



NEW NIU

MAEBB Collaborative Design Studio Urban
Multi-use Public Playspace
FALL 2021



Studio Description

The Masters in Ecological Buildings and Biocities Collaborative Design Studio

had the ambition to give students a chance to experience a real world design challenge, from engaging first hand with a site and a community of stakeholders to iterating designs and finally fabricating and installing their own proposals. By taking part in each step of this process MAEBB students actually feel the weight of external forces and social pressures that are usually absent from the classroom on their design proposals, adapting them to more accurately suit the needs of their vision.

This prototype serves as a discussion between two bodies of knowledge and a chance for mutual learning between them. Escola Entença is a unique institution with the weight of history ever present in its location within the walls of a recently closed prison. The spirit of transformation embodied within this new school became clear upon our first site visit. Our project needed to reflect and accelerate this ethos of transformation. Since the children of the school would be the primary users of this prototype, considering our installation from their perspective was a very important objective of the design.

The main challenge of the studio was to bring lessons from the forest context of Valldaura Labs and the Collserola Natural Parc to the urban environment, specifically the entryway to Escola Entença. Taking materials from the forest and processing them using advanced digital computation and traditional carpentry methods, students were to create an interactive playscape that represented the forest ecology to inspire the students, and provided multi-use functionality for the whole community.



Prototyping Process

Initially, students were divided into groups of 3, each tasked with creating a unique, ecologically oriented solution using only materials that we could source from our forest on site at Valldaura Labs (dimensional timber products, raw tree trunks, branches and off cuts). Each group returned with dynamic and imaginative responses, but that well exceeded the scope and scale of the design prompt. This led to a subsequent series of revisions that honed their ideas into more convincing proposals.

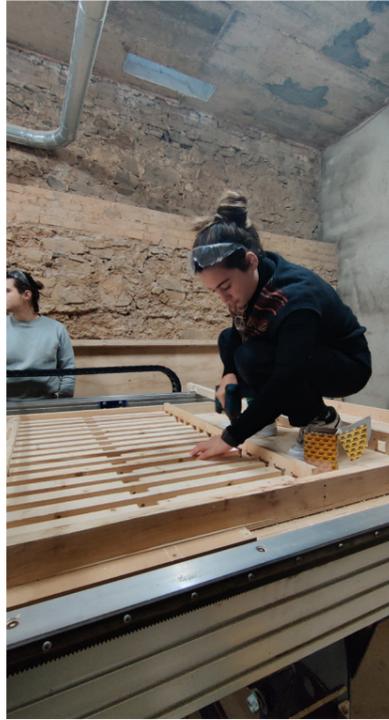
After several rounds of revision, the students finally arrived at 3 proposals that could feasibly be built within the budget allocated, keeping in mind the relatively short fabrication schedule. These proposals were shown to the school board of directors at Escola Entença, with the intention of selecting just one proposal to continue with. Instead, the staff of the school encouraged MAEBB students to pursue all three proposals together, creating a dynamic series of distinct interventions into the site to create an immersive experience for the children.

These three proposals then underwent a rigorous prototyping process to make the fabrication process as efficient and effective as possible. This meant creating bespoke “jigs” or custom attachments for all the carpentry tools to make creating all elements safe and quick. Different approaches were tested, redesigned, rebuilt and tested again until they passed our rigorous standard for outdoor furniture to be used by children.



Final Proposal : New Niu

The intention of the wooden nest is to enhance and uplift the entrance to the School, bringing the energy of the forest down to the city. This nest is constructed from over 1.500 wooden elements, each cut using robotic precision to carry the structure above the wall. The pieces are modular and self-supporting, meaning the form is flexible yet the structure becomes rigid when connected together. It was crucial to have a structure that could be created at a small scale (children could do it) but that could assemble into a larger structure that maintained structural integrity.





Final Proposal : Playful Voids

These playful wooden boxes attempt to reimagine waste material and the circular design process by re-using discarded wooden pieces to make a dynamic facade. Each piece was formerly scrap wood from the Carpentry at Valldaura Labs, recycled and re-processed individually by students to create a rich tapestry of wooden texture and color. This embodies the ethos of circular function and reuse that is an important line of study at Valldaura Labs. The heart shape refers to the love that went into the construction of the boxes, and the joy they will bring to the students that will use them. The leaf refers to the forest that created the wood, and the ecological processes that we are all a part of.





Final Proposal : Log In

This series of raw wooden benches and steps were intended to preserve as much raw materiality as possible while still integrating advanced tools and technology. These trunks were scanned before processing, allowing the students to prepare hyper-specific joints and insertions. The result is a minimal touch, allowing the raw materiality of the trunk to stand out, highlighted by a few embellishments of modern flair appropriate for the city context.





Description of school + community engagement

From the beginning of the design process, engagement and discussion with community stakeholders was an influential factor in the studio work. During the initial site visit, students also had a chance to meet with the School Board Representatives of Escola Entença. This proved to be a perfect opportunity for interactive design, as the scope of the project changed dramatically during the course of the conversation. The original intention for this project was to occupy the corner of the site, but as the School Board started sharing their perspective it became clear that the entrance to the school was a much more important location. Through a continuous dialogue with the school board about our design, many other features began to take shape.

To address many needs within the school, there was a unanimous decision to create an element above the entrance to the school, signifying its importance on the street, giving a playful accentuation to the building and creating shade and a sense of gathering. Benches and play spaces were also suggested by the school to address the needs of the parents when they come to pick the children up.

To give an extra layer of engagement with the citizens and stakeholders, mainly the parents, students and teachers of Escola Entença, students decided to create a participatory installation that could use the help of dozens of children and their parents to create a sturdy structure. To do this, a modular component was devised to allow for a simple construction and fast assembly. This component could be mass manufactured in our shop and constructed with the help of all the parents and students who actually use the entrance.



Calendar of Activities

Friday, October 8

First Site Visit to Escola Entença with MAEBB students and director Vicente Guallart and School Board of Directors.

Friday, October 15

First presentation of proposals, groups of three students were asked to give detailed site analysis from their studio work, reflecting on the scale of the urban environment and the multi-use children's playspace prompt.

Friday, October 22

Second presentation of proposals, students were combined into groups of 6 and asked to more seriously consider materiality and fabrication processes while maintaining energy and ambition within their design.

Wednesday, October 27

Presentation of designs thus far to the School Board of Representatives of Escola Entença for feedback and recommendations. This proved to be a very fruitful discussion, leading to a combination of all student proposals into a dynamic and varied installation composed of several distinct elements.

Friday, October 29

Students first begin prototyping with the materials they will eventually construct their installation with, including dimensional lumber, raw tree trunks and waste wood from the Valldaura Labs carpentry shop.

Friday, November 5

After reviewing materials and fabrication processes, students finalize designs and begin preparing presentation drawings to show the various stakeholders (Escola Entença Board, Barcelona City Representatives, and the general public)

Friday, November 12

Students and staff make official choices of material amounts and close designs to begin final fabrication process

Wednesday, November 17

First elements of the wooden nest entrance are created on the CNC, first full scale test completed and tested for strength and durability.

Friday, November 19

All raw trunk elements selected and cleaned, elements which are too large to process on-site are shipped to be cut at a nearby sawmill

Friday, 26 November

Fabrication in full swing, all parts being processed as wood materials arrive to the Green Fab Lab to be assembled.

Monday, 29 November -

Friday, 10 December

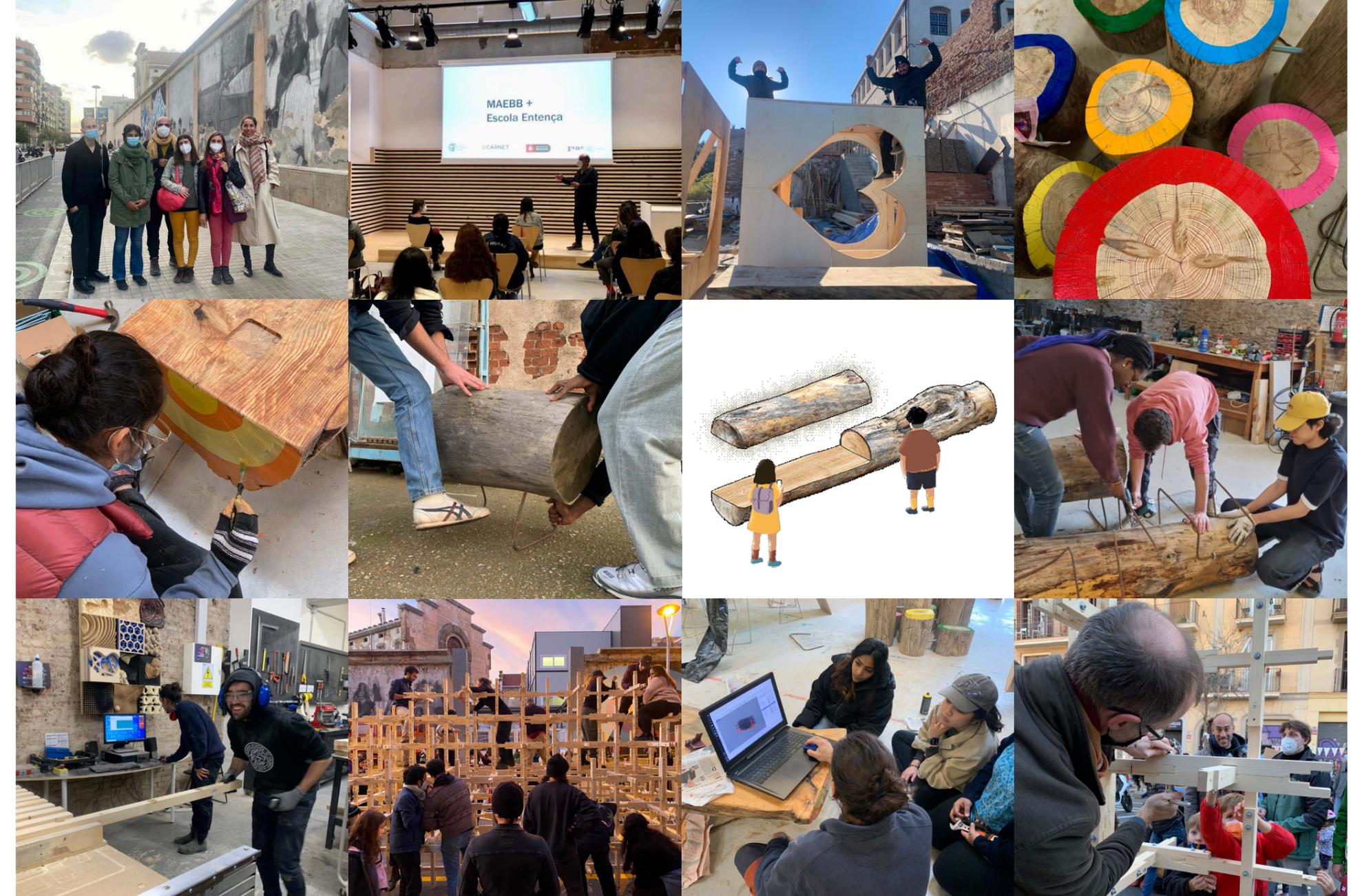
Intensive fabrication of all elements for the wooden nest entrance, void seats, raw log benches and connected trunk steps.

Saturday, 11 December

Installation of project on site at Escola Entença. With help from families, students and staff from the school, the wooden nest entrance was assembled in the street during a festival.

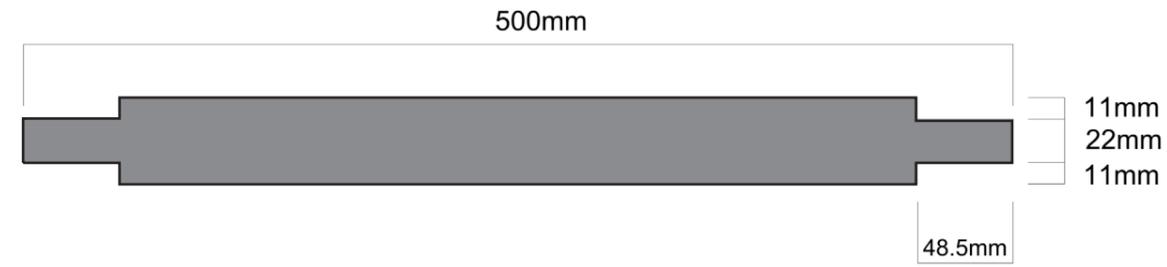
Sunday, 12 December

Wooden nest entrance is lifted and secured into place via crane, finally completing the installation of the MAEBB prototype.

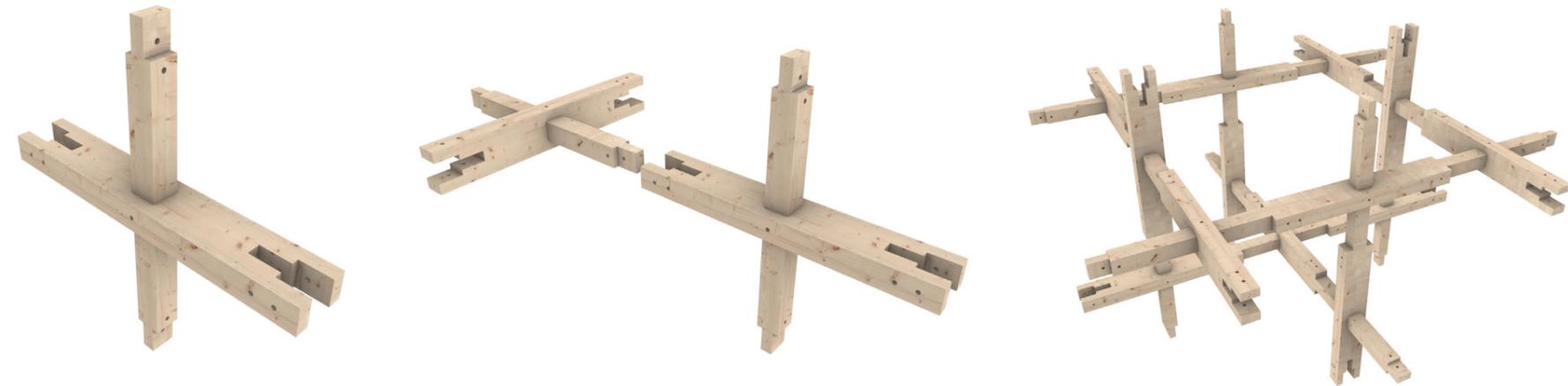
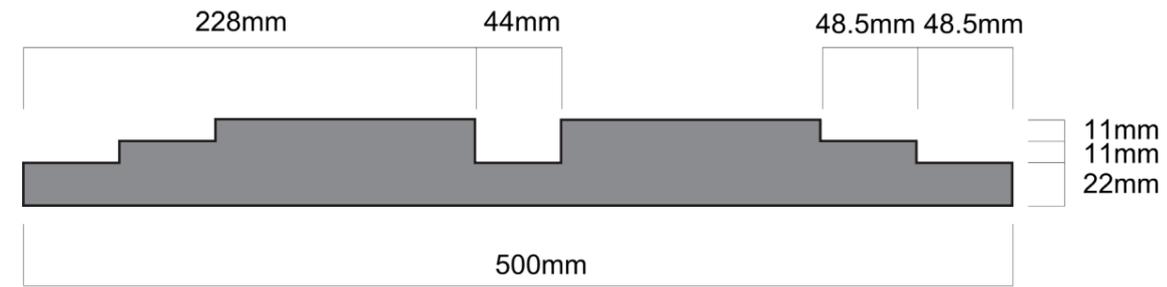


Technical Drawings

COMPONENT A

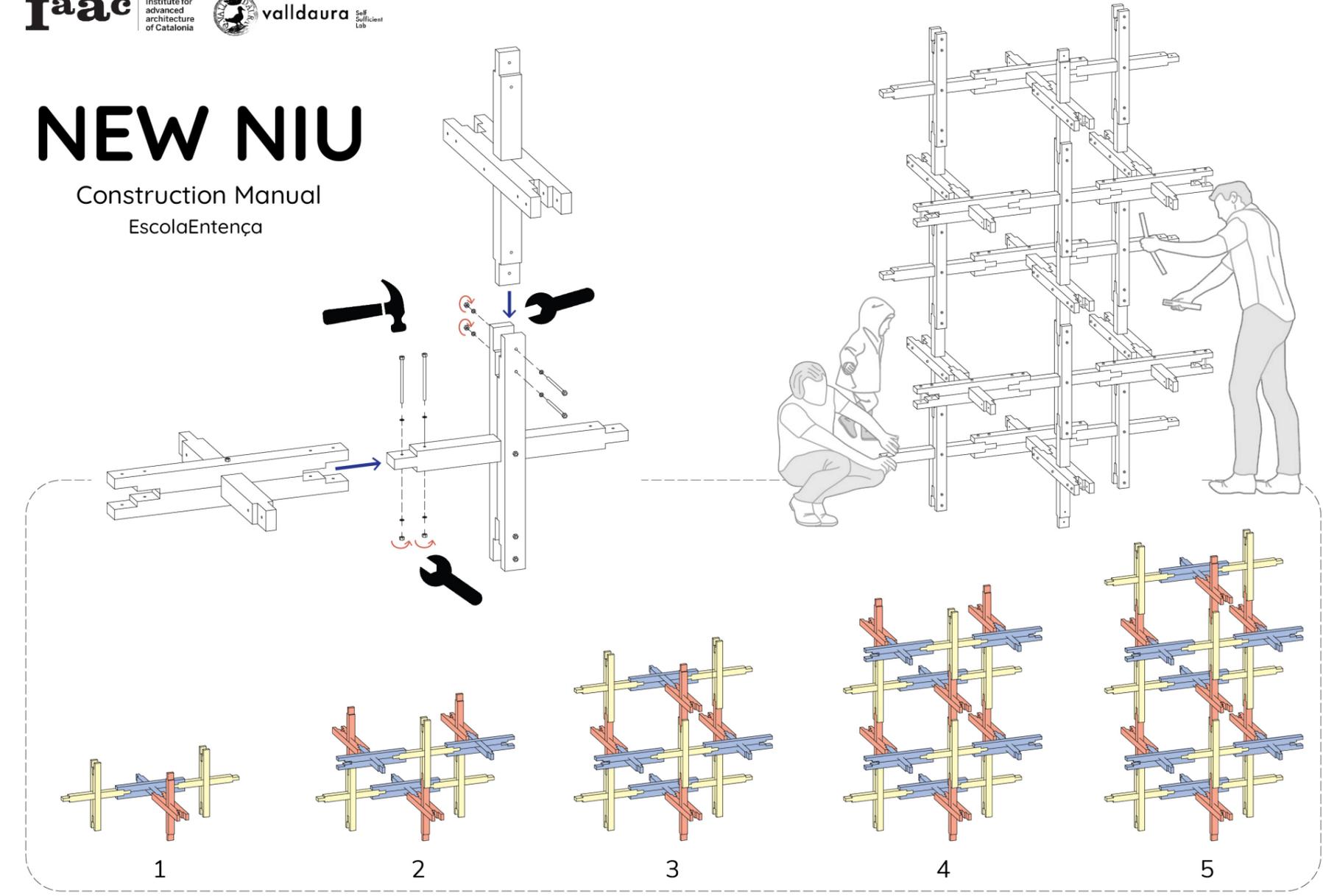


COMPONENT B

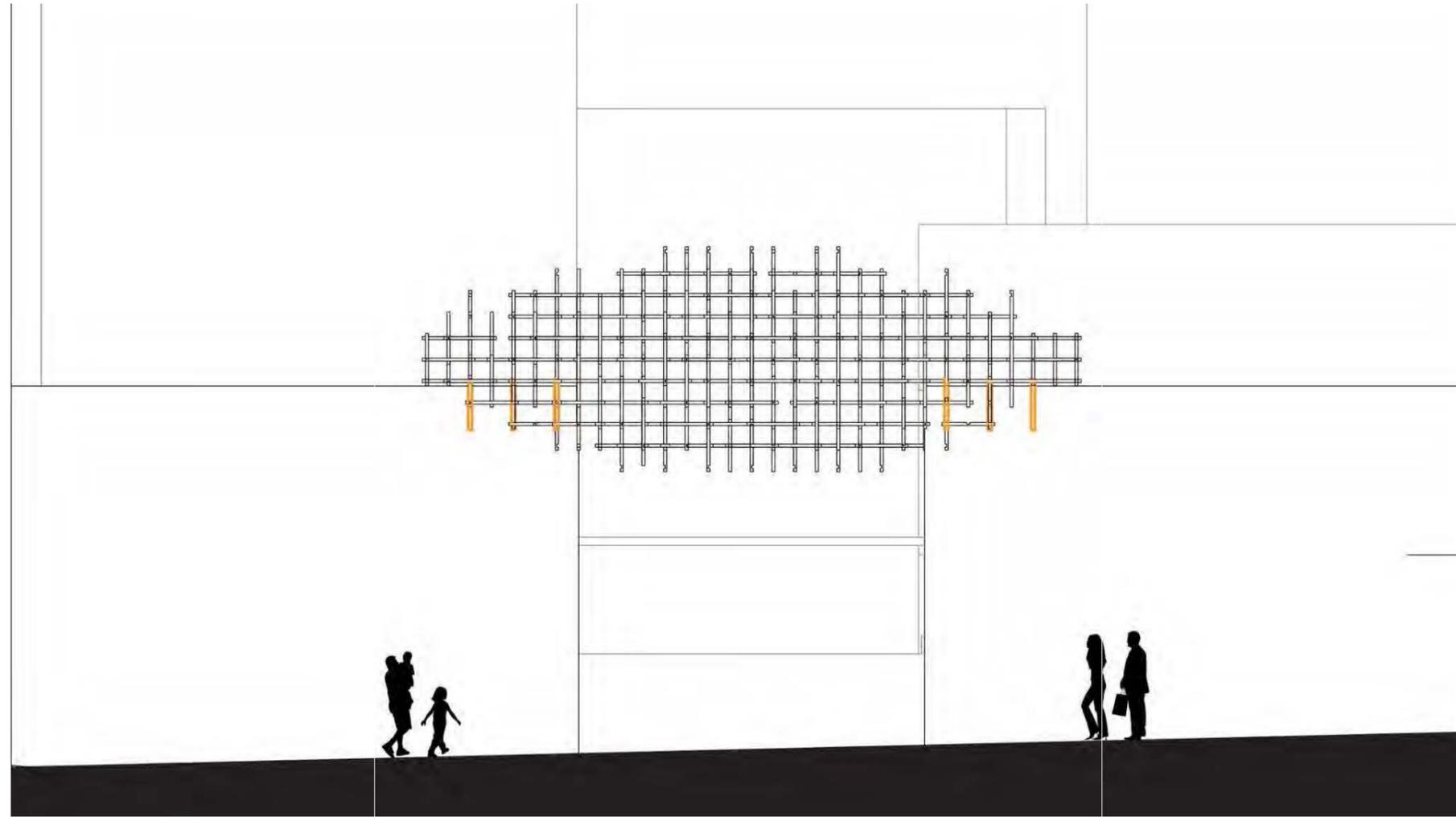


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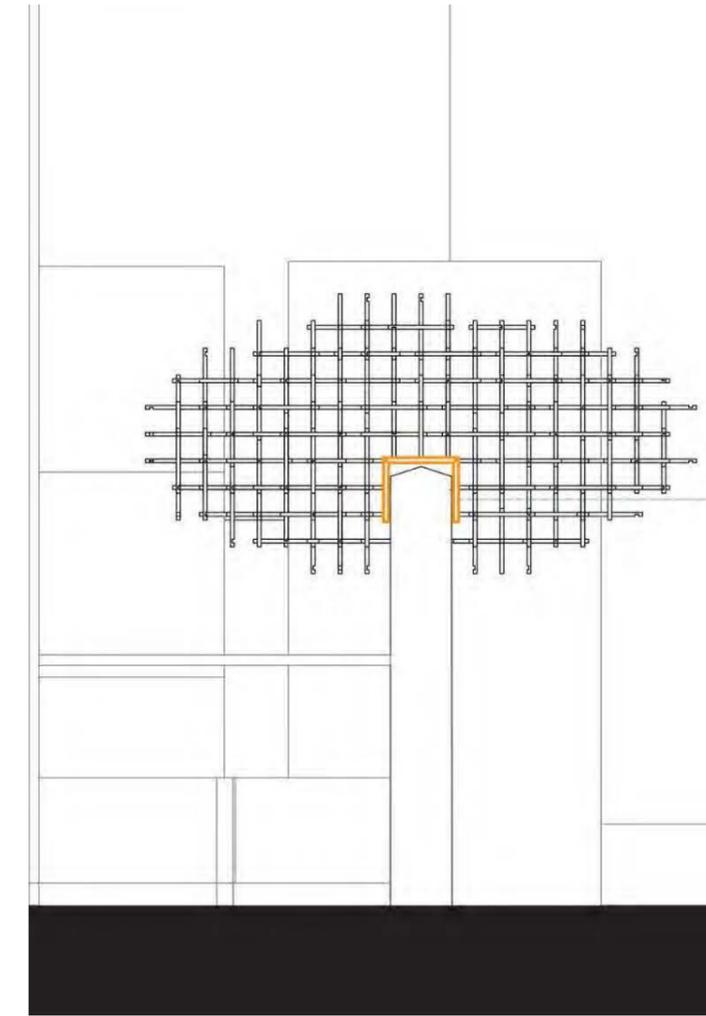
Construction Manual
EscolaEntença



Technical Drawings

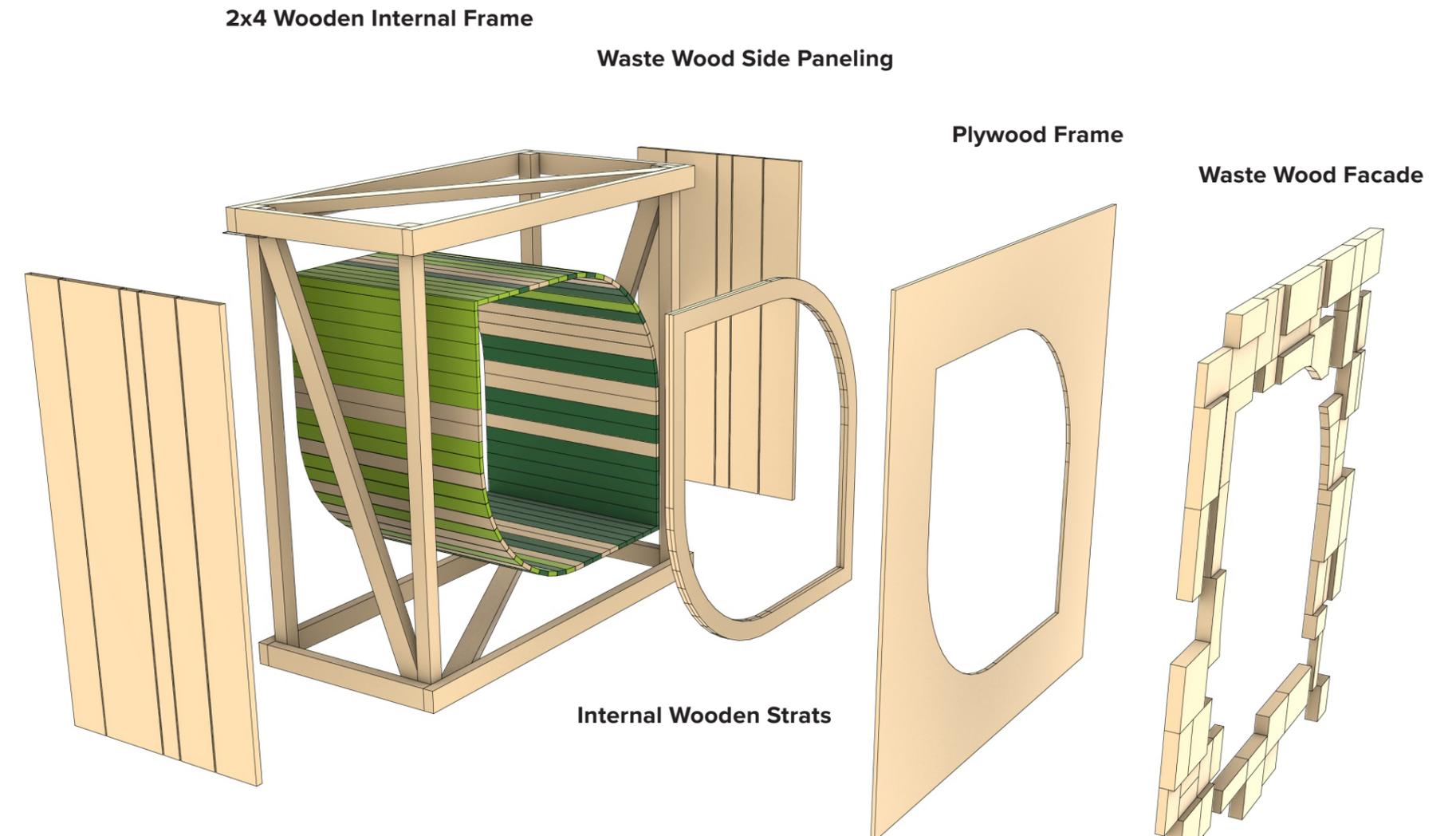
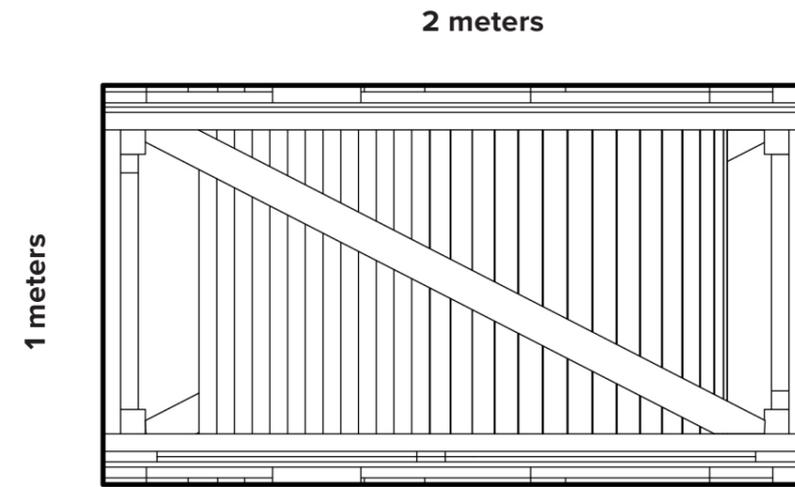
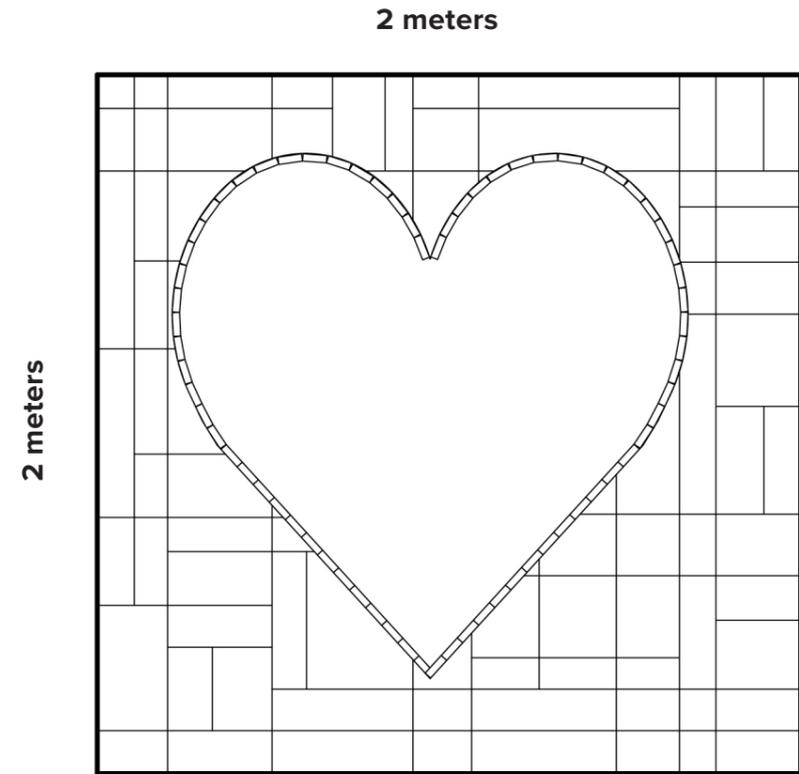


Entrance Elevation



Entrance Section

Technical Drawings



Technical Drawings

