



ARCHITECTURE PORTFOLIO

Martí Vera Marsal

Not An Average Portfolio

Architecture, understood as the art of editing the world, invites architects to question, act, and imagine across a spectrum of scenarios and scales. This portfolio embodies that spirit. It is a curated journey of inquiry and exploration, pushing the boundaries of what we define as architecture. From rethinking the essence of aesthetics to revitalizing forgotten communities through unconventional means, these projects demonstrate a commitment to transversality; blending disciplines, tools, and perspectives. Each project unfolds across varied scales, yet all share a unifying sensitivity: to the user, the built environment, and the landscape that frames them.

This portfolio is an evolving narrative, a work in progress that reflects growth, curiosity, and a deep commitment to exploring architecture's potential to shape meaningful connections between people, places, and ideas.

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Architecture After The Fires: LA in Progress

Exhibition and spatial research

Developed in collaboration with Altadena residents

Produced by SCI-Arc Resilient Futures Task Force

With support from LACMA Art + Technology Lab

This project explores the act of scanning as a spatial and perceptual operation rather than a purely technical one. Built from three-dimensional scans of houses destroyed by the Eaton Fire (Los Angeles, 2025), the project captures what remains after the event: collapsed walls, voids, warped geometries. Rendered as point clouds, these fragments suspend architecture between presence and absence, transforming destruction into a legible yet unstable landscape.

SOFTWARES - Scanning Technology (Lidar and Photogrammetry), PolyCam, RealityCapture, Rhino 3D,
Adobe Photoshop & Premiere Pro

SCANNED + DRAWN FLOORPLAN SUPERPOSITION

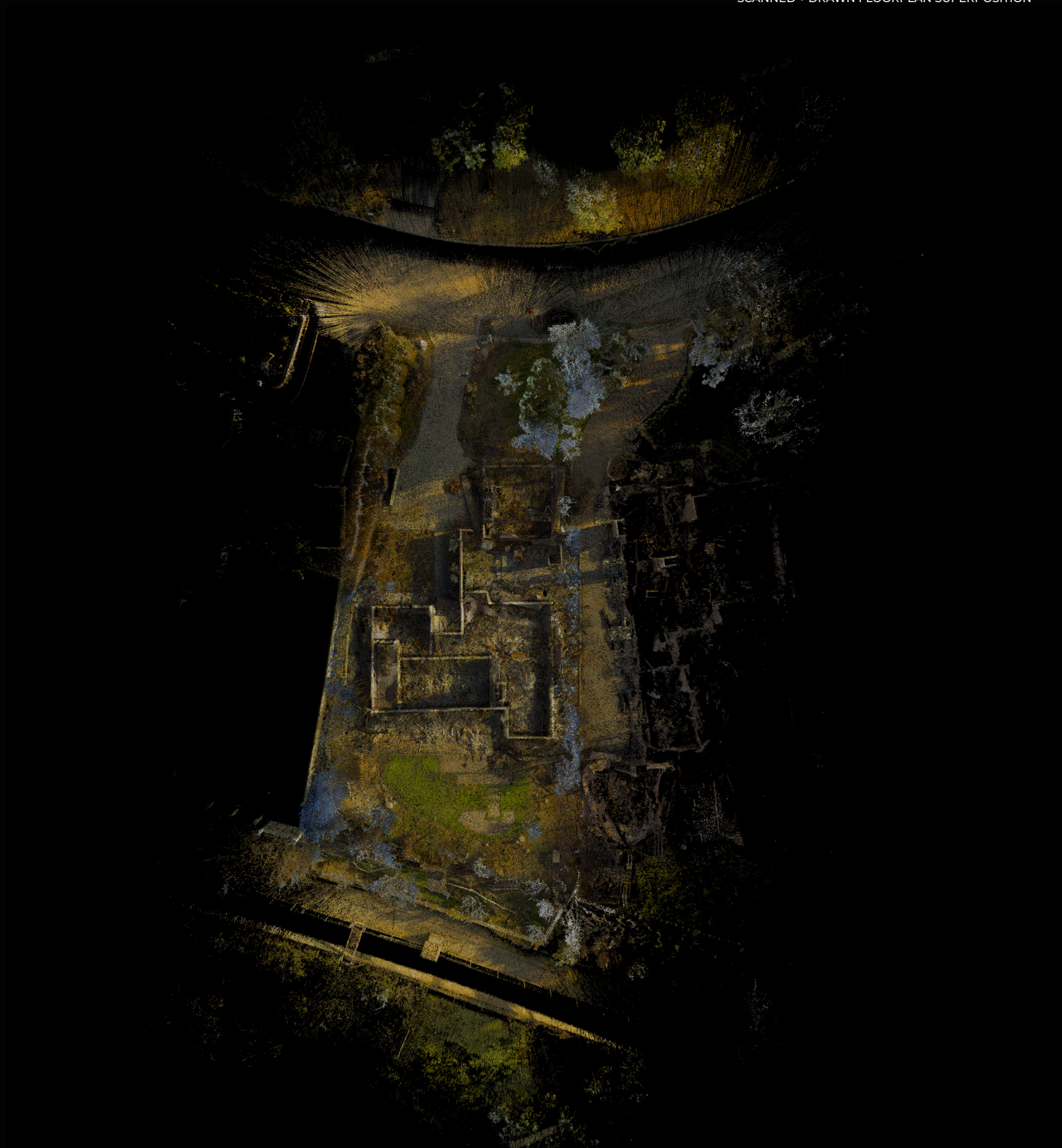


SECTION COLLAGE



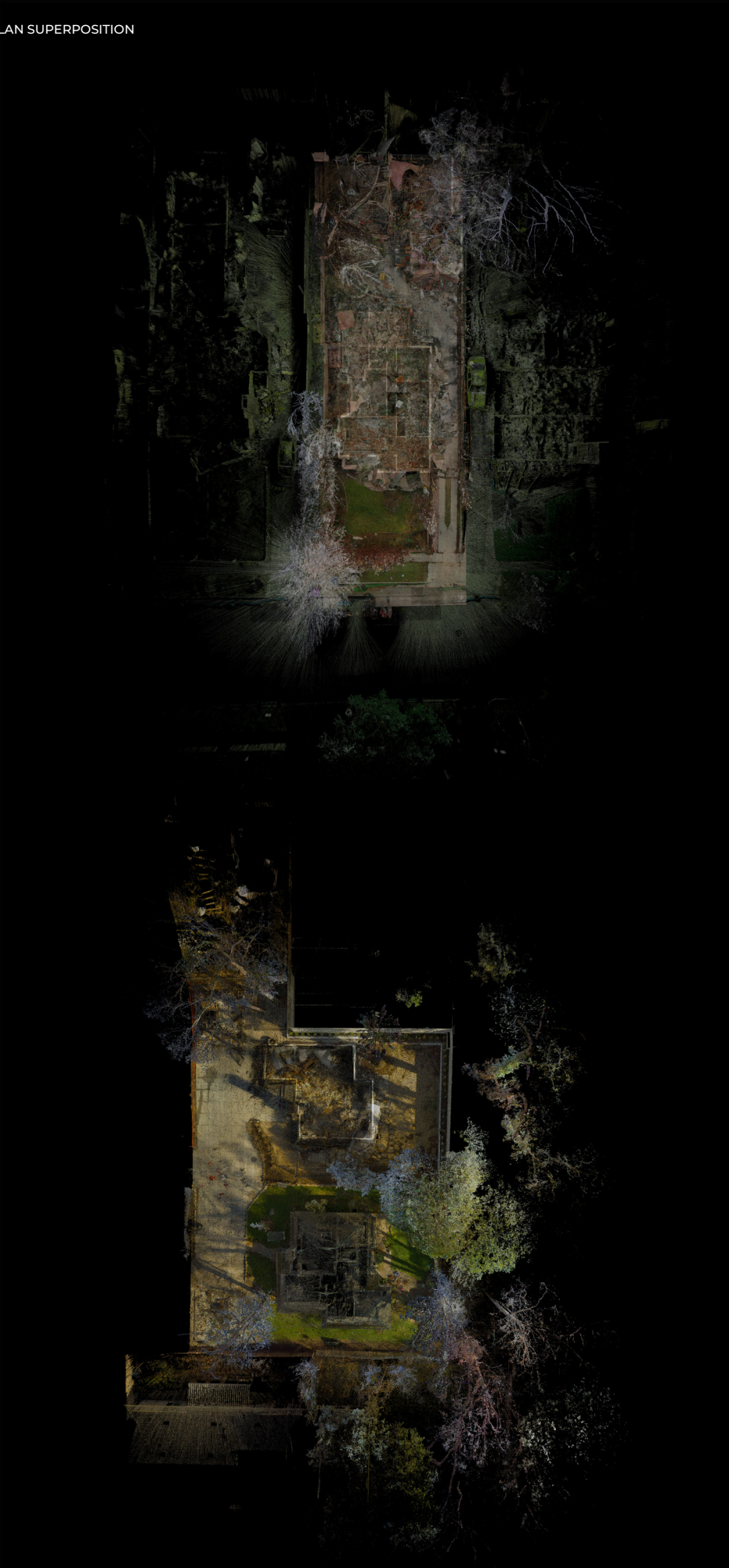
HOUSE SCANS

SCANNED + DRAWN FLOORPLAN SUPERPOSITION



SECTION COLLAGE

SCANNED + DRAWN FLOORPLAN SUPERPOSITION



HOUSE SCANS

POINT CLOUD RENDERS



Surreal Frame

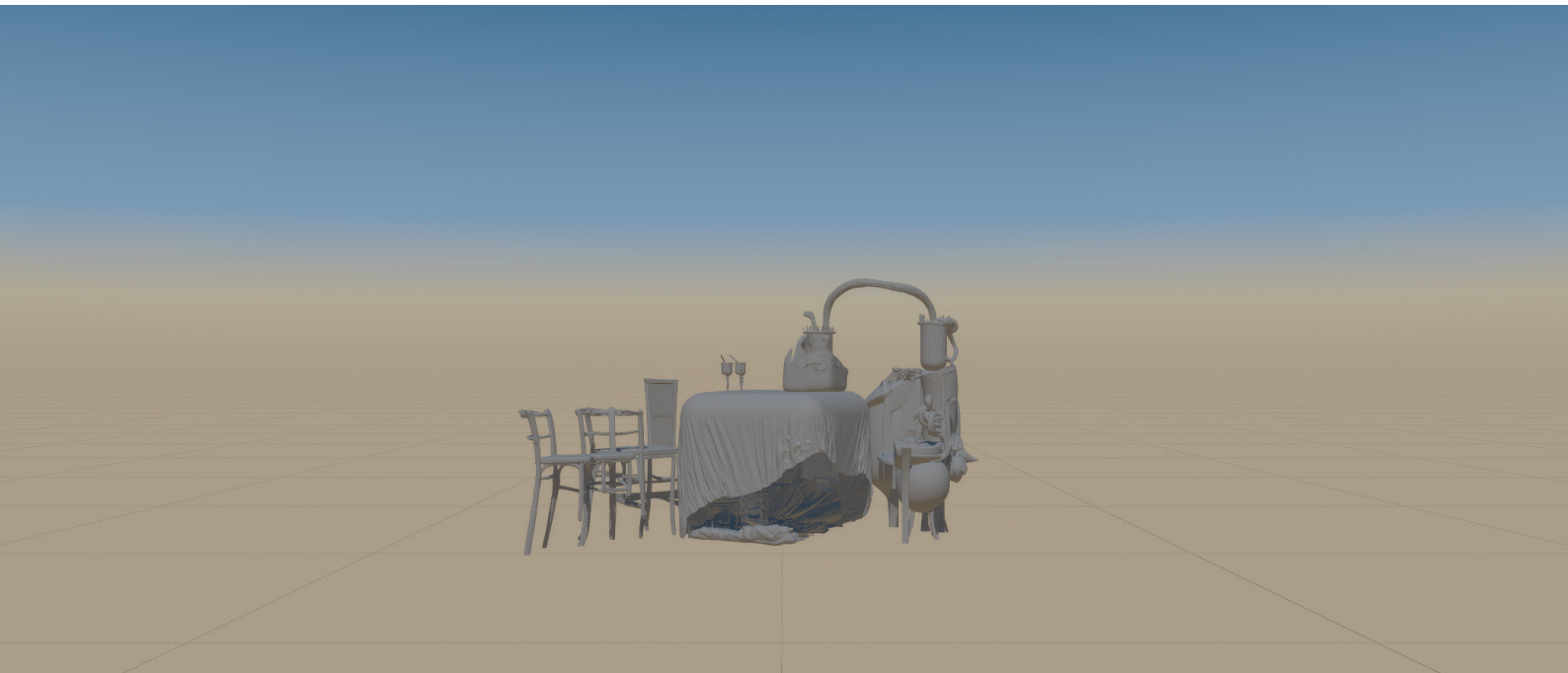
My MS Synthetic Landscapes Thesis explores the modeling space as a surreal landscape, an artificial ground where digital objects acquire the illusion of physical presence. Within the soft gradient of the viewport, objects are arranged, duplicated, and transformed into recursive compositions that generate worlds inside other worlds. Each frame acts as a container that suspends these fragments of space, giving them the appearance of landscapes. The project unfolds through a series of digital renderings and videos that investigate how framing and layering can turn simple objects into self-contained worlds, landscapes nested, reflected, and multiplied inside one another.

Beyond its formal construction, the project questions the very idea of what makes a landscape exist. It proposes that landscapes are not independent entities but perceptual events that appear only when framed, when edges define what is visible and what is not. Once the frame is removed, they dissolve, absorbed by larger environments. In this sense, the landscape becomes a fiction of perception, a condition that emerges through attention and containment. Surrealism here functions not as a style but as a structure, the logic that allows contradictory realities to coexist within the same space. Maybe landscapes are not as real as the objects themselves. Maybe the concept of landscape is surreal, beyond the real, in itself.

SOFTWARES - Generative AI, Blender, 3D Printer
<https://www.youtube.com/watch?v=pNlrnAkkOU&t=2s>



SURREAL FRAME



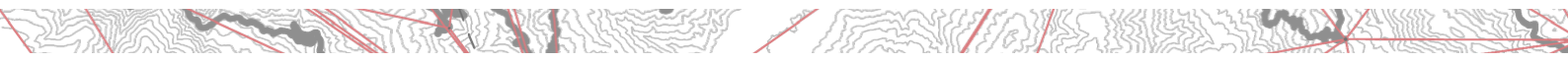
A cluster of domestic objects is assembled within a neutral modeling environment. The scene is detached from any architectural interior or exterior, resting instead on an infinite grid-ded ground beneath a soft gradient horizon. Objects are gathered through proximity rather than function, forming a compact world suspended inside the digital viewport. This frame captures one moment within a larger time-based sequence, where landscapes emerge through accumulation, scale shifts, and camera movement rather than spatial enclosure.

<https://www.youtube.com/watch?v=pNlrnAkrOU&t=2s>



THESIS EXHIBITION





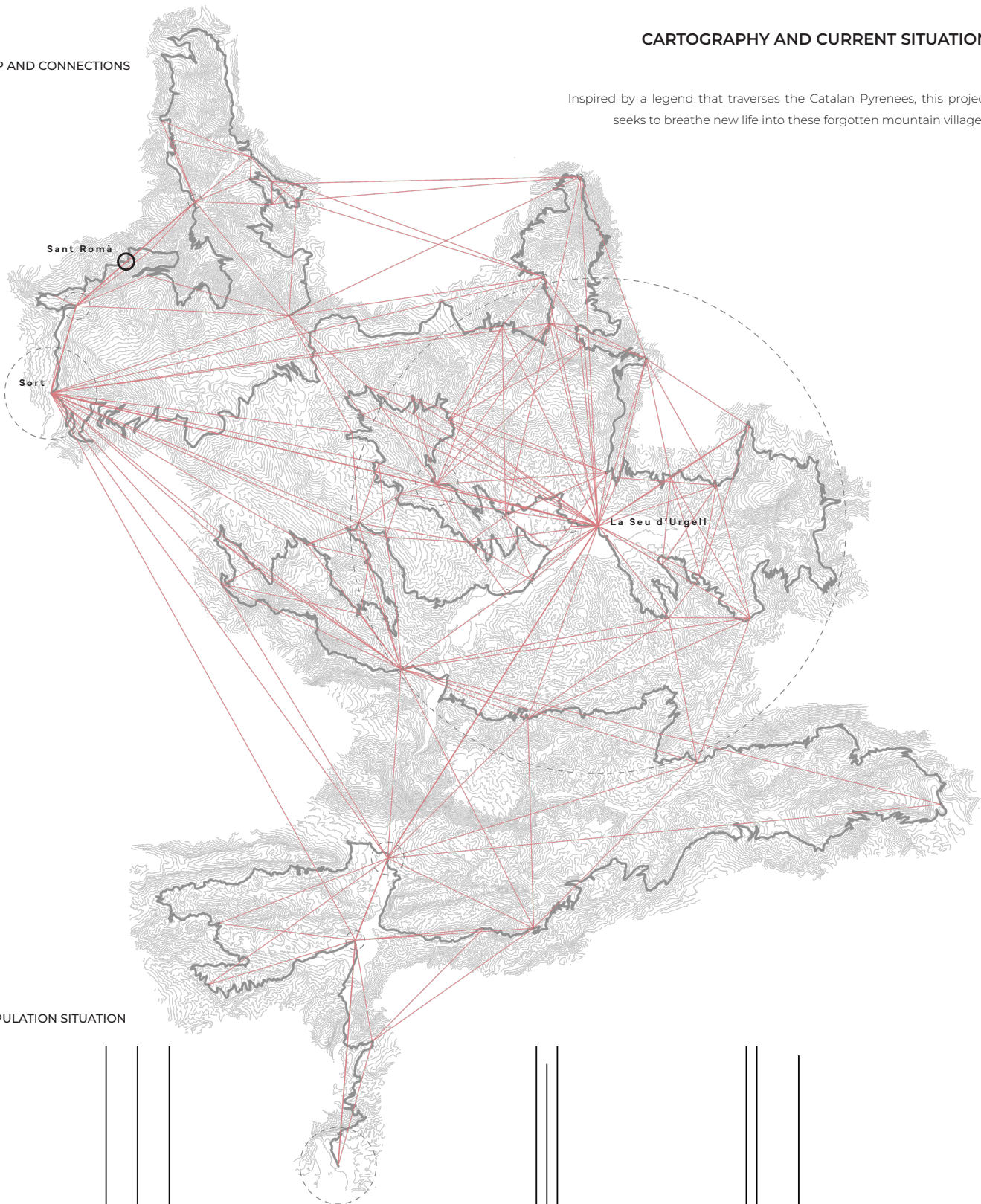
LACasa per la teulada / *The House through the Roof*

This project explores the potential of integrating inflatable architectural structures to revitalize abandoned rural homes and forgotten villages in the Catalan Pyrenees. By addressing the challenge of reactivating these underutilized spaces, the proposal aims to create a seamless dialogue between traditional architecture and innovative design. The intervention envisions a lightweight, portable solution that leverages existing structures without altering them, adapting to the specific needs of rural communities. The core concept focuses on designing inflatable modules that harmonize with the architectural character of deserted homes while preserving their original forms. These modules fit within the preexisting constructions, creating an interesting and respectful link between the past and present. By providing functional spaces for shelter, community activities, and sustainable living, the structures enhance the resilience and appeal of remote areas.

SOFTWARES - Rhino, Grasshopper; Karamba (Structural Analysis), HoneyBee (Climate Analysis) & Kangaroo (Inflatable Simulations), LIDAR Scans Polycam, AutoCAD

<https://www.youtube.com/watch?v=rQqW5BiponA>

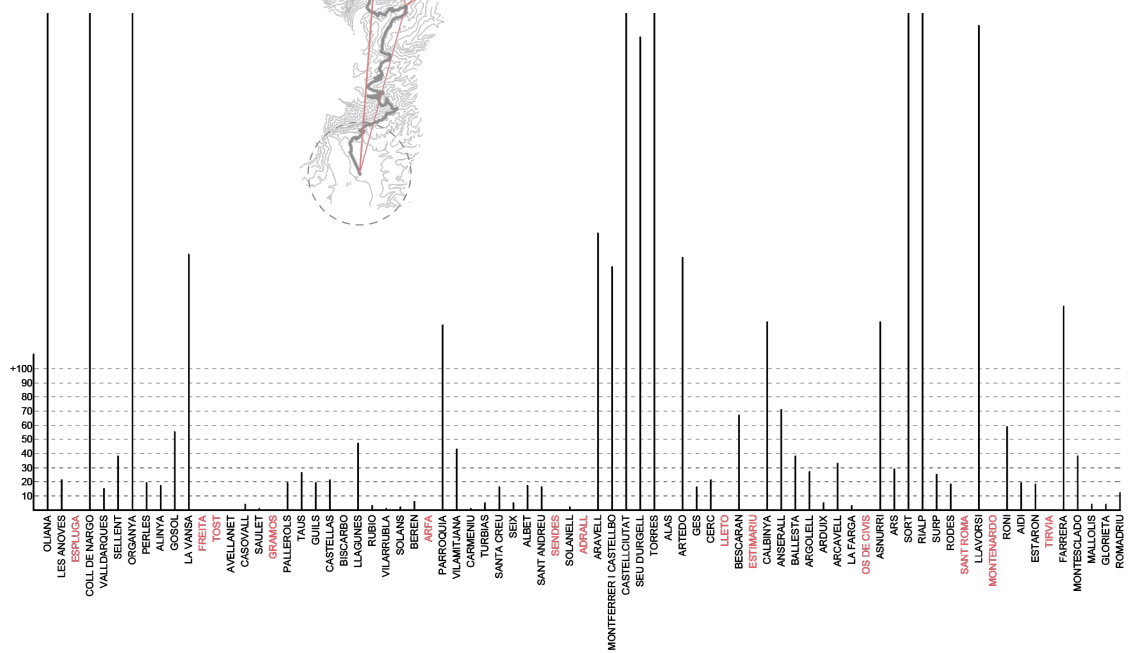
TOWN MAP AND CONNECTIONS



CARTOGRAPHY AND CURRENT SITUATION

Inspired by a legend that traverses the Catalan Pyrenees, this project seeks to breathe new life into these forgotten mountain villages.

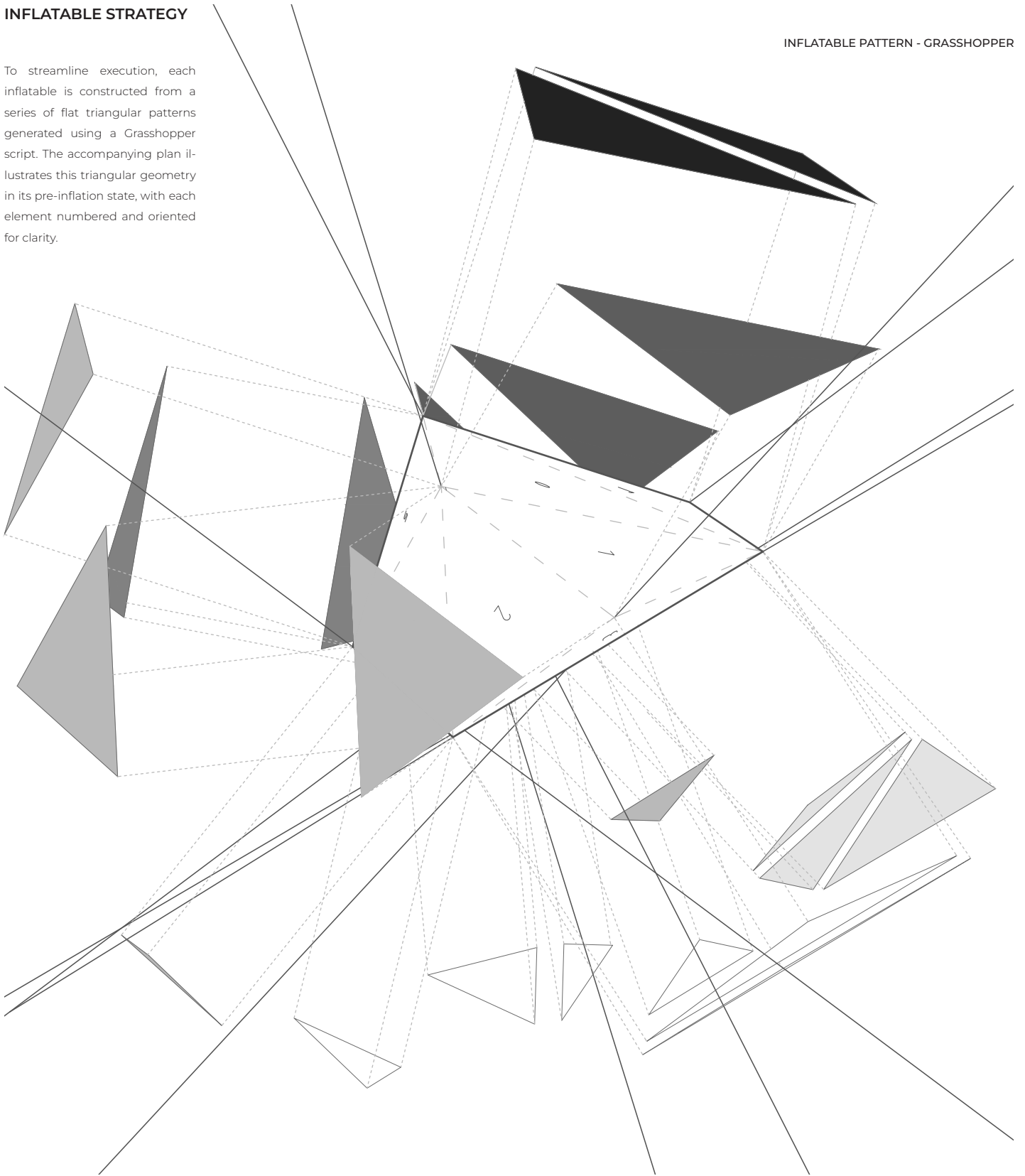
TOWN POPULATION SITUATION



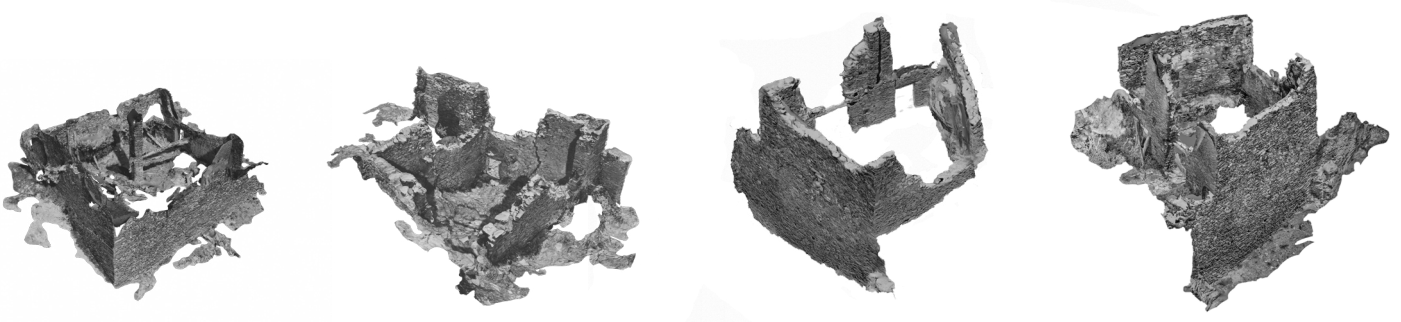
INFLATABLE STRATEGY

To streamline execution, each inflatable is constructed from a series of flat triangular patterns generated using a Grasshopper script. The accompanying plan illustrates this triangular geometry in its pre-inflation state, with each element numbered and oriented for clarity.

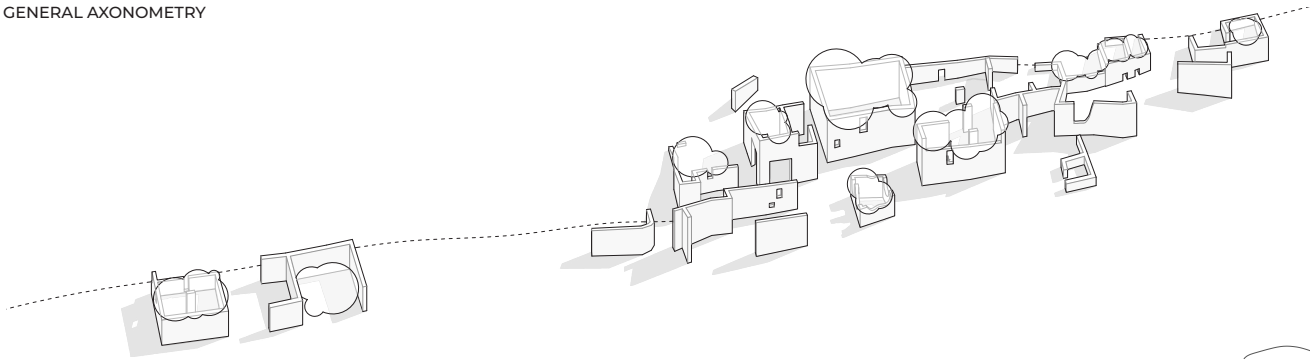
INFLATABLE PATTERN - GRASSHOPPER



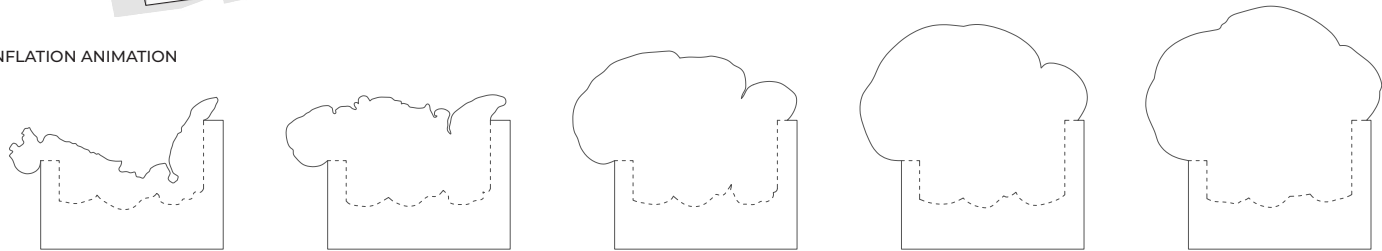
3D SCANS - LIDAR POLYCAM



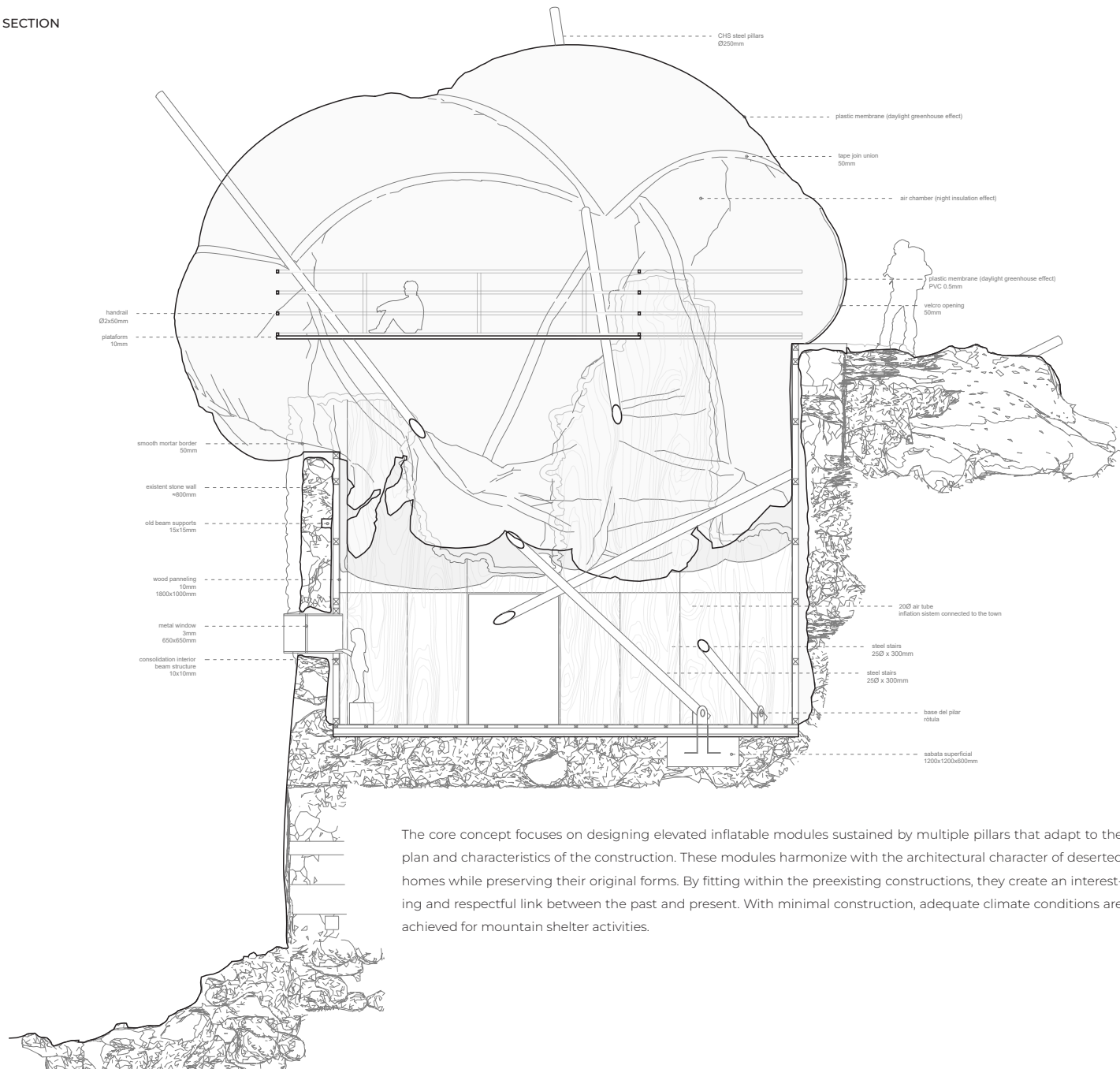
GENERAL AXONOMETRY



INFLATION ANIMATION



SECTION



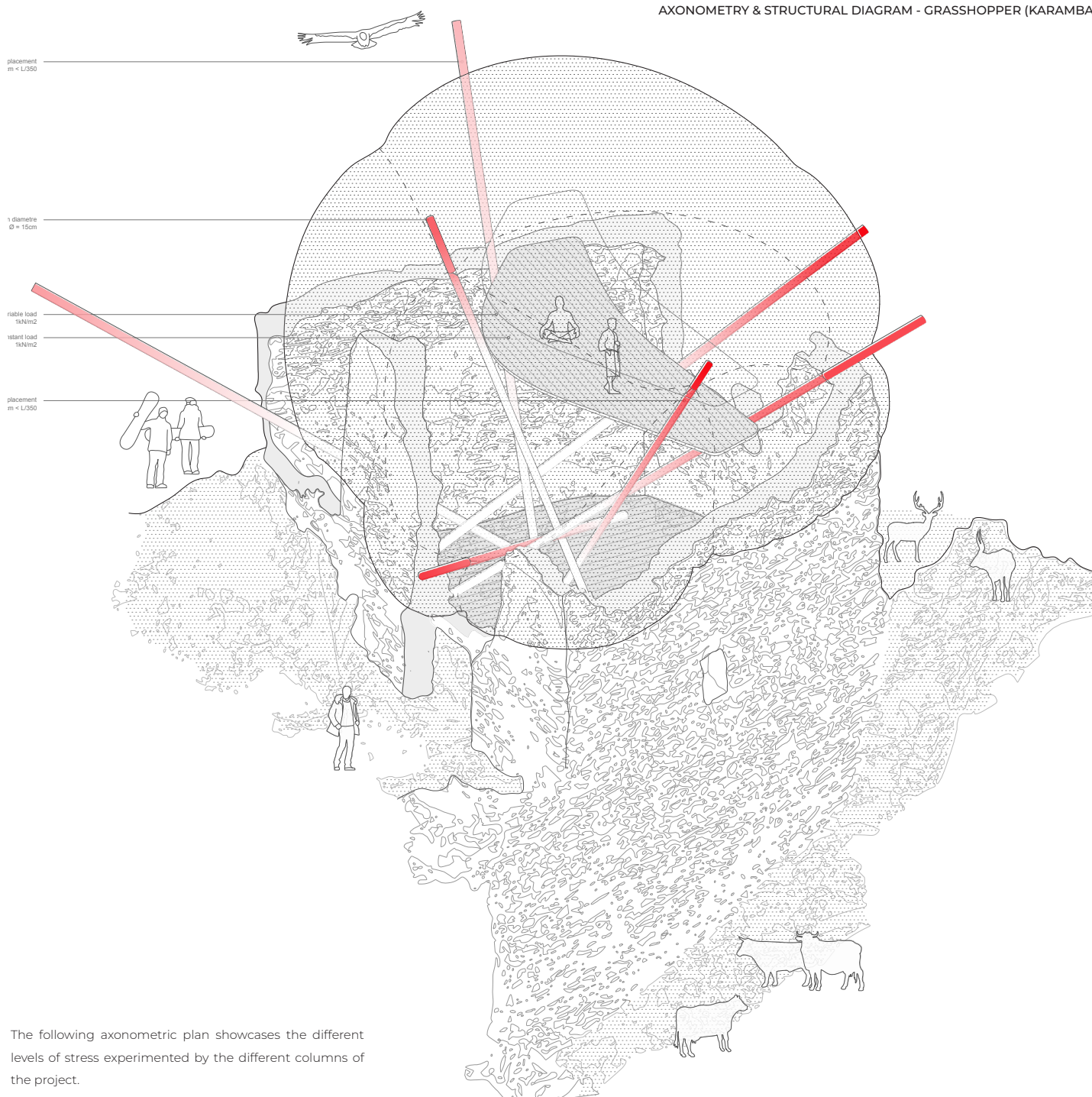
The core concept focuses on designing elevated inflatable modules sustained by multiple pillars that adapt to the plan and characteristics of the construction. These modules harmonize with the architectural character of deserted homes while preserving their original forms. By fitting within the preexisting constructions, they create an interesting and respectful link between the past and present. With minimal construction, adequate climate conditions are achieved for mountain shelter activities.

STRUCTURE & AXONOMETRY

STRUCTURAL CONDITION



AXONOMETRY & STRUCTURAL DIAGRAM - GRASSHOPPER (KARAMBA)



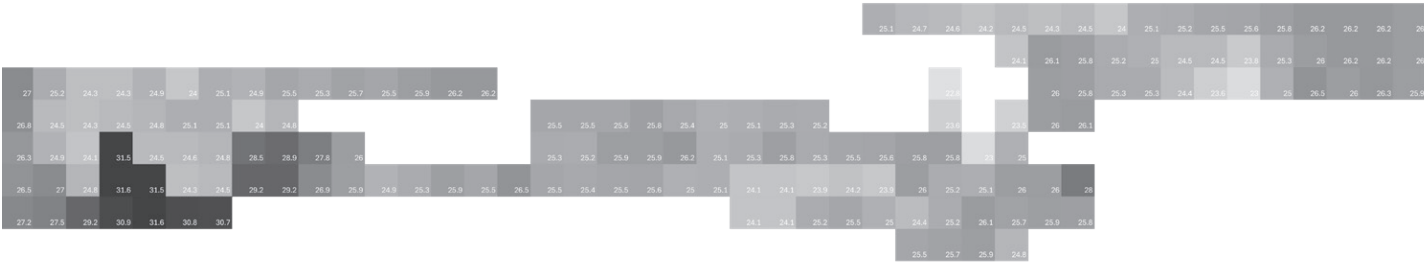
The following axonometric plan showcases the different levels of stress experimented by the different columns of the project.

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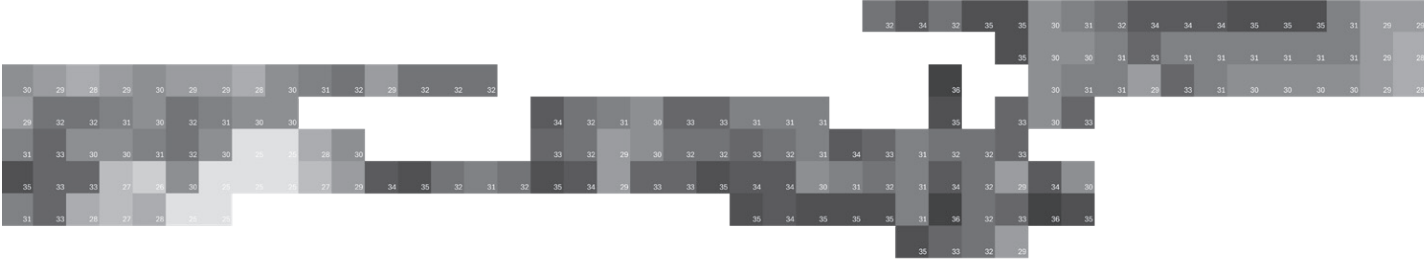
CLIMATE ANALYSIS

Given the unique location, program, and unconventional nature of the project, conducting a climate analysis of both the site and the inflatable was essential. The primary objective was to ensure the project's functionality as a cohesive system, creating the necessary conditions for the effective use of the old construction, the inflatable, or a combination of both.

TEMPERATURE PLAN DIAGRAM

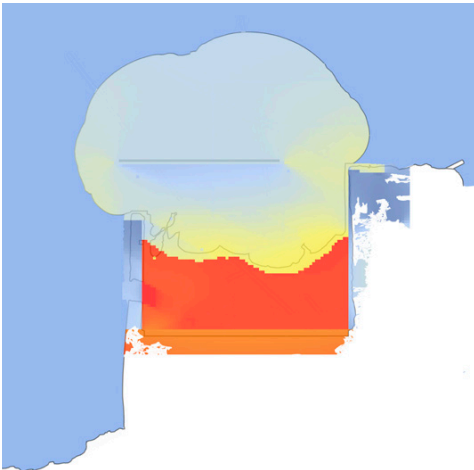


HUMIDITY PLAN DIAGRAM



CLIMATE ANALYSIS - GRASSHOPPER (HONEYBEE)

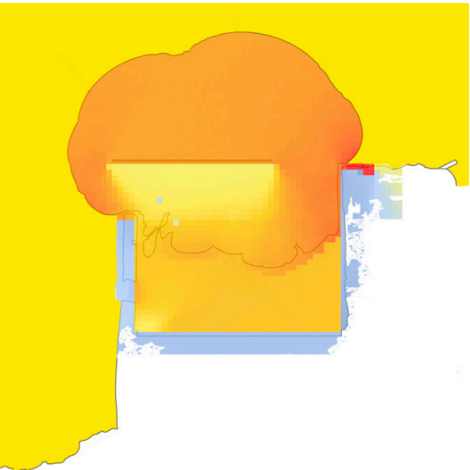
Winter Diagram



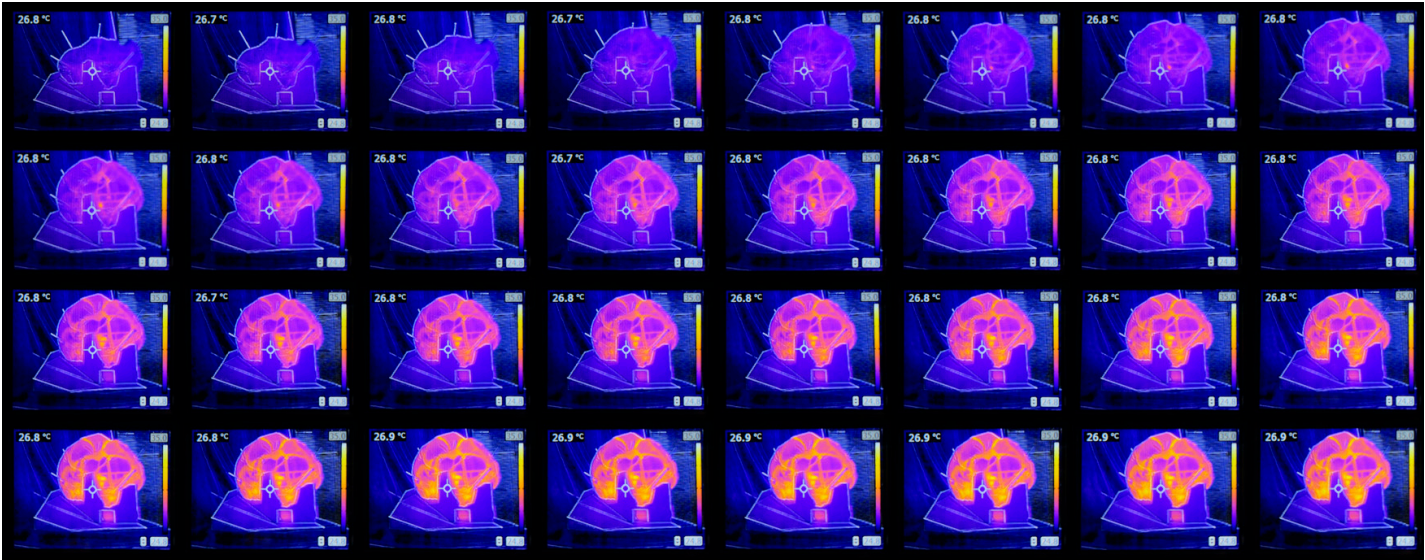
Summer Diagram



Yearly Medium Diagram



REAL LIFE TEMPERATURE VARIATIONS



RENDERS & MODEL





LACantera / *The Quarry*

This project aims to challenge the scale of landscape architecture and create a proposal based on data analysis with a focus on wind and erosion. Located in the Coma Roja Quarry, the proposal speculates on the possible evolution of the site. Due to the site's hindrance to natural growth, our intervention aims to aid vegetation increase by leveraging existing features. The main concept is to control erosion by excavating certain paths in the site, determined by terrain and other climate factors, that guide rainfall and wind to deposit sediments in certain areas. The difficulty of the project comes in dealing with such a large plot of land and the ability to create a working concept that, implemented in different points, could bring the quarry back into nature. The result is a series of "particle accelerators" that help channel the wind to push particles to key points with higher growth probability and help the quarry renaturalize.

SOFTWARES - Rhino, Grasshopper, Ansys (*Wind Analysis*), Blender (*Particles Erosion*), AutoCAD

<https://www.youtube.com/watch?v=0adW6UwvXmA&t=2s>

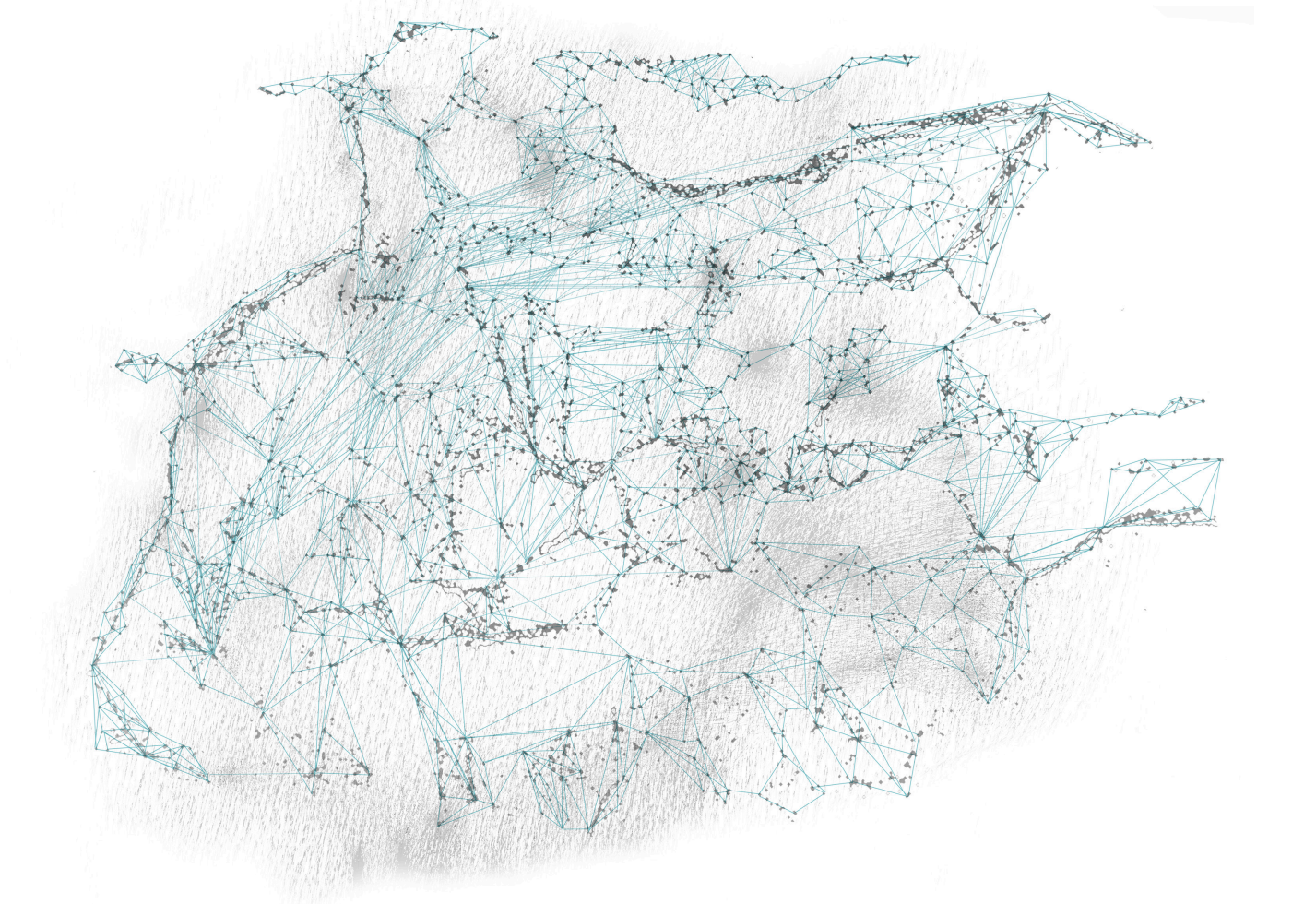
Architecture Portfolio

WIND ANALYSIS AT DIFFERENT LEVELS OF THE QUARRY - GRASSHOPPER

LOCATION & CLIMATE ANALYSIS



PARTICLE EROSION OF THE QUARRY - BLENDER



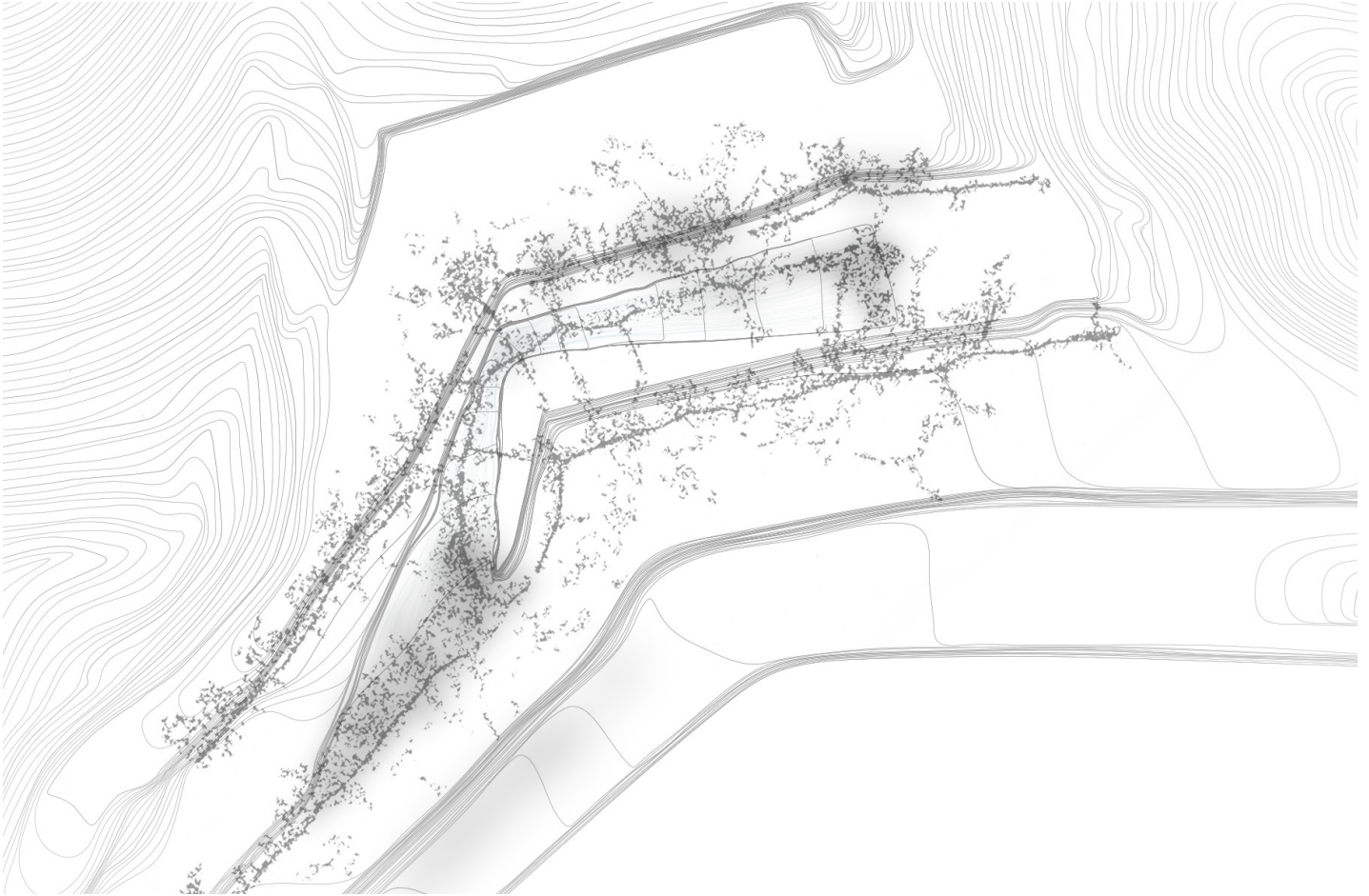
COMA ROJA QUARRY



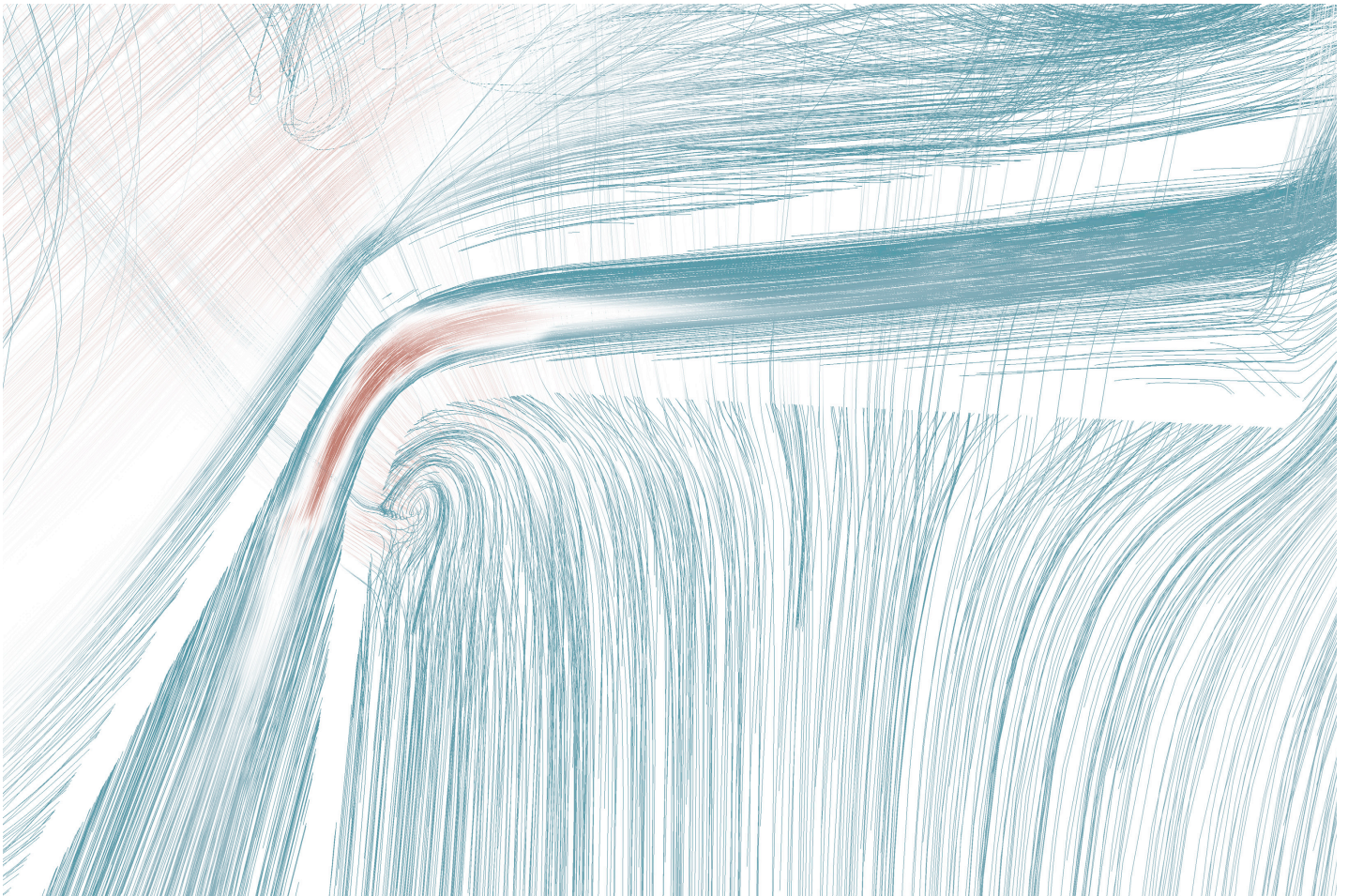
MAIN PLANS OF A "PARTICLE ACCELERATOR"

The geometry of the various 'particle accelerators' was designed based on extensive wind analysis, optimizing the redistribution of particles across the quarry. To ensure proper functionality, the design manipulates the width of the excavations to accelerate wind in targeted areas.

MAIN PLAN



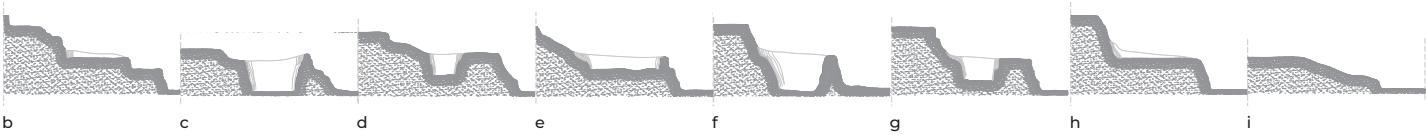
WIND ACCELERATION ANALYSIS PLAN - ANSYS



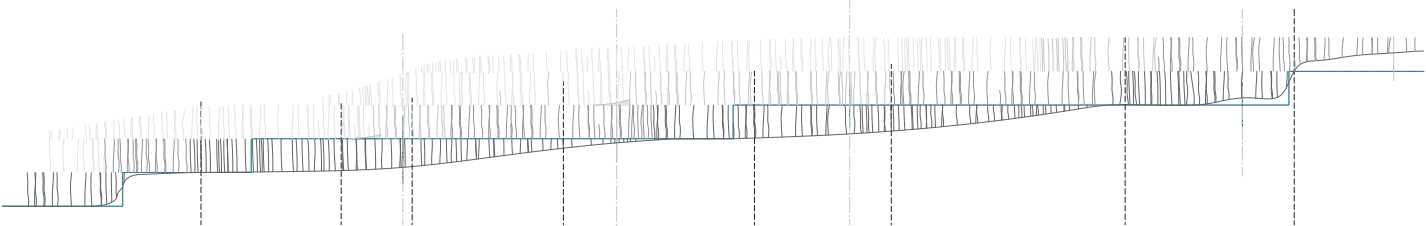
Architecture Portfolio

GENERAL PLAN, SECTIONS & RENDER

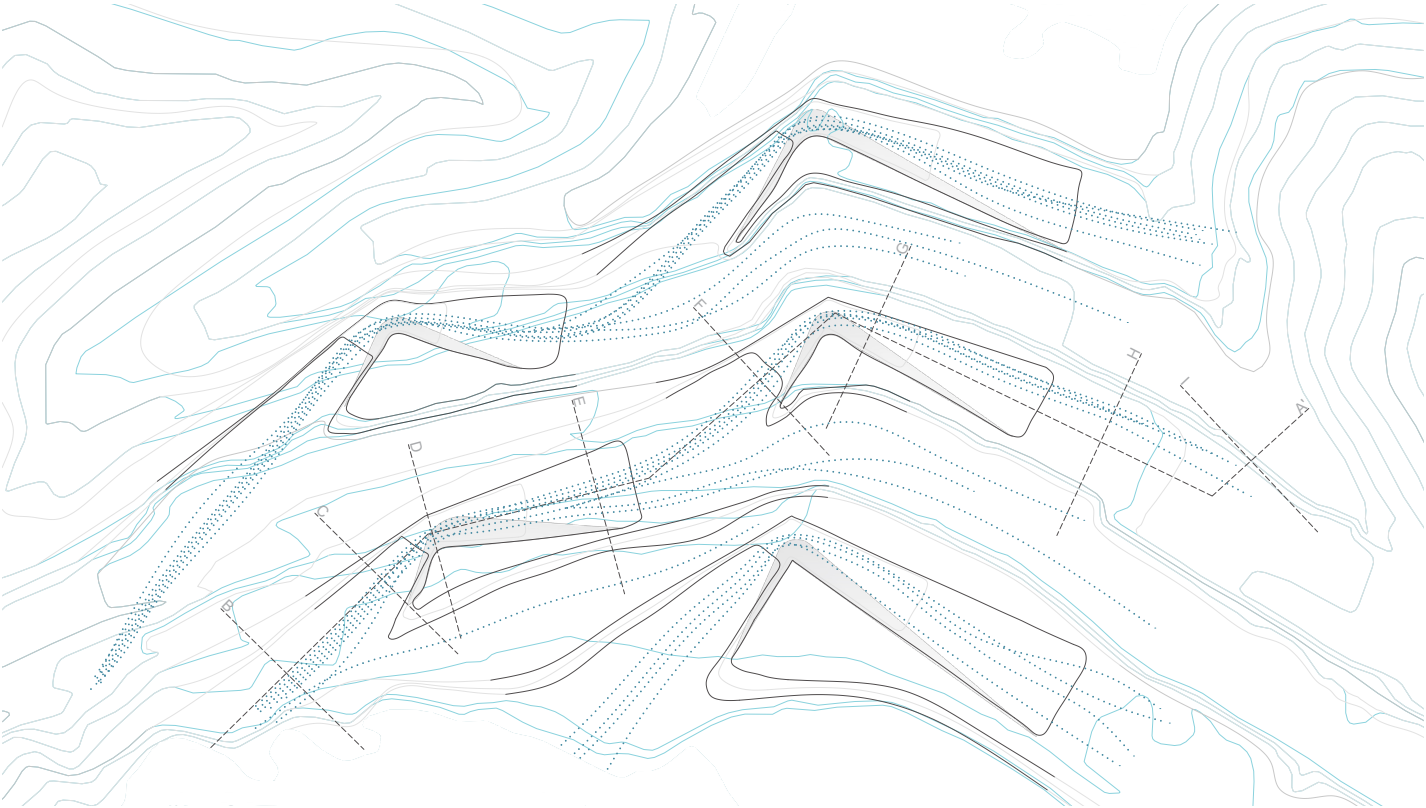
TRANSVERSAL SECTIONS



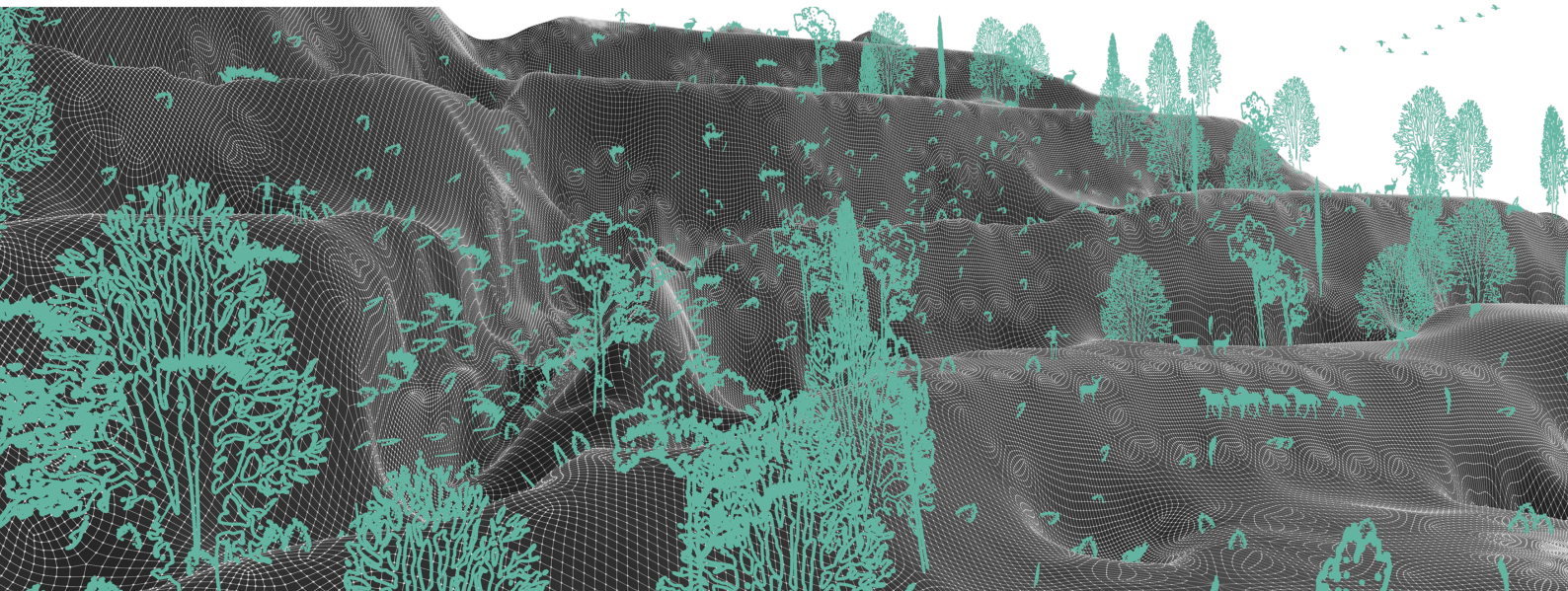
LONGITUDINAL SECTION



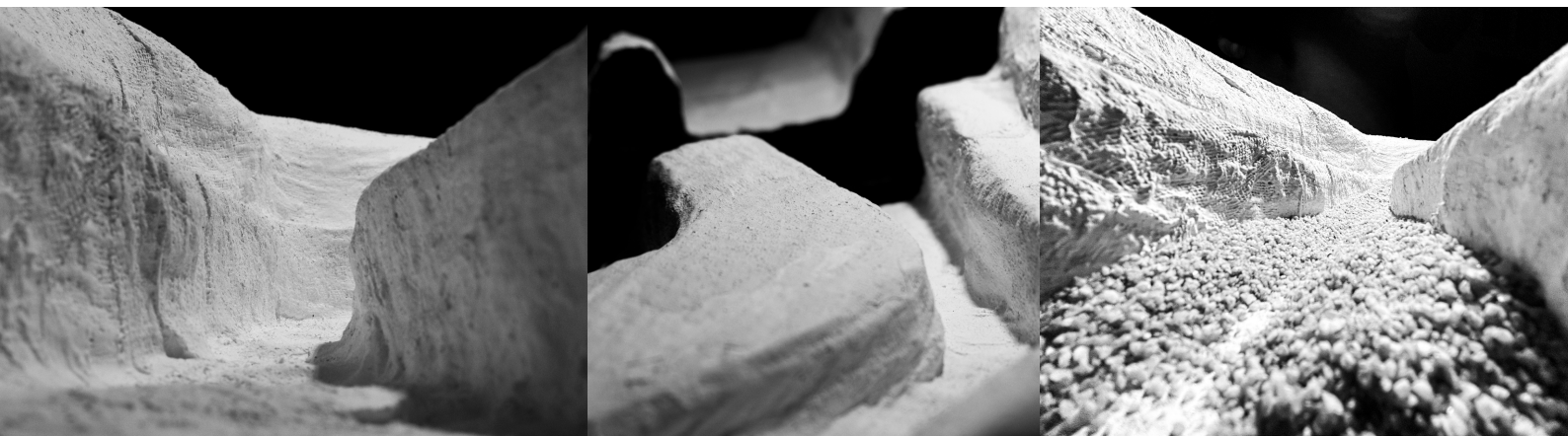
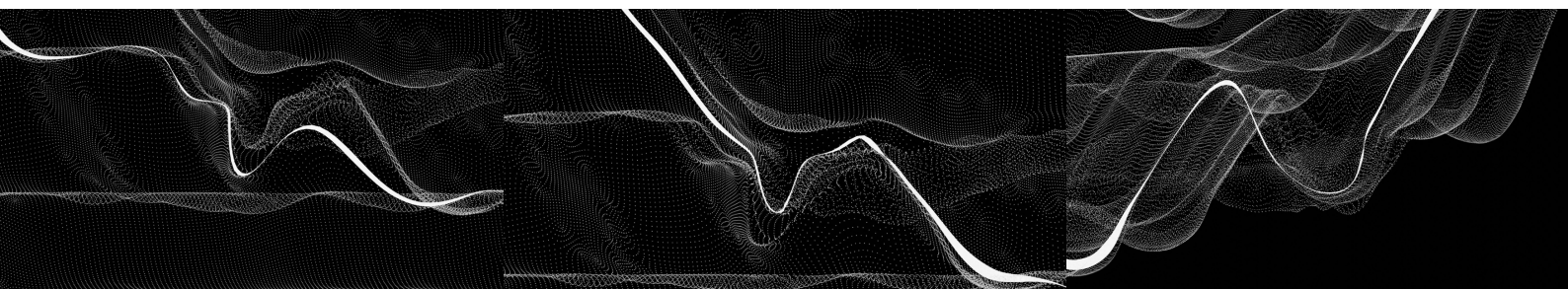
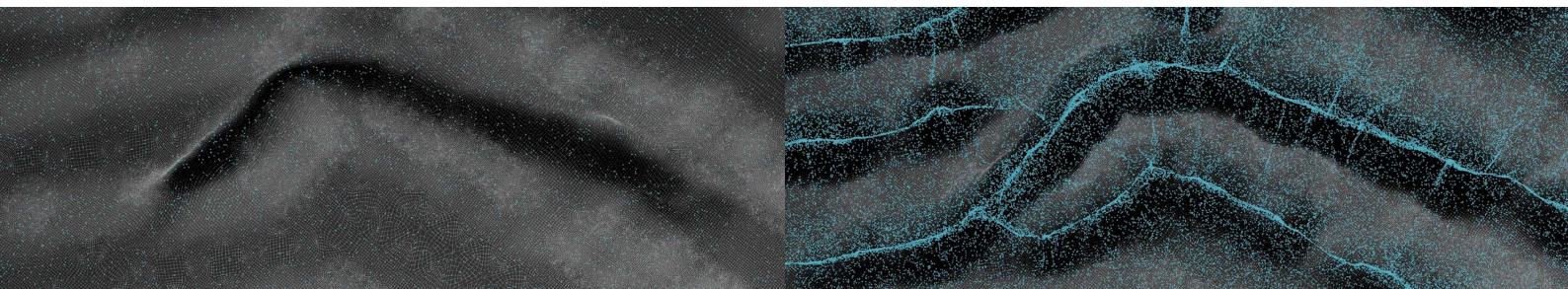
GENERAL PLAN OF "PARTICLE ACCELERATORS"



RENDER



SIMULATIONS & MODEL



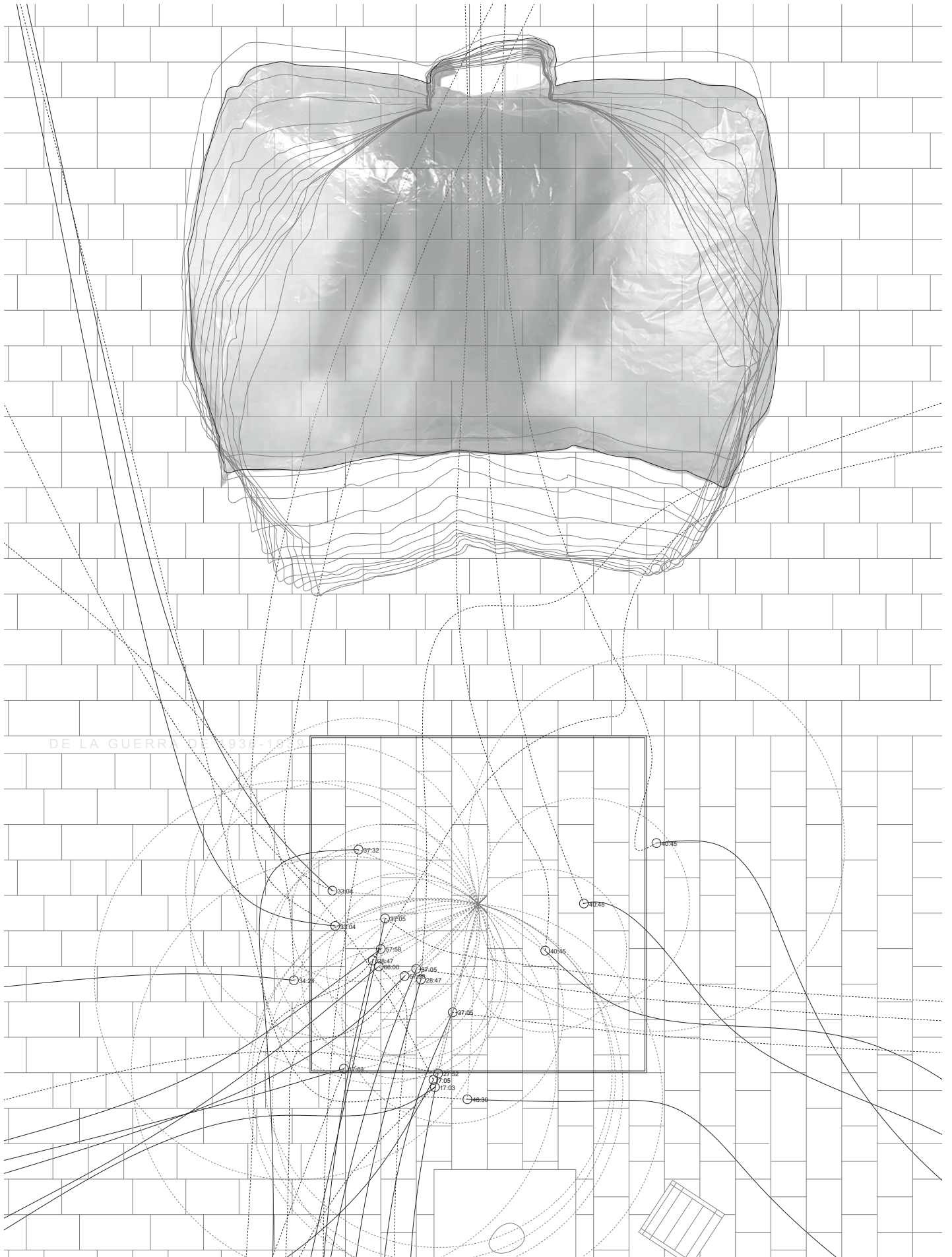


m³

This project intends to push the boundaries of portable architecture and create a proposal for social clothing. This innovative concept revolves around the interactive dynamics of individual space, in a time after COVID, where each garment adapts and transforms in response to its exchange with neighboring pieces. Picture a dynamic symphony of clothing that creates a protective “bubble” shielding users from the elements, seamlessly adapting to both sun and rain. When combined with air, this transformative ensemble unveils a visible personal space, beautifully merging individuality and collaboration. Step into a realm where fashion becomes a harmonious blend of innovation and connectivity, redefining the boundaries of personal and shared experiences. Our social clothing proposal envisions a future where garments transcend mere aesthetics, forging a new era of collaborative and adaptive wearable art.

SOFTWARES - AutoCAD

The exercise consisted in measuring personal and social spaces of different individuals. To do so, we devised an experiment and mapped out the different interactions. This will help lead to a first prototype for our approach of flexible architecture.



SOCIAL EXPERIMENT



How to Approach a Stranger

<https://www.youtube.com/watch?v=C8LYDC52XoA&t=3s>

Exploration of various combinations and relationships between single, paired, and triplet prototypes.



MODEL

