

International Summer Workshop 2021

Modelmaking in the Digital Age

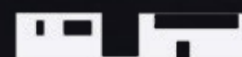
From automated production to sustainable craftsmanship



Workshop Booklet



Atelier La Juntana



Architecture Official College of Cantabria




Polytechnic University of Madrid



“Amidst the impermanence of pixelated production and digitally defined boundaries, the thought of physically committing ideas to materials without the option of an ‘undo’ button seemed unexpectedly daunting.”

Immy Harrison

Introduction	06
Atelier La Juntana Summer workshops 2021 Edition	
Surroundings & locally Sourced Circularity & Self-fabricated	11 15
Techniques and exercises	19
01. Carving a Tower	
02. Circular Design & Casting Materials	
03. Ceramic Tiles	
a. Terracota Clay & Gas Kiln	
b. Local Sourced Clay & Reclaimed Wood Kiln	
04. Hard Ground Engraving	
05. Photo Etching	
06. Aluminium Casting	
07. Screen printing	
Contextual Integration	57
Group Activiteis	63



“The visual interpretation of the surrounding nature focuses on textures and forms of rocks, brutally shaped by the powerful ocean.”

Agnieszka Popielak

Introduction

The workshop is located in a two-story house in the green fields surrounding Liencres. It is the family house of the tutors as well as the workshop of the father of the family. Around the building, there is a big garden where many of the workshop activities can take place.

During the workshop, participants are supported by three tutors, two architects and one artist. The tutors introduce the participants to the workshop equipment, techniques and materials available and assist each of them in the production of the models. They also aid with documentation (photography and animation) to provide a complete record of the workshop. Informal one-to-one tutorials for individual projects and the further exchange of ideas take place in parallel.



Daniel Gutiérrez Adán (Santander, 1955)

Daniel is an interdisciplinary artist whose work encompasses a broad conceptual and formal span, with his artistic origins grounded in the fields of ceramics and sculpture. For over 30 years of his artistic career, he has researched and innovated tirelessly in the territory of contemporary sculpture. His solid technical background is coupled with unrelenting curiosity and a steady and always-necessary inquisitive drive.

Besides his work as an artist, equally noteworthy is his intensive educational work, which he has developed in parallel with his art practice since his first steps as a professional. This activity has given him a chance to engage in constant dialogue with younger generations of artists.

His work is part of an extensive number of museums and collections, such as Moderner Kunst Stiftung Ludwig Vienna, Fine Arts Museum Bilbao, Fundación Marcelino Botín Santander, Art Context Mountrouge Paris, New Europa Supranational Art Milan, ARCO `01 Open Spaces Madrid, Basel Art Fair Switzerland, Jacques Hachuel Collection Madrid and Runnymede Sculpture Form, Los Angeles.



Armor Gutierrez Rivas (Oviedo, 1984)

Armor graduated as an architect from the Polytechnic University of Madrid School of Architecture in 2009. He spent part of his studies abroad at École Nationale Supérieure d'Architecture de Paris La Villette. As a member of the Architecture Official College of Cantabria since 2010, he has been actively participating in several architectural workshops with architects such as Elia Zenghelis, Carme Pinos and Mathias Klotz, alongside artistic collaborations with Andrés Jaque, Uriel Fogue and Chema Madoz.

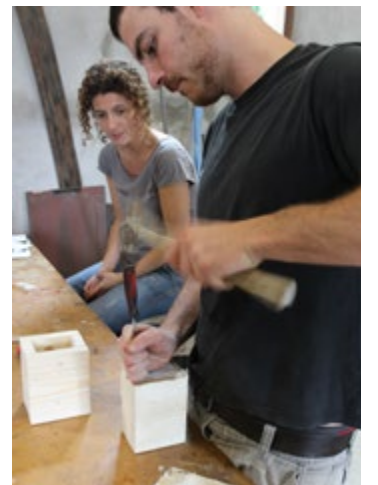
Armor received a Leonardo grant and joined Bjarke Ingels Group in Copenhagen, actively collaborating in the Expo 2010 Shanghai in China. In 2012, he started a collaboration with MVRDV in Rotterdam, working as a Project Architect and BIM Coordinator; he later developed a number of architectural models for MVRDV. His work has been awarded several prizes worldwide, such as the Montenegrin Pavilion for the 2018 Architecture Exhibition Venice Biennale, the 2018 and 2019 London Festival of Architecture, the Gaudi Competition for Sustainable Architecture in 2010, Fundamentos de Arquitectura in 2008, Catedra Blanca ETSAM in 2004 and the International Art Contest Pancho Cossio in 2002, among others. Since 2017 he runs a Master of Architecture Design Unit in the University of East London.

Nertos Gutierrez Rivas (Santander, 1989)

Nertos graduated as an Architect from the Polytechnic University of Madrid School of Architecture in 2015. He spent part of his studies abroad at Technical University Vienna, where he specialised in graphic design and video production. He continues his education, collaborating on several workshops with Campo Baeza, Tuñón y Mansilla and Chema Madoz. Over the last three years, he has participated at IFAC (International Festival of Art and Construction) as a Photography and Video Tutor. In 2013,

Nertos worked in partnership with Renzo Piano and Fundacion Botin on the exhibition Creating Future at the Botin Center, where he explained the future development of Santander city to blind people through tactile models. In 2020 he joins Herzog and DeMeuron offices in Berlin.

His work has been awarded several prizes worldwide, such as at the Isover Competition 2013, the Gaudi Competition for Sustainable Architecture in 2010, and the International Art Contest Pancho Cossio in 2006, among others.



64 participants
23 nationalities
12 backgrounds

“To ask ourselves how things are done, how we can do them and to broaden the spectrum when it comes to representing our ideas, for all these, I want to warmly thank Armor, Nertos and Daniel; for giving us the opportunity to enter their workshop and have all these unique experiences from first hand. I take with me an incredible memory, not only because of what I learned but also because of the warmth and familiarity of the environment in which we had been working. From the heart, an incredible experience.”

Paula Jordán García



“Peace
Blue horizon
And a bit of gray
Cantabrian breeze
Shorts and sweatshirt
The rest is green ”

Lucía Mendoza García-Ochoa

Surroundings & locally sourced

The workshop takes advantage of its unique location at the centre of Dunas de Liencres Natural Park, the largest protected natural area on the north coast of Spain. A mix of green and blue landscapes, it has five different beaches located within walking distance of the Workshop: Somocuevas, Valdearenas, Canallave, La Arnía and El Madero. The River Pas estuary, the Liencres Pine Tree forest, the Quebrada Coast area and the Picota Hill area are also located within the Natural Park, all within walking distance.

These unique surroundings provide unique opportunities to explore locally sourced materials. During the first days of the workshop, we explore the local littoral to identify areas for collection of local seaweed to be used for our casting exercises. As an introduction to the ceramic exercises, participants learn how to identify areas for suitable clay extraction in a stream located in the forest adjacent to the workshop.

These sourcing experiences unfold a variety of opportunities for participants to explore other local resources with making potential.



red algae

clay



The ‘Costa Quebrada’ geological and natural park is home to ‘Caloca’, a red algae seaweed used in cosmetic and food industries. During the workshop, we collect red algae from the local beaches and explore the possibilities of this abundant natural resource as a carbon negative binder and filler for our castings, and as a potential construction material.

This produces beautiful and inspiring results and opens paths towards sustainable making and carbon negative construction systems.





Circularity & Self-fabricated

Minimising waste and enhancing circular economy methods are key topics in our making agenda. During the workshop, participants are made aware of the importance of materials, tools and time optimisation, and of the relevance of incorporating reclaimed resources and by-products into making, creating more sustainable processes. In every edition we explore new opportunities, including reclaimed coffee, tea leaves and bottle corks from the workshop kitchen to be used as binders and fillers for our casting exercises, or aluminium windows cut-outs from local curtain wall industries to be used for our metal casting exercise.

The workshop processes and by-products play a key role in this exploration, reusing wood and metal dust as resin fillers or reclaiming dated silicone moulds to be milled and mixed with new silicone, reducing significantly the amount of materials needed.

Majority of the tools and machines required to conduct the exercises have been designed and manufactured in the workshop. As part of the exercises, participants are encouraged to understand the entire making processes and explore self-fabrication opportunities.



reclaimed wood chips

coffee waste



“During the workshop, we had the opportunity to experiment with different techniques, learn through our designs and explore new ways of modeling in a dynamic, yet fun environment of camaraderie.”

Paula Jordán García

Techniques and exercises

“Overall I was very happy how the workshop turned out. Especially everyone that joined really made it worth the trip; not only the new techniques and processes that we learned but also the friendships that we made during our stay.”

Luka Bernik



Carving a tower

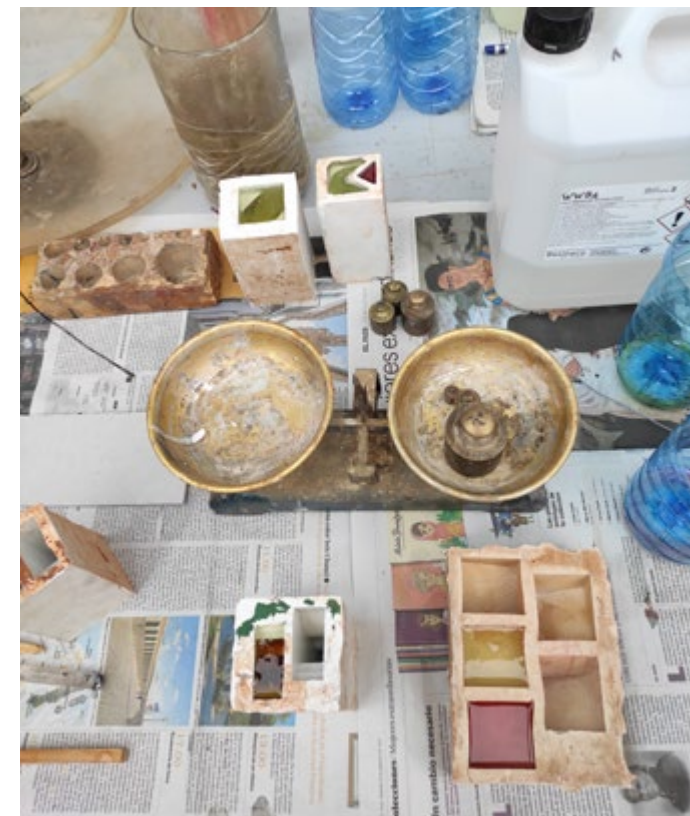
Mini Brief

Taking advantage of the flexibility of woodworking, this exercise serves as a great induction to the variety of the workshop equipment. Using a solid wood block as a base, the student will develop an architectural idea, with geometry and texture playing a key role. Students are encouraged to use different woodworking techniques such as carving, bush hammering, cutting, sanding, subdivision and deconstruction.

At the end of the activity, each unique creation is replicated by means of silicone moulds, as a transition to the next exercise.

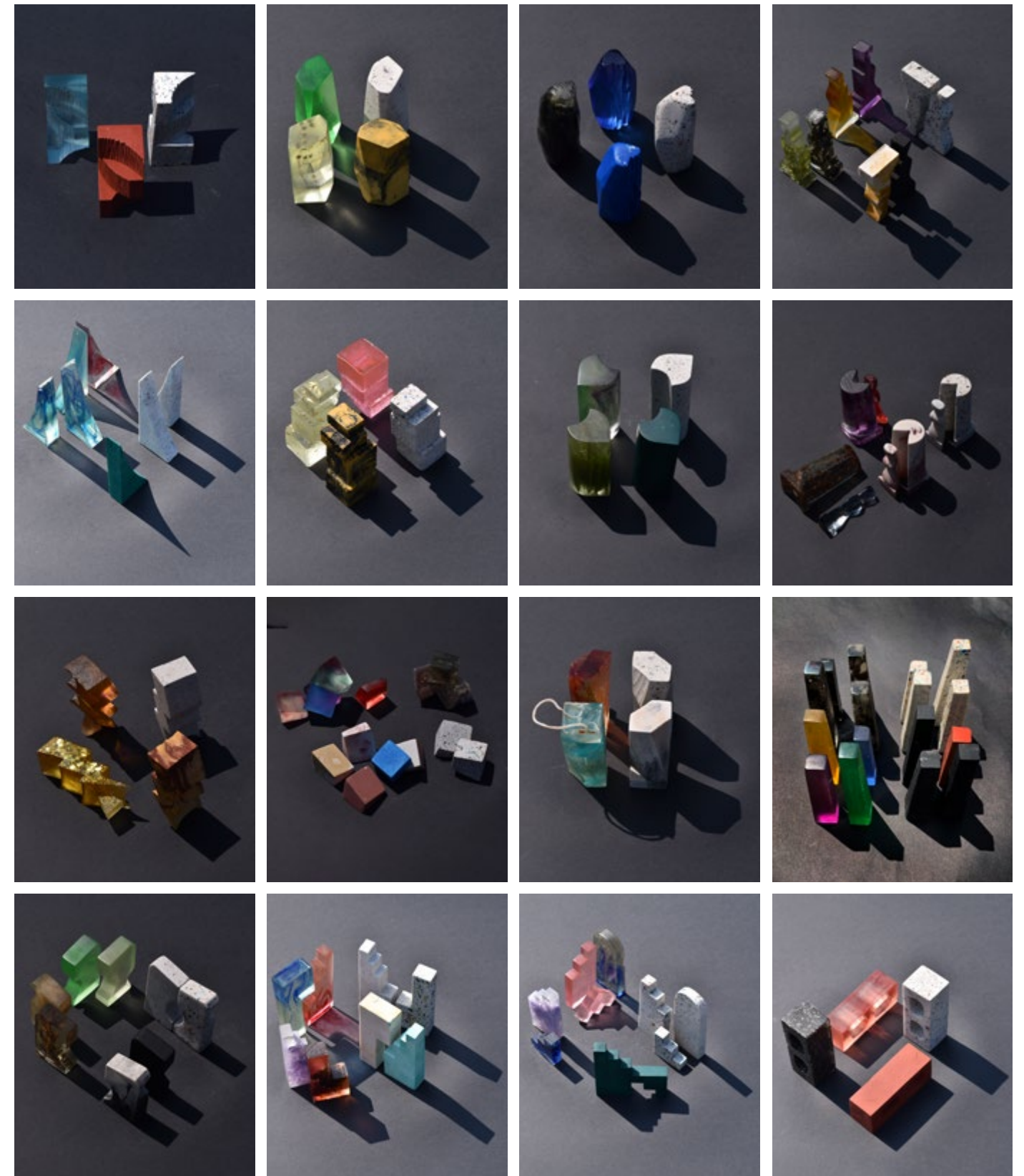
Process, Materials and Tools

The base material is wood, and the equipment includes woodworking tools such as laser cutter, wood carving duplicator, carpentry table saw, circular sander, hammer, chisels, drills and sand paper.



“Overall I was very pleasantly surprised by the experience of the whole workshop during covid. Mostly I was surprised by the different nationalities, the different workflows and their results. I think it was a very valuable experience not only from the technical aspect but in total.”

Nikolaj Srdic Kranjc



Mini Brief

This exercise is a continuation of the carpentry and wood workshop. It explores the use of silicone moulds to replicate objects, materials and textures. Using a one-piece flexible silicone mould, the student reproduces a master—in this case, the architectural creation from the first exercise. Further applications and good practice on silicon moulds will also be studied as part of the exercise, including the use of reclaimed fillers to be added to the casting materials.

Process, Materials and Tools

The process involves covering the object we want to reproduce with a flexible, yet resistant, material, creating the negative volume of the object: the so-called mould. Wooden containing walls are set up to enclose each volume. Silicone is then poured around the master and casted creating the mould. This technique allows us to replicate every detail and texture in a precise and efficient way as many times as necessary.





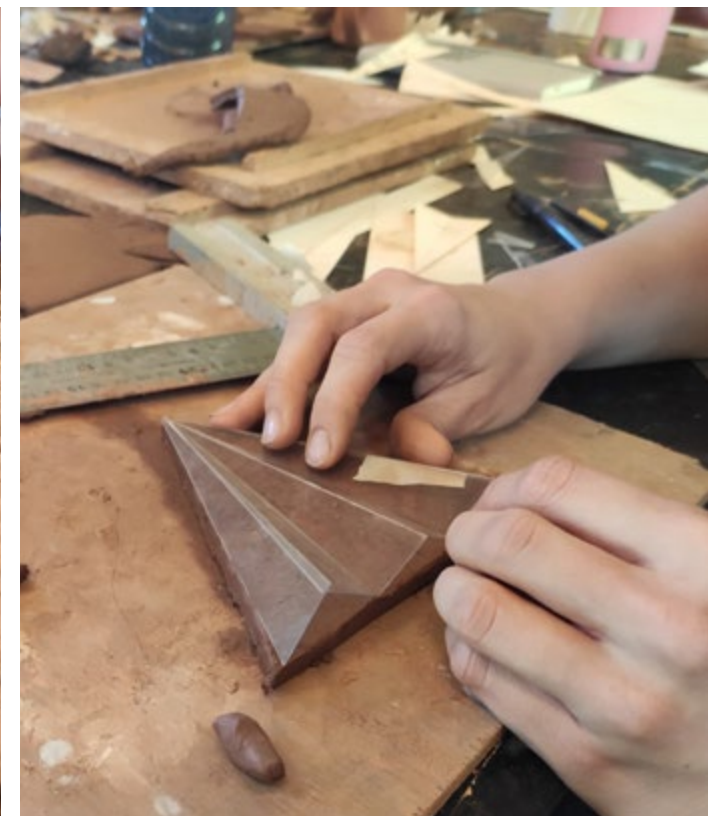
Ceramic polyphonia

Mini Brief

Ceramic is one the most versatile and universal constructing elements, combining tradition and cutting edge design. In this exercise, participants design a ceramic façade prototype. Several options will be available while working with clay: plaster casting, slip casting and a potter's wheel, or a combination of techniques. The students will experiment with different types of clay, glazing finish, texture and kiln temperature, creating a collection of samples for each façade prototype.

Process, Materials and Tools

Materials include plaster moulds, clay (terracotta, earthenware, porcelain), glazing and mineral pigments, and a gas fed ceramic kiln.

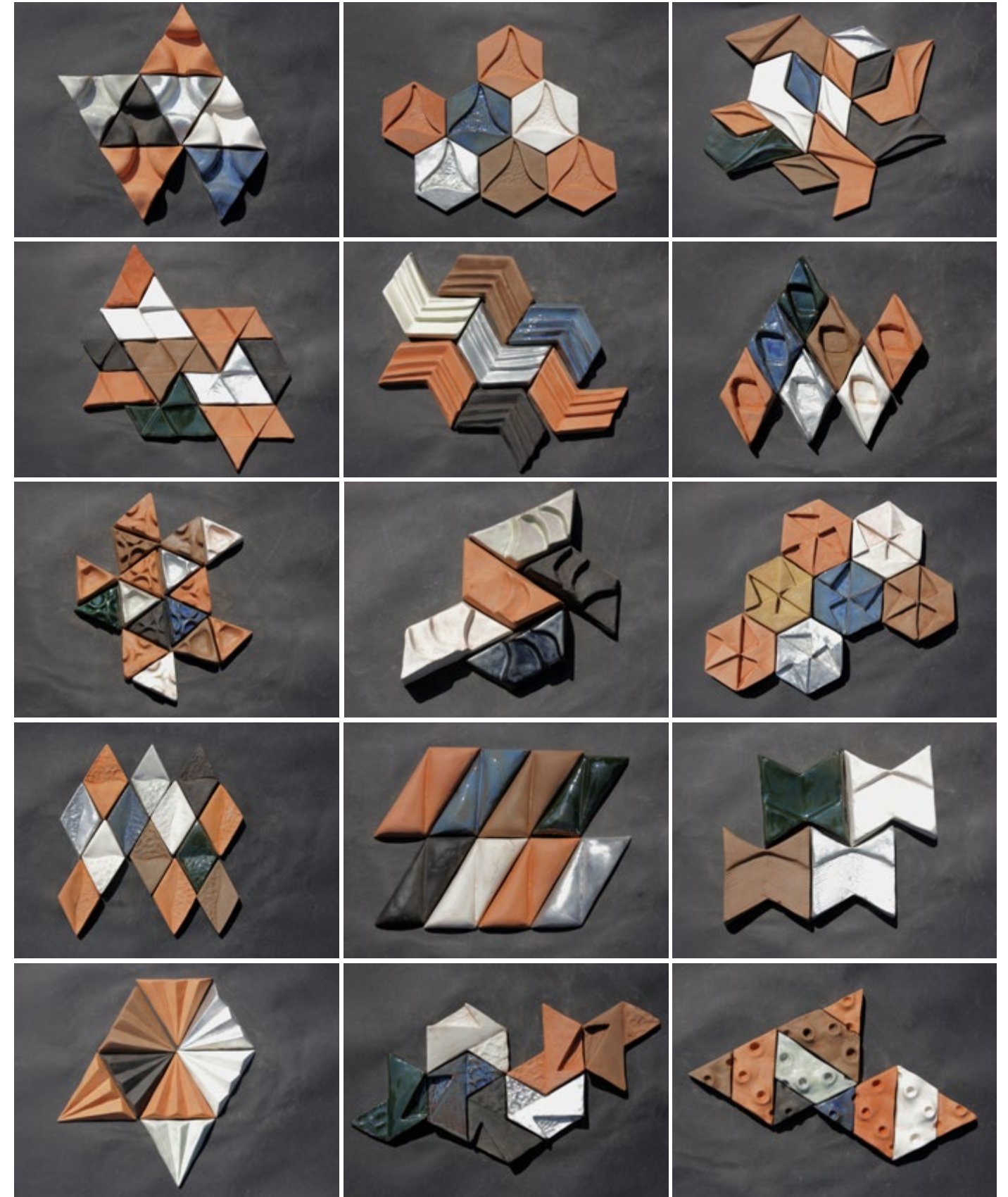


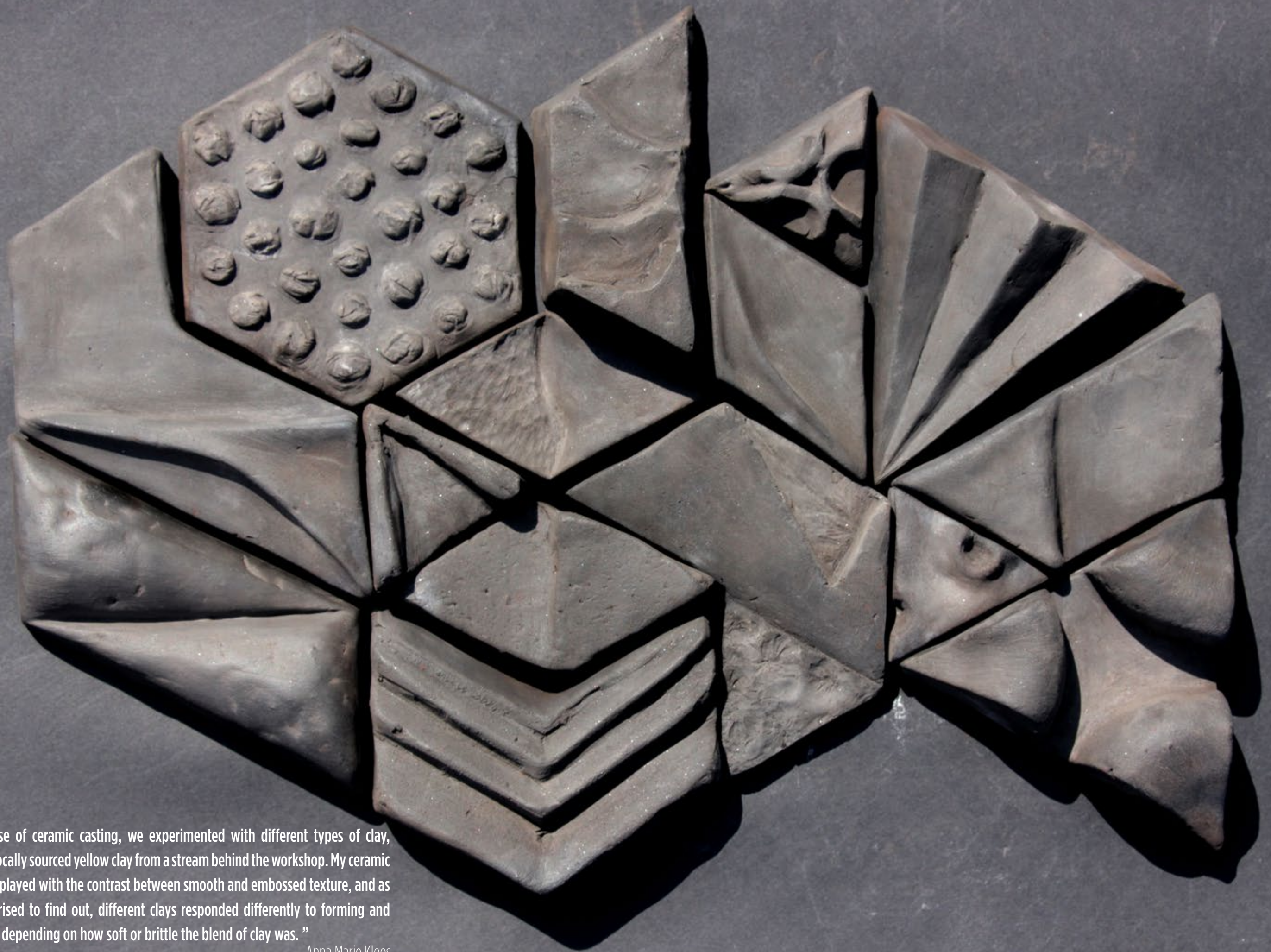


“It is worth noting the dedication of the Masters, who in a very short time managed to make us understand, in a very simple and fast way, complicated and traditional techniques. At the same time, it was very special that many of the machines have been built by hand with everyday materials.

All this has contributed to bring these techniques even closer to us, has allowed us to see things with different eyes and to enable us to see beyond what is industrialized; to appreciate popular techniques and the beauty of craftsmanship which, in a way, carries a bit of the soul of the one who has created it.”

Paula Jordán García





“In the case of ceramic casting, we experimented with different types of clay, including locally sourced yellow clay from a stream behind the workshop. My ceramic tile design played with the contrast between smooth and embossed texture, and as I was surprised to find out, different clays responded differently to forming and embossing depending on how soft or brittle the blend of clay was.”

Anna Marie Kloos

Mini Brief

Building on the previous ceramic exercise, participants are challenged to explore the possibilities of locally sourced clay. Participants learn how to identify areas for suitable clay extraction in a stream located in the forest adjacent to the workshop, extract the clay and prepare the mix to create copies using the plaster moulds from the ceramic exercise. After drying the clay for few days, a wood dust kiln is prepared, using reclaimed dust from the wood workshop. The tiles stay in the kiln for 24 hours of slow burning and get a distinct black colour due to the smoke release during the process.

Process, Materials and Tools

Materials include plaster moulds, locally sourced clay and reclaimed wood dust.



“During the shading, drawing tiny lines tightly lined up next to each other, listening to some music, I felt really calm, I got lost in reverie.”

Hédi Müller



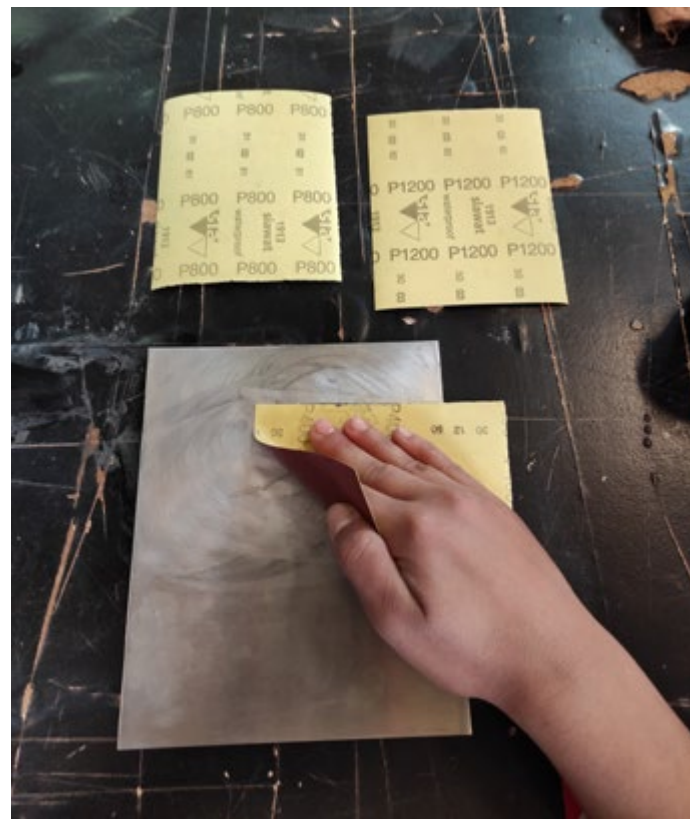
Hard ground engraving

Mini Brief

This exercise explores hard ground engraving as a technique to transfer designs onto metal surfaces, as a reinterpretation of traditional engraving plates. Each participant draws a design by hand directly upon the surface, which has previously been coated with the hard ground emulsion. The designs aim to relate the tower from the first day exercise with the unique landscape surrounding the workshop.

Process, Materials and Tools

A hard ground coating layer is applied to the zinc plate to protect it from the action of the mordant used in etching. The hard ground is typically drawn through with carving and drawing tools. Traditionally, the hard ground yields a pen-like line associated with etchings. The longer the hard ground plate is exposed to the acid, the deeper and wider the line becomes.





Cyanotype etching

Mini Brief

This exercise explores the possibilities of cyanotypes and acid etching to transfer plans and drawings onto different materials and surfaces, so they can be used as site plans, model bases or tactile maps. Each participant etches a metal plate with a given design, controlling the precision and depth of the carving.

Process, Materials and Tools

The cyanotype process uses one of the earliest photographic processes, invented by the scientist Sir John Herschel in 1842, and used by pioneering photographer Anna Atkins in the first published book to include photographic images.

The process starts by coating the metal surface with a UV-sensitive product, to which an acetate layer with the design printed in black and white is applied. Exposure to UV light will create a mask on the plate that shields the printed area, which is therefore protected during the etching process. The unshielded parts get carved by acid; the depth of the mark is controlled by the acid exposure time.





“Making a tile out of reclaimed aluminum frames melted just on-site, that was extraordinary!”

Angeliki Chantzopoulou

Aluminium casting



“From the same design of tiles we also made a cast of aluminium- this requires a longer process of preparing sand moulds that would allow the liquid aluminium to flow between into the mould, from tile to tile, and back out the mould- the most fascinating part about this was the hand-fashioned aluminium kiln that allowed me to thoroughly understand the process in detail.”

Anna Marie Kloos

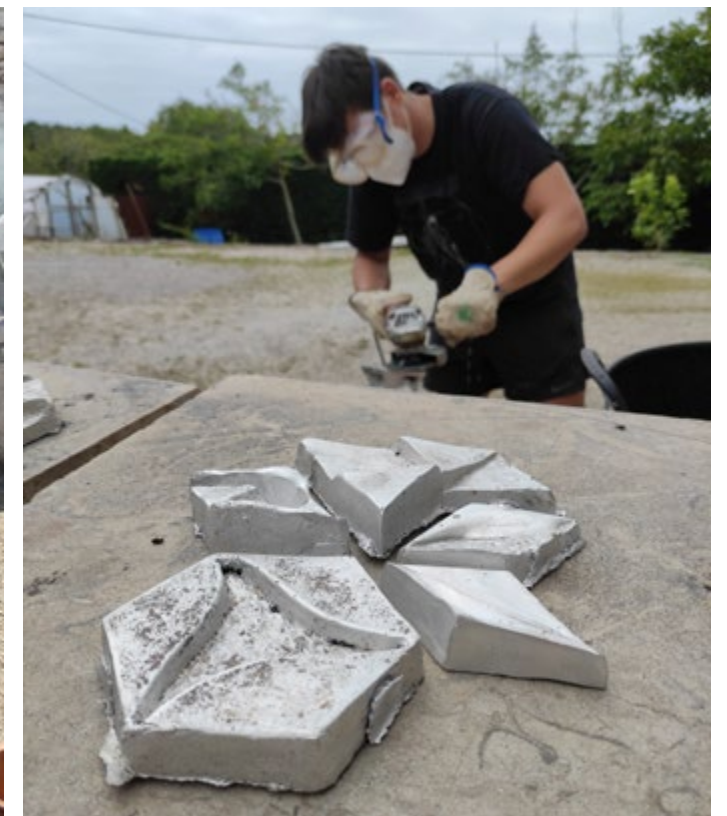


Mini Brief

This exercise investigates the potential of sand casting to reproduce an idea onto a metal working prototype. Using the ceramic design as a master, each participant replicates the design on aluminium, learning the technique and the setting up of the kiln. The exercise provides an understanding of the different finishes of aluminium (PPC vs anodizing) and their implications of these finishes on recycling the material. The kiln uses reclaimed kitchen oil as fuel and reclaimed aluminium from windows off-cuts as material.

Process, Materials and Tools

Materials include the master ceramic piece to be reproduced, a mix of sand, water and bentonite, the wooden box which helps us in creating the sand mould, and the aluminium casting foundry. The kiln is heated to 660 degrees to melt the aluminium, which will be poured into the sand mould, taking the shape of the original object.





Screen printing

Mini Brief

To better understand the process behind silk and screen printing, participants engage on the design of a silk screen inspired by the workshop experience which is then transferred into any textile base.

Process, Materials and Tools

This technique uses a similar cyanotype process as described in the photo etching exercise, but in this case the photo emulsion is developed with water. The process starts by coating the screen surface with a UV-sensitive product, to which an acetate layer with the design printed in black and white is applied. Exposure to UV light creates a mask on the screen that shields the printed area, which is therefore protected during the developing process. The unshielded parts get exposed by water and allow the ink to get through and transfer the design.



“Textures, a very important element in this location, define the design of the t-shirts, outlined in a set of 9 circles that reinterpret textures such as water, leaves, stones, sand and even rain.”

Paula Jordán García



“I believe that the exercise of including textures, materiality and using different hand-making methods into the design process always adds value and more diverse possibilities to your design. It also allows you to connect and understand better the context where you are working on.

That’s why the model making tool is so powerful and important in the design practice.”

Paula Gonzalez

“My Tower represents my life’s work, tumbling down, but from the Tower, leaning forward, still running, comes out a figure, offering endless possibility. I am offered The World.”

Joel Pantaleon

Contextual integration



Idom



I wanted to create a simple, unambiguous design, which is still aesthetically pleasing. I created pieces from different materials, but the design concept connects all of them. It's easy to play with the pieces by putting them in different positions. Creating this shape was a fast and clear process: I just made 2 triangle-shaped wooden pieces by cutting diagonally the tower that was given. Afterwards, I just needed to create the arc with a cylindrical-shaped machine.

My zinc plate drawing was connected with the tower in an obvious, upfront way. I imagined my tower on a different scale and I placed it in the surroundings I have experienced during the workshop, in a surrealistic way. I tried to test different engraving techniques which I practiced a little with a pencil in my sketchbook.

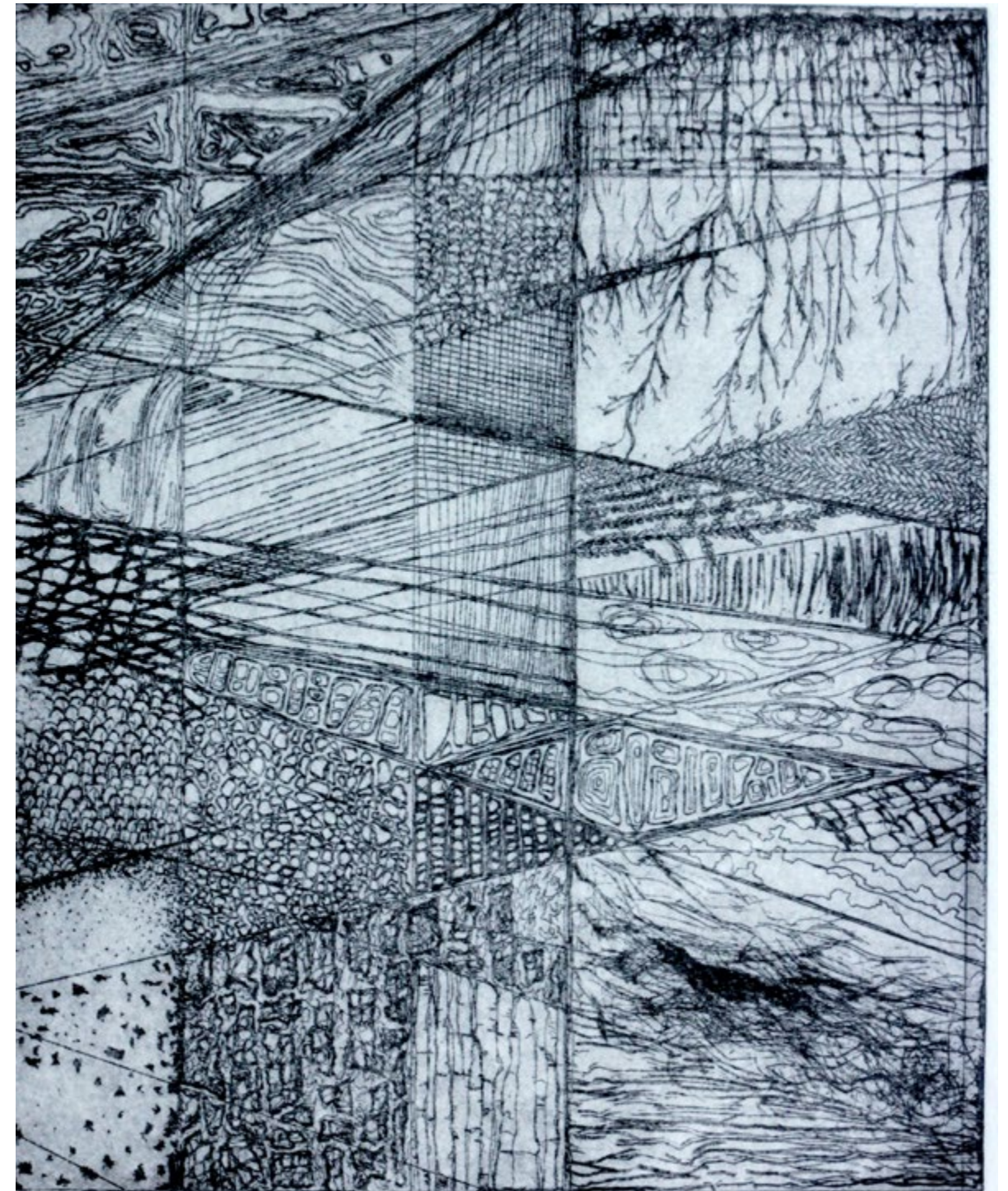
During the shading, drawing tiny lines tightly lined up next to each other, listening to some music, I felt really calm, I got lost in reverie.



Straight five



Peace
 Blue horizon
 And a bit of gray
 Cantabrian breeze
 Shorts and sweatshirt
 The rest is green
 Hierba
 Scrap stone
 Family picture
 Daniel is already doing something
 He always is
 Good morning to all
 Listen to him
 Armor gives me someone's cast
 Who could he be and why would he have done it this way
 A little bit geometric for me
 I draw his tower
 Its geometries are my guides
 To engrave with a needle the textures of La Juntana
 My stomach asks me to look at the time
 Nertos, can I help?
 13:59
 Bell
 Tupper up to the top
 Marivi takes advantage of the sunbeam to dry clothes
 I eat while I ask about their lives
 Some already draw their proposals
 Same premise infinity of solutions
 Why?
 What do we, each of us, have to reach them
 Take the plunge says Daniel
 Trust
 We choose our place
 Maybe I'm going to the beach, maybe I'm not
 My body asks me to stay
 I think this place gets me
 Connected
 And I keep scratching the hard varnish
 I'm the one who wants to
 I'm the one who enjoys doing it
 I'm the one who chose to come here
 I'm the one who decides how much to soak
 I'm the one who is
 Here
 And without realizing it's over
 Just a little more of sanding
 And some new limbs, please



“It was priceless to be able to work with your hands in such an inspiring place and with inspiring people surrounded by this beautiful landscape.”

Paula Gonzalez

