Imagery from
Nature on Ceramics

Design Research Seminar Project
By Gauri Karunakara Panicker

Guided by Prof. Raja Mohanty

Industrial Design Centre
Indian Institute of Technology
Bombay

February 2015

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Declaration

I declare that this written submission represents my ideas and work in my own words and where other ideas and words have been included, I have adequately cited and referenced the original sources.

I also declare that I have adhered to all principles of academic honesty and integrity and have not fabricated, misrepresented or falsified any idea/data/fact/source in my submission.

I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom permission has not been taken when needed.

Signature:

Name: Gauri K Panicker

Roll no: 136250005

Date: 29.07.2015

Approval Sheet

The Design Research Seminar Project entitled
"Imagery from Nature on Ceramics"
by Gauri Panicker, is approved in partial
fulfillment of the requirements for the Master
of Design degree in Visual Communication.

Guide : Prof Raja Mohanty

Acknowledgement

I would like to thank my guide Prof. Raja Mohanty for guiding me and bringing a better and deeper understanding about the subject.

And a very big thank you...

To all my friends who have helped me in all ways.

To my family for always been supportive and enthusiast to see what am I working on.

To my husband who has always been there to support me and encourage me to keep exploring in my work.

Abstract

"Imagery from Nature on Ceramics" as the titles indicates involved a study of nature and natural forms and creating designs that are characterised by natural forms. A close observation of flowers, leaves, insects and animals and natural elements and periods like night, water, day-light, air, fire led to explorations with clay.

The underlying impetus for the project is somewhat similar to that of Art Nouveau Movement that arose as a response to the Industrial Revolution that often emphasised utility over aesthetics. The ease of access to diverse cultures in the 21st century makes it different from the period that gave birth to our times appears to be the unprecedented exploitation of nature and natural resources.

How we relate to nature can shape our lives and that of the planet.

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Introduction

Imagery is a natural yet a special way of thinking that involves our senses. It is a visually descriptive or a figurative language, especially in literary work. Images are thoughts one can see, hear, smell, taste or feel. It also includes memories, dreams and daydreams, plans and visions and fantasies. It is a type of thinking that has particularly strong effects on our emotions and physiology. For example, the memory of sucking a lemon, it automatically brings the feeling of shrinking eyes, twisted face of one's memory. Imagery could be an image, a graph, an icon, an illustration, a diagram, a sketch, a symbol or a portrayal.

Nature! How do I explain what is nature? Well its defined as the things which are not made by humans are nature. But how can we forget that we are nature ourselves. To avoid any confusion I focused only on natural objects and elements like plants, animals, insects, water, stone, light, air etc.

Imagery of nature on Ceramics was a project where I illustrated nature forms and shapes by using various tools and techniques that involve my visual sense and the sense to touch.

This project allowed me to understand the nature of clay. How it requires both rough and gentle handling at every stage of its lifecycle. I worked in two types of clay, stoneware and terracotta. I used different tools to get the form

that I wanted, on some occasions I made tools either out of things that we use daily or from scrap.

I enjoyed and value the opportunity of thinking freely, exploring the medium in various ways to make products that reflects nature and also connects to the human needs.

Ceramics is a beautiful medium that allows us to express our thoughts in various ways. But one cannot communicate through it if one does not understand the medium unless he works in it and get their hands dirty. Doing is the biggest learning.

A brief history of Terracotta

The origin of pottery in India can be traced down to neolithic age, with coarse handmade pottery of bowls, jars, vessels in various colours such as red, orange, brown, black and cream. The real beginning of Indian pottery is with the Indus Valley Civilization. There is proof of pottery being constructed in two ways, handmade and on wheels. The Harappan and Mohanjodaro cultures heralded the age of wheel-made pottery, characterised by well-burnt black painted red wares.

The terracotta tradition is the continuation of Indus valley traditions that date back 5000years. India also has an age old tradition of clay toys and terracotta figures. Terracotta work is mainly centred in the states of West Bengal, Orissa and Madhya Pradesh. It is estimated that the pottery appeared in Bengal, in or around 1500B.C.

In an alluvial region like Bengal, fine clay is a distinctive geological feature. The ancient inhabitants of the region exploited this natural resource for making numerous pottery wares. Archaeological sites, such as Pandu rajar dhibi, Manishadal, Chandraketugarh, Tamralipti, Rajbadidanga, Harinarayanpur and Bangarh (all in West Bengal) and Mahasthangarh, Gobindha bhita, Bhasu vihara, Raja Harish Chandrer Badi, Mainamati and Paharpur in Bangladesh have produced varieties of potsherds (fragments/broken pieces of pottery).

Pottery could be mainly classified into two major sections:

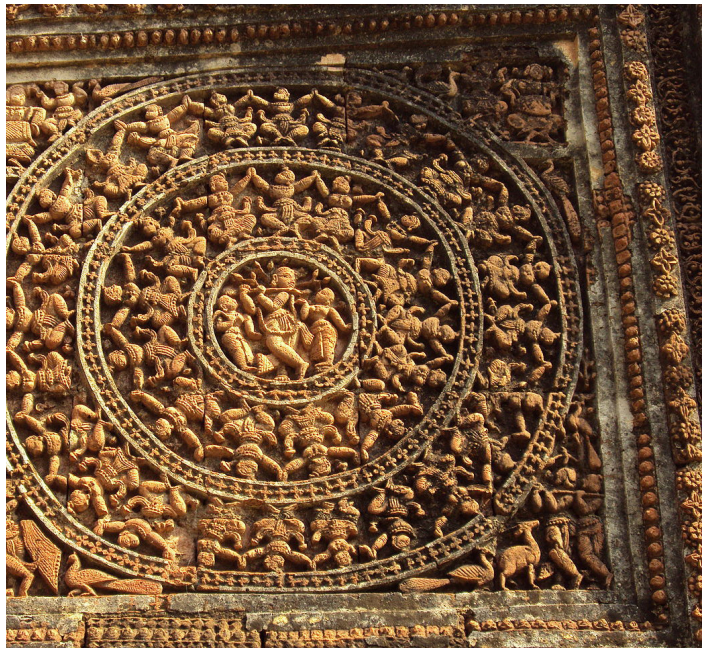
Firstly, the **utensils and vessels** and secondly, the **votive terracotta and sculptures**. In both these arenas the traditional Indian potters have made substantial contributions.

Shyam Ray Temple (c. 1643)

Jor-Bangla Temple (c. 1655)

Radhamadhab Temple (c. 1737)

Ras Mancha(Rasmancha (c. 1600)



Shyamrai Temple, Bishnupur, where birds, animals and floral motifs are used in and on the frames.

Terracotta tiles with floral motifs and scenes depicting various Hindu mythology epics on Temples

Unglazed pottery is the oldest form of pottery practiced in India.

Bankura is a district in West Bengal that is famous for the terracotta temples located in Bishnupur. These temples are covered with terracotta tiles depicting stories. The tiles consists human forms and motifs of flowers, leafs, birds animals and other nature elements.

The most famous product of this area is the Bankura Horse fashioned out of terracotta. It is widely recognised as the symbol of devotion.

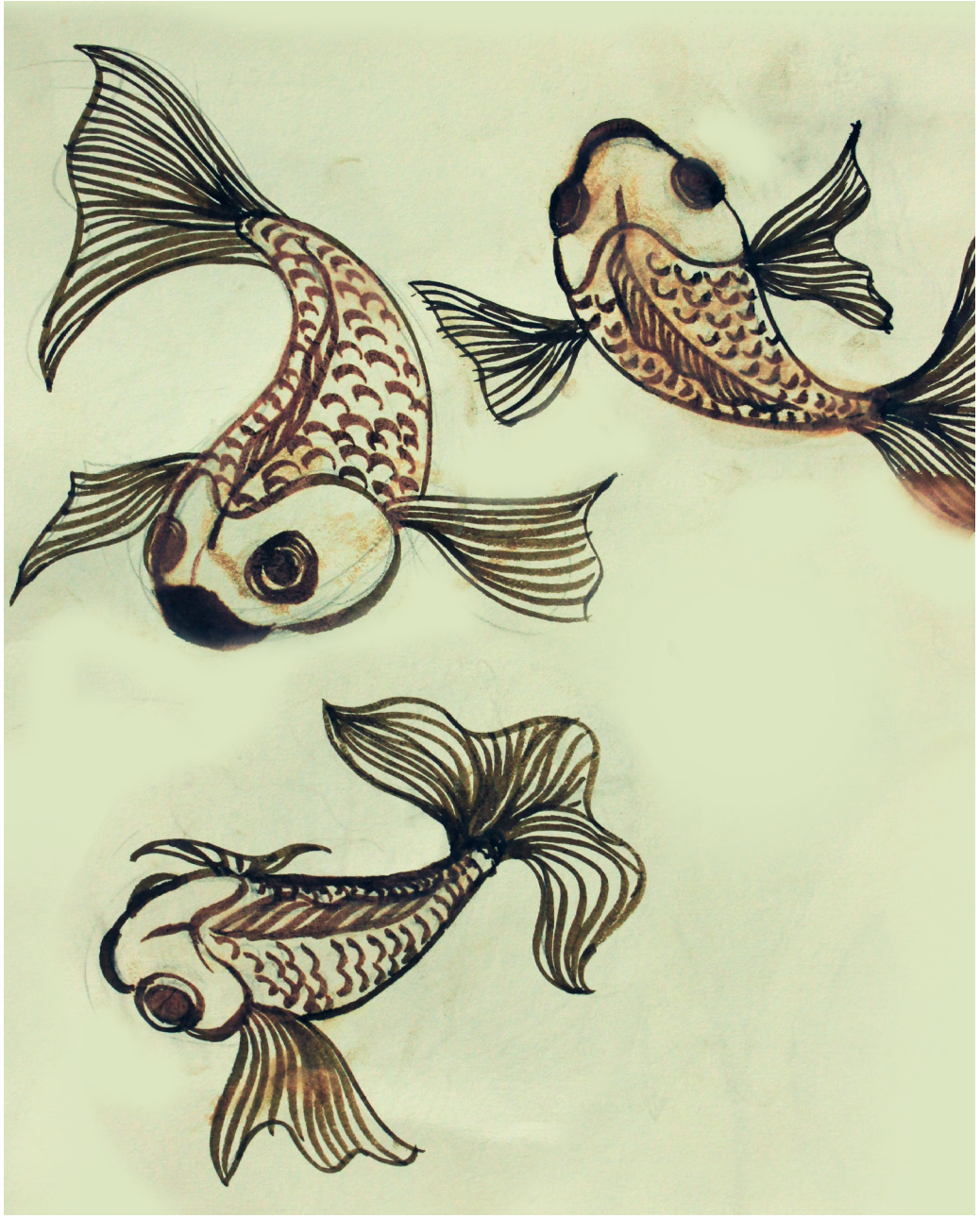
Characterization of animals on terracotta walls of Jor-Bangla Temple.

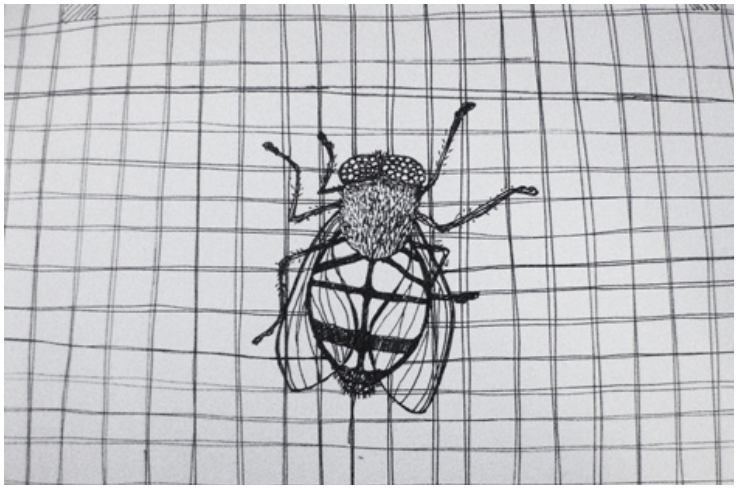
Main Body of Work

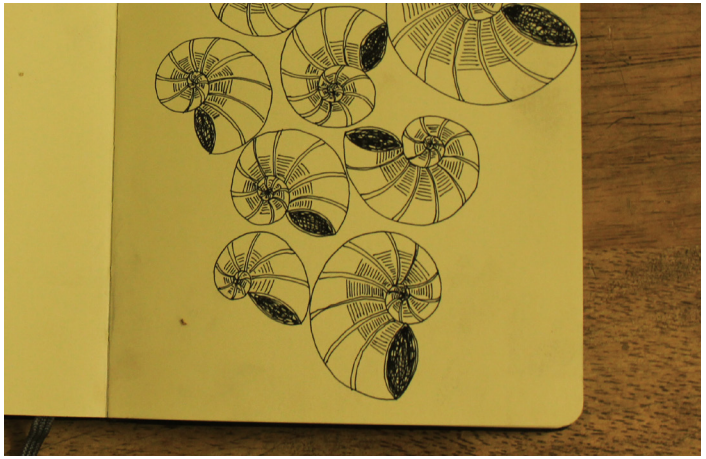
Study of Surrounding Nature

The Campus of IIT Bombay has many varieties of animals, plants, birds, insects and fungi. The project called for a closer observation of nature.

Photography and sketching became useful approaches to document and express an understanding of nature.
Sketching from life is a good exercise which improves your observation and line quality. We went around the campus and observed flowers, barks of trees, insects, birds, leaves, and some patterns.
After live sketching the sketch had to be simplified to a form that could it be adapted and executed on the clay medium.







We worked on two types of clay.
The grey colored clay is called the "Stoneware Clay"
The reddish brown clay is caller "Terracotta Clay"

Kneading the clay

Kneading the clay is the first lesson before learning how to throw them on wheel or making tiles. The clay had to be carefully kneaded, removing all the air bubbles that the clay ball contained. We used stoneware clay that has a grey tone. By doing it several times one can come up with their own kneading method. There are many more ways to remove air bubbles.

The lump of unkneaded clay.
How do we know whether the clay is not kneaded?
We can see air spaces in the clay.
We have to knead the clay to remove all the air bubbles in the clay. If they remain, then it can break the tiles when we fire them.
We can see the use of wire tool after the kneading image.

These pictures give us an idea of how a clay in kneaded. The clay has to be kneaded gently allowing all the air bubbles to burst. There is a certain rythm in which the clay is kneaded with pressure applied by the palms.
The clay has to move in a circular motion.
Once you feel that the clay is out of bubbles, use the wire tool to slice the clay horizontally to check if any bubbles have still remained in the lump.

Here you can see how these two air bubbles have remained in the lump. Slice all the lump to check other bubbles.

Check the clay two to three times till you see that the lump is bubble free.

Knead the clay again following the same process that we saw previously.

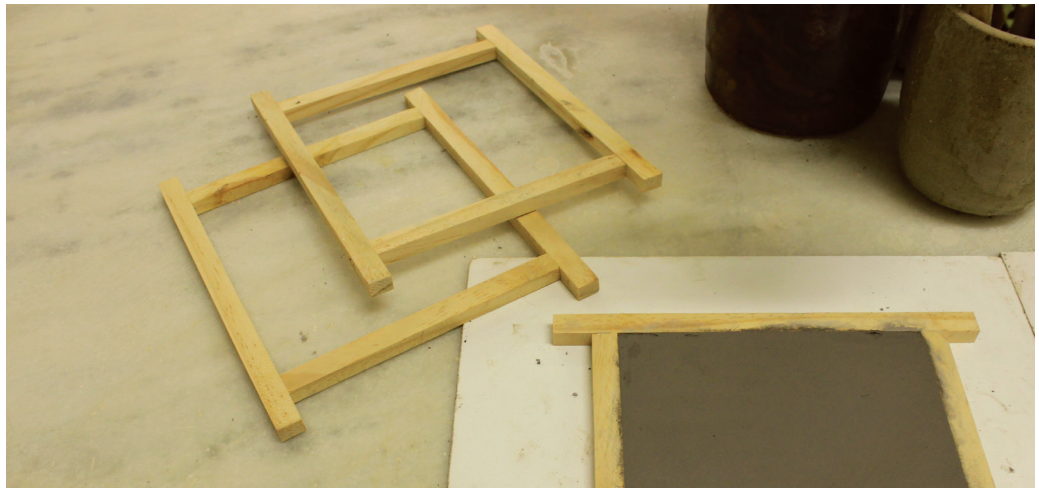
Knead the clay into lumps. and wrap them in a plastic bag so that they remain moist and donot dry.

The same process is used to knead Terracotta.

Making Ceramic tiles

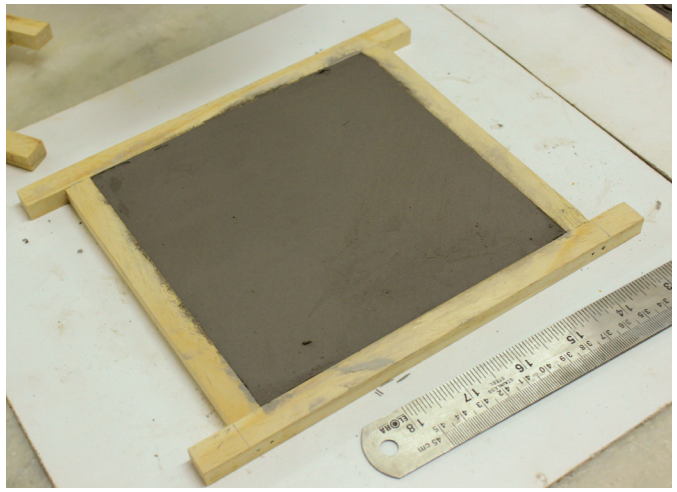
Making the tile was the first task to learn.
We used a wooden frame of 6x 6 inches.
The clay had to be carefully kneaded, removing all the air bubbles that the clay ball contained.
We used stoneware clay.
The nature of clay variesat every stage. When it is wet it has to be kneaded with certain amount of energy. While the tiles are drying there has to be regular inspection to prevent the tiles from curving. The carving has to be finished when the tile is leather hard. The tiles are very fragile when they are dry. Huge stacking of unfired tiles is a problem as the chances of bottom tiles breaking is higher due to the weight of upper stacked tiles. Even a slightest jerk could break them.
So understanding clay as a medium and handling it accordingly was an important lesson that I learn't here. The pictures on the next page can give you a glimpse of how to make a tile.

Always keep the table and your surrounding clean and tidy.

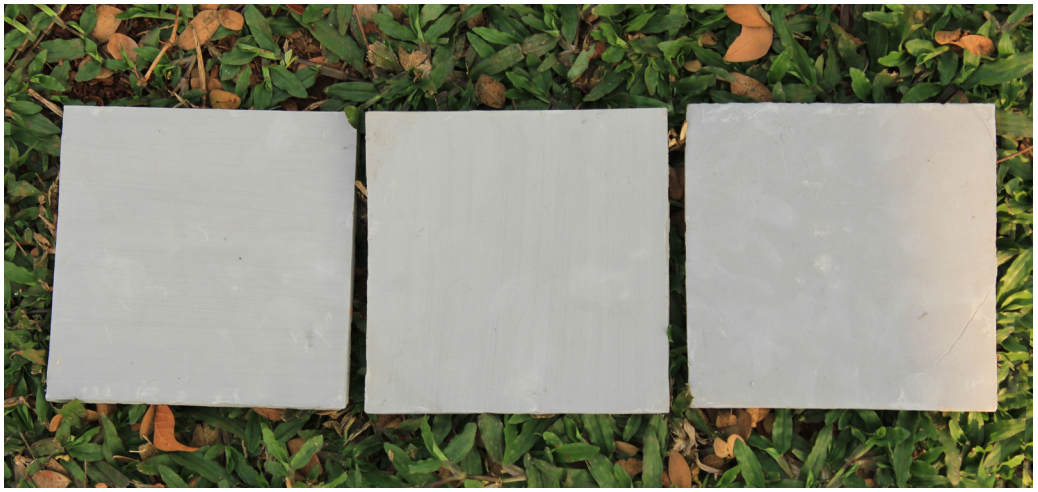


These are square wooden frames of 6"x6"

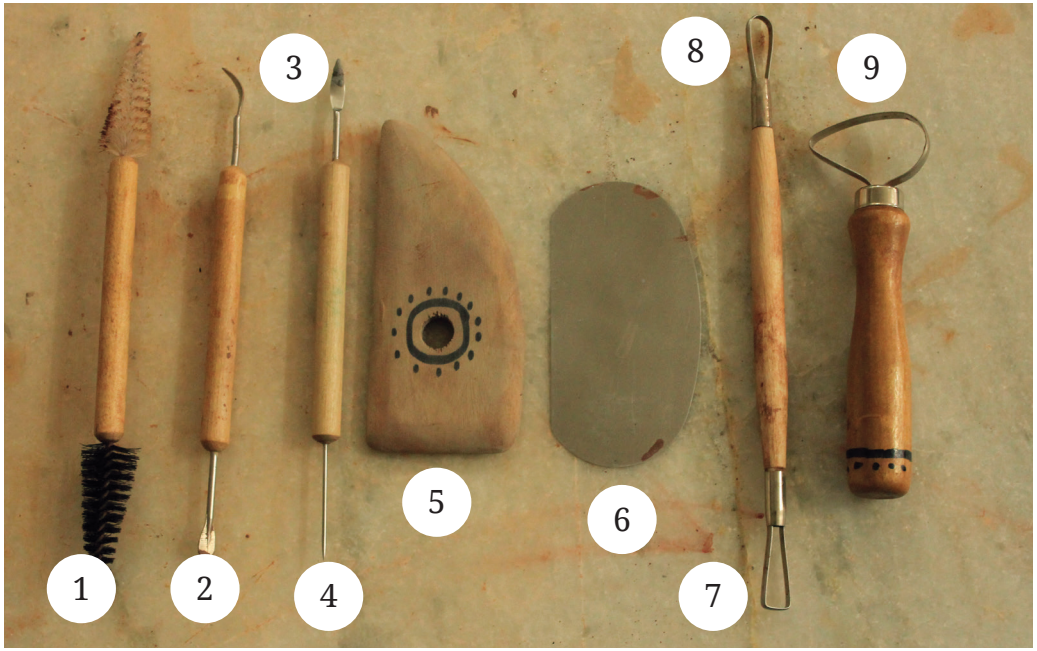
Keep the frame on a foam board or on a newspaper and fill the frame with the kneaded clay.

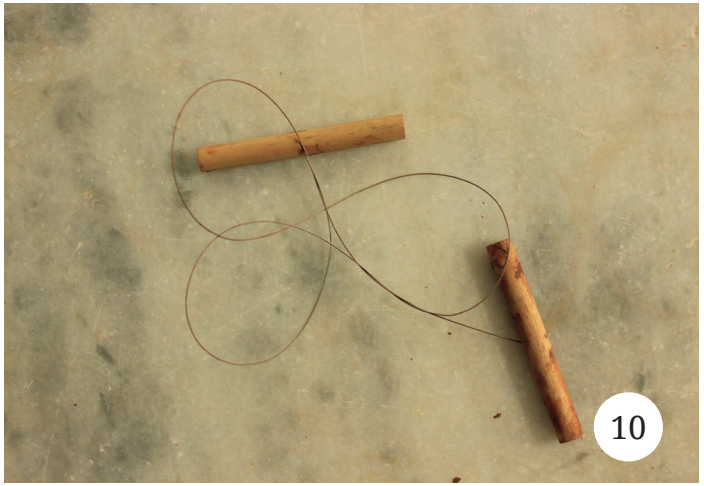


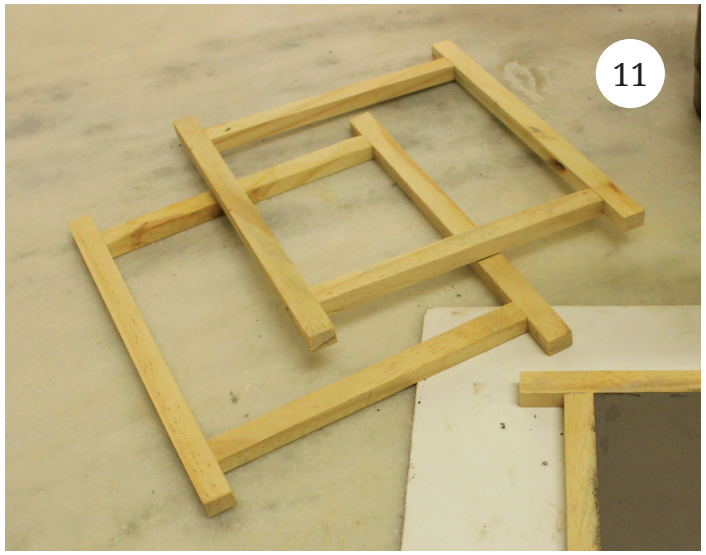
Once filled slowly scrap out the extra clay with a ruler and to smoothen the surface use a moist sponge. Donot remove the frame till the tile is a bit dry. The corners of the tiles get curved while drying.



So either press them by keeping some weight on the corners or reverse the tiles at regular interval of an hour to prevent them from curving. Then leave them for drying. They are supposed to be handled very carefully as even slightest jerk could break them. They are very fragile till they are bisque fired.







Tools

1 Brush Tool: For clean up
2 Clean up tool (sharp edge): Carving, srapping, texture making
3 Pin tool: Carving, texture making, lancing air pockets
4 Clean up tools (muitiple purpose) : Carving, srapping, texture making
5 Wooden Rib: Helps in scrapping and aids in throwing.
6 Serrated Rib: helps in scoring and scrapping
7 Small loop tool (flat) : Scrapping flat surface or sharp corners
8 Small loop tool (round) : Scrapping round corners
9 Large pear shaped Loop tool : Broad area trimming on wheel
10 Toggle Wire tool : Cutting clay
11 Wooden frames: To make square shaped tiles

These are some of the tools that are used while working in clay. I also used some objects like pen caps, bottle caps and pens as tools for cutting and creating patterns.

The bucket full of recycled clay

The POP tub where the water gets soaked.
If the quantity is huge then clay powder is added to the soaked clay and then mashed with legs by the potter.

Recycling the clay

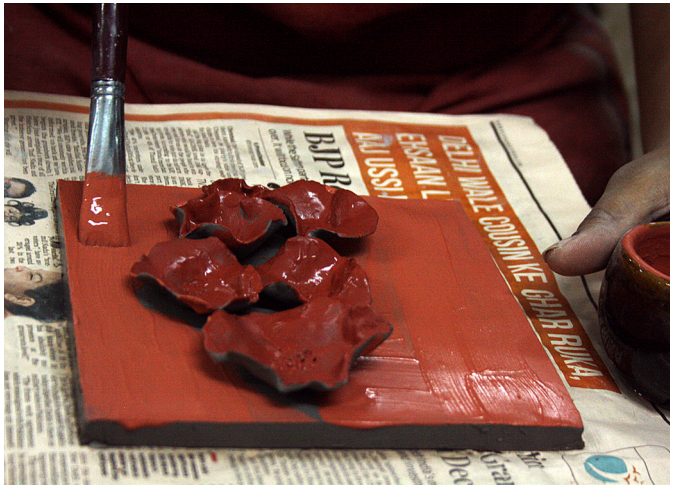
All the scrap that remains after making tiles and the tiles that break before firing, can be recycled to make fresh new clay. The scrap is soaked in a tub or bucket with water and then its mashed with hands and then poured the slip into a tub made Plaster of Paris. The POP soakes the water from the clay leaving it dry enough to knead and use it again.

Making individual Ceramic tiles by using different techniques to create **new forms inspired by nature**

Flowers

I chose a very simple form of flower which was not very precise. These flowers were handmade and then sticked to the tile by appling slip (liquid clay). I feared that the flower might fall off once they dry so I pressed the center of every flower and poked with needle that will also look like the pollens of the flower. Then I coated them with glaze. The flower is coated with dark brown colored glaze and the surface of the tile was coated with a light brown colored glaze.We did not bisque fire the tile before applying the glaze. Instead we applied glaze on to the tile and directly glaze fired it.

This saves energy for firing the tiles twice. The glaze firing took 9 hours to complete and a day more for the kiln to cool down.



Lotus

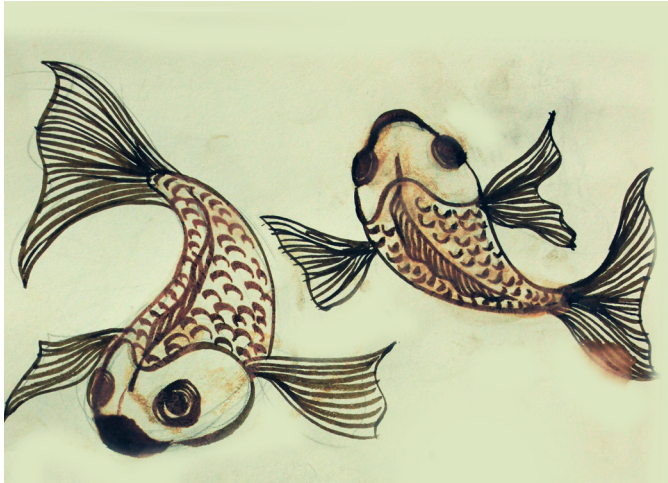
Lotus signifies the wisdom of knowledge. IIT logo symbol consists of lotus in it but I have never seen one in IIT campus. I am not sure whether there are water lilies in IIT. So basically here I took inspiration from the logo and tried to explore forms of lotus flower and leaves and water.

I was inspired from a work where the artists embossed the tile by keeping a POP leaf beneath the tile whilt its still wet. The tile is then coated with glaze and as it becomes leather hard they carved the pattern of leaf on it. I used the same technique to create lotus flower forms on the tiles.

Tiles after glaze firing.

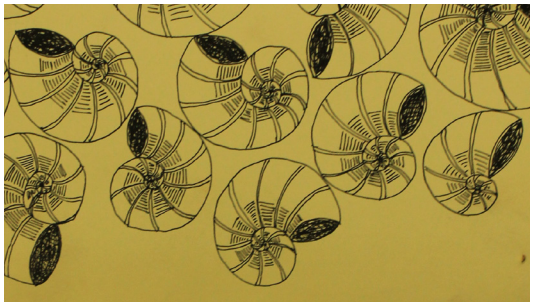
Fish Tales

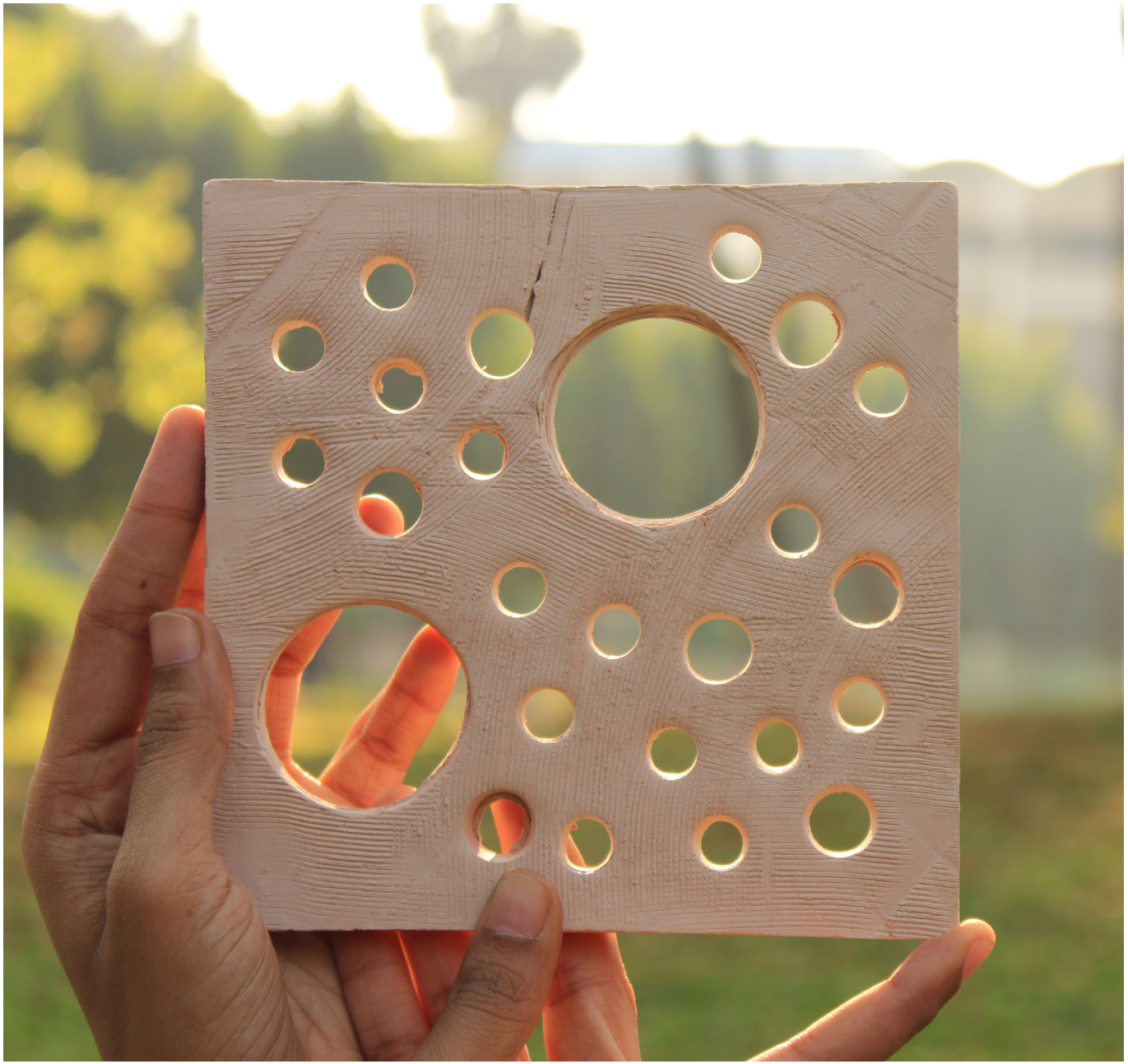
The main building of IIT Bombay has an open aquarium with fish and turtles. I embossed the body of fish and the lotus bud. Then applied glaze in two different tones of brown merging them diagonaly. When the tiles were leather hard, I carved out their fins and tails.



Snail

I have always loved drawing shells and snails. In the rainy season IITB campus is filled with them. So I decided to make one. After applying the glaze I scrapped out rings on the snail's back and carved some leaves around it.





Light

This was a simple but interesting tile which interprets the natural element such as light. A huge set of these tiles could be used to make pillars that emit light in the night.

Leaf and Water

The form of lotus leaf on the water surface was tried to acheive. After embossing the leaf form, I first applied the brown glaze to the tile and carved out the leaf. After that I carved out the neagtive portion of the tile. Then I applied another coat of white glaze on the tile leaving the leaf area. Once the glaze dried I scrapped out the formost thin layer of glaze leaving the ones stuck in the puddle areas. After glaze firing the leaf was standing out beautifully and the white glaze gave the beautiful feeling of water around the leaf.

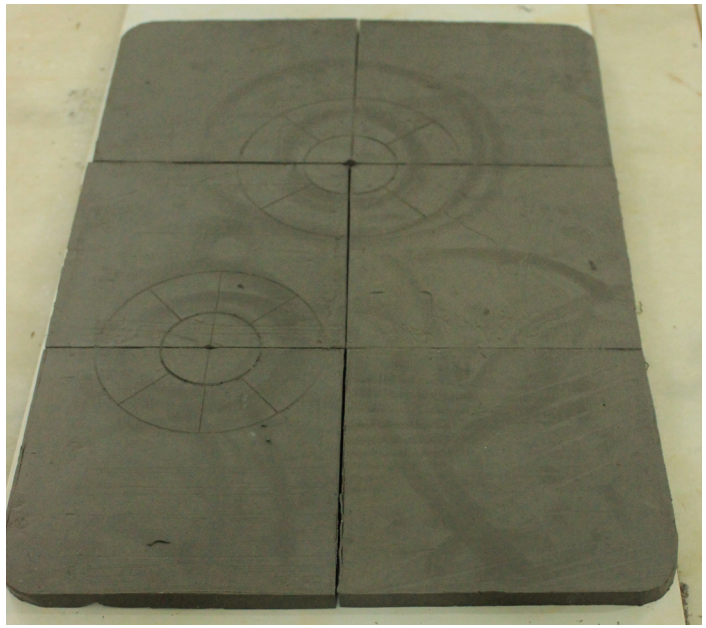
Mosaic Tiles

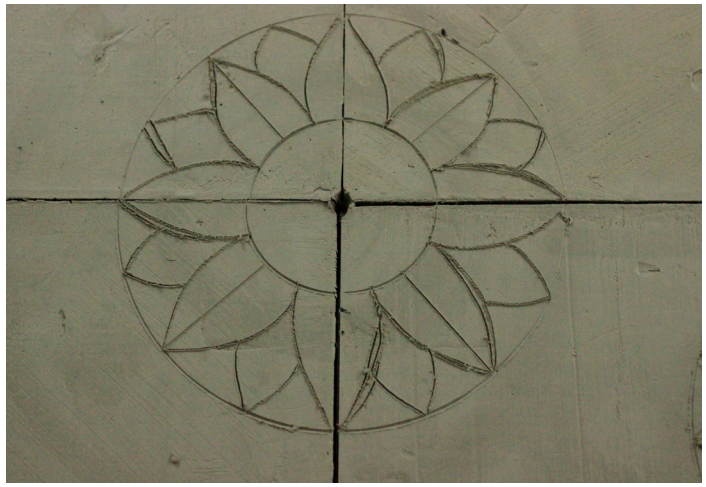
After making 6"x6" tiles, I wanted to make some mosaic tiles. So I cut a single tile into 9 equal pieces of 2"x2" and carved miniature bugs and a portion of the flower.
This could be an interesting mosaic tile work where one has freedom to make their own landscape. There could be additional tiles with patterns of leaves, barks, clouds. and also plain tiles.

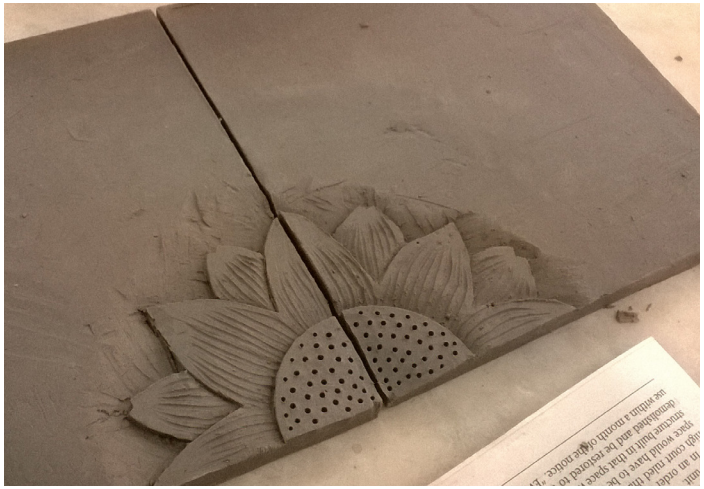
Exploring the nature forms and carving technique to create a **mural** on a set of six tiles

After making single tiles, the next task was to make mural on a set of six tiles.
I decided to combine the forms that I made on individual tiles and compose a form using the same forms. Here I carved on the tiles to get the emboss effect. These were some of my sketches of composition.

I made six tiles and left them overnight to be leather hard. The corners of the mural were cut round. I first marked the flowers with a compas tool. Then drew the petals and composotion of leaves and buds freely.
Once the drawing was complete I worked on each tile separately.



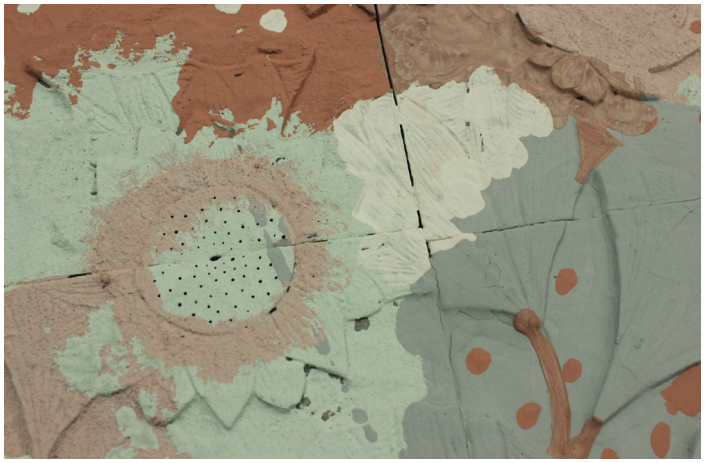


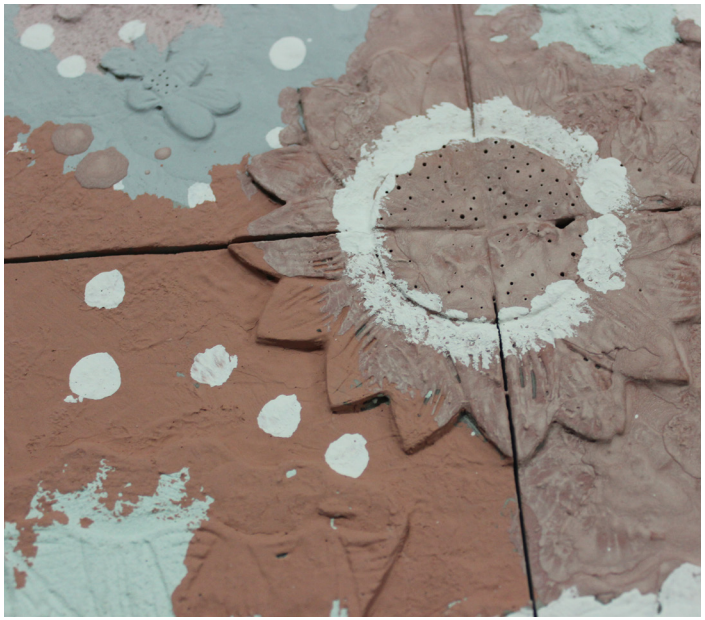


To bring the surface of the flower and leaves up, I first carved out the negative space on the tile around 3 mm deeper.

Towards the end it became quite difficult to carve as the tiles had almost dried. That is when I learnt that, we can reduce the speed of drying by wrapping them in plastic sheets. Drying increases the risk of breaking due to friction while carving.

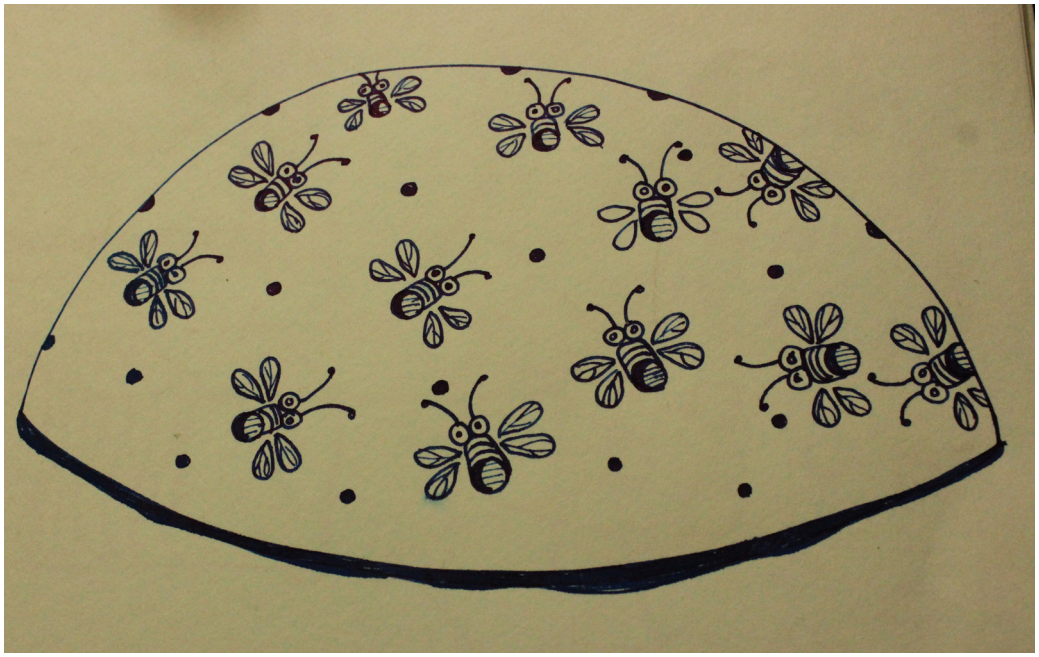
The glaze was then applied to the tiles.
I applied the glaze with no certain pattern in mind. I avoided filing the glaze like a coloring book. Instead I wanted the colors to ovelap the forms on the tiles.
After the glaze firing I realized that the layer of glaze that I applied was very thick. The thick layer of glaze melted and filled up the small details of the work. The glaze firing usually happens at 1200ºC.

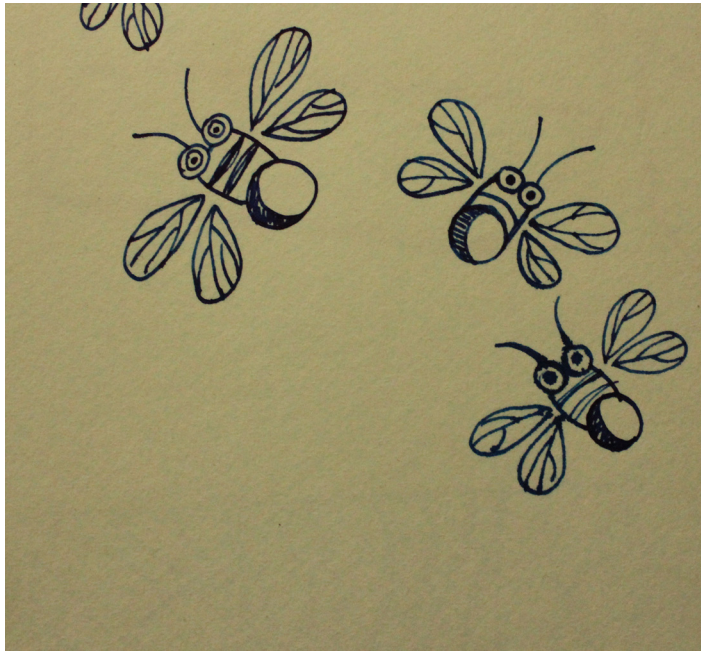




Fire flies...

This project was inspired from the excitement that I experienced when I saw a firefly in IIT campus. I find these little glowing bugs as mysterious beings. In the day they are not even noticed by anyone. But during the night their glowing abdomens can excite even the eldest soul with excitement to catch them and be surprised to see them twinkle in their hands. The concept was to make a garden lamp that bring in an element of surprise as the night rises.



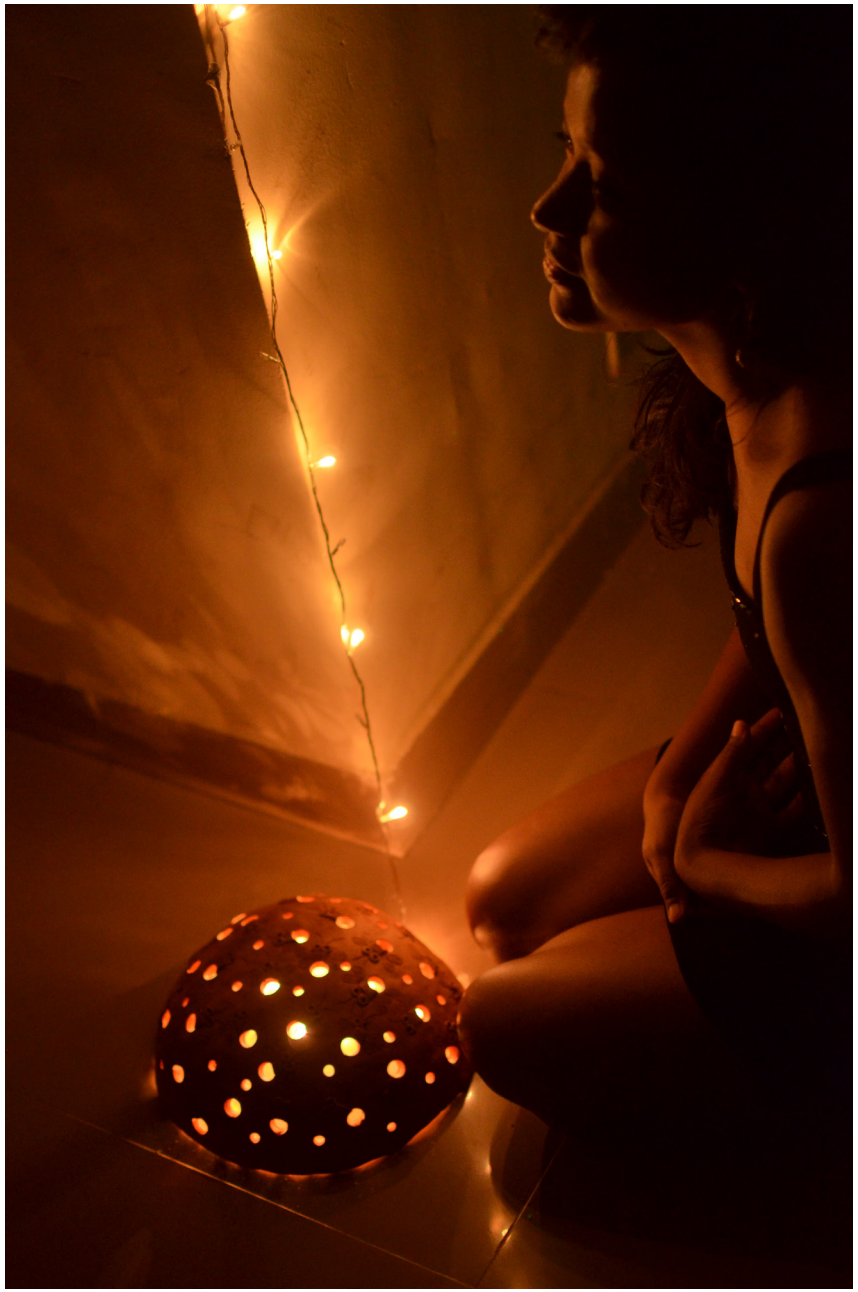


I used the method of making tiles, but without a frame to make the sheet of clay. Sphere is a geometric form that can be easily found in nature rather than sharp edge forms like cube, rectacgle box or pyramids. So I decided to make a dome shape. The form of firefly was taken from the mosaic tiles I had made before. To create the dome I used a POP mould and wrapped it with the sheet of clay.
I sticked small square pieces as their body, two clay balls as their eyes, which I later poked with an empty pen I had. I used a pen cap to make the light holes in their abdomen. Then I kept the clay to dry leather hard overnight.

After a day the clay was leather hard, I carved the wings and antenna of the firefly with the carving tool.

a inner portion of the lamp.
b lamp when held against the sunlight
c dome shape gives a natural look to the lamp
d actual size of the lamp

Lighting the lamp



Basis of future work

We take inspirations from everything around us and it reflects in our thoughts, behaviour, and action. Nature has been the biggest resource of inspiration for human beings. And we can see its existence in our history as well as our day to day life. I would like to continue to explore more and experiment with the techniques to create nature inspired forms on terracotta.

This project has helped to bring a deeper understanding of nature and exploration of natural forms and techniques to create artworks that are inspired from nature.
The more we get closer and deeper to nature in our day to day life and activities the more we will understand the value of it. And a reminder of our need to protect it.

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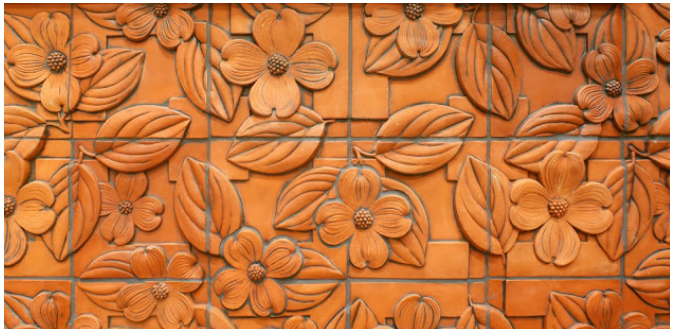

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