

**Mu<sup>2</sup>qarnas**

A Thirdspace Where Binaries Overlap.

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# 1 Muqarnas

مقرنص

## History has its charms

Muqarnas is a three-dimensional form whose visual function is the gradual transition between two levels, two sizes, two shapes, and two spaces. It is one of the most original inventions of Islamic architecture and continued to evolve over one thousand years. It adorned major buildings from the Alhambra in the west to Samarkanad in the east.

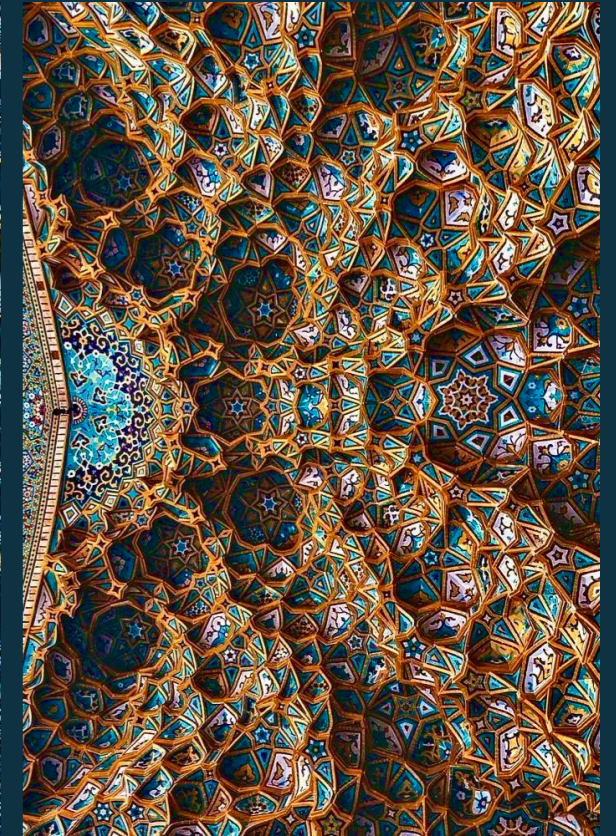
Muqarnas is an ornamental structure meaning it had both structural & aesthetical features. It can either be carved into the structure of a wall and ceiling, or it can be added on and hung purely as a decorative surface.



Arga, India



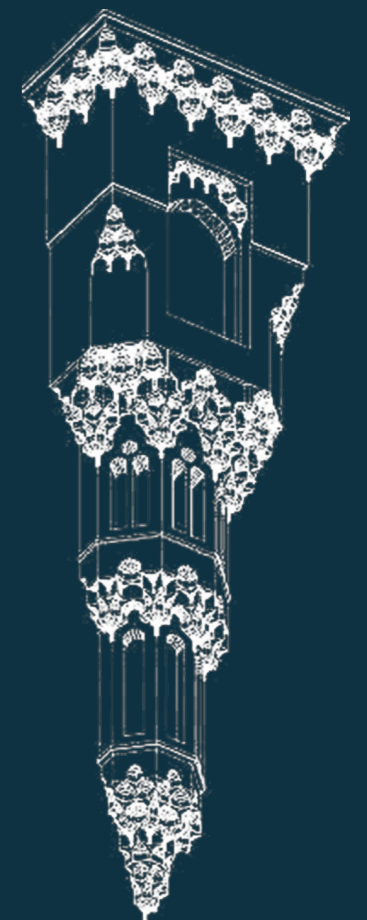
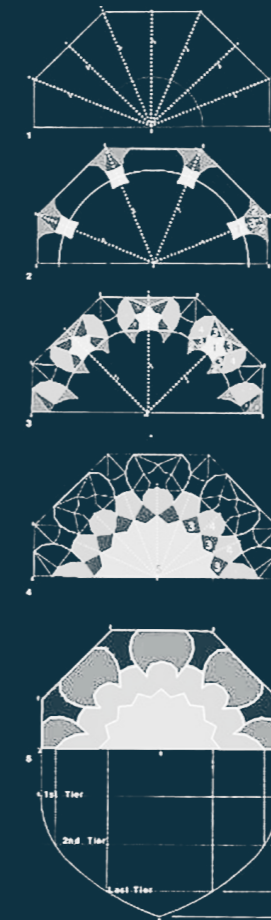
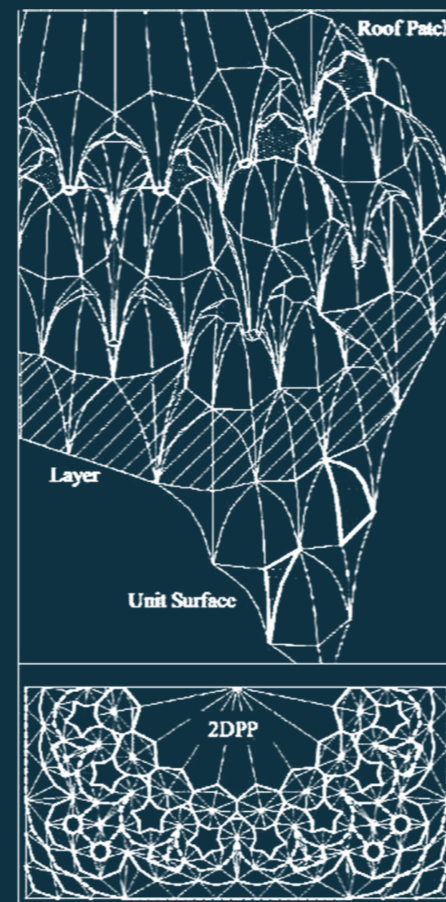
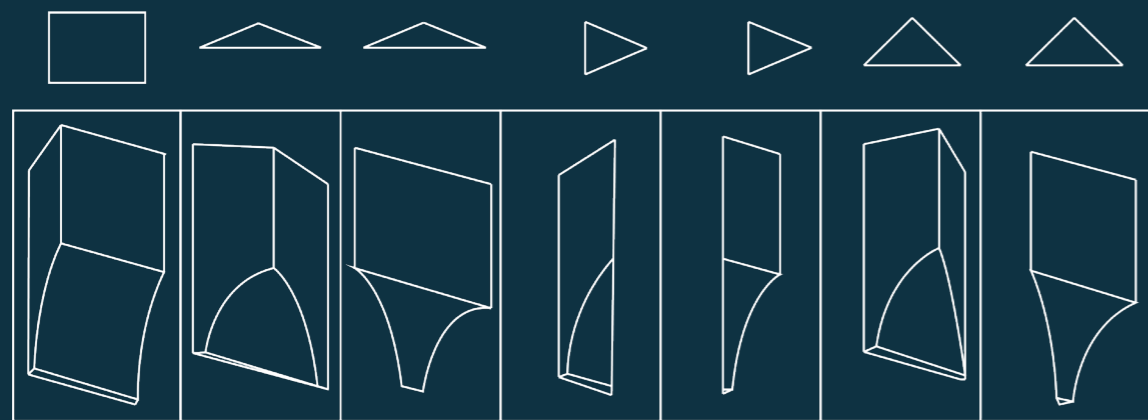
Imam Hussein, Iraq



Fatima Masumeh Shrine, Iran

## It all goes back to numbers

The complexity of the Muqarnas lies in two essential factors; the first being the variety of the units / modules used. Secondly, the algorithms that govern the curves the muqarnas sits on. Muqarnas was ignored gradually starting from the 18th century onward, but before that, it portrayed a complex process of evolution throughout time.



02

Mu<sup>2</sup>qarnas

مو مقر نص

## Mu<sup>2</sup>qarnas



## What

A methodology of reinterpreting and developing the traditional muqarnas form to accommodate the modernity of our times and the latest technologies, to design for shade and shadow and for the user experience.

The project proposes the design of an urban furniture inspired by the ideas behind the historical muqarnas only developing them to provide a new identity using natural materials, taking into consideration the sustainable needs of Jordan and manipulating light and shadow to create memorable experiences.

The methodology behind this proposal could also be applied on different scales (i.e. pavilion, or acoustical units).

## How

Using different materials with different properties for the modules each repeated along a shape using the algorithms used to produce Muqarnas in the hope to produce a minimal yet sophisticated form that performs the function of a public furniture. They all come together to form a functional bench open for the public to use and enjoy.

### *Leveraging Modularity*

Why build the whole thing and risk damage during shipping when we can ship the small modules and help the users to assemble them on their own?

### *Diversity*

It's important to involve the users in the final output, they choose the arrangement, the colors and maybe the whole function and form of the product.

The color scheme can change according to the seasons, layout, style, or to raise awareness of events such as breast cancer awareness month and many more.

## Why

The need to redefine public places in Jordan to be meaningful and interactive. Reconnecting with our roots and an open invitation to every artist, designer to rethink past accomplishments and take them one step further. Creating meaningful experiences through Shade and Shadow Manipulation.

The project aims at reinterpreting and developing the traditional muqarnas form to create a dialogue between:

- Old and the new.
- Perception and conception.
- Light and Shadow.
- Active and Passive.

## Business Model

### **Circular Design**

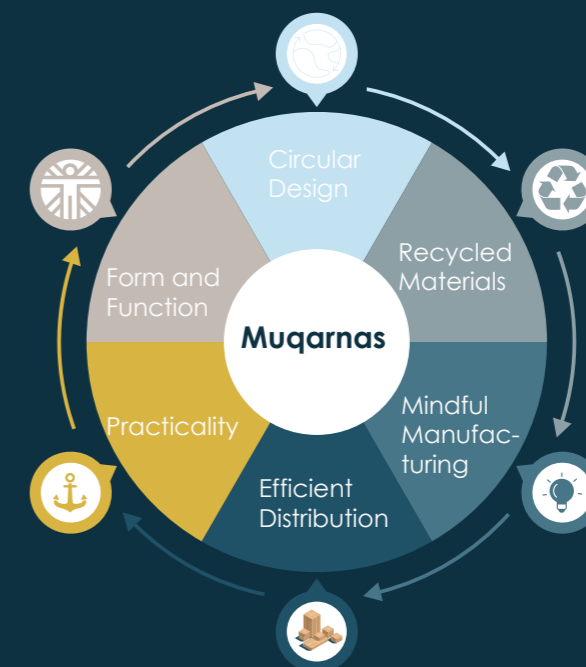
The design takes into consideration the different needs of different users and tries to be multifunctional and durable.

### **Recycled Materials**

Plastic is here with for hundreds of years, we might as well make use of it.

### **Mindful Manufacturing**

Minimal packaging design, minimal need for extra external parts, design for ease.



### **Efficient Distribution**

We ship the small modules and the final piece can be assembled on site. Less impact and safer trips.

### **Practicality**

We make products people need and are friendly and easy to use.

### **Form and Function**

Functional doesn't have to be ugly! we take both beauty and utility into consideration.

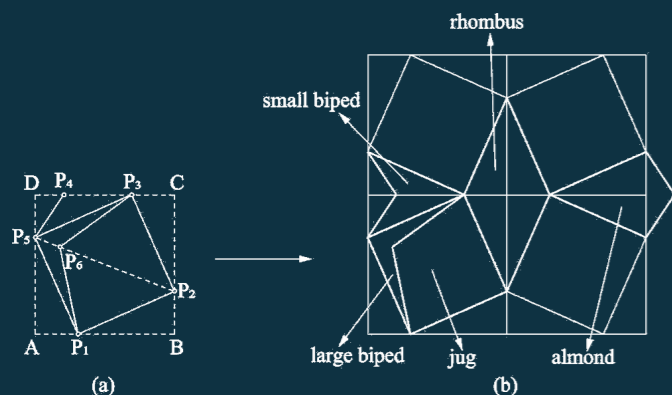
OS

Digital

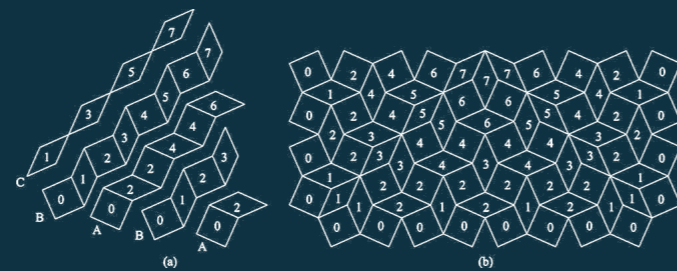
رقمہ

# 2D Pattern Plans

## References

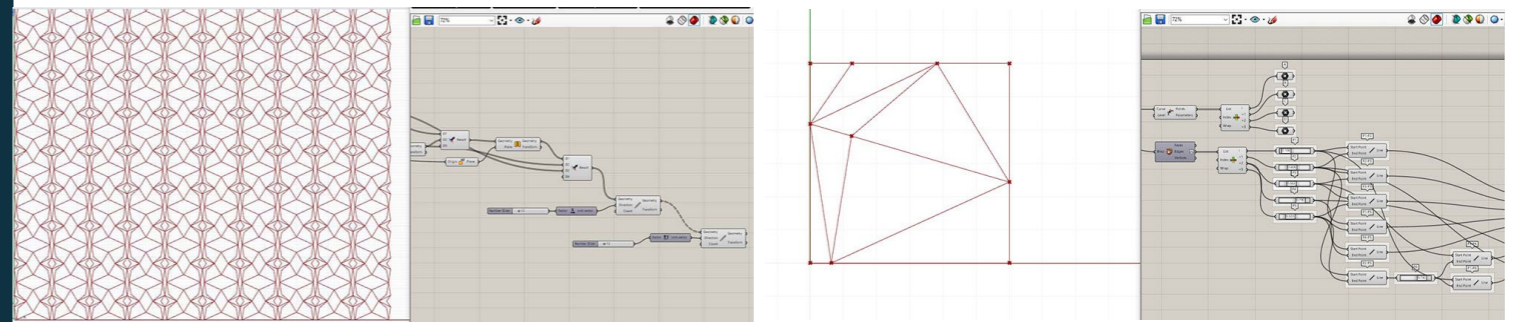


(Dinçer & Yazar, 2021)

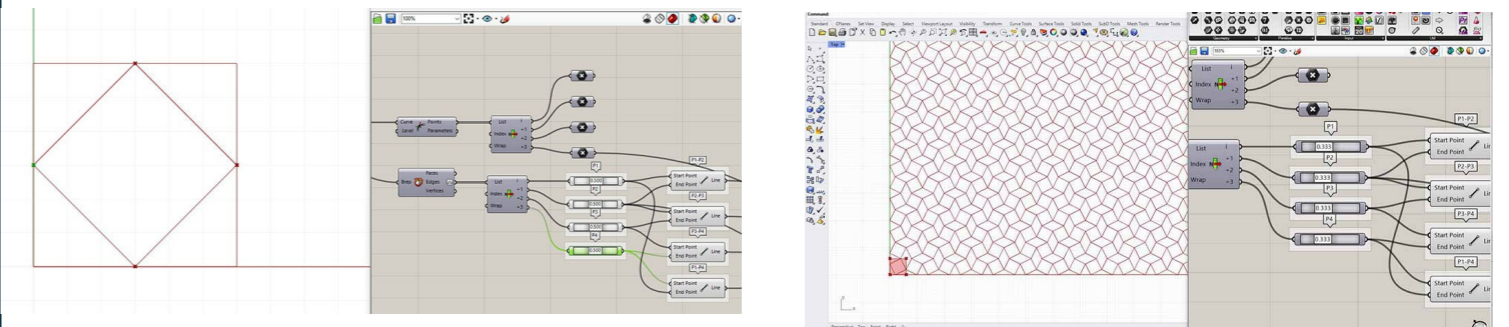


(Dinçer & Yazar, 2021)

## Explorations



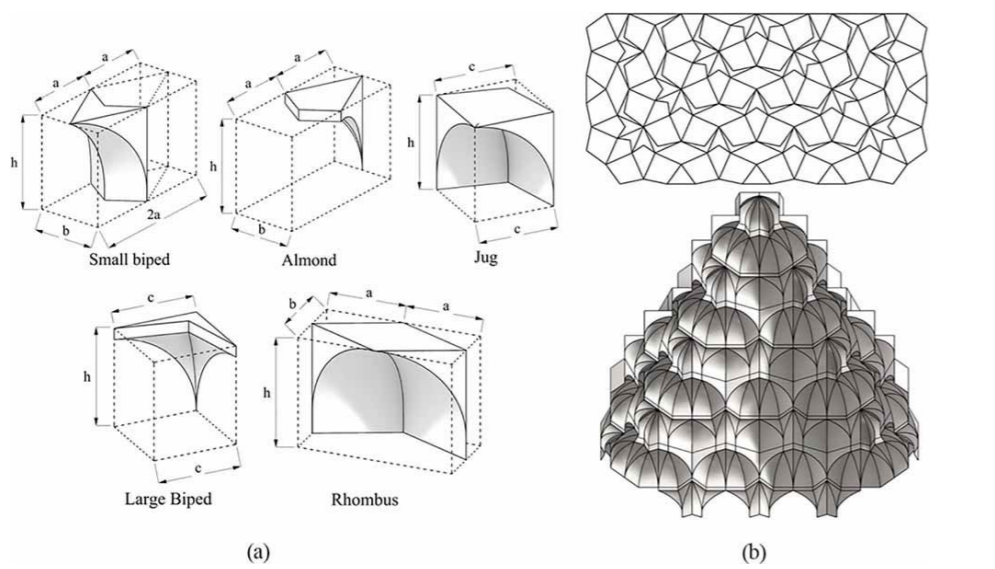
## Six-points Square



## Ammann-Beeker Tessellation

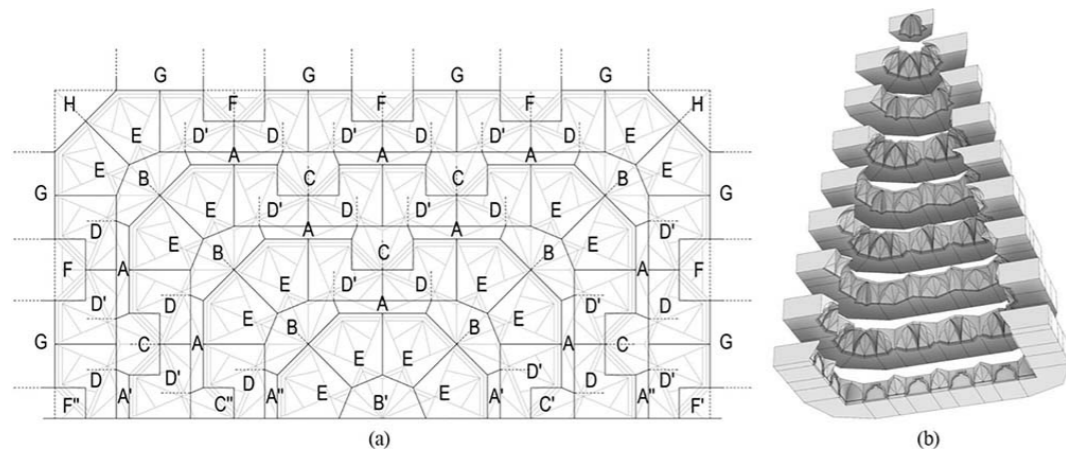
## Modules

### References

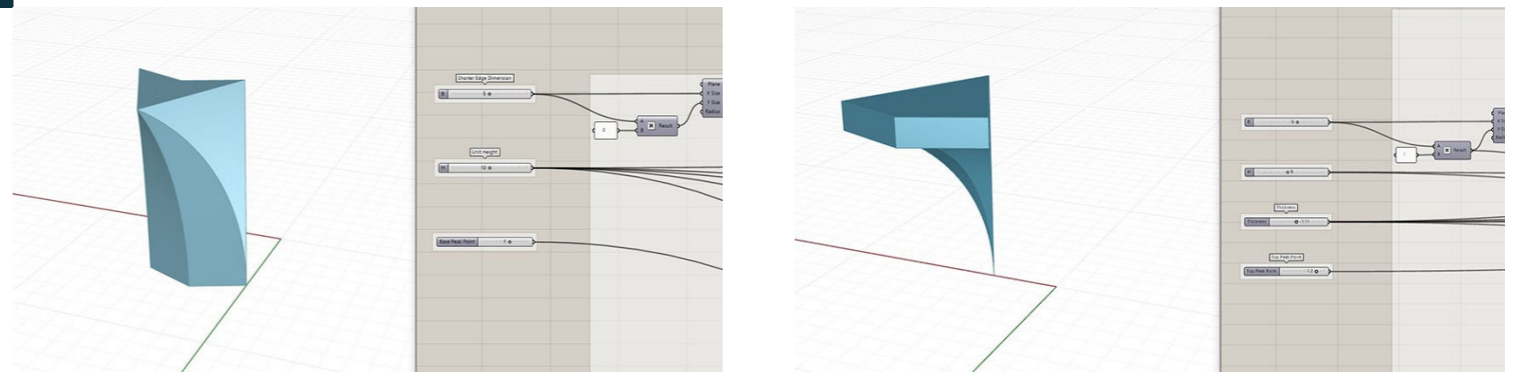


(a)

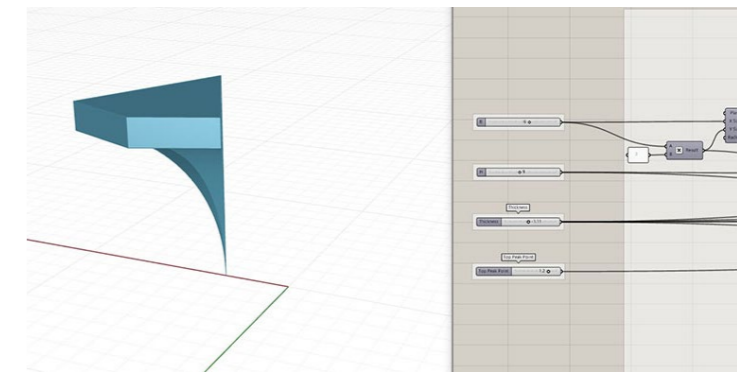
(b)



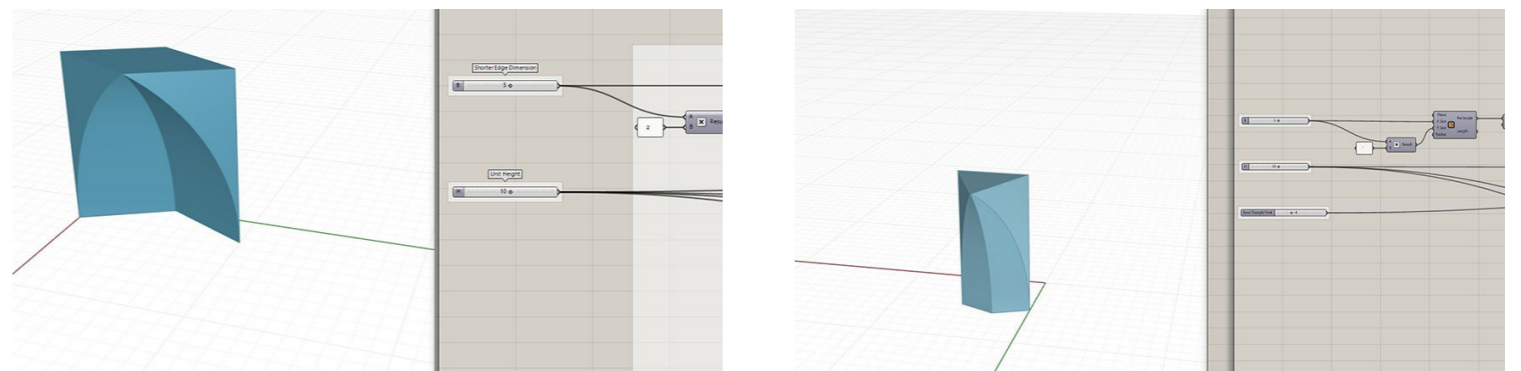
(Dinçer & Yazar, 2021)



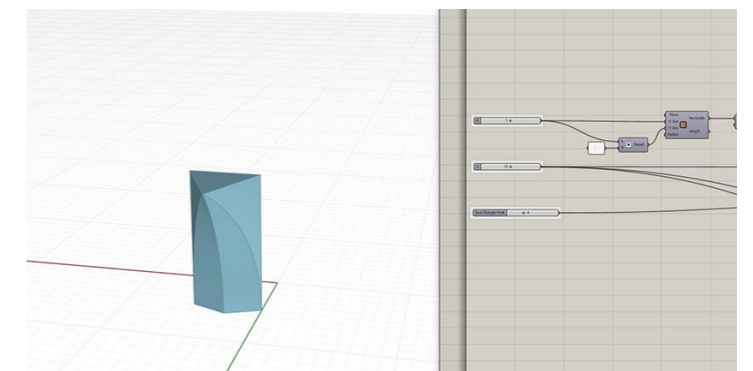
Small Biped



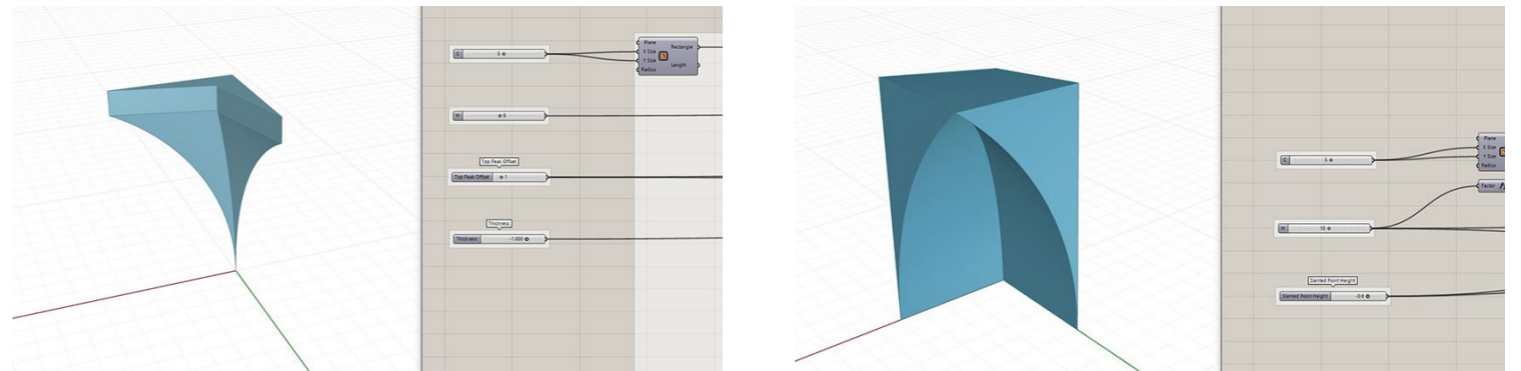
Almond



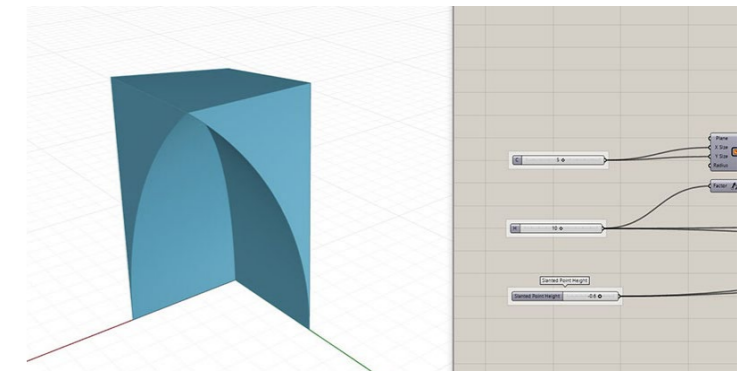
Rhombus



Triangle



Large Biped



Jug



04

Physical

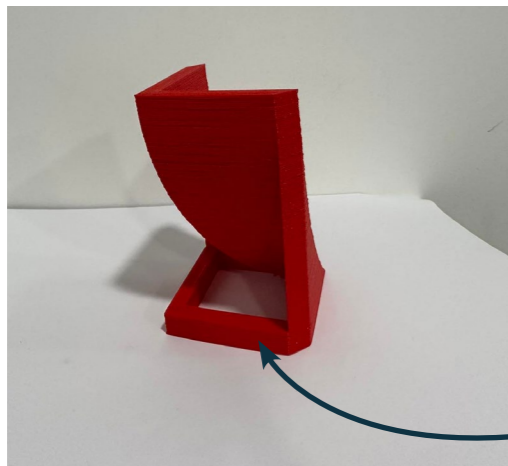
ملفوظ



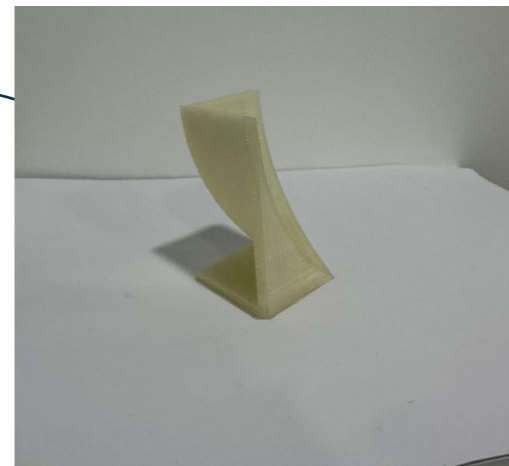
Original Design



Consistent Thickness

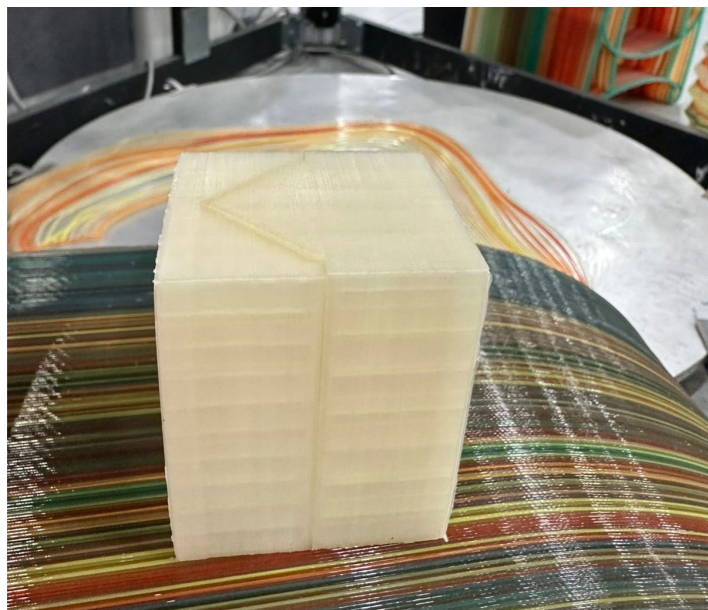


Filled For the Mold Design



Added For Support

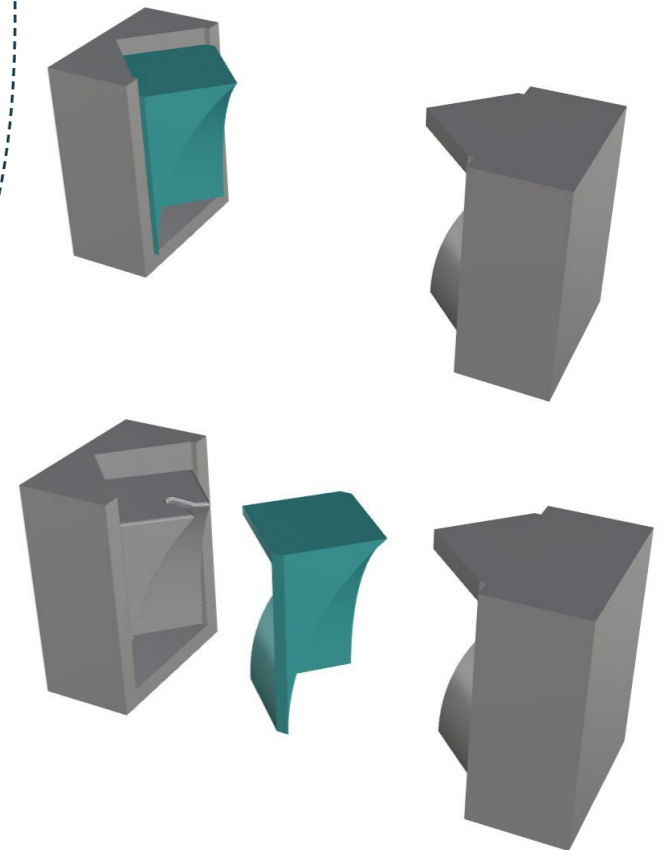
Digital



FDM Mold



Physical



# 50 Material

نسیج

# Materials, Methods, And Textures

## Silicone Mold



## FDM Printing



## Composites & Mixtures

Making a silicone mold opened up new opportunities for me in terms of exploring with multiple and different materials and even composites.



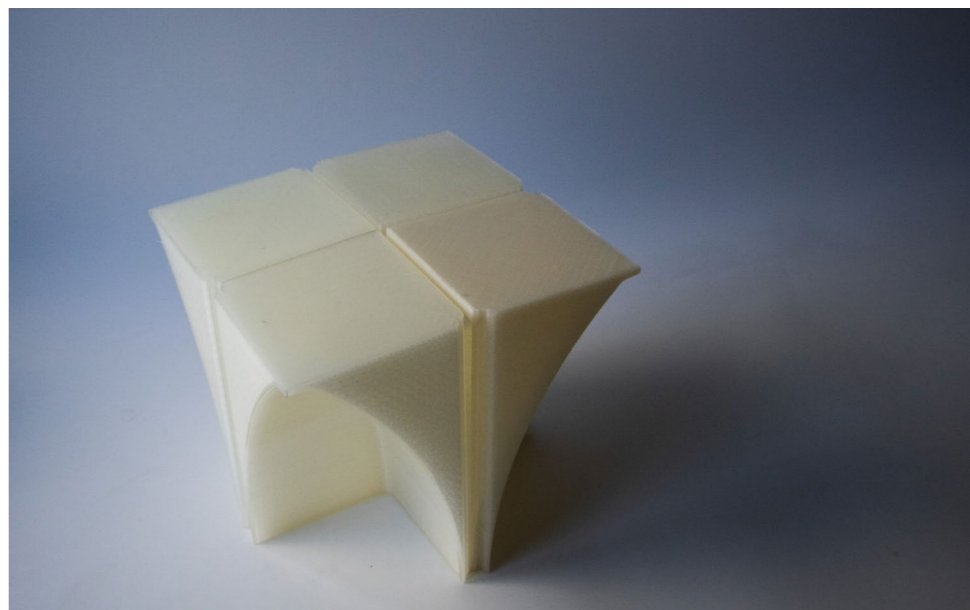
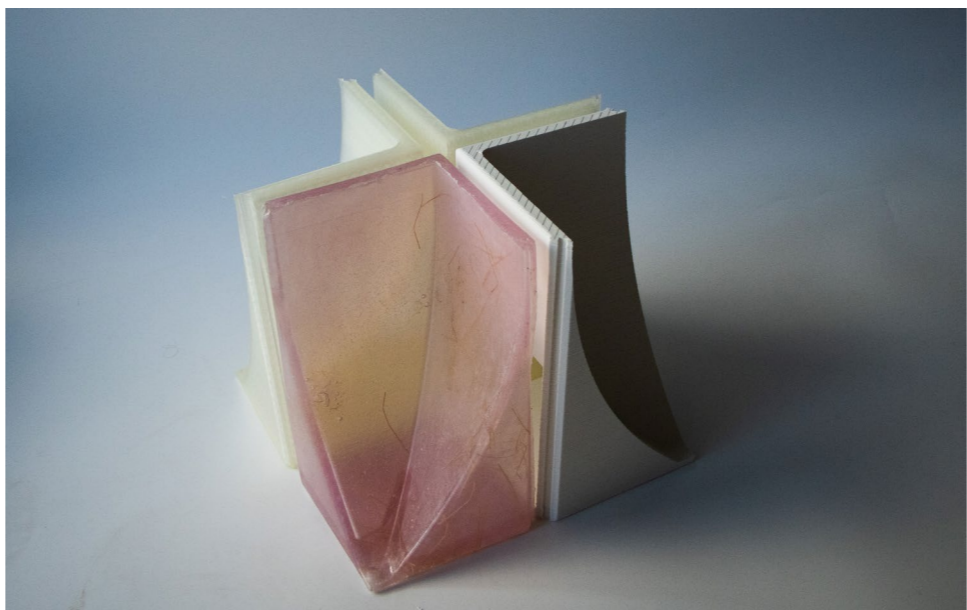
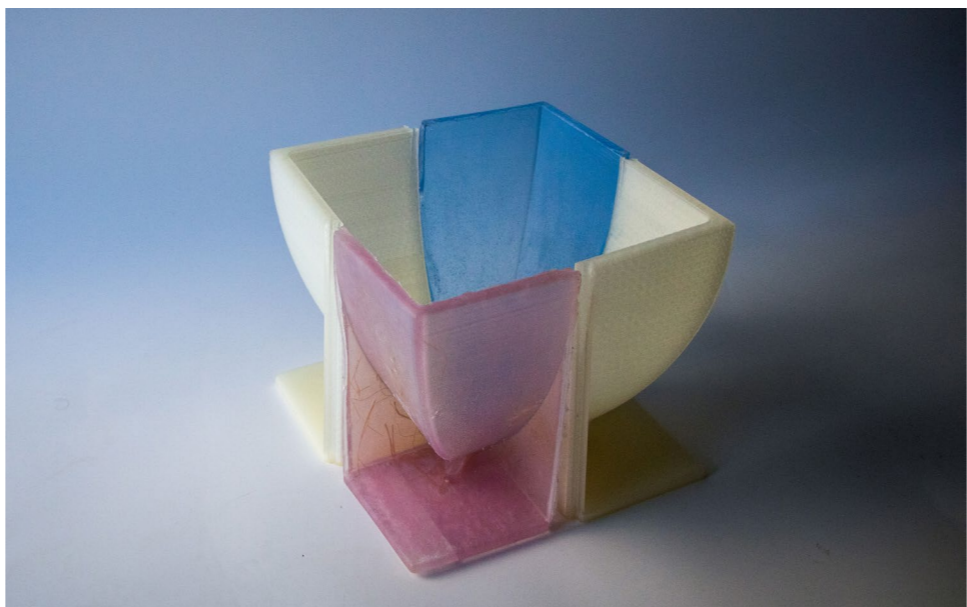
## Aluminum Mold

Pictures below show the compacted sand in preparation of the Aluminum casting.



# 60 Gallery

صور



This project was submitted by **Shahd Farran** in partial fulfillment of fabricademy 23-24



**TechWorks**  
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