during construction.

The work combines strong technical expertise (**BIM workflows, construction documentation, regulatory compliance**) with strategic project leadership. This dual capacity enables proactive risk management, resource optimization, and informed decision-making throughout the project lifecycle—positioning the experience at a senior level, with direct responsibility for delivery, coordination, and overall project performance.

