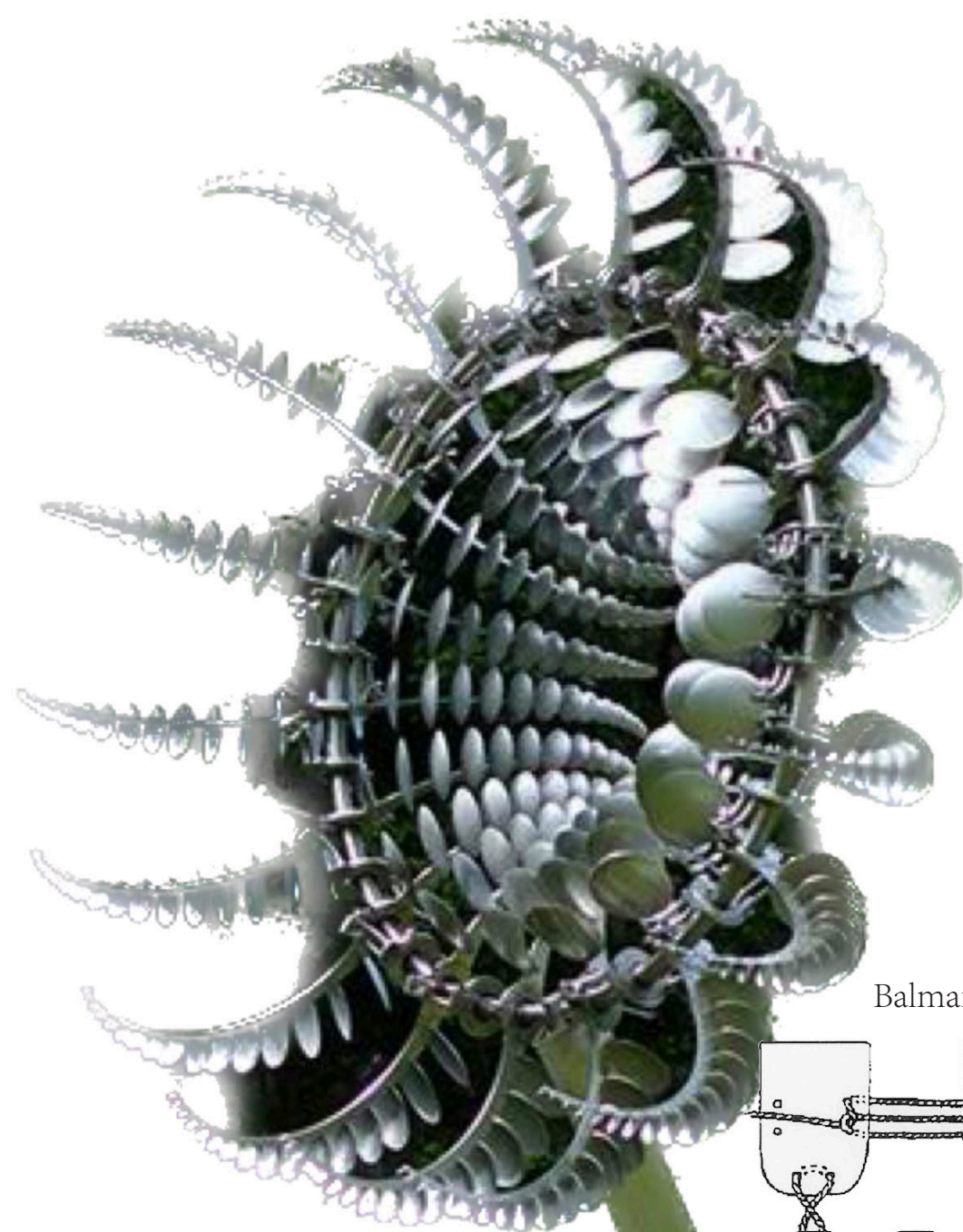


Only Natural 2025
– "Second Skin"

Jennifer Jiang



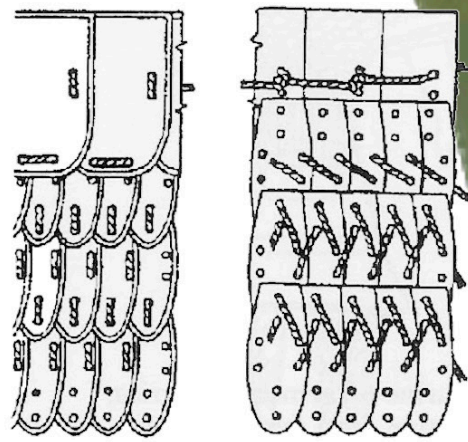
Chinese Ancient Armor



Historical and Contemporary Research

I researched armor from different dynasties in China, Paco Rabanne's designs from the 1960s, and the movable installations of Anthony Howe, an artist collaborating with Iris Van Herpen, for inspiration.

Balmain



Chinese Ancient Armor

Figure 8. Manner of lacing armor laminae, (from Zhongguo Luoyang 1903)

Sustainability Research

In terms of modern sustainable design, I researched the sustainable practices of the brand icicle, such as food dyeing, Xiangyun yarn, etc., as well as the use of natural fibers in Balmian 2023 Haute Couture.



Icicle Campaign



Paco Rabanne

Anthony Howe

Concept

This project envisions armor not as a heavy, rigid barrier, but as a flexible, protective second skin that moves and breathes with the wearer. Rooted in my studies in Edinburgh and inspired by the rich Scottish wool tradition, I explored how wool’s tactile softness and natural resilience could be transformed into structured, wearable forms. Through hands-on wet felting practice, I discovered how wool fibers can naturally bind and sculpt into protective layers without synthetic additives—mirroring the organic interconnectedness found in nature.

The visual and conceptual heart of this design lies in the idea of “cracks” – inspired by natural cracks, ancient Chinese ceramics, and the weathered textures of historic armor. These cracks symbolize the paradox of strength born from fragility, where imperfection becomes a source of beauty and resilience. This duality reflects how the protective qualities of armor coexist with adaptability, echoing the layered construction of Chinese lamellar armor, which balances rigidity and flexibility.

These materials collectively support a concept that reimagines armor as a second skin, grown from the earth but shaped by modern consciousness. The design envisions a future where natural materials reclaim power, where ancient wisdom and sustainable innovation form a tactile dialogue. Inspired by natural cracking forms—from dried earth to shattered ceramics—I aim to express both fragility and strength through textures and structure, creating a wearable language of resilience.



Wool Felt



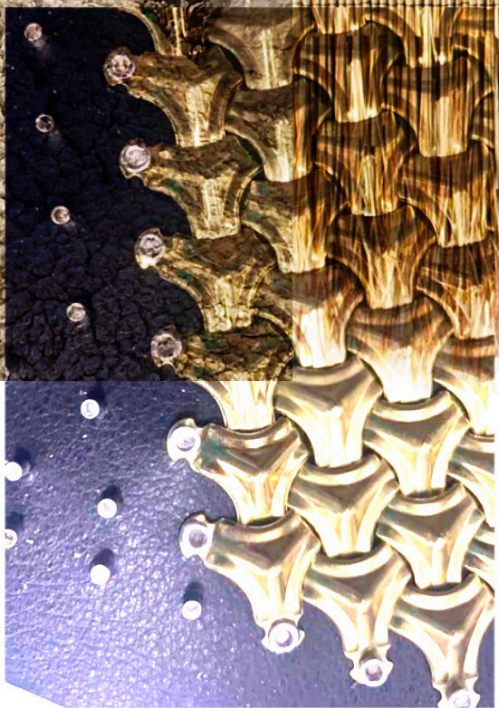
ZHUCHONGYUN



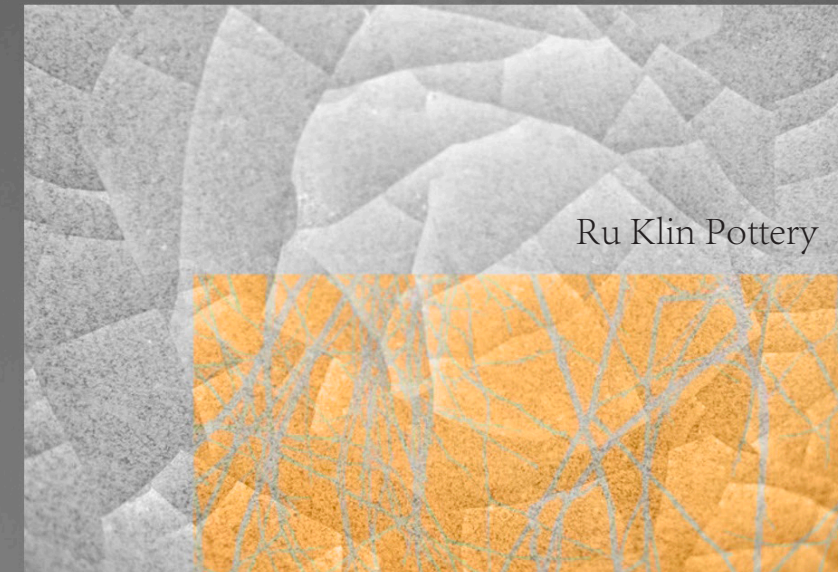
Wool Origin



Raffia



Chinese Ancient Armor



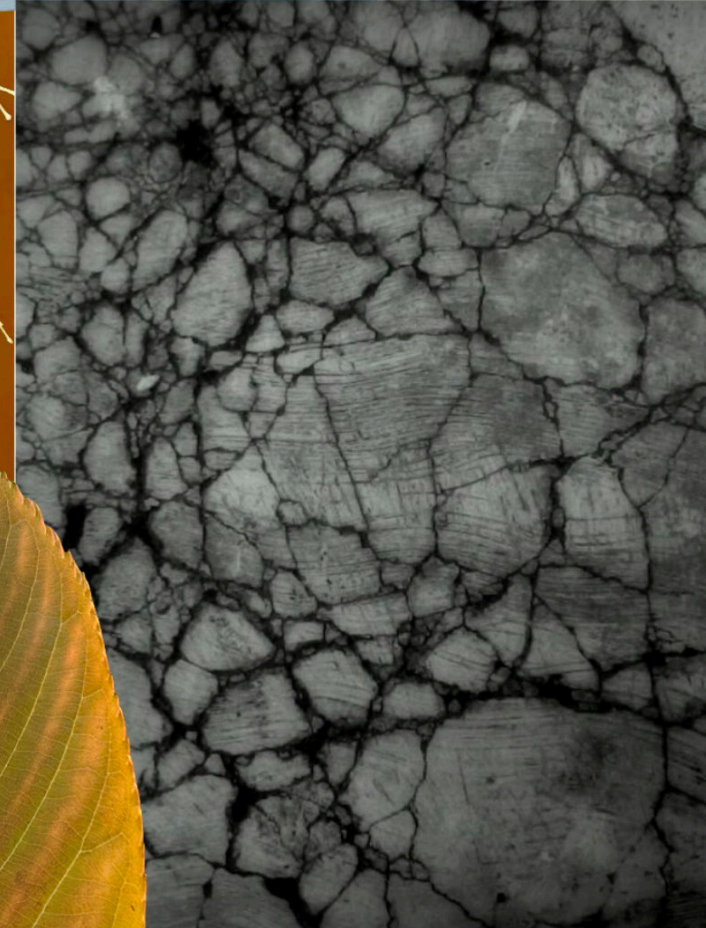
Sky of Meadows
- Primarv



Natural Cracks

Cracks represent both fragility and strength—natural results of tension, age, and transformation. Inspired by cracked earth, ancient Chinese armor, and fractured ceramics, I use this motif to express resilience through imperfection. In wet-felted wool, controlled shrinkage forms organic fissures, while recycled aluminum adds sharp, sculptural contrasts. These materials interact to mimic structural tension, where soft and hard surfaces collide.

Ice Crack and Flowers



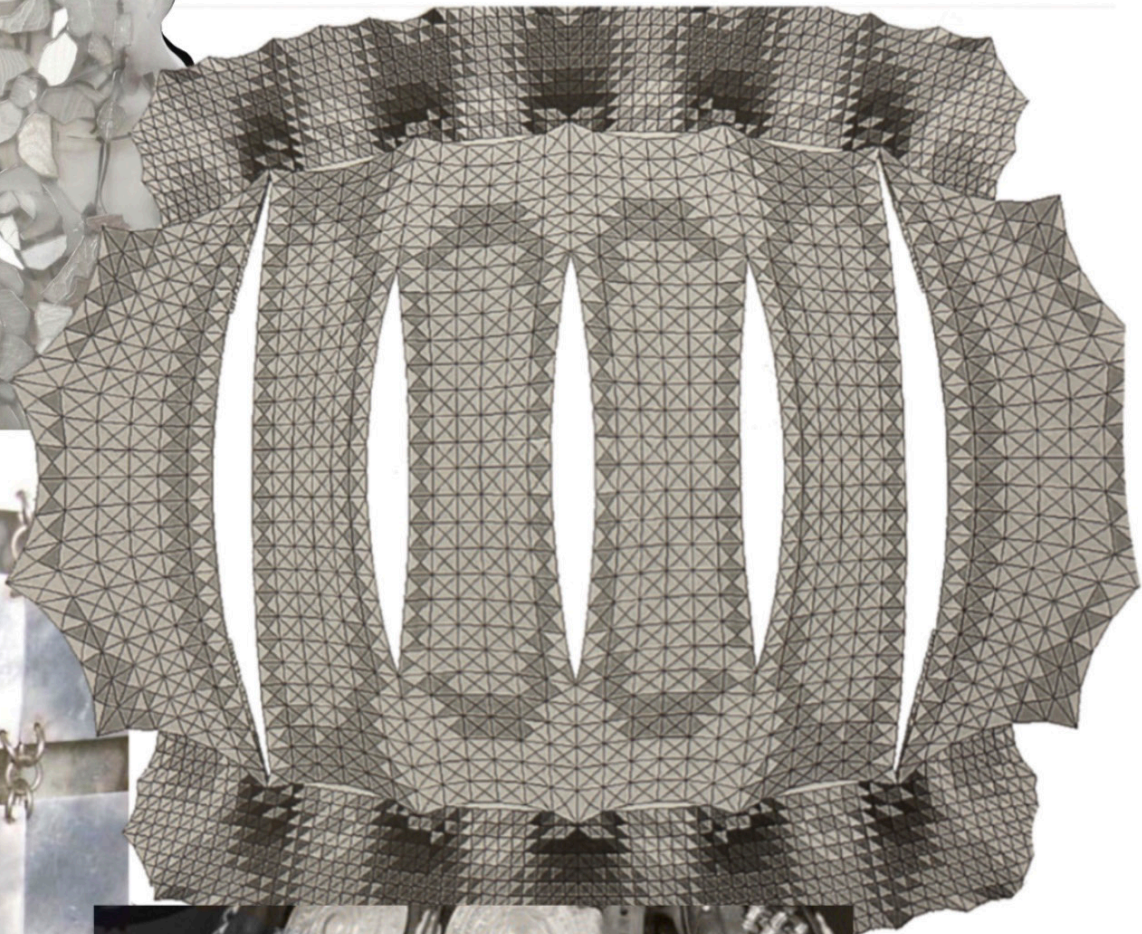
Ground Cracks



Fade and Life Cycle - Primary



From the book Techno Textile by Thamas & Hudson



Paco Rabanne



Chinese Ancient Armour

Second Skin

Ancient armor symbolizes protection and resilience, while futuristic design evokes transformation and reimagination. Together, they inspire a narrative of survival and adaptation—honoring tradition while confronting the unknown. This duality reflects our current era: rooted in nature, yet moving forward. The design merges these worlds through natural materials shaped into protective, future-facing forms.



Sheep shearing from the Internet

Lohcarron Trip Scotland

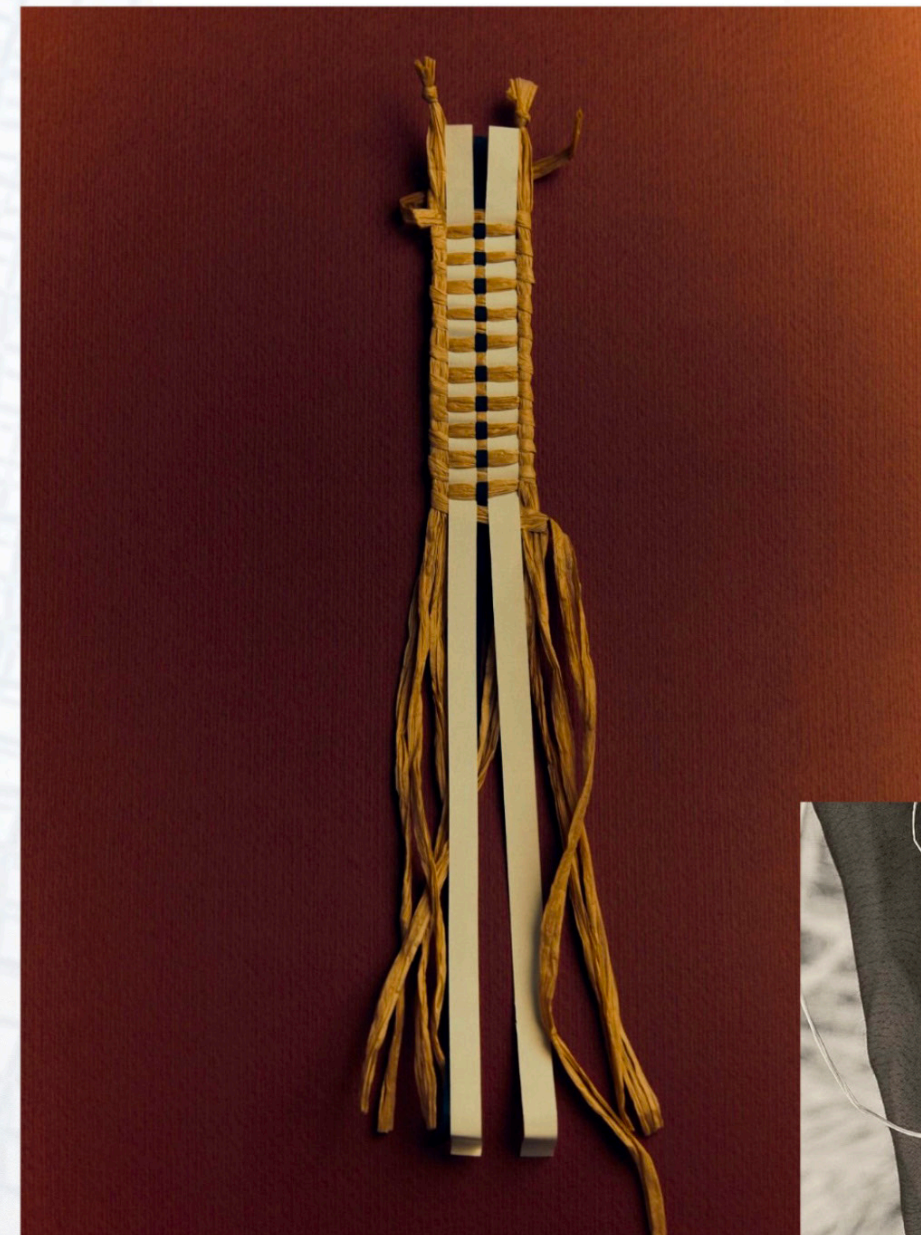
I visited the Lochcarron factory, located in a small Scottish town renowned for its traditional tartan weaving. This visit gave me a deeper understanding of wool—its origins, processing, and sustainable application—which is central to my design. Observing how wool yarn is spun, woven, and naturally dyed inspired me to rethink material use, particularly influencing my approach to weaving raffia, another natural, biodegradable fiber. In fashion, tracing materials back to their source is vital for responsible creation. Lochcarron’s blend of tradition and eco-innovation strongly aligns with my project’s emphasis on natural fibers and sustainability.

Material Research

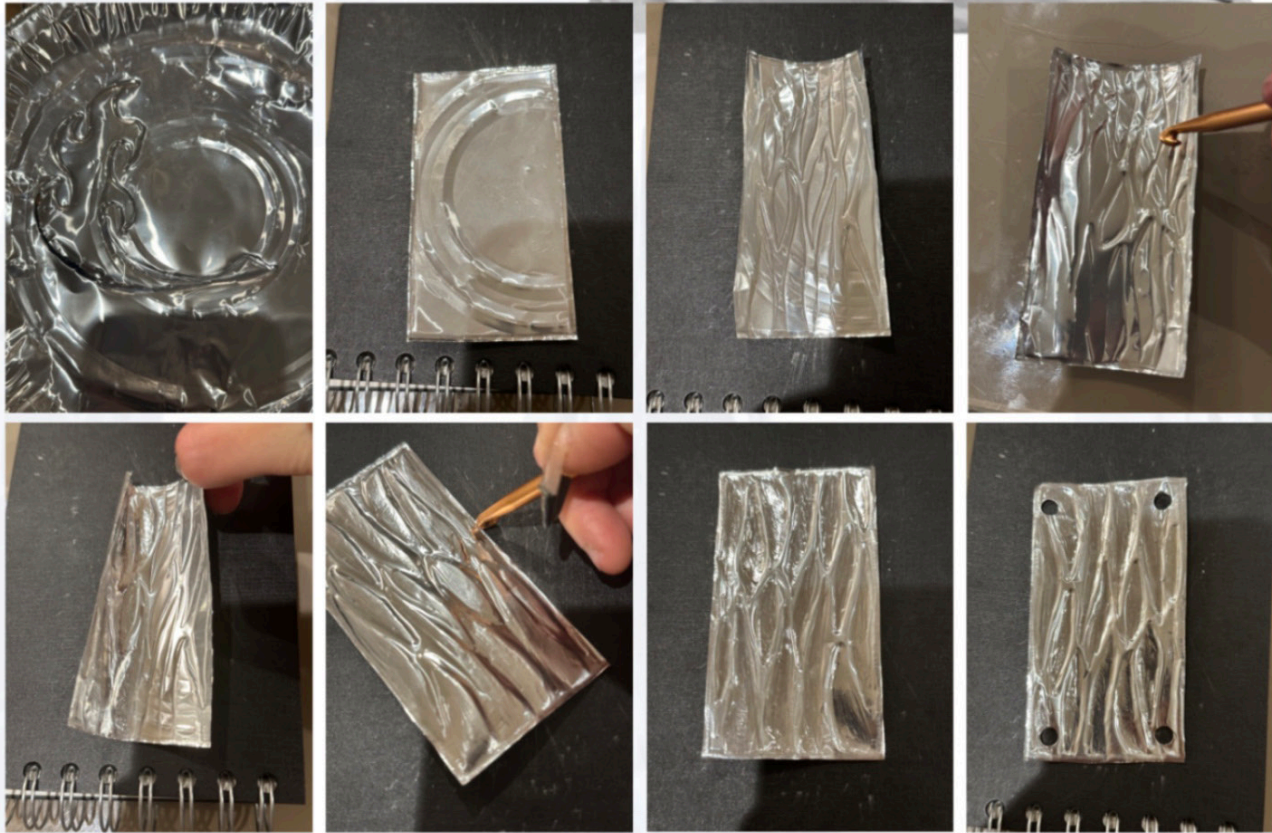
The selection of materials in this project is driven by sustainability, functionality, and cultural resonance. Central to the design is British wool, sourced locally in Scotland, valued for its renewable nature, biodegradability, and tactile warmth. Through wet felting—a traditional technique—I harnessed wool's natural ability to bond fibers without adhesives or stitching, creating soft yet structured forms that evoke protective layers. This method ensures minimal environmental impact while preserving the material's integrity and versatility.

To complement wool's softness, raffia fiber was introduced as a natural connector. Derived from palm leaves, raffia is strong, flexible, and fully compostable. It serves as an organic alternative to synthetic fastenings or threads, allowing for modular assembly and reinforcing structural joints, reminiscent of lacing in ancient armor. Its coarse texture offers visual contrast and emphasizes the handcrafted, earthy quality of the design.

For contrast and sculptural accent, recycled aluminum trays are incorporated. Although industrial and non-organic, aluminum is infinitely recyclable and lightweight. Its metallic sheen and rigidity reference the hard surfaces of traditional armor, creating a deliberate tension with the softness of wool. This juxtaposition reinforces the dialogue between nature and technology, past and future. Each material is carefully chosen to support the concept of a "second skin" that is protective, adaptable, and environmentally conscious—bridging ancient craft with innovative, responsible design.



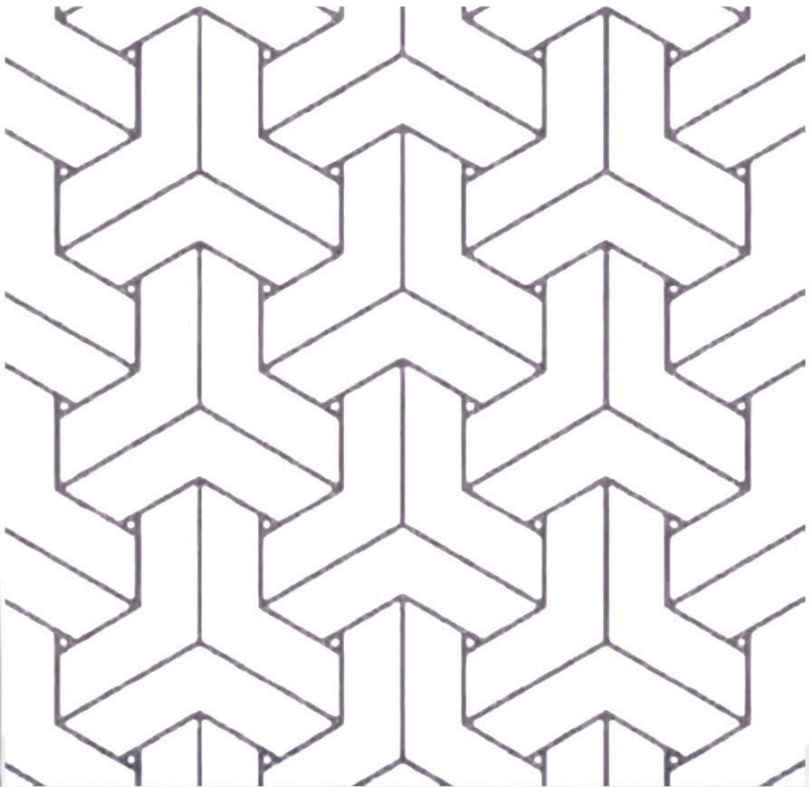
I changed the rectangles aluminium sheets smaller to fit the raffia size



Alunimium Carving Experiment

These aluminum sheets are made from discarded aluminum kitchen utensils. Their shape and texture remind me of the design of ancient Chinese armor. However, I realized that after the product life cycle ends, users need to separate the aluminum sheets from the fabric before they can enter the cycle. For this reason, I began to explore biodegradable alternative materials to aluminum, such as bio-based composites, hoping to simplify the recycling process while retaining the visual and functional effects, and achieve a more sustainable design.

Chinese Mountain Scale Pattern
- From the Internet

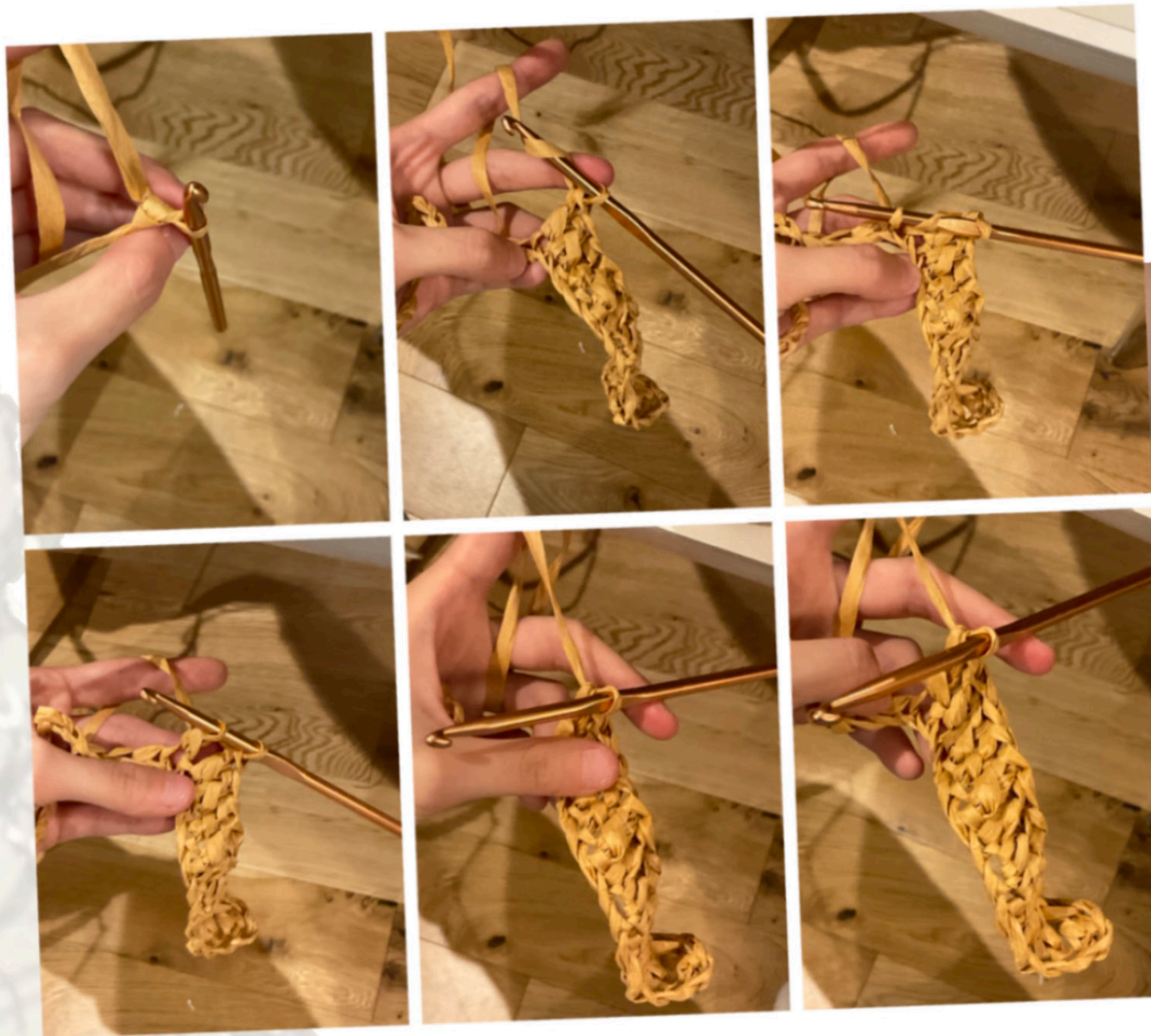
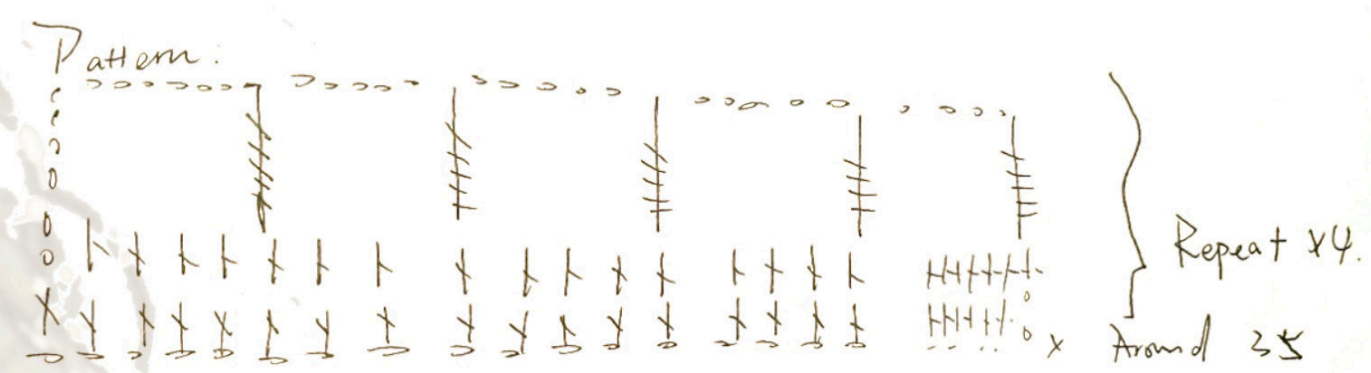


Original Pattern Inspired by Armor



Primary Samples





Raffia Crochet Experiment

To explore natural, low-impact alternatives to stitching or synthetic fastenings, I experimented with using raffia to connect pieces of wool felt. The inherent flexibility and tensile strength of raffia made it an ideal connector—able to be braided, tied, or looped through the porous texture of felt without damaging the material. Its fibrous structure gripped well against the felted surface, creating stable yet adaptable joints.

By interweaving raffia through pre-felted slits or wrapping it around seams, I was able to reinforce connections in a way reminiscent of traditional armor lacing, while maintaining full biodegradability. This approach preserved the soft tactility of the wool while adding tension and visual rhythm through the contrast in texture. It also introduced a sense of modularity: each wool felt component became a "plate" held together by natural fibers, echoing the flexible logic of lamellar armor.



Sample Raffia Crochet
- Takes 4 Hours

This method reinforced the concept of a "second skin"—one that adapts, breathes, and protects, all without relying on industrial components.



Wet Felting Process: Sculpting Wool into Skin

Wet felting is a traditional textile technique that uses water, soap, heat, and agitation to bond wool fibers into a dense, durable fabric—without any glue or stitching. It is both low-impact and deeply tactile, making it ideal for sustainable fashion applications.

Fiber Layout
Natural wool roving is arranged in layers, typically criss-crossed at 90° angles. This ensures even shrinkage and strength during the felting process.

Wet and Soap
Warm water and a gentle soap (like olive oil soap) are applied to the wool, allowing the fibers to relax and start interlocking.

Agitation & Pressure
The wool is gently pressed, rolled, or rubbed by hand or with a textured surface. As heat and motion are introduced, the microscopic scales on each fiber begin to tangle and fuse.



Final Sample and Tiger Inspiration



Shrinking & Shaping
Continued manipulation causes the wool to shrink and condense. At this stage, sculpting and forming can take place, shaping the material directly on a body or mold.

Rinsing & Drying
The felted wool is rinsed clean and left to dry, holding its new shape with structural integrity.



Design Collages and Sketches

This page presents a series of design collages and hand-drawn sketches developed from my previous material experiments. By combining elements such as armours, raffia weaving, cracks, and natural patterns, I explored silhouette, structure, and texture. These visuals helped translate my concept—centered on second skin, protection, and natural transformation—into wearable forms.





Color Draft

Wet Felting Process



Process same as the small experiments

To create large-scale wool felt pieces, I used traditional wet felting techniques, layering raw wool fibers on a flat surface and applying warm water mixed with natural soap. Through repeated pressing, rubbing, and rolling, the fibers gradually locked together, forming a thick, seamless textile. Unlike small felt samples, working at a larger scale presented several challenges. The wool tended to shift or stretch unevenly during the felting process, especially at the edges, making it hard to control the final shape. Maintaining consistent thickness across the surface also proved difficult.



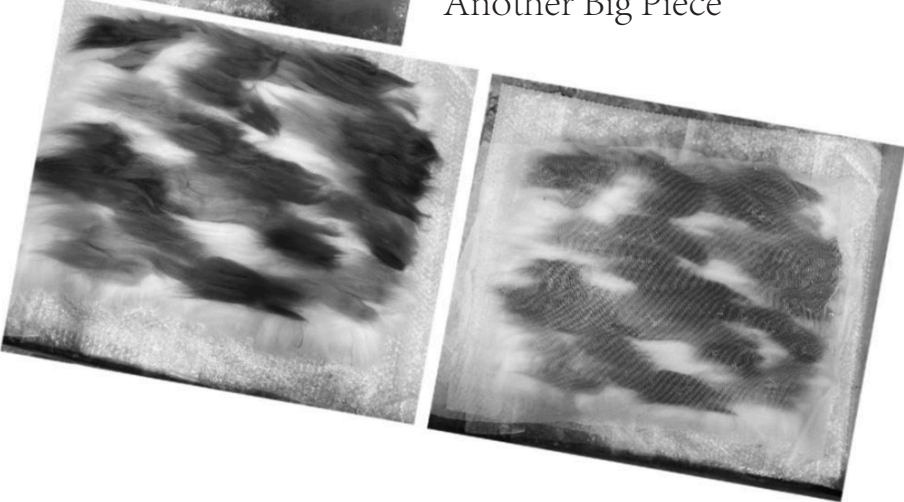
Additionally, as the felt became denser, the process required more physical effort and time to fully mat the fibers. Despite these difficulties, the results revealed a sculptural, skin-like material that could mold to the body while retaining structure—reinforcing the concept of armor as a flexible second skin. The natural imperfections that emerged during the process also echoed the organic cracks and irregularities that inspired this project.



Drying process



Another Big Piece

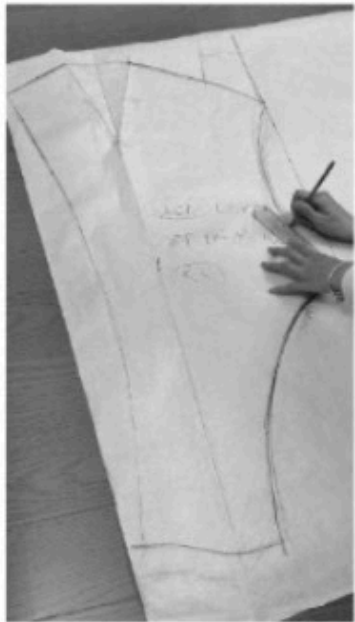


Picture before Wetting Process



Pattern Making And Raffia Crocheting

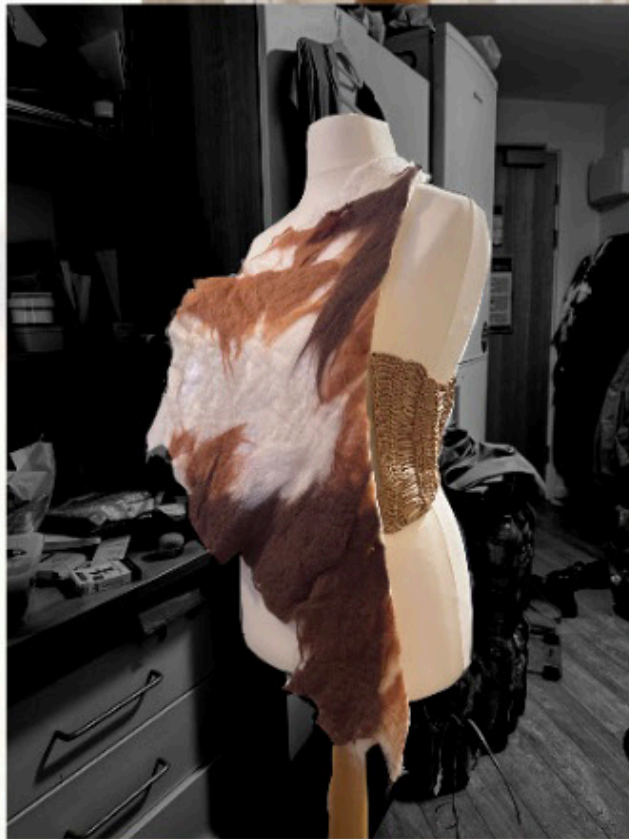
Pattern making according to the final draft



Back Panel *2



Front



Side View



Raffia Crocheting Process



Side View



Adjusting Pattern With
Wet Felted Pieces

Eventually, I decided to build the structure directly on the mannequin, treating the body as the base form. Using long strands of raffia, I connected felted wool panels by tying, weaving, or wrapping them together. This method allowed greater flexibility and spontaneity in shaping the garment.



Adjusting Tension And Position



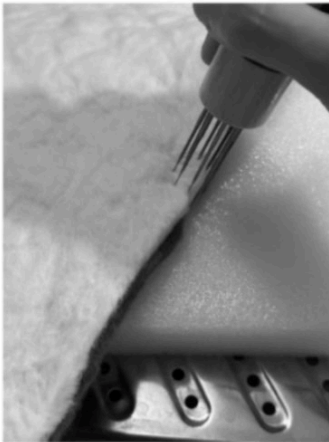
Front Side Right Side Left Back

As I built up the silhouette, I continuously responded to how the structure shifted with gravity and tension. Some parts collapsed, while others became too rigid. This hands-on process required constant iteration: I pinned, removed, and reconnected elements using raffia, refining the tension and spacing of each join to create both visual harmony and structural integrity.

Through this sculptural approach, the final form gradually emerged—not through fixed plans, but through tactile problem-solving and real-time adjustments that respected both material behavior and concept.

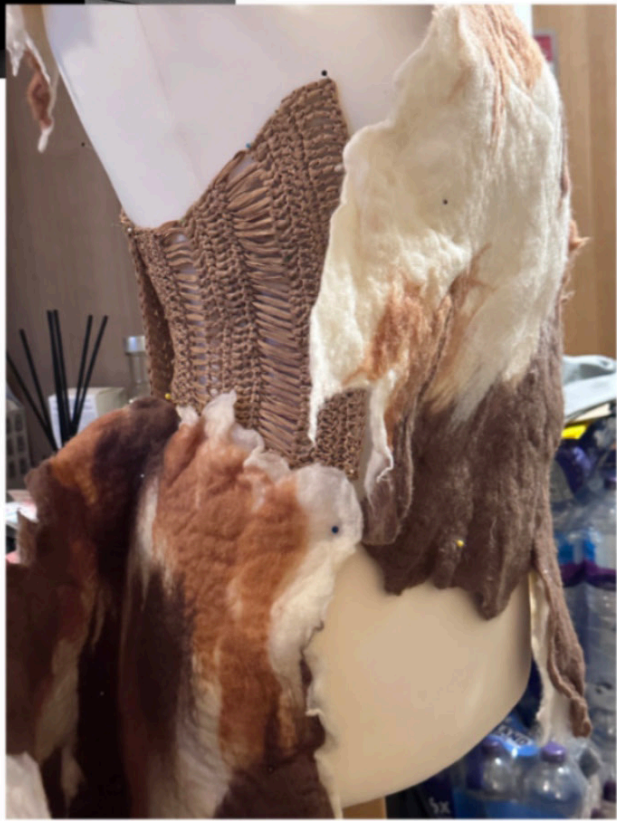
3D Developing Process

In the 3D development stage, I began by roughly assembling felted wool panels on the mannequin to test volume, proportion, and how the material interacted with the body. Unlike conventional fabrics, the thickness and springy texture of wool made it difficult to predict how pieces would behave once combined. This led to a series of ongoing adjustments—cutting down bulk in certain areas, reshaping curves to better fit the body, and repositioning the connections for more balance and movement.



Raffia Pattern Close Up

Use the needles to strengthen the edges



Back and Side View before hand sewing them together using Raffia



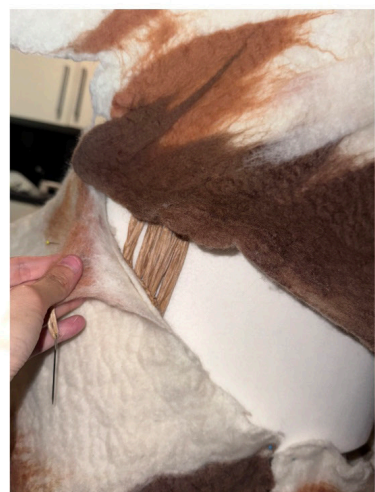
Fitting Photo



Lengthening



Internal Binding For Finishings



Detailing & Finishing

For the detailing and finishing, I focused on reinforcing the structure and enhancing the handmade quality of the piece. Each wool felt panel was carefully edged with an internal raffia binding—braided by hand and stitched into the inner seam to ensure that the felt would not fray or fall apart over time. To strengthen the wool density along the edges, I also applied needle felting techniques, compressing the fibers to create a more compact and durable finish.

At the back of the garment, I added a series of long raffia fringes, cascading like a tactile extension of the woven armor. These not only brought movement and rhythm to the silhouette but also echoed the idea of ancient protective wear infused with natural ornamentation.

The entire connection and construction process—from joining felt pieces to creating trims and decorative elements—was executed fully by hand, using only raffia. This commitment to natural materials and craftsmanship reinforced the project’s vision of sustainable, tactile design.



Raffia Tavssels on the back panel

Short Version Before Adding Tassels



Front



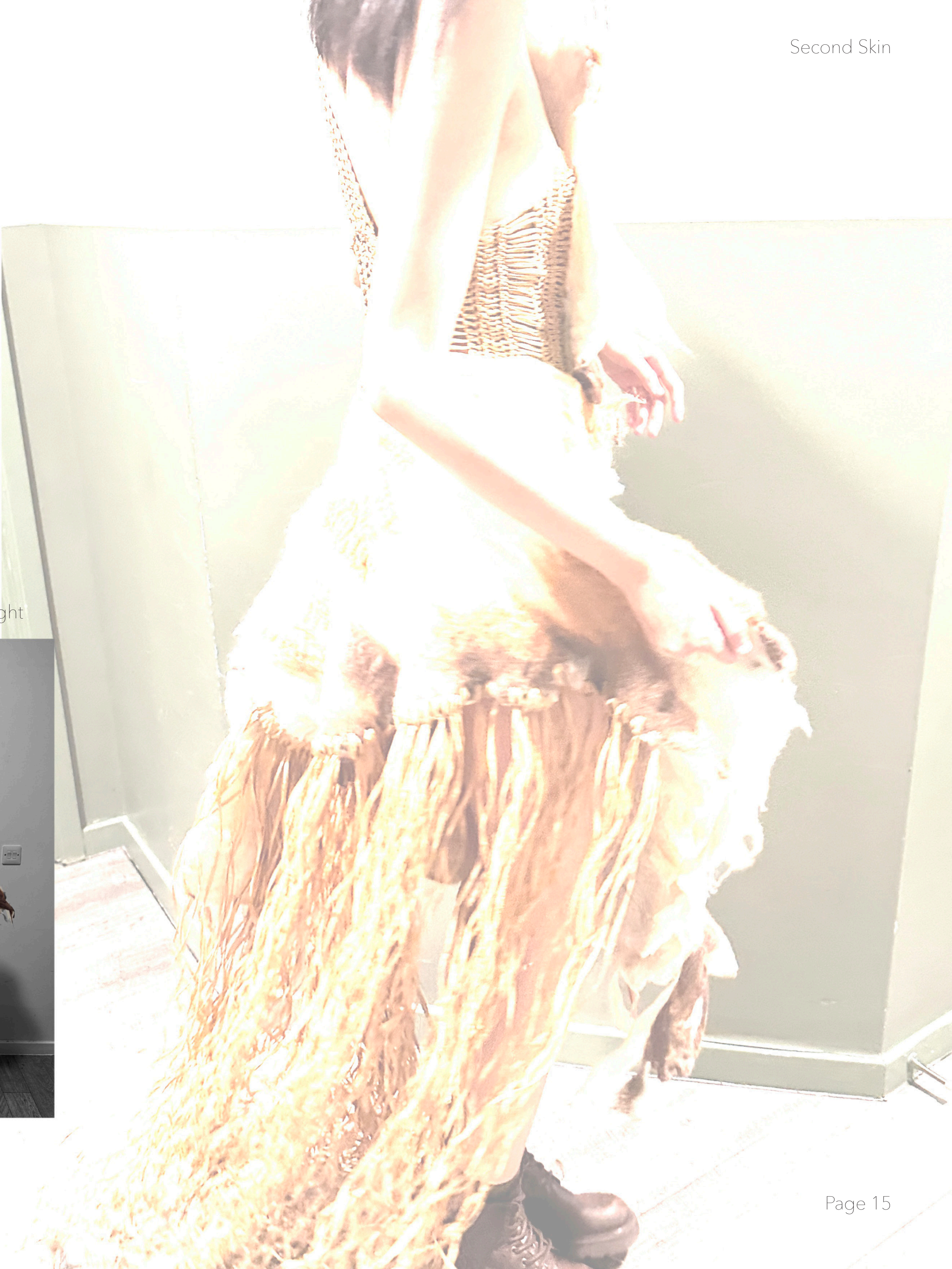
Side Right



Side Left



Back



Final Photo



Front



Side Left



Side Right



Back



