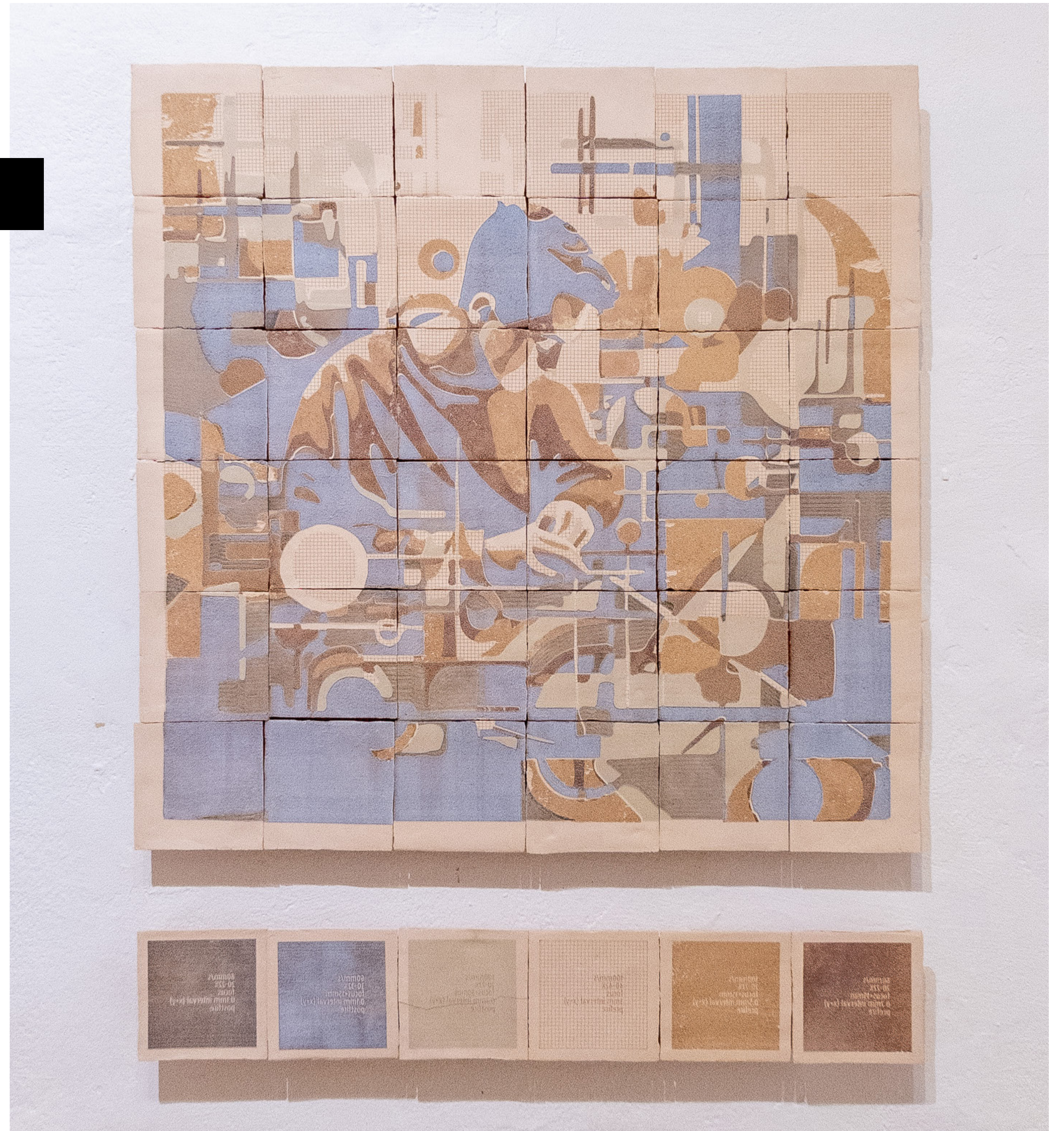


THE CRAFT OF CRAFTING

an exploration of Digital Craftsmanship

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Young adult operating a soldering iron
64x64cm
Laser etching on SM0.5

ABSTRACT

The works in this document are the product of my thesis for Bezalal Academy's MDes program in Industrial Design. For my research I explored the measure of continuity between traditional and novel digital crafts. The main question of my research was: **Is it possible to design and fabricate items within digital means, such that they are then evaluated in a way that is similiar to the evaluation of items created by pre-digital processes?**

In order to test this query I focused on **the intersection of ceramic materials and the technology of laser etching**. Not only does this intersection result in interesting products from a design perspective, it also intuitively represents the intersection of the old

craft world and the new. On the one hand, ceramic crafts are some of the most ancient known to man; ceramic material itself has changed very little throughout history, and contemporary ceramic techniques still rely heavily on pre-industrial technology. On the other hand, laser etching is only several decades old, wherein only in recent years has it become available to the vast public.

Within the framework of this research I **developed a means to glaze ceramic material in a selective manner**. Specifically, I discovered that the power of the laser etching machine is such that it can turn the ceramic material itself - which organically contains the necessary materials - into a glaze. To reach this development I was

required to understand the physical processes that occur during the firing of ceramic materials, the characteristics of different ceramic materials, as well as the means in which a laser etching machine operates.

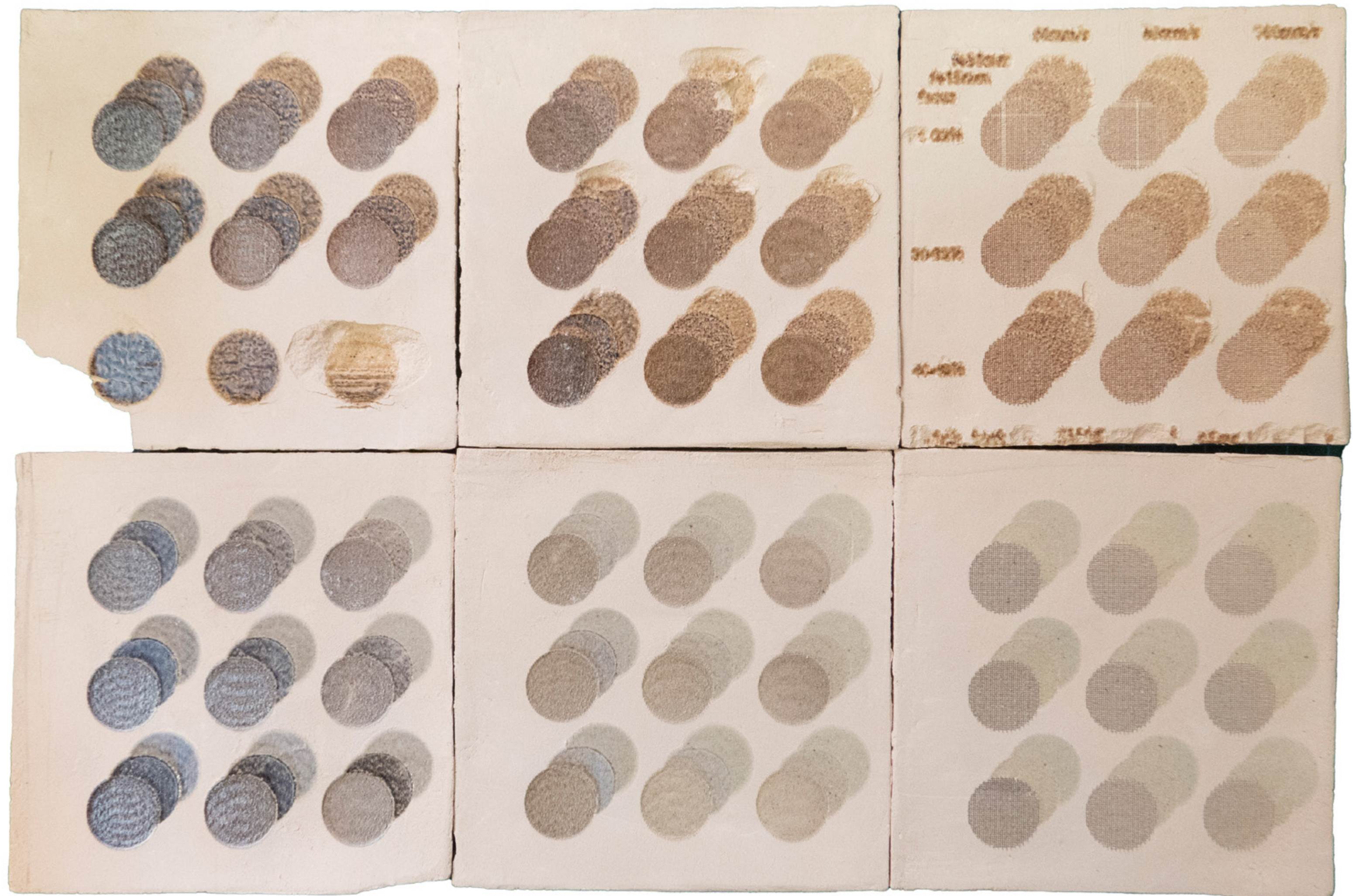
Ultimately, **observing the process of development afforded insight into the evaluation of digital craftsmanship and the association of this evaluation to that of the craft practices of the old world**. This association manifests itself in several issues key to the understanding of craft, such as: labour and the latency of production, the intimate relationship between a craftsperson and his materials, and the means in which a craftsperson applies the knowledge of his craft.

SM0.5 test plates

Each tile contains a matrix of different etching values across three parametrical axes: speed, power, and focus.

The comparison of the tiles represents a 4th axis, that of the density of the hatch of each circle.

Finally, the 2 rows are identical in their etching parameters, the difference being that the top row was etched pre-firing, while the bottom row was etched post bisque firing.



AZULEJO

Azulejo have been associated with the city of Lisbon since early modernity. They were introduced as early as the middle ages, but their status was cemented following the earthquake of 1755; after the destruction of the city the ceramics and tiling industry served as a convenient means of rapid reconstruction, and therefore was widely used. Ever since, the azulejo have been synonymous with the name Lisbon.

As these wall tiles historically communicate a cultural identity, I deemed it fit to use this medium to communicate the imagined identities of digital craftspeople. As traditional azulejo were used to display scenes of local industry, so do my wall tiles serve to tell the tale of my own creative environment. I used the Midjourney generative model to imagine depictions of digital labour, in a style that I preconceived.

The etching was done on tiles of SM0.5 and SM0.2. In each instance the tiles were etched all together, twice: pre- and post-firing. The etching values are represented under the image of the young adult operating a soldering iron. ▶





A woman operating a 3D printer
64x64cm
Laser etching on SM0.2



Yarden Amir
The Craft of Creating
The craft of creating
The craft of creating
The craft of creating

The project examines the relationship between traditional and contemporary crafts through the use of paper cutting as a creative medium. It is based on the idea that the traditional craft of paper cutting can be used to create contemporary art. The project is a collaboration between the artist and the curator, and it is a testament to the power of the craft of creating.

60mm x 100mm
20-22x
focus 150mm
0.2mm interval (x-y)
metric

100mm x 150mm
20-22x
focus 150mm
0.5mm interval (x-y)
metric

100mm x 150mm
20-22x
focus 150mm
0.5mm interval (x-y)
metric

100mm x 150mm
20-22x
focus 150mm
0.5mm interval (x-y)
metric

100mm x 150mm
20-22x
focus 150mm
0.5mm interval (x-y)
metric

Photo: Niv Vaknin

CHINA ISRAEL

While designing these porcelain dishes I chose to look at traditional linglong pottery and the popular symbolism that they communicate. I asked the question: What would linglong pottery look like if it tried to communicate local Israeli motifs? In response to this question I was drawn to the iconography of the biblical Seven Species, and of them specifically the ear of wheat as a symbol of prosperity.

Again, I used Midjourney to imagine what these porcelain wares would look like, and I etched these patterns with the laser, using cobalt pigment to accentuate some of the patterns. Because of the multitude of items in this collection, I opted to display the different stages of production by leaving some of the wares unpigmented or even unglazed.

I believe that the porcelain material itself, since its value is very much derived from the historically isoteric traditions that surround it, inherently transfers a sense of craftsmanship to most items made from it. Therefore you might be

able to encode the material with any message, and ultimately create an object that is evaluated as being 'handmade'. In this particular instance, I believe that if I had not stated the digital process behind these pieces, the value of the digital aspect of production would have gone completely unnoticed. ▶



Photo: Dor Kedmi



Saucer
14cm diameter
Laser etching on porcelain
(unglazed and unpigmented)



Plate
30 cm diameter
Laser etching on porcelain
(unglazed and unpigmented)





Soup dish
30cm diameter
Laser etching on porcelain,
cobalt (unglazed)





Photo: Niv Vaknin



Mugs (top)
8cm diameter x 10cm
Laser etching on porcelain,
cobalt, clear glaze

Teacup (bottom)
9cm diameter x 4cm
Laser etching on porcelain,
cobalt, clear glaze

UNTITLED

For me the most interesting characteristic of terracotta is the continuity and the ubiquitous nature of its use throughout human history. I wanted to celebrate this aspect of the material by designing a centerpiece, and it seemed wholly fitting to choose the household planter as the building block for this piece because of its iconic shape and immediate recognizability.

Because the piece seeks to convey a sense of craftsmanship, as I approached the design process I aspired to make something that is as visually appealing up close as it is far away, something that would draw the observer into a close, intimate relationship with it.

I used a parametric design process to plan the gradient nature of the statue, laser etched each individual planter, and set them in a vertical hierarchy with the darkest planter being at the bottom. This hierarchy serves as a juxtaposition between the material and the craft itself, seemingly elevating the terracotta above the technology used to decorate it. However, were the planters not crafted, this perceived elevation of the material would not exist. ▶





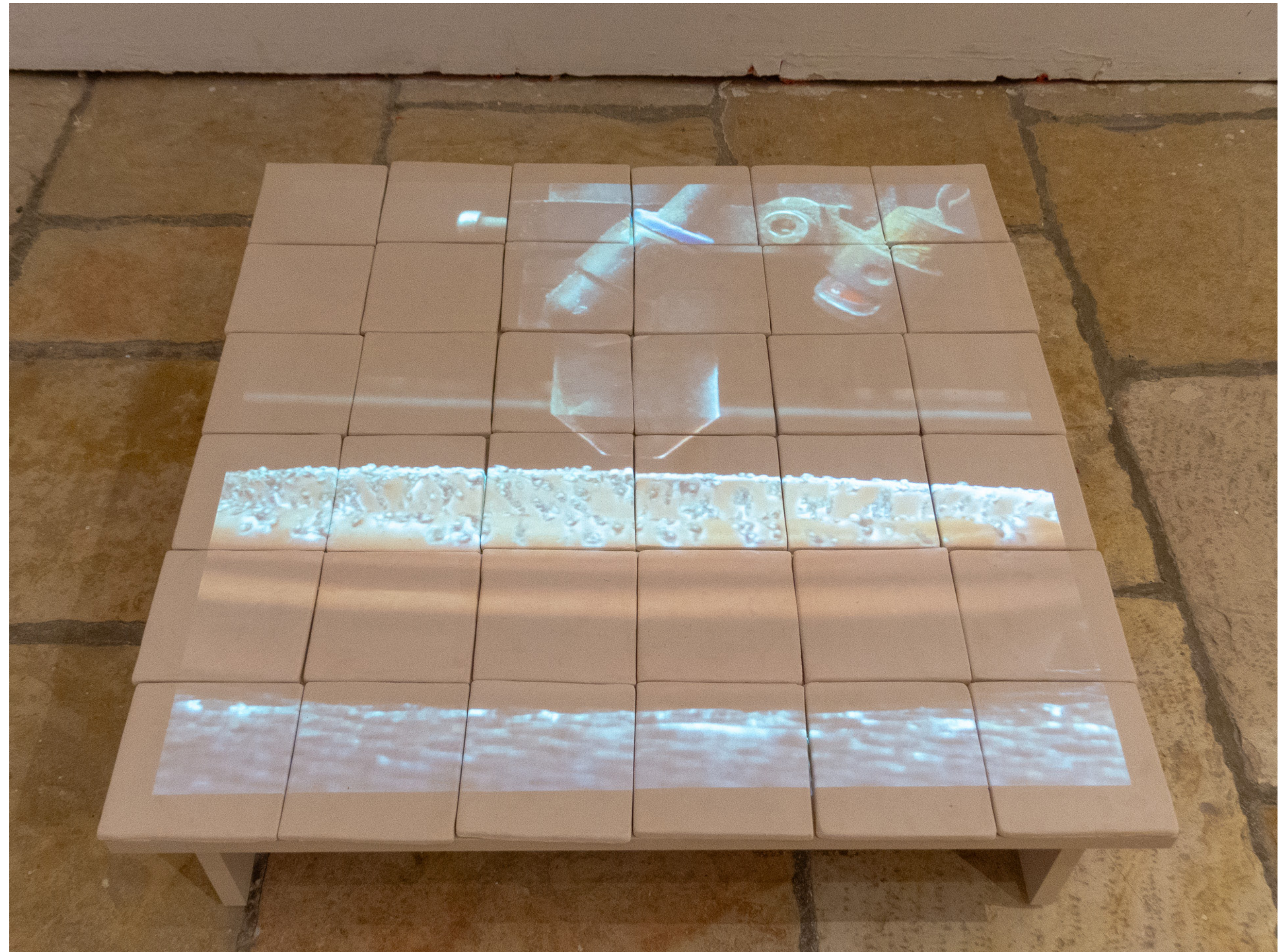
Photo: Dor Kedmi

VIDEO

As an appendix to the material pieces displayed in the exhibit, I also presented a video that displayed certain parts of the process that happens within the laser etching machine. The video is not meant to convey any real technical understanding of the process, but rather to expose the viewer to some of the graceful moments that come to life while using the laser.

The video was projected onto a tiled surface the size of the azulejo displayed next to it, in order to create a parallel between the projection of the video onto the floor and the 'projection' of the laser inside the machine itself.

[Link to Vimeo](#)





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