



saarathi

TEXTILE FOR ARCHITECTURAL SPACE

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Special Thanks to:
Sakthivel Vilvopathy



PROJECT BRIEF

Textiles for Architectural Spaces aims to engage students with the realm of interiors. Students are to design a textile product for the E1 E2 guest house living room or bedrooms in NID.

Initial research on the space is to be conducted, after which a theme for the textile product must be selected. This could be drawn from NID history, pedagogy, colours, projects, etcetera. Weaving explorations support the development of a concept. Ultimately, sampling and creation of a prototype must be carried out.





SYNTHESIS OF RESEARCH ON NATIONAL INSTITUTE OF DESIGN

1. Philosophy

- Its focus on 'Design' as a whole, with no distinction between disciplines (inter-disciplinary learning is encouraged even today).
- The learning by doing philosophy is seen in the making of the architecture (domes were not built in one go).

2. Architecture

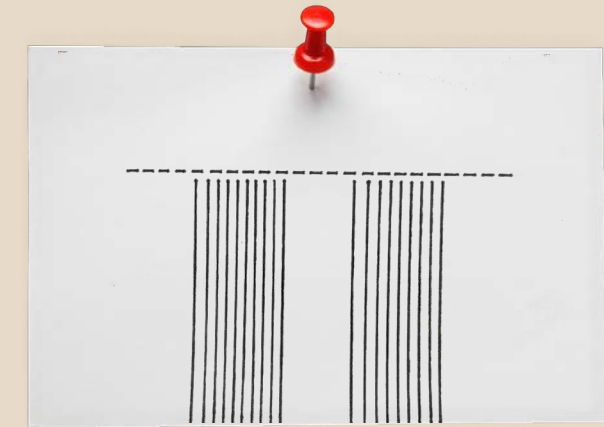
- Every element is true to itself.
- Every element is intentional and has a purpose.
- All studios are interconnected. Hence, facilitation of holistic learning.

3. Guest House Interior

- Modernist philosophy is reflected in the interiors and the furniture (material, joinery, etc.)
- This leads to continuity and harmony between architecture and furniture.
- Furniture caters to the Indian consumer (user-centric design).

4. Flora and Fauna

- Some plants were indigenous, others from outside India.
- Done with the forethought to help students learn, study and sketch.
- Fauna get attracted to a haven of greenery in NID.
- This creates a different environment inside campus versus outside (in terms of noise reduction, pollution and sunlight).



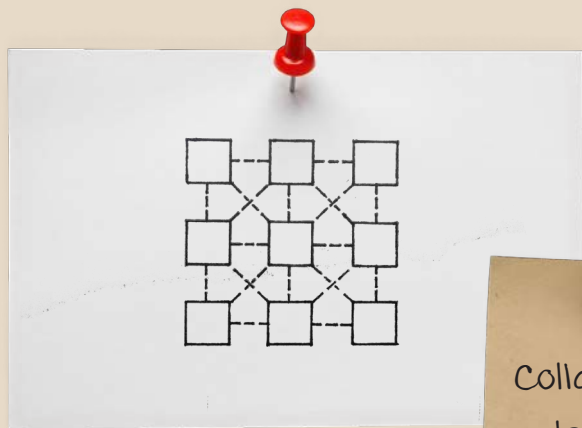
Equality

No hierarchy

Self discovery



Informality

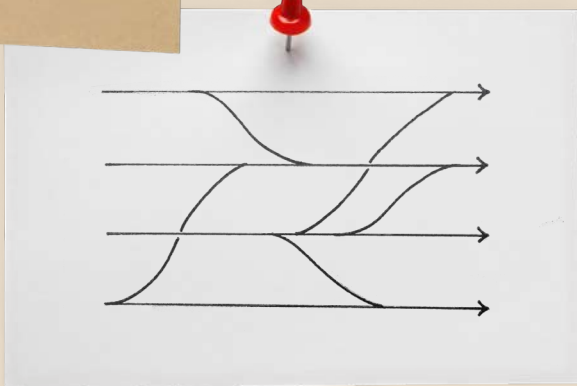


Collaborative learning

STUDENT
TEACHER
DYNAMIC

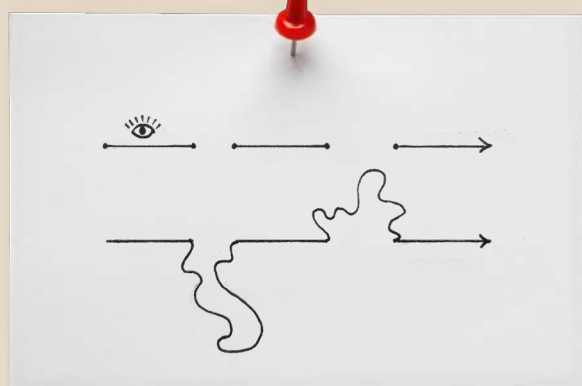


Unconventional
Pedagogy



Student
Autonomy

Guidance
rather than
authority



CONCEPT / INSPIRATION

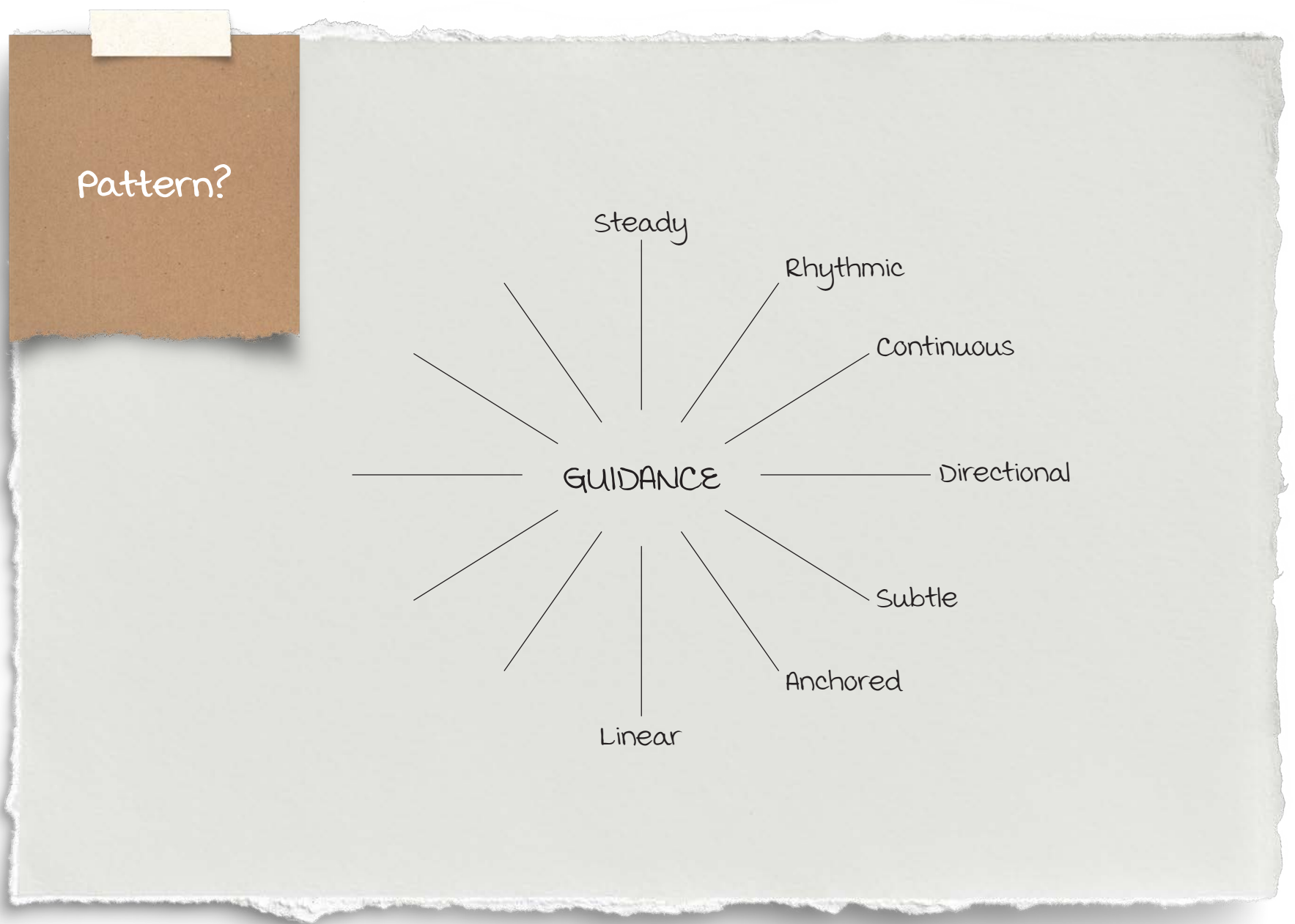
Learning at NID is distinct from conventional methods followed elsewhere. **This is a learning situation in which teachers and students work in partnership.**

On the very first day, Gautam Sarabhai told the students that they were to address their teachers by their first names. H.Kumar Vyas did not want any separating line between him and the students. **When teachers are addressed as 'sir' and 'ma'am,' it creates in students' minds a sense of power that they are not one of us.**

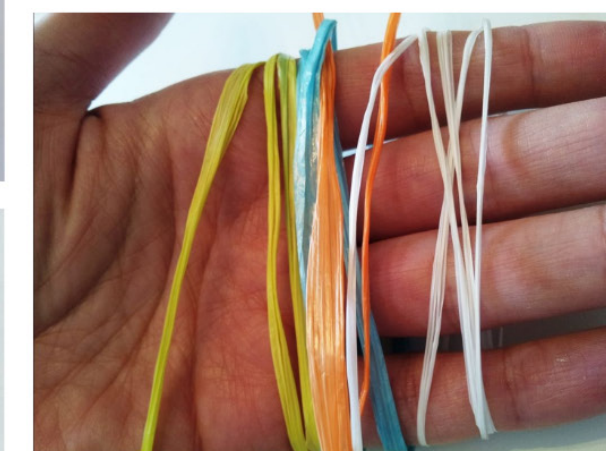
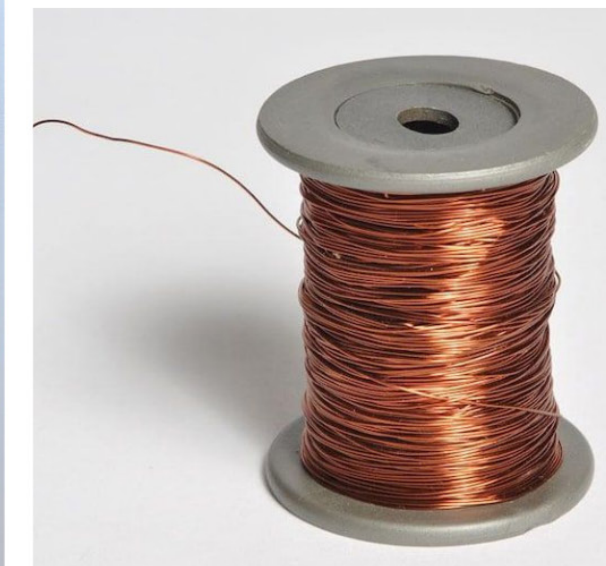
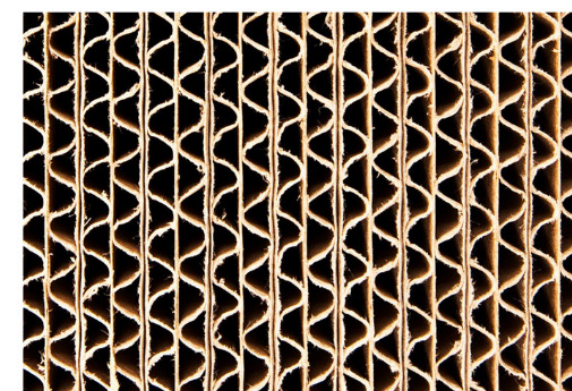
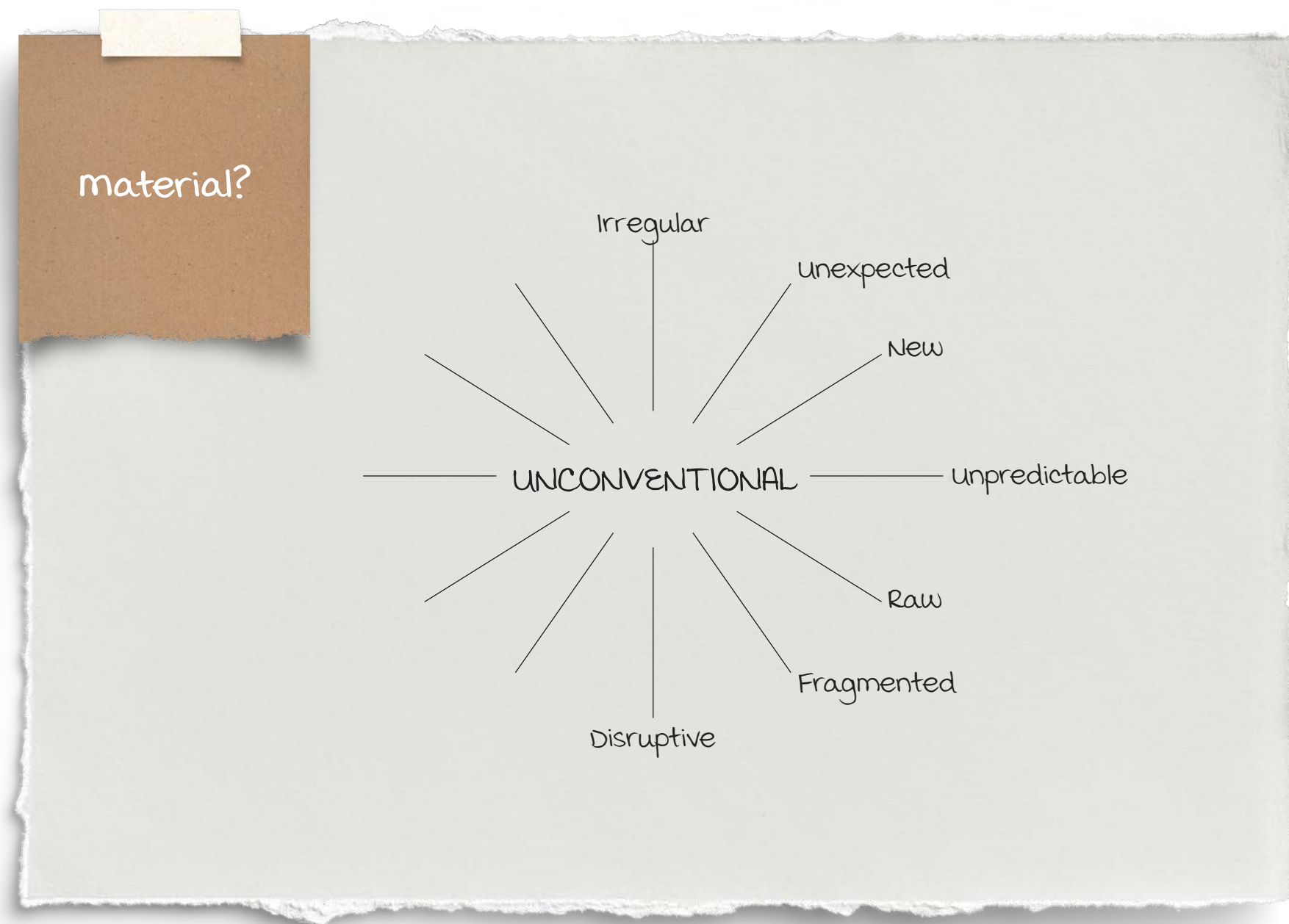
Even the assignments are not usual. **There is no spoon feeding.** The exercises that teachers set for students lead them to develop their own perspective. To find their own answers.

And as there is no rigid categorisation of people, **even informal spaces become a space of learning.**

Taking the student-teacher dynamic as a concept, to give this intangible aspect form, I further **visualised the keywords I gathered as tangible objects**. I noted the qualities they would have or the properties they would exhibit.



Doing this exercise gave me an indication of the areas these qualities could be used. Out of all, I chose and went ahead with three that would gel well together: **structure** (collaboration), **pattern** (guidance), and **material** (unconventional).



Initial direction

Visual depiction of subwords emanated from the keyword '**Unconventional**'.



Firstly, I focused only on the **material (unconventional)** aspect. I began with some materials I had.

In one of the samples, I used aluminium wire in combination with bamboo skewers **to leverage both materials' properties**. Bamboo's **sturdiness** would help the sample retain its form in the foreground. In contrast, the **mouldability of metal** would allow us to change the background's form.



When the sample was taken off loom and given form, I realised **the choice of materials seemed forceful**, as the stability of warp against weft was lacking.

I set out to find some **natural material whose behaviour could be used to create the 3D forms** without compromising on the dimensional stability of the fabric stucture.



I came across ropes of natural origin, the exact description of which I was unaware of. It turned out to be **munj grass ropes** sourced from Jaipur, Rajasthan.

I used the **pulled warp technique** to imitate the dynamic nature of the bamboo-metal sample. However, the weave structure wasn't suitable for this. Pulling the warp was extremely labour-intensive and inefficient.



I, then, **changed the denting** to two in a dent and a dent gap. I also introduced cotton weft at alternate intervals. This helped immensely, as **the warp rib structure and the behaviour of the cotton yarn** allowed it to move out of the way when the warp was pulled.



I wanted to see **how cotton yarn and munj rope would behave in a similar setting**, so I wove them side by side following an identical pattern.



While the cotton section remained fluid, the munj area did not form any curves but folds. This discovery showed that cotton and munj, in an alternate picking order, were the most suitable for achieving the desired results.



GUIDANCE

- Rhythmic
- Directional
- Subtle



UNCONVENTIONAL

- Irregular
- Unexpected
- Raw



COLLABORATION

- multiple
- Connected
- Overlapping

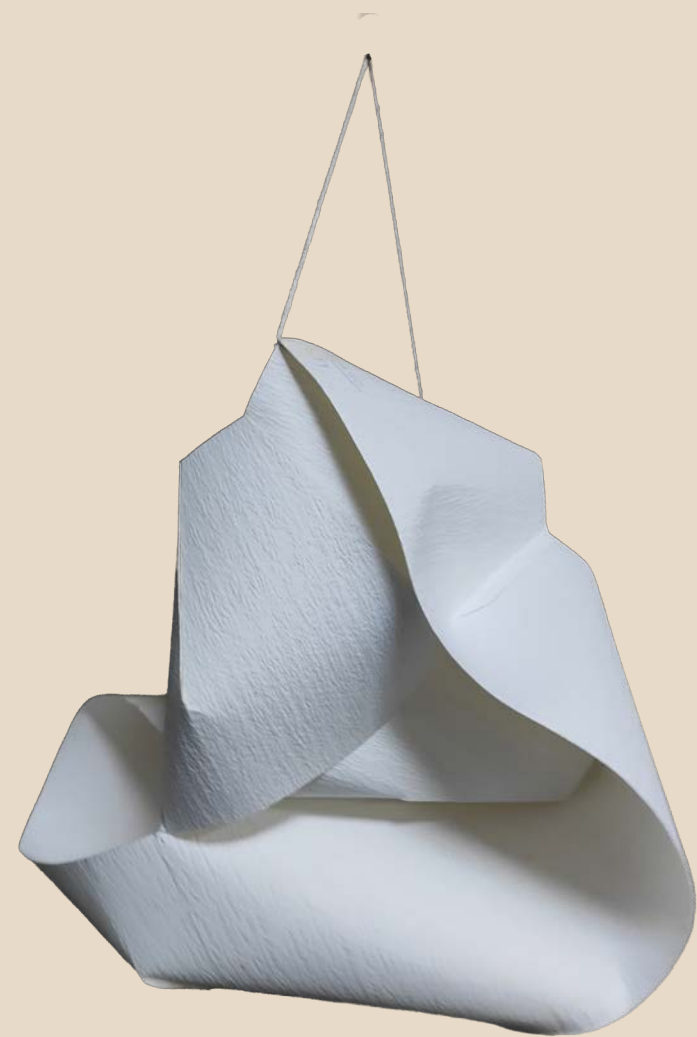
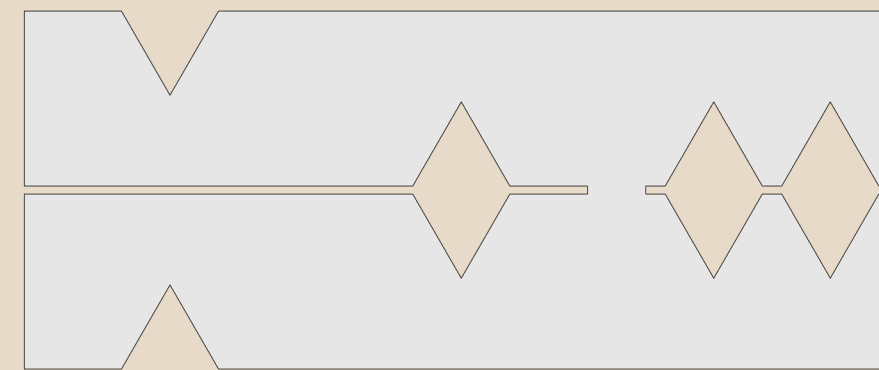
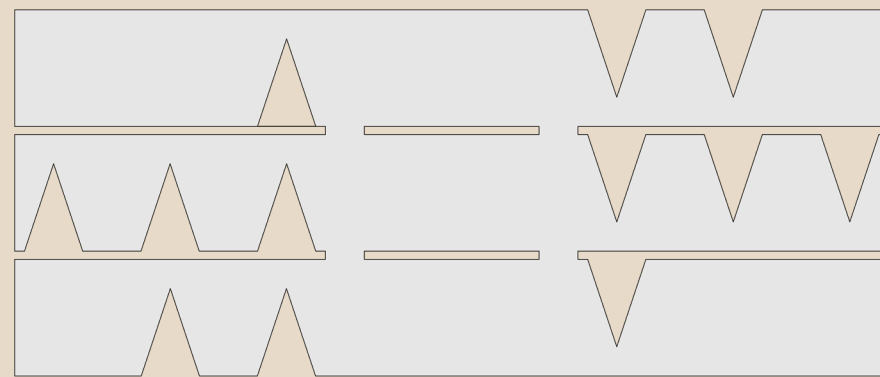
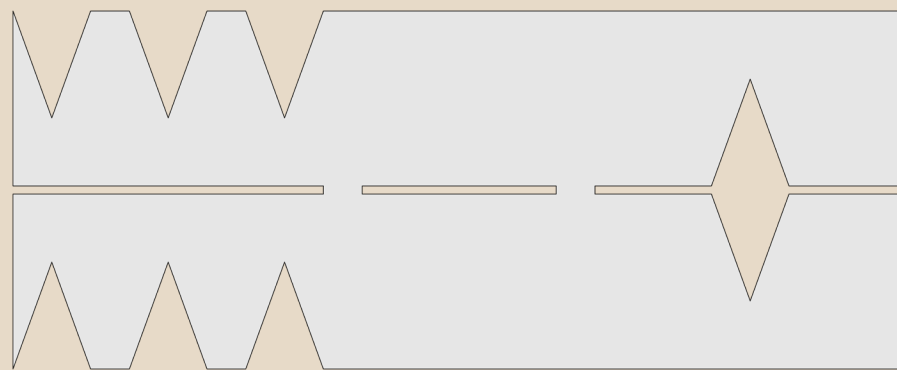
DESIGN BRIEF

Initial

To create an **object of visual interest** that keeps the passerby engaged while they are going from the ground floor through the stairs to other floors in the E1 E2 Guest House.

Revised

To create a **3D textile sculpture** for the E1 E2 Guest House, using weaving as a fabric construction technique. It aims to explore the various aspects of the student-teacher dynamic using colour, material and form expression.



(selected)

Once the material was finalised, I worked on a few **paper models** to incorporate the **structure (collaboration)** aspect of the concept. Shown here are a few of them.

I cut off the sections of paper that were to be left unwoven on the loom. Then, I joined the sides of those sections to imitate a pulled warp effect.

I gave it a form afterwards by overlapping and connecting multiple panels.



Winding the **4/10s** yarn for warping

Warping in sections of
84 ends; thrice





Transferring the warp



Stretching the warp



Tying the ends to the previous ones on the loom to save time, as the same drafting and denting was to be followed for the prototype as well.

More munj ropes were bought.

One bundle weighs around 2.5 kg, priced at Rs. 100 per kg.

Two new bundles were bought, and it was observed that they had a **subtle hue difference**.





Soaking the munj rope in water overnight or for more than six hours during the day **makes it more pliable and suitable for neat weaving.**

The ropes came in **4 ply.** Before soaking them, they need to be separated into individual ropes as **they get even more twisted when wet.**

To facilitate easier transfer of weft onto shuttles, they need to be **detangled before soaking**, as they twist even more when wet. So, I placed a heavy object in the centre of the container used for soaking, then wrapped the rope in a spiral around the object.





After soaking overnight, a **yellow-tinted residue** was noticed in the water.

After draining the water, the ropes are washed thoroughly and **kept under a wet jute fabric** to keep them moist while weaving is underway.





As material and structure were in place, I used munj ropes of two distinct hues to create a subtle *pattern (guidance)*.

I initially used **2/2s cotton** but realised it wasn't strong enough and **was prone to breaking against the coarse munj rope**.

I tried using **4-ply of 2/10s cotton** instead, but it **lacked friction**, which is also necessary to hold the munj rope in place. So, it was suggested that I use one of each together.

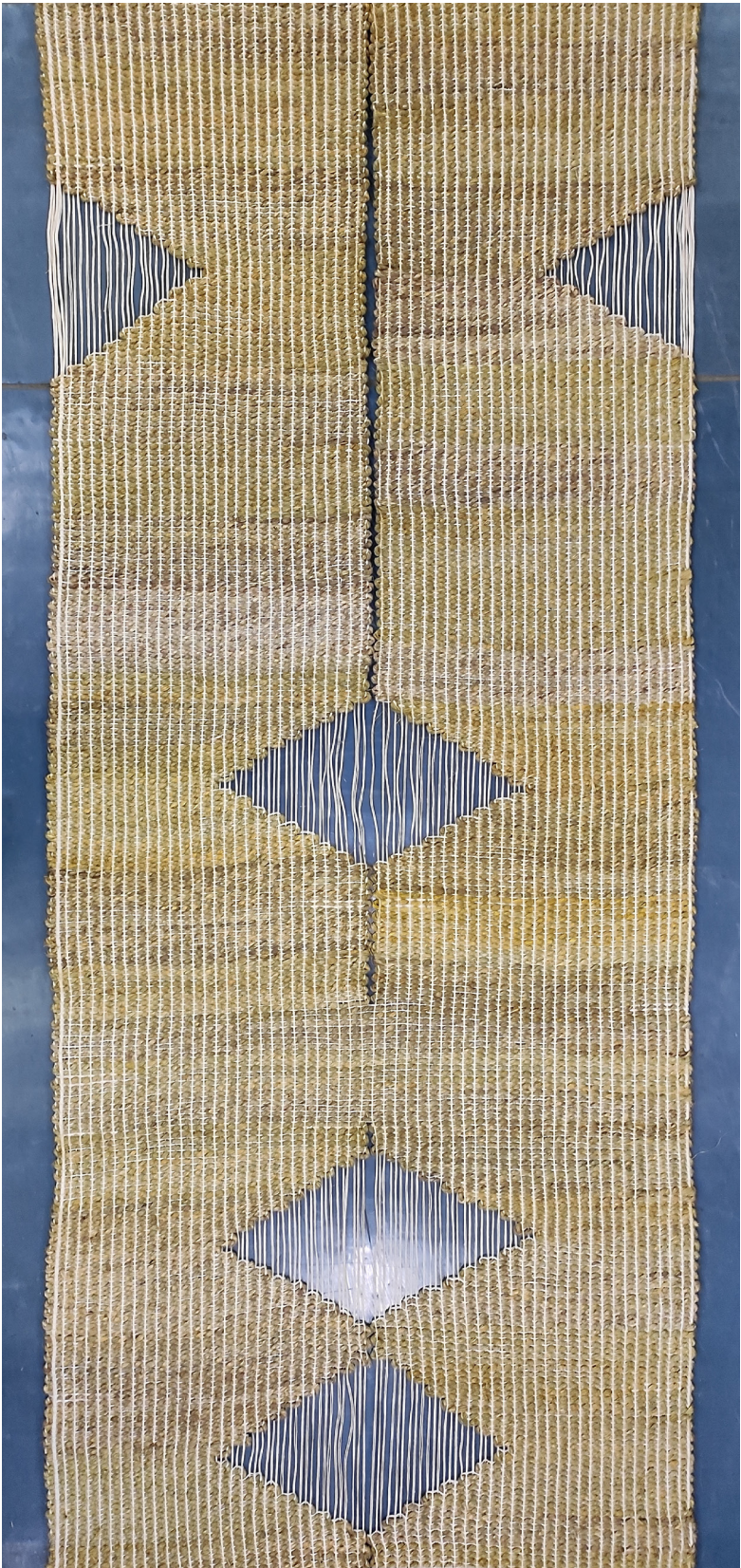
2/2s cotton provided the friction, and **2/10s cotton** provided the strength needed.





The prototype while **weaving**.

Reed: 12s
Reed Space: 38”
Denting: 2 in a dent and a dent gap
Weave: 2/2 Weft rib



The prototype **off the loom**

Finished length: 90”
Finished width: 36”



The prototype **after warp pulling**



Since **paper models** did not account for the weight of munj ropes, the prototype looked entirely different once it was given form.



I **improvised** and made some small changes to the form.



Tying the ends of different panels and weaving the ends in

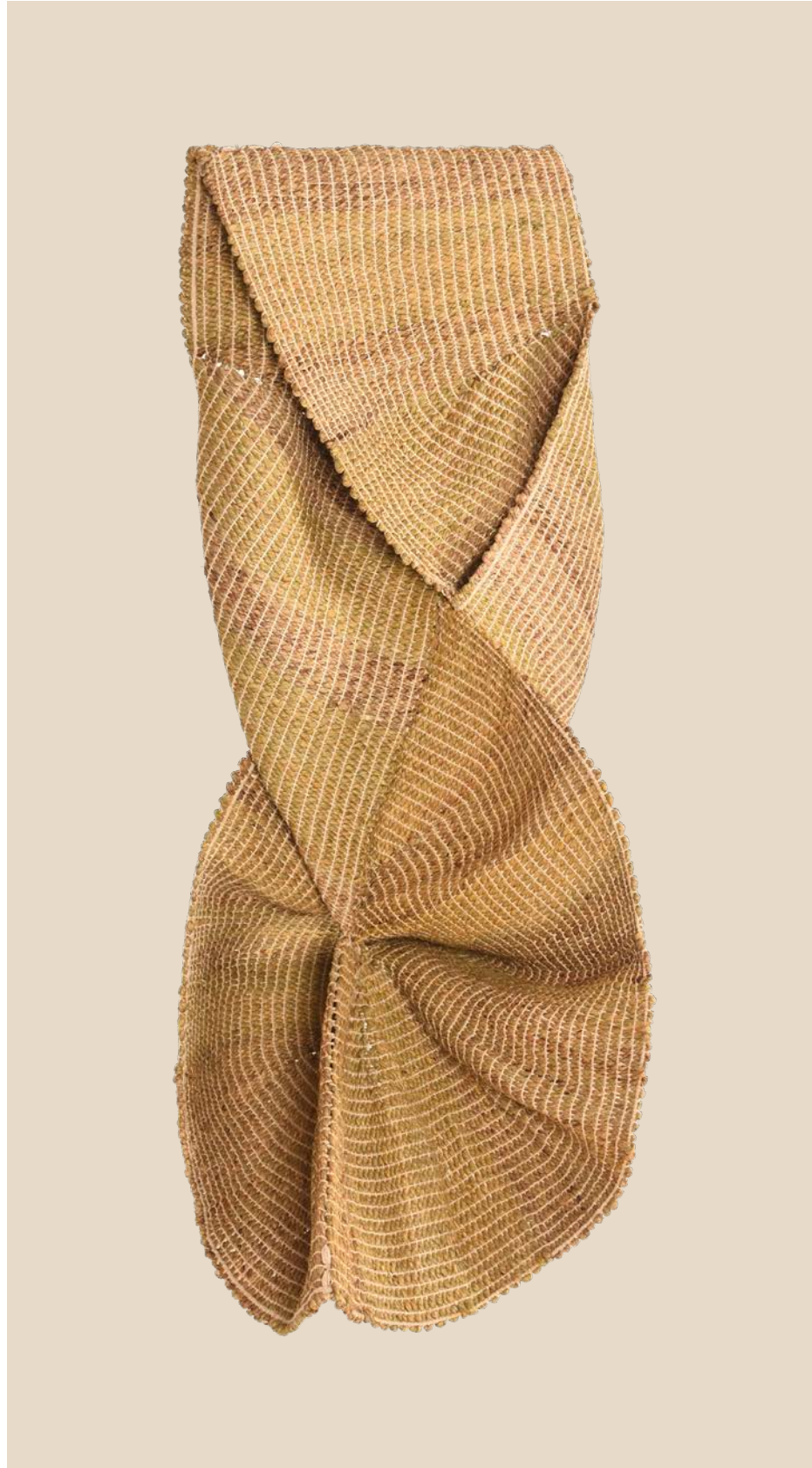


The **space** within the E1 E2 Guest House, where the prototype was **proposed for installation**.



The space with the **53” long** prototype installed digitally.





From left to right:
front, side, back and close ups of the prototype (3D textile sculpture)