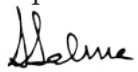
URAVU | INTERNSHIP

Design Project - I
Uravu & Uravu Ecolinks |Thrikkaipetta | Wayananad | Kerela

DECLARATION

I declare that this written submission represents my own ideas and where other's ideas or words have been used, I have adequately cited and referenced the original sources. I also declare that I have adhered to all the principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any ides/source/fact in my submission. I understand any violation of the above will be the cause for a disciplinary action by the institute and can also issue penal action from the sources which has been thus not been properly cited or from whom proper permission has not been taken where required.



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ACKNOWLEDGEMENT

I express my gratitude to Uravu organization for their constant support throughout the internship. From providing insights into the craft industry, material knowledge to making the products, people at Uravu have helped in each step. The chechis at Urvara Jute centre have been extremely patient. The learnings from the project has been immense.

I am grateful to my classmates for contributing their valuable insights to this project. Special thanks to Shashank Gautam, Hirom Ulemba, Nikhil Kunnath and Duttaram Chari for their help, numerous discussions and support.

BRIEF

Design a family of toys, stationary using the materials available locally in Uravu. Bamboo, coconut shell, jute cloth were the available in craft units, these materials were used for product exploration.

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URAVU

Indigenous Science & Technology Study Centre

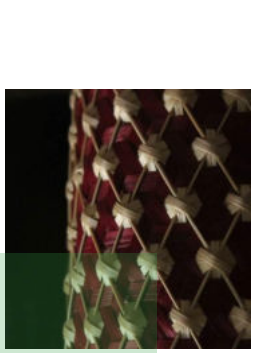
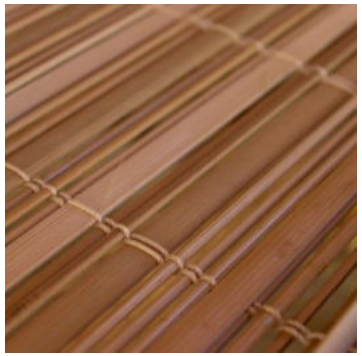
Uravu means spring, source of water, source of life, creativity….

The core idea that led to the formation of Uravu Trust in 1996 was revitalizing indigenous knowledges and upgrading productive skills of people were essential for ensuring sustainable development of rural areas. The trust's activities were borne out of the realization that ensuring access to resources- natural resources used as raw materials for production; appropriate skills and technologies; finance and markets etc- was essential for overall development of marginalized social groups.

The key objective of the organization is to improve livelihood sustenance of women & marginalized people through sustainable entrepreneurship.

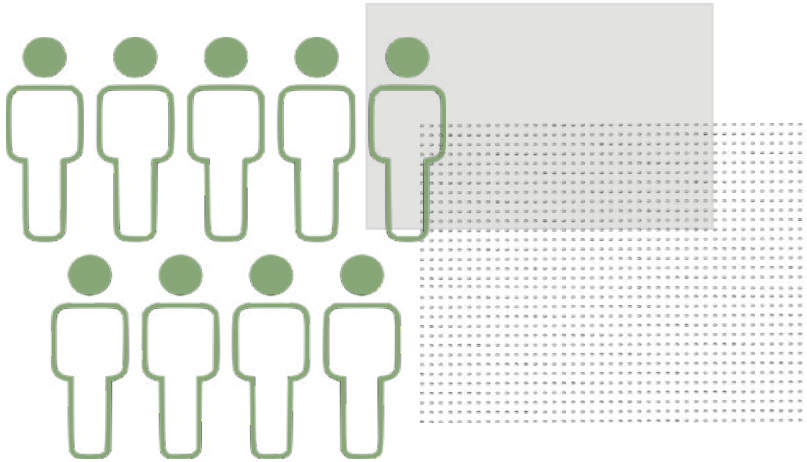
WHAT URAVU HAS ACHEIVED

Bamboo jewelery, bamboo blinds, bamboo crafts, food products and much more..


Over the years, Uravu has established a cluster of micro-enterprises and self-help groups in Wayanad District- the Kalpetta Bamboo Cluster. The units in the cluster manufacture a variety of products of utility and decorative value . The products include jute bags, jewelery, bamboo pen, baskets etc.


WORK STRUCTURE



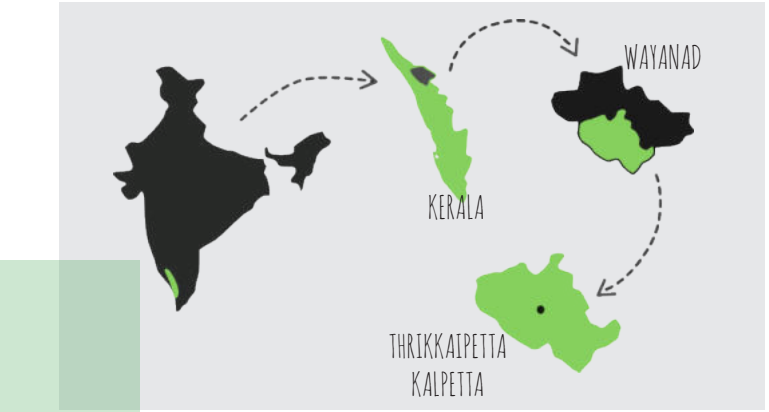
The core of the business structure of the Uravu cluster is the Common facilities Centre (CFC) that provides input supplies and techno -managerial support to the decentralized production units. The CFC is equipped with the facilities for the collection, storage, chemical treatment, processing, drying and supply of bamboo.

Production takes place in the MEs/ SHGs according to advance plans prepared on the basis of market enquiries or orders available. Services of production supervisors and designers are provided to the micro enterprises whenever required. The semi-finished goods made by the micro enterprises/ SHGs are also taken back by the CFC for final finishing and distribution

GETTING THERE

Uravu Indigenous Science &
Technology Study Centre
Thrikkaipetta P.O.
Wayanad district
Kerala State
South India
PIN: 673577
Tel: +91-4936 231400

Cell: +91 9605770702
email: uravu.india@gmail.com



From Chennai, Thiruvananthapuram, Kozhikode etc. via Kalpetta
TRAIN: nearest railway station is Kozhikode, bus from Kozhikode to Kalpetta , local bus from Kalpetta to Thrikkaipetta

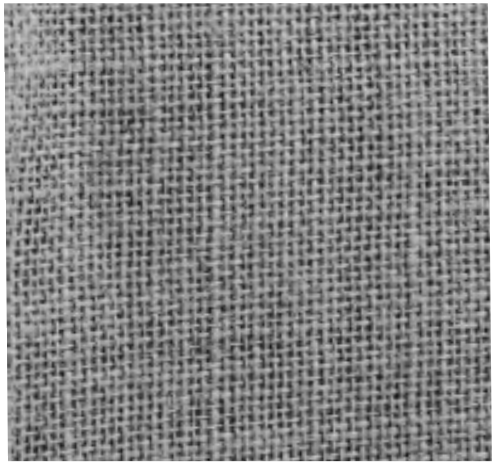
FLIGHT: nearest airport at Kozhikode, bus from Kozhikode to Kalpetta , local bus from Kalpetta to Thrikkaipetta

From Bangalore
Bus from Bangalore to Kalpetta ,local bus from Kalpetta to Thrikkaipetta

How we reached
Bus from Mumbai to Bangalore,
Bangalore to Kalpetta,
local bus from Kalpetta to Thrikkaipetta

REFERENCE PERSONS:

- Baburaj M, President
- Surendranath C, Trustee
- T Sivaraj, Trustee
- Corrine, Founding member, Uravu Ecolinks



KNOWING THE MATERIAL

Most of the times products are a result of the nature of available materials, processes etc.

2

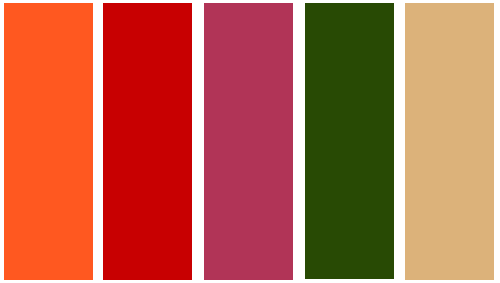
Uravu has been promoting and making products and architecture with eco-friendly as well as locally available materials such as bamboo, palm wood, coconut shell etc . Knowing the materials was one of the first tasks we did at Uravu.

Primary materials at Uravu is bamboo and jute. Coconut shell, cane, reed are also used in the units of Uravu.

We were introduced to the materials right from the planting of bamboo saplings at the Uravu nursery to the its applications in various products.

JUTE

One of the most affordable natural fibers and is second only to cotton in amount produced. It is called "the golden fiber".



Available in choicest range of colors (the above colors were available during our course of internship). Screen printing can be done to achieve various kinds of prints on jute.

Also known as Hessian , burlap, gunny cloth is a woven fabric usually made from skin of the jute plant or sisal fibres, or may be combined with other vegetable fibres. Jute is a long, soft, shiny vegetable fibre that can be spun into coarse, strong threads. Hessian was first exported from India in the early 19th century.

PROPERTIES

- Naturally is brown to off-white in colour
- Eco-friendly, 100% boo-degradable
- It is breathable, thus resists condensation and spoilage of the content
- Durable enough to withstand rough handling in transit
- High tensile strength, low extensibility, and ensures better breathability of fabrics.

USES

- Agricultural commodity bulk packaging to ship goods like rice, coffee beans etc.
- Sandbags during flood mitigation
- Can be blended with other fibers, both synthetic and natural to produce different range of textures in fabric.

1. Made of natural fiber, non-toxic and 100% biodegradable
2. Coarse, Strong and cheap (production)
3. The fibers might get coarser if washed multiple times
4. Grown without the use of chemicals or other fertilizers
5. UV-protection
6. Heat resistant (heat sensitive items for example vegetables and fruits from groceries remain fresh)

JUTE vs COTTON

Comparative study of materials

1. Made of natural fiber, 100% biodegradable
2. Soft (bag) and expensive (production)
3. Washable several times
4. Grown in places where need to use chemicals to control insects
5. No UV-protection
6. Not heat resistant

BAMBOO

It is a tribe of flowering perennial evergreen plants in the grass family .

Bamboo is one of the most important nature's substitute for the endangered rainforest hardwoods. It is a quick-growing, versatile , non-timber forest product whose rate of biomass generation is unsurpassed by any other plants. It is utilized extensively for a wide range of purposes. The strength of the culms, their straightness, smoothness, lightness combined with hardness and greater hollowness; the facility and regularity with which they can be split; the different sizes, various lengths and thickness of their joints make them suitable for numerous end products/purposes.

PROPERTIES

- The bamboo is in its size, lightness and strength an extreme product of nature. It is stable and because of its cavities an extreme light and elastic building material.
- The lignifying cell construction of the bamboo texture and its technical conditions are very similar to the original texture of wood. Whereas wood has got a hard centre [Hirnholz] and becomes weaker towardsthe outer parts [Splintholz], the bamboo is in its outer parts hard and in its inner parts weak, what causes a much more stable construction.

USES

Bamboo has been used since ages in many applications as building material, culinary, medicine, weapons, musical instrument etc
It is known to be a natural and excellent raw material for manufacturing strong and sturdy furniture, handicrafts, and novelty items.

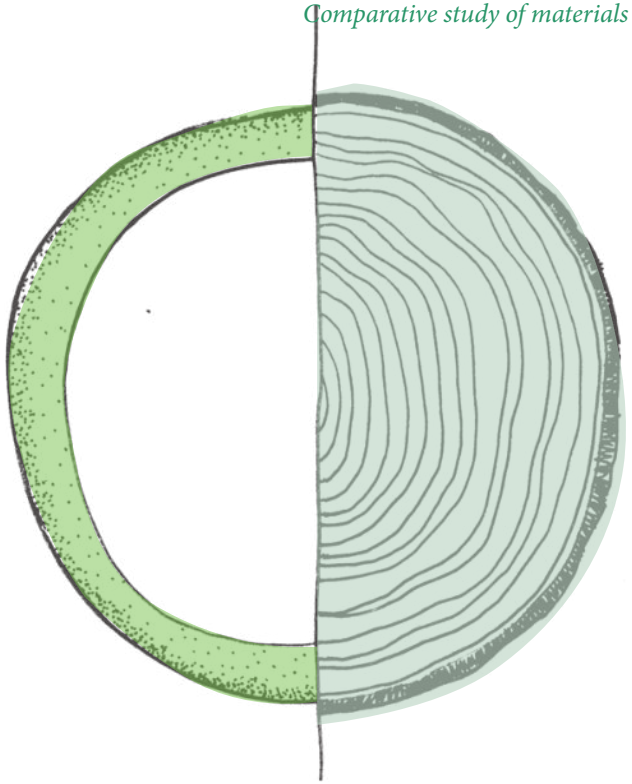
AVAILABILITY

Bamboo of different species was available at Uravu. Dendrocalamus strictus,Elephant bamboo,

1. As strong as mild steel with the compression strength of concrete
2. Bamboo bends instead of breaking. Hence an amazing material to be used in houses in earthquake prone zone
3. Harder at the periphery and is usually hollow at the center
4. Can range from solid to hollow in cross-section
5. Fibers are arranged in longitudinal fashion. Hence it cracks along the fiber direction under impact

BAMBOO vs WOOD

Comparative study of materials



1. Softwood can't match bamboo's compression and tensile strength.
2. Wood doesn't bend as bamboo
3. Harder at the center than at the periphery
4. Is usually solid in composition
5. The fibers are not arranged longitudinally

PROJECT BRIEF

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BRIEF

Design products using jute and other locally available, eco- friendly materials with the help of local craftsmen at Uravu.

Duration:
1 and half months

Organisation :
Uravu and Uravu ecolinks

Deliverables :
Prototypes of a range of products, documentation of the entire process

4 TOYS

TOYS NOT BASED ON CHARACTERS

Dolls | Teddy bears

TOYS BASED ON CHARACTERS

Barbie Doll | Mickey Winnie the pooh

TOYS BASED ON INDIAN CHARACTERS

Chota Bhim | Chutki Hanuman

MARKET ANALYSIS

This study shows the variety of available toys in the local market in order to position the possibility of toys by Uravu. It also gives an overview of the competitive level present in the local toy market.

Toys representing famous icons like Barbie, Angry Birds, Doremon etc and normal toys like teddy bear are dominant in the market. Few toys representing Indian characters and gods like Chota Bhim, Chutki, Hanuman, Ganesh etc can also be spotted in the stores.

Apart from this , there is also an increased competition from video games and games on digital devices. There is a growing trend in the use of tablets and smart phones for entertainment purposes. But one cannot deny the increased tactile feedback a child gets from physical toy.

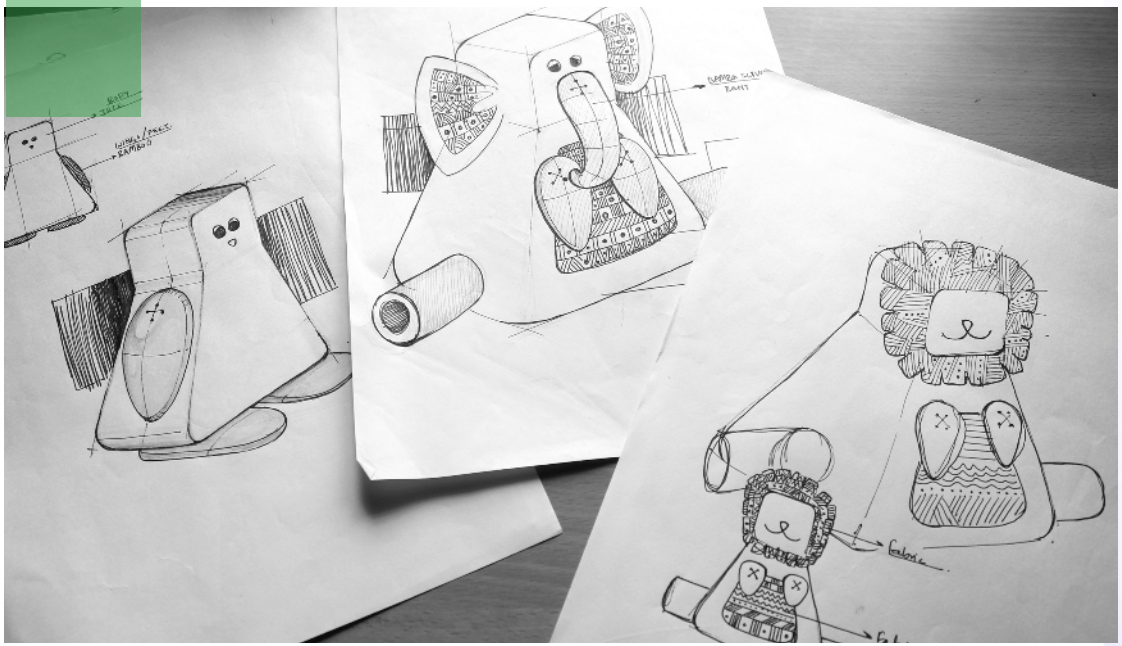
The unavailibity of traditional & local toys presents a scope for further explorations in this area.

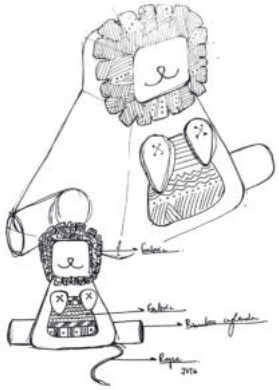
IDEATION

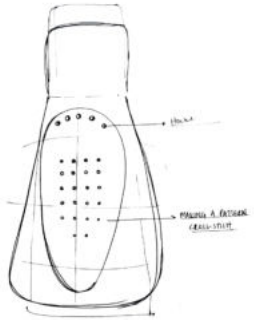
Different ideas and concepts were explored .

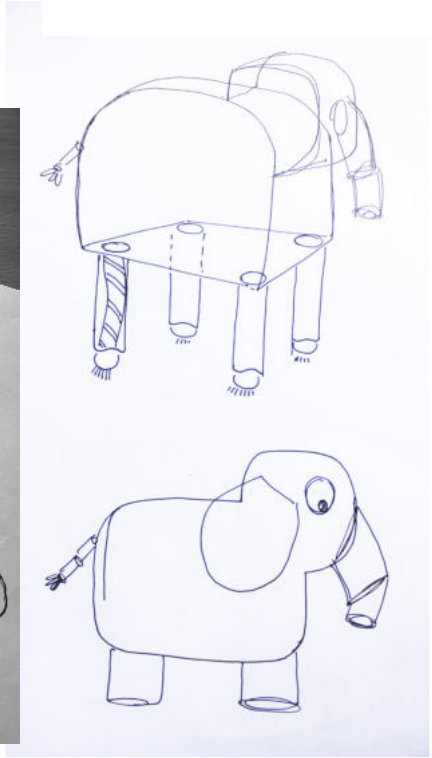
Different forms for the toys was sketched. Ideation was done primarily in the joineries, forms possible, mixing of other material if required, different color possibilities, what animals forms should be included etc.

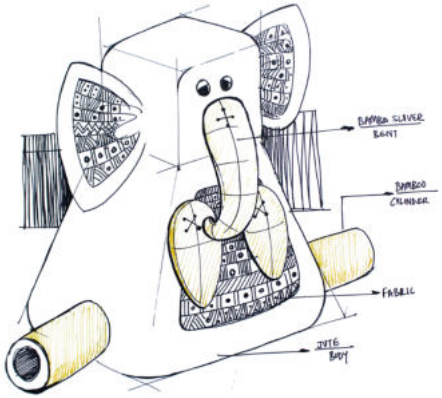
SKETCHES

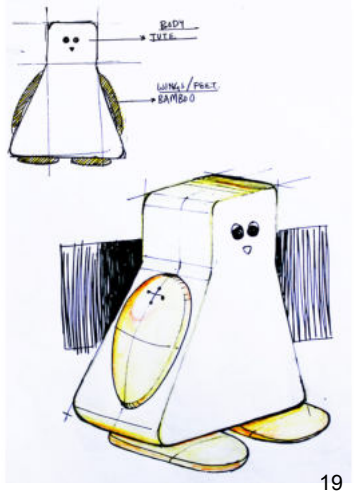









BAMBOO SLIVER
BAMBOO CYLINDER
FABRIC
JUTE
BODY


BODY
JUTE
WINGS / FEET
BAMBOO

JOINERIES

Various joinery details were tried out to mix bamboo and jute.

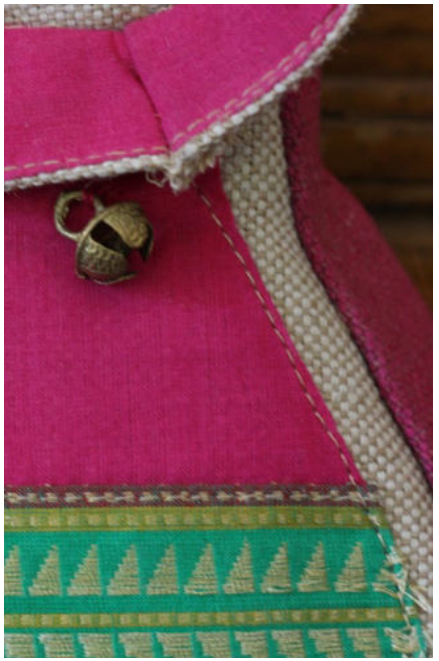
1. Fabric is inserted in the bamboo's cylindrical section. It is then rolled and stitched.
2. Slits were made in bamboo for inserting jute.
3. Parts were made like buttons and stitched on the jute body.

MORE EXPLORATIONS

More exploration was done on the possibilities of using bamboo and other materials like decorative stitches, flattened bamboo, cotton fabric, other embellishments like brass bell etc

Decorative Stitches

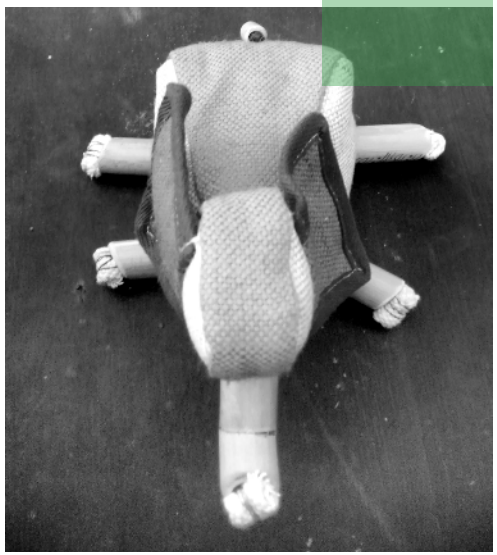
Flattened Bamboo

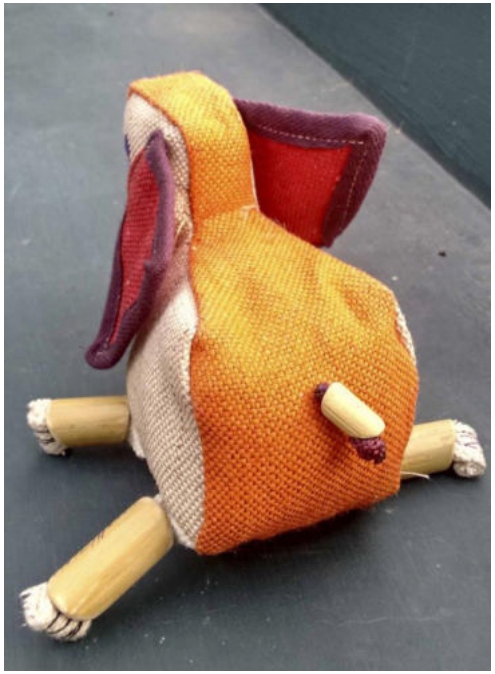


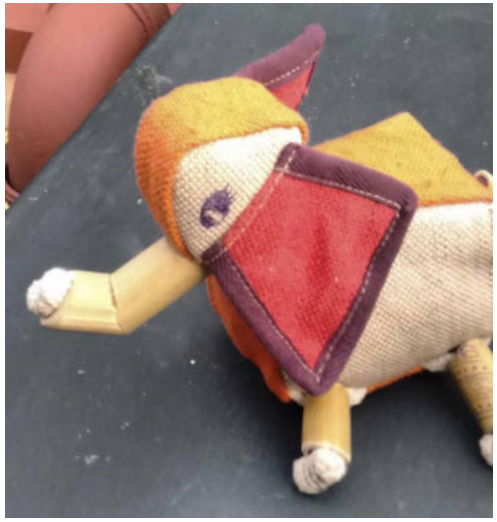
Fabrics and other embellishments

FIRST PROTOTYPE

The first prototype was an elephant made by combining both jute and bamboo.







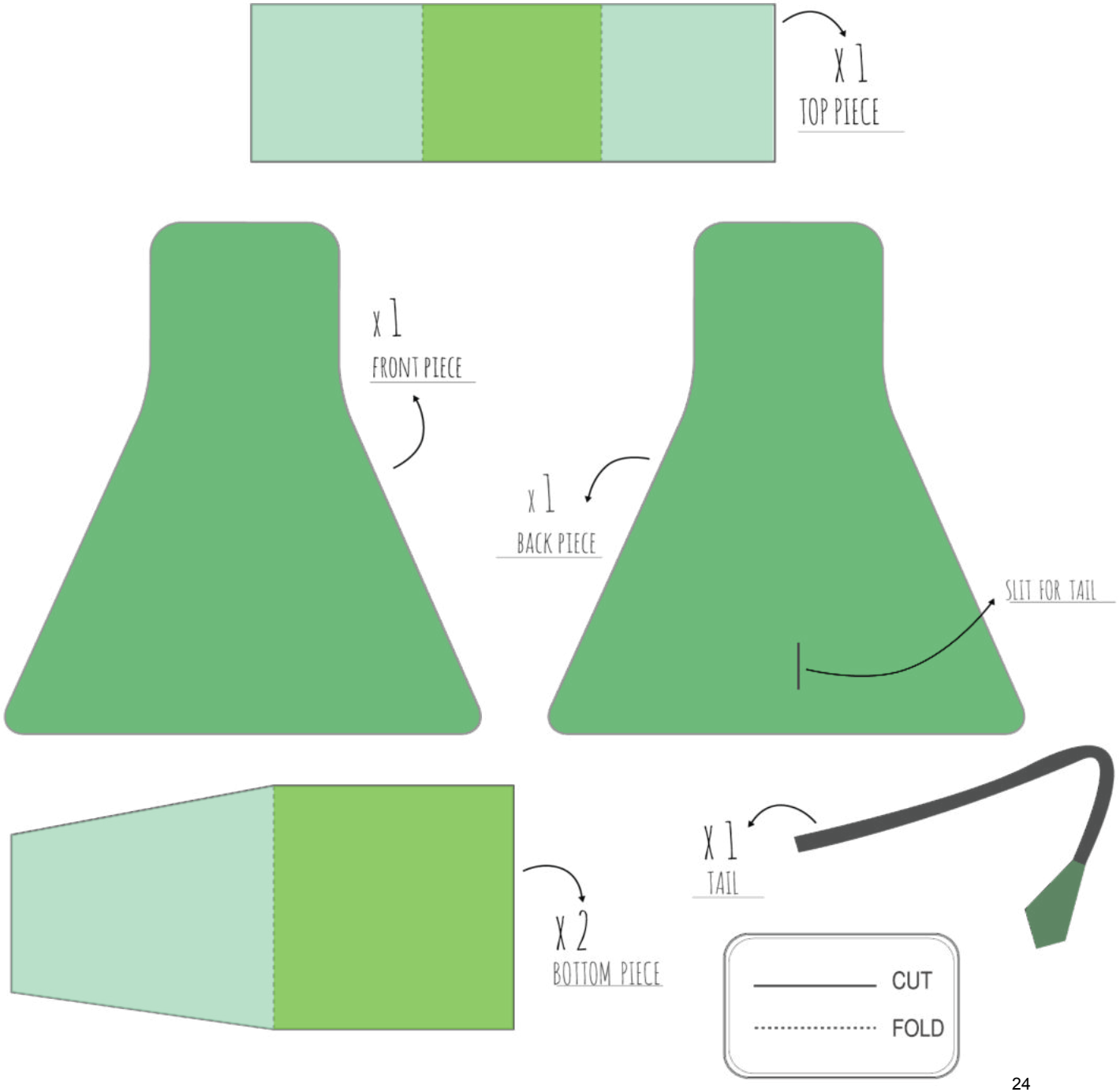
The joineries was still crude and had to be improvised aesthetically. Trunk had two pieces of bamboo joined in an angle. This posed problem while inserting the fabric in the trunk because it wasn't straight. The tail was just stitched and wasn't strong enough and had to be worked on.

FINAL CONCEPT

Jute posed problems such as difficulty in turning the fabric inside out because of the thickness of the fabric. So an simpler form was chosen for making the toys.

PATTERN

Pattern for toy was made for easy replication of the design



TOOLS

The following tools were used during the process-

- *Steel ruler*
- *Pencil for marking*
- *Scissors*
- *Needle and thread*

FINAL PROTOTYPES

Names and stories were created for the toys to give it a personalized feeling.

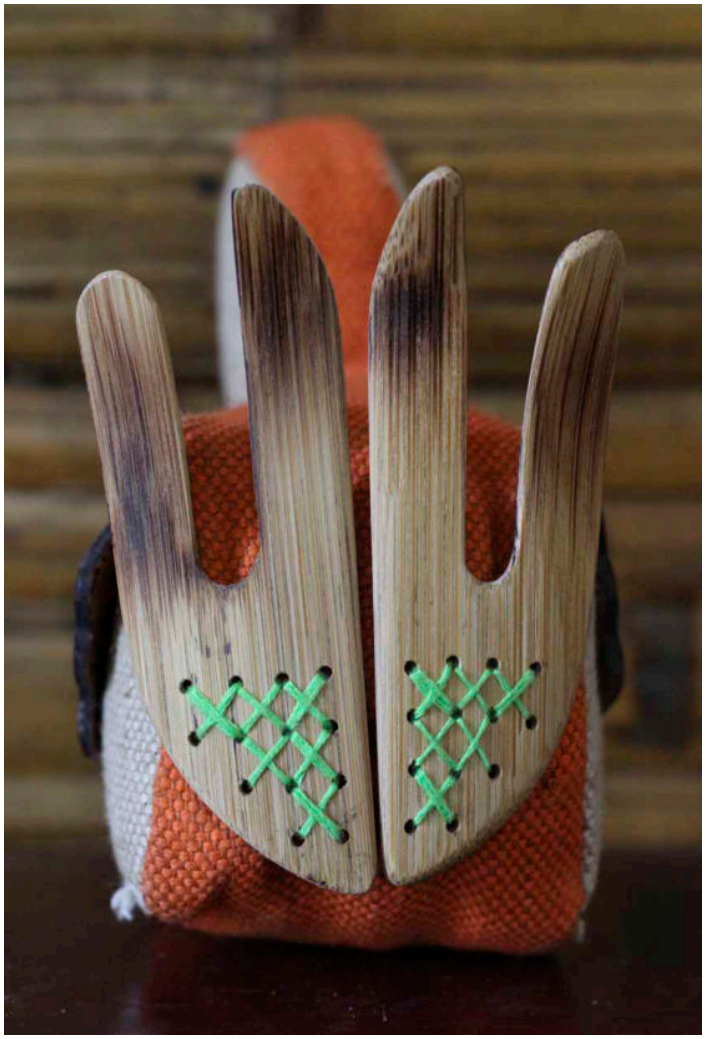
MEET PINU, the elephant

Pinu loves stories and dancing. Tell her one and she will listen to it amusingly.

Jackfruit is her favorite fruit. You might find her munching jackfruits in Wayanad's lovely green forests.

MEET THE OTHERS

KUKUDU, the hen
VINSHU, the penguin
SHERU, the lion

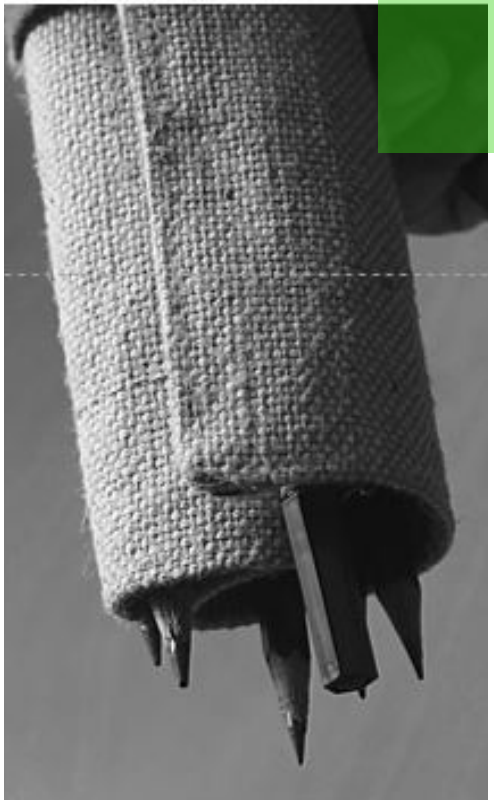


Stationaries is an area which usually has a regular market. Different types of pencil cases was explored.

5 PENCIL CASE

MODEL - 1

First model was made using jute and fabric

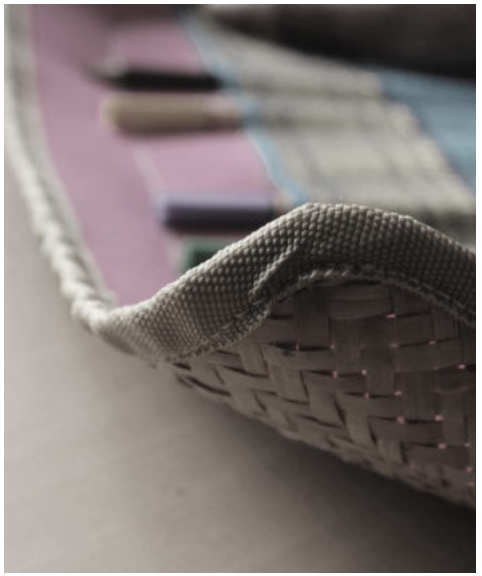


ISSUES

The pouch has to be held only in a particular alignment to prevent the items falling off.

MODEL - 2

First model was made using Sheetal patti and fabric



ISSUES

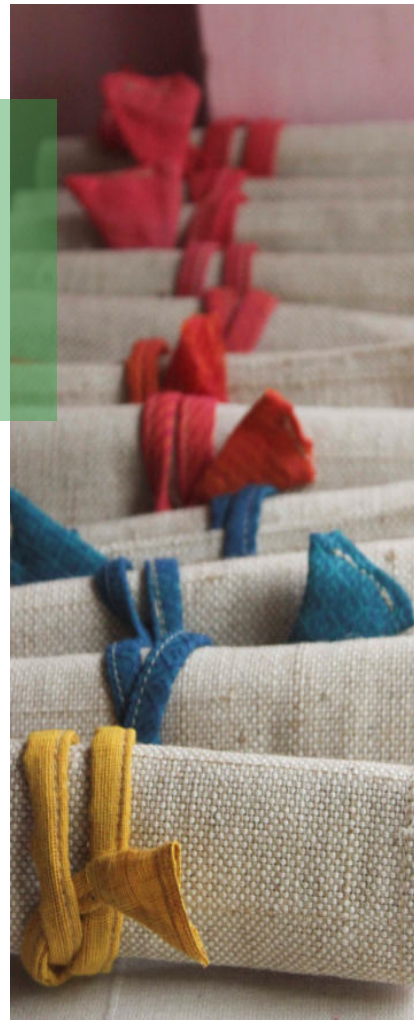
- Breaking of Sheetal Patti
- The stitches are visible
- The pouch doesn't stay flat making it difficult to access.
- Corners are difficult to handle

FINAL MODEL

A flap was added on the top of Model-1 to prevent the things inside from falling.

MAKING IN BULK

A particular process (step by step) in which the stitching is to be done was worked out and decided with the aid of the craftsmen. After this around 80 pieces was stitched. It was then send to different stores to see customer response and feedback.



Cost price: Rs 60

Selling price of the product would depend on the location at which it is bought i.e. at the point of production or not. It would also include the labor cost, machine depreciation cost and other overheads

VISUAL DESIGN

There are lot of dimensions other than just designing a product. Lot of practical, real life issues come into play during the process.

6

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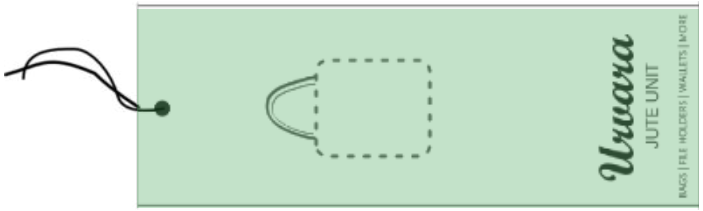
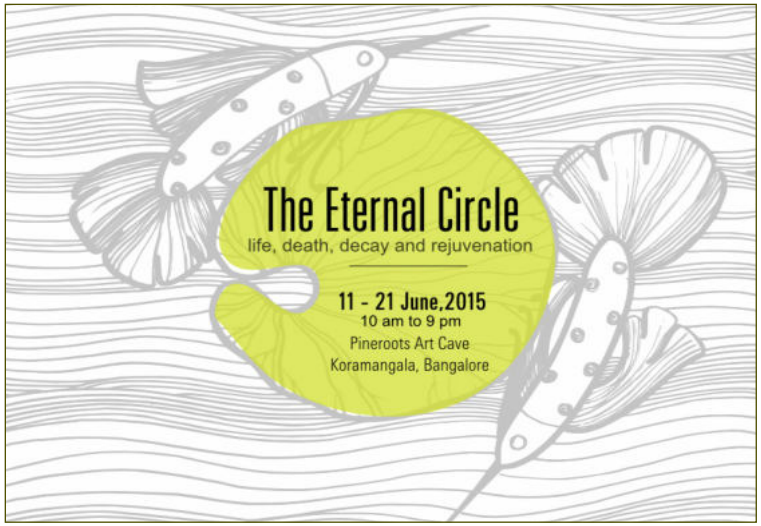
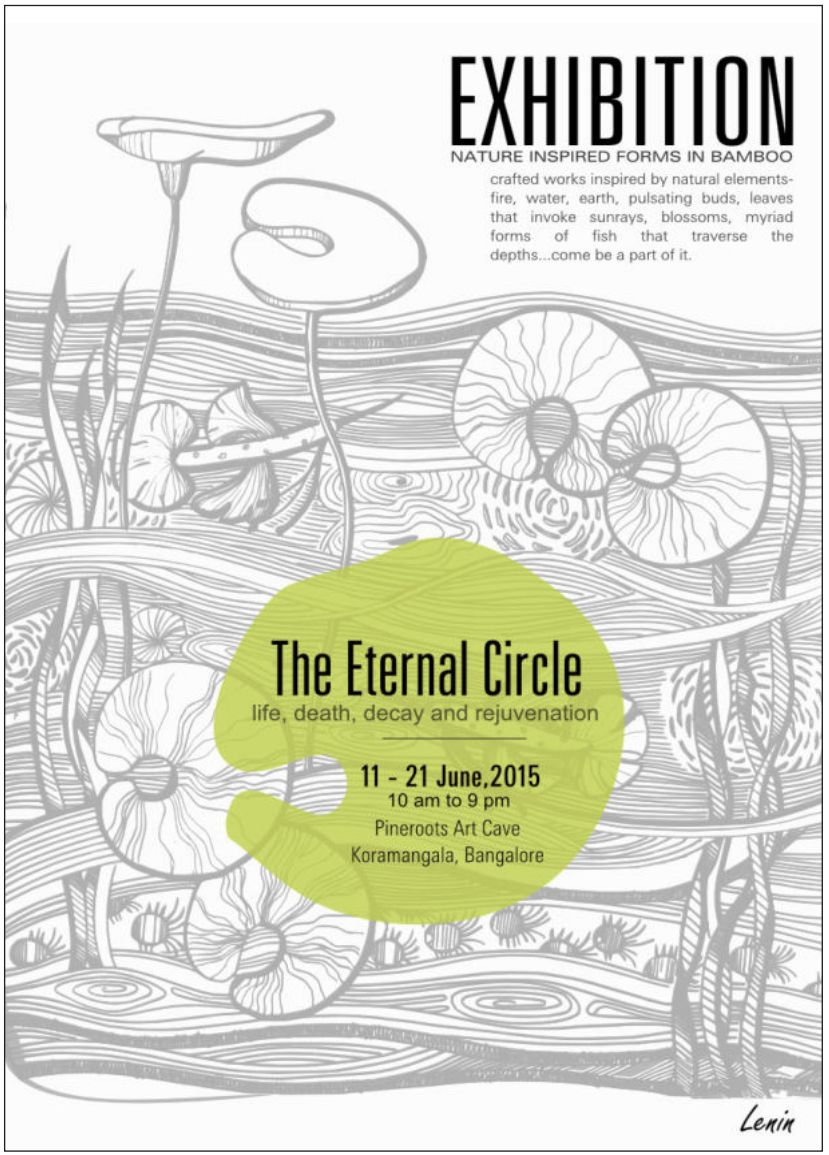
BRANDING / POSTERS

Brand tags, labels, logos, posters were designed to improve the visual identity of Uravu.

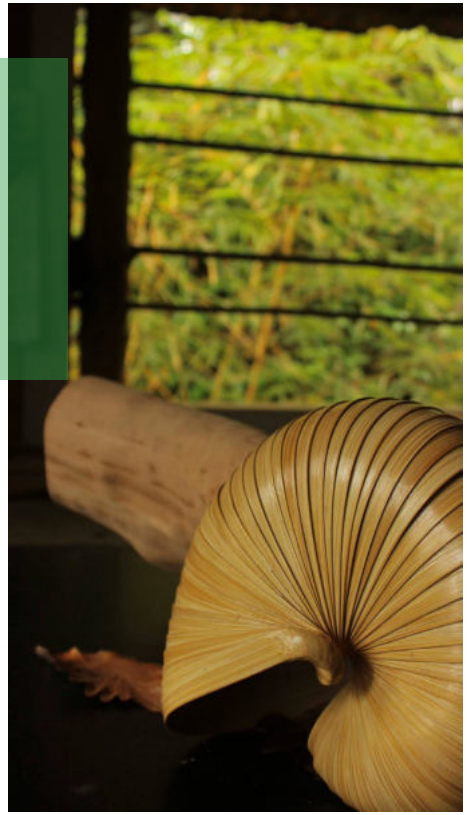


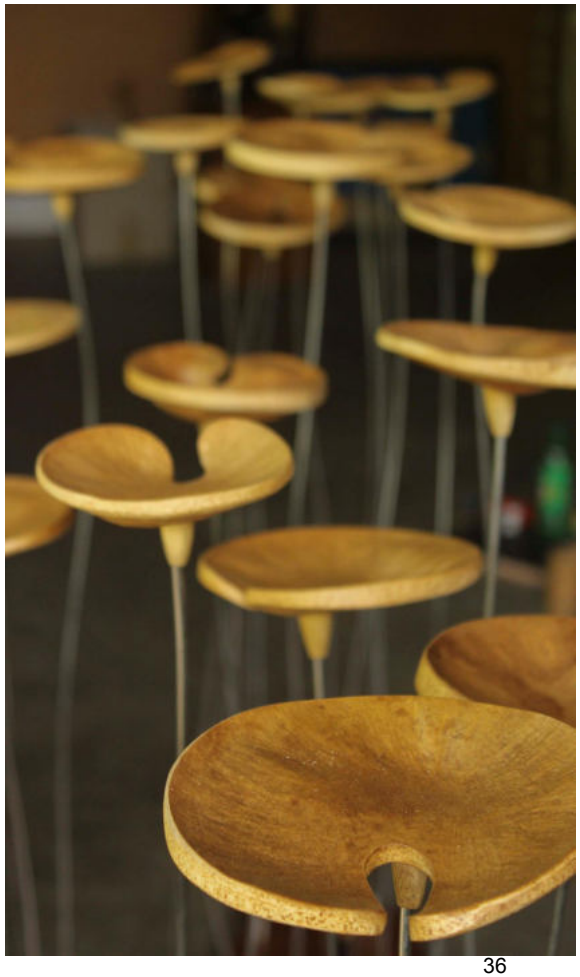




PHOTOGRAPHY

Photographs allow us to share and to communicate ideas . Lot of photographs were taken of the existing works, products, architecture.





The photos in this page are works of an artist & master craftsman -Lenin.

PRODUCT SHOOT

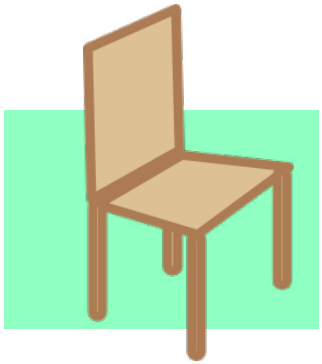
With growth of online platforms, photoshoot of products have become extremely important if the organization wants to promote its products or services.

The style of photograph would differ for different platforms. Online store would usually require product picture with white background, whereas platforms like pinterest, instagram etc usually have products with a set up environment to compliment the product.

Weaved bamboo container for gifting shawls.

BAMBOO LOG

Workshop on sustainable architecture and furniture design.



bamboo लोग

"bamboo and bamboo workers"

Design workshop

GEORGE

KUSHAL

ME

7

The workshop was mainly invovlved in finding ways to demonstrate bamboo's versatility as a building and furniture material through evolving creative design of two housed, one community center and three furniture sets by teams of formally trained architects and designers, on one side and traditional bamboo craftsmen on the other. The oppurtunity is also to study conditions of the bamboo workers and explore ways to enhance their employment prospects .

The workshop was an amalgation of four organization- Habiitat Forum, INHAF, Sangaru, IN:CH and Uravu.

We were a team of three members- George (Furniture Design, NID, Ahmadabad), Kushal (Lifestyle accessories Design, NIFT,Kangra) and me.

FURNITURE

The brief given to us, was to design a range of Bamboo furniture for the urban market to promote and establish bamboo as a superlative material for furniture making.

Affordable
Sustainable
Appealing aesthetics

Center table, sofa seat, chair prototypes.

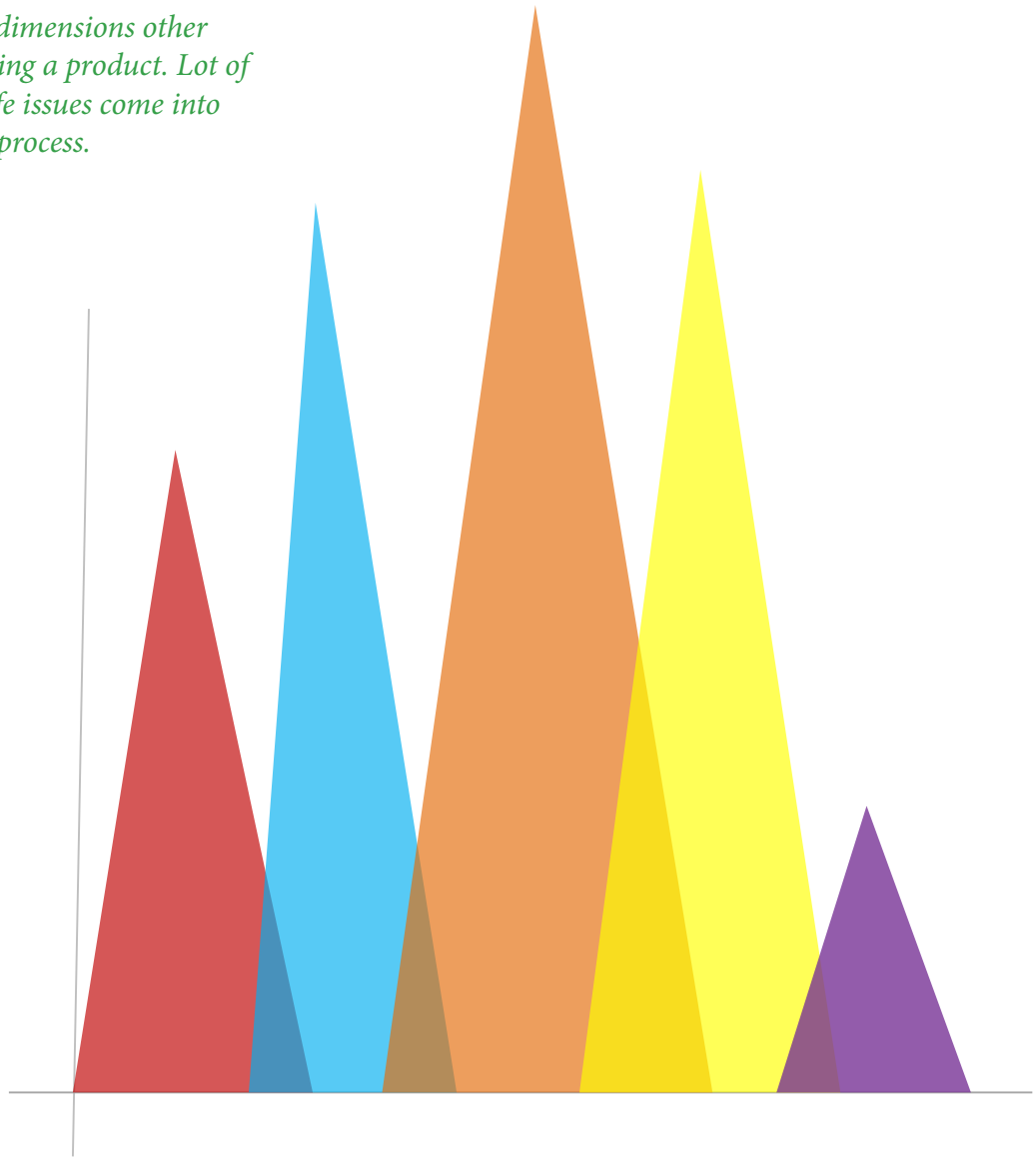
RANGE OF FURNITURE

Internship not only helped me learn new skills, practical sides of industrial design but also it was a chance to meet people from various work dimensions, understand, share and learn from them.

8 LEARNINGS & ACKNOWLEDGMENTS

DEPENDENCIES IN DESIGN

There are lot of dimensions other than just designing a product. Lot of practical, real life issues come into play during the process.



COSTING / BOM

Knowing the cost price, profit, selling price, machine depreciation cost, overheads etc

CRAFTSMEN

Training, communicating ideas, designer's presence, making them understand the design, personal issues etc

MANAGEMENT / STRUCTURING

The entire system has to managed properly, which includes capital ,human resource, product management.

RESEACRH

Market analysis, buying habits, current trends etc.

LANGUAGE

A small but yet an important attribute for understanding people and environment around oneself

ACKNOWLEDGMENTS

Lot of people were a part of my journey at Uravu.

It's the people you meet that makes vibrant experience. They shape our memories more than the locations themselves. They can make a bad place good, or a great place bad. They teach us about what we like or don't like in others. We learn more about ourselves from people.

The kids, chechis(elder sisters in Malayalam)of Urvara, local friends and many other were an integral part through out the internship at Uravu. It is through their immense support and help, the projects at Uravu were accomplished.