

Wool House

Claire Jouanchicot

Concept

The «Wool House» is a material research project valorizing Manech sheep wool from the Basque Country, a local resource often discarded. Bridging design, craft, and digital fabrication, it explores needle felting and bio-binders to transform raw fibers into structural and poetic objects. The project aims to rethink domestic spaces through sustainable materials anchored in territorial memory.



Childhood photo of Claire Jouanchicot in Saint-Etienne-de-Baïgorry

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Who ?

The Wool House is developed by a designer-researcher whose practice is rooted in material exploration, territorial narratives, and memory. The project is deeply connected to a family-owned sheep farm in the Basque Country (France) and focuses on Manech sheep wool, a local, underutilized, and often discarded resource. The work stands at the intersection of design, craft, and material research, engaging with pastoral knowledge, industrial decline, and contemporary fabrication tools.

What?

The Wool House is a material research project that rethinks the future of coarse, non-spinnable wool through alternative transformation processes. Instead of yarn-based textile production, the project explores needle felting, bio-based binders (gelatin, sodium alginate), molding techniques, and digitally fabricated tools to create textile surfaces, composites, and volumetric forms. These experiments culminate in a speculative domestic environment composed entirely of wool-based elements.

When ?

The project unfolds over an extended research timeline, beginning with long-term material investigations prior to Fabricademy and intensifying during the program. It is structured in three phases :

- **Material experimentation and research.**
- **Process refinement and technical development.**
- **Design and fabrication of speculative objects forming the final installation.**

Where ?

The project is anchored in multiple locations :

- **The family sheep farm in the Basque Country, where the wool is sourced.**
- **The Niaux spinning mill in Ariège, one of the last facilities in France capable of washing and carding wool.**
- **Fabricademy labs and fablabs (including Green Fabric), where experimentation, prototyping, and documentation take place.**

The final work materializes as a conceptual space called «The Wool House», a fictional yet tangible domestic environment.

Why?

The Wool House responds to the disappearance of wool valorization channels in France and questions our reliance on industrial, non-renewable materials in domestic spaces. By transforming an overlooked vernacular resource into a contemporary material system, the project seeks to preserve local knowledge, reduce waste, and imagine alternative futures for textile-based living environments. It proposes wool not only as a textile, but as a structural, insulating, and poetic material capable of carrying memory while shaping sustainable futures.

«Wool House», Claire Jouanchicot, 2026.



References



1. "Amas", Sacha Parent
2. "Lampe", Emma Bruschi
3. "Table Brush", Calen Knauf
4. "Paravent FSW", Charles Eames and Ray Eames

Ideas

The Wool House is a project of spatial and material research that explores wool as a soft architecture, capable of responding to the fundamental needs of living according to orientation, climate, and bodily use.

Conceived as a house without rigid walls, The Wool House is composed of active textile elements that unfold, fold, and transform throughout the day. Each object is designed in direct relation to a specific orientation and function. Facing South/West, a wool Venetian blind filters daylight and allows for subtle modulation of sunlight. Facing North/East, a thick tapestry-blanket acts as a thermal insulation and protective device: when deployed, it becomes a floor sleeping surface; when lifted and fixed to the wall, it transforms into a low seating element, creating an enveloping resting space.

Through these hybrid objects—situated between textile, furniture, and architecture—the project questions our relationship

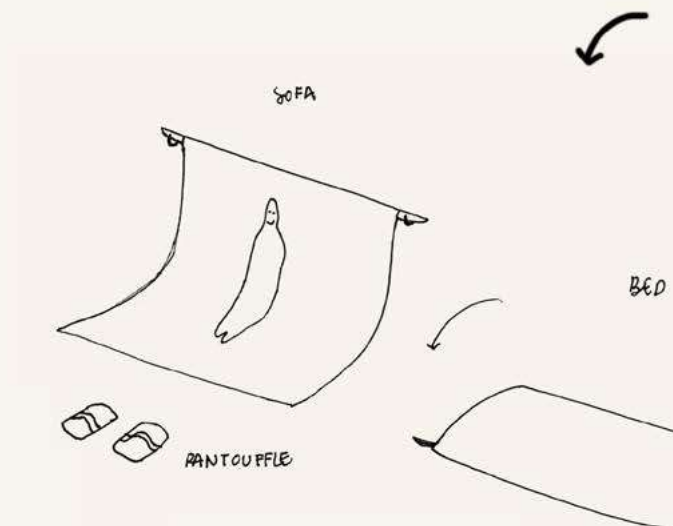
with so-called “soft” materials in contemporary domestic spaces. Wool, often relegated to secondary uses, becomes here structure, surface, and shelter. The Wool House thus proposes an evolving living environment, attentive to daily rhythms, where textile matter dialogues with the body, light, and climate to imagine more sensitive, local, and sustainable ways of inhabiting space.

Sketchs

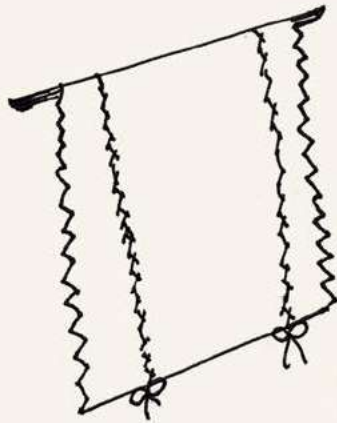
Facing north-east, the tapestry/bed emphasizes notions of rest, isolation, and protection. Here, wool acts as a thermal and sensory envelope, creating a space dedicated to calmness and retreat. Facing south-west, the modular blind filters light and heat while generating a soft, vibrant atmosphere through the natural properties of wool. These two elements evolve throughout the day and adapt to the needs of the body and daily uses. Together, they form a dynamic textile habitat that revalues a forgotten material and reveals its architectural and domestic potential.

The bed is associated with lavender, evoking the memory of sheets washed by our grandmothers and its well-known benefits for relaxation and rest. In contrast, the blind is linked to cedar, recalling nature and the warmth of a home, while also reinforcing a sense of protection and comfort.

Additional elements may be added, everyday objects such as glasses, stools, or wool slippers, in order to build a more narrative vision of the project and to suggest lived-in, domestic gestures within The Wool House.



some ideas
for the wool house: wool
shelf



WOOL
VENETIAN
BLIND



WOOL
COFFEE
TABLE



Tools



The FeltLoom

The FeltLoom is a unique, semi-industrial needle-felting machine designed to transform carded wool fibers into dense, cohesive textile surfaces without the use of water or soap. Utilizing a bed of hundreds of barbed needles that punch in and out of the material at a high frequency, the wool fibers become mechanically entangled to create a stable and resilient felt.

As part of the The Wool House project, having access to the FeltLoom at the Texture Museum in Kortrijk was a pivotal step. It allowed for transcending the scale limitations of traditional handcrafting to produce large-scale, monumental pieces—such as the pleated curtain or the 7.50-meter-long bed ribbon—while maintaining precise control over the calibration, texture, and opacity variations of the wool.



Manech Wool

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Recipes

As part of The Wool House project, the challenge was to find a binder capable of setting the wool, giving it structure and strength, while preserving its intrinsic qualities and reversibility. The research focused on two natural polymers with distinct properties: gelatin and sodium alginate.

Gelatin Recipes : Structure, Volume, and Flexibility

This high-concentration formula provides excellent rigidity and true shape memory, making it ideal for maintaining wool volumes (such as the lampshade). It allows for a fine spray application to preserve the airy, fluffy quality of the fiber.

- Water: 80 mL
- Powdered gelatin: 16 g
- Glycerin: 2.5 g (for flexibility)
- Essential oil (Tea tree, mint, or lavender): A few drops (natural preservative)
- Texture/color options: Food coloring, natural pigments, coffee grounds, crushed eggshells, seeds.

Sodium Alginate Recipe : Flexibility and Molding

Alginate (extracted from brown algae) was tested for its ability to create textured and flexible pieces using molds (specifically for the artifice tableware). Unlike gelatin, it sets through chemical cross-linking and retains a rubbery or leather-like appearance after drying.

- Sodium alginate: 20 g
- Water: 200 mL
- Glycerol: 5 g (optional, to enhance flexibility)
- Natural dye or pigment: 1 tsp (optional)
- Fixative solution: Calcium chloride (for cross-linking)



Wool Stool

It all began with an unexpected encounter: an injection-molded plastic stool, discarded on the street near my home. Initially just a plant stand, it soon revealed an untapped potential. What if, instead of letting it fade away, I gave it a new life—this time, in wool? And so, it became the mold for its own transformation.

I started by coating it in wool infused with gelatin, patiently building layer upon layer to create enough thickness to hold its shape once dry. Once removed from the mold, the fragile wool skeleton seemed to call for a second skin. I applied another layer of wool, this time misted with gelatin to preserve its airy, ethereal texture. For the underside, drawing inspiration from upholstery techniques, I folded and sealed the edges with more gelatin, reinforcing the structure while maintaining a refined finish.

After a final drying, the stool was complete: the first prototype in a series where wool—a warm, living material—replaces plastic to create an object that is both functional and poetic.



Wool Shelf

The shelf was born from a sketch and a desire to suspend a «sheet» of wool using two braids seamlessly integrated into the material. The goal was to add a graphic detail to the wool, which was flattened and set using gelatin. Within the fibers, hints of purple appear—the color used to mark my family's flock to identify our sheep during the summer transhumance.

Based on my sketch, I built a mold to achieve the desired shape, following the same technique used for the stool. To prevent the plastic from sticking to the wool during demolding, I used a polypropylene sheet, which is better suited for shaping (and was already available in my studio). I used brackets as templates and a PVC tube to create the counter-form where the suspension braids would pass. To get a more rounded curve, I could have filled the tube with sand and heated it, but since I had none on hand, I moved forward without it; ultimately, it did not affect the final shape of the fiber.

Once the mold was ready, I applied gelatin to the wool using a brush. Inès helped me position the fibers, as having an extra pair of hands made the process much easier. After reaching the desired thickness, we tapped the entire surface to press the material firmly against the mold. After a day of fan-drying, the shelf was ready to be demolded and dried on the other side.

Meanwhile, I crafted the braids for the suspension. Once dry, I trimmed the edges for a cleaner finish, and the shelf was finally ready for use!





Wool Blind

The curtain was born from research into developing a folding process specifically for wool. In the textile industry, wool is rarely shaped using folding techniques because its density makes it difficult to hold a sharp crease. Driven by a desire to shape wool in unexpected ways, I began sampling various experiments using metal rulers combined with gelatin or alginate.

By pre-felting the wool with Green Fabric's open-source needle-felting machine, I created thin surfaces that were easier to manipulate. The material is held in an accordion shape using clamps. Once in place, I apply a gelatin or alginate solution to the exposed edges of the wool at the ends of the rulers. Once dry, the tools are removed, leaving only the pleated wool.

While gelatin offers a more efficient finish and faster setting time, I chose alginate for the final prototype. Since the curtain is designed for a window to block light, it needed to withstand high temperatures; therefore, alginate was the most suitable biomaterial. To needle-felt such a large surface, I used

the FeltLoom at the Texture Museum in Kortrijk. This allowed me to create a 2.50m x 1.20m surface, matching the standard 1kg wool batts carded at the Filature de Niaux. I felted the material unevenly to play with different light opacities and then created a needle-felted hem for the curtain rod.

Back at Green Fabric, after purchasing and cutting 40 MDF slats, I reproduced the sampling process on a large scale. Inès helped me once again, as the size of the panel required four hands. Once dry, I removed the wooden slats and finished the piece. I decided to leave the fibers loose at the bottom of the curtain to evoke the material's natural state and highlight the rhythmic nature of the shaping process. The pleats bring a poetic quality to the curtain's movement. To allow for modularity, I hand-braided 8 meters of Manech wool cord. These two parallel braids recall the look of Venetian blinds while providing a graceful drape. The braids support the folds through small knots, adding a touch of poetry and tenderness to the design.

Wool Bed

The bed was born from a desire to create a modular wellness space that adapts to changing needs—a place where textures unfurl to envelop the user in Manech wool. Like a flexible ribbon, it defines the space it occupies. This theatrical piece measures 7.5 meters in length and uses 5 kg of wool, featuring varying opacities to meet different sleep-related needs.

The headboard is thick and opaque, bridging the gap between the wall and the floor while insulating against drafts. At the top, a hem (similar to the one on the curtain) allows the ribbon to be hung at the desired height. This is followed by 2.5 meters of thick, quilted wool, padded to provide comfort and floor insulation. Much like a futon, it can be used on the ground or mounted on the wall as an acoustic panel. The piece then transitions into a gradient of increasingly airy material, creating a comfortable duvet that conforms to the body's shape.

When rolled up, the bed transforms into a sofa, creating an entirely different atmosphere. This entire monumental piece was crafted using a FeltLoom at the Texture Museum in Kortrijk, with final touches completed at Green Fabric.







Wool Light

The lamp was born from a desire to showcase the openwork textile surfaces I developed by combining them with spray gelatin during the «Textile Scaffold» week. Since my wool consists of very long fibers, I work it using a «gridding» technique: I felt it onto gridded foam to create delicate, openwork surfaces. Combining this with spray gelatin allows me to preserve the fiber's airy quality while adding strength and shape-memory properties.

In this case, the rectangular surface was shaped using a thin, suspended metal structure over which I draped my material. Once the desired shape was achieved, I sprayed a generous amount of gelatin to ensure the final structural integrity of the wool. After drying with a fan, the piece was demolded to create the lampshade. Annabelle helped me build the electrical circuit (bulb, switch, and plug) on a 4-meter cable to offer more installation possibilities. Whether using natural outdoor light or the bulb, the patterns of the lampshade reflect throughout the room, adding a touch of sensitivity.



Wool Tableware

The tableware was created using various existing molds along with gelatin or alginate. While they are not actually functional, they were designed to add an extra layer of narrative to the project.





Video

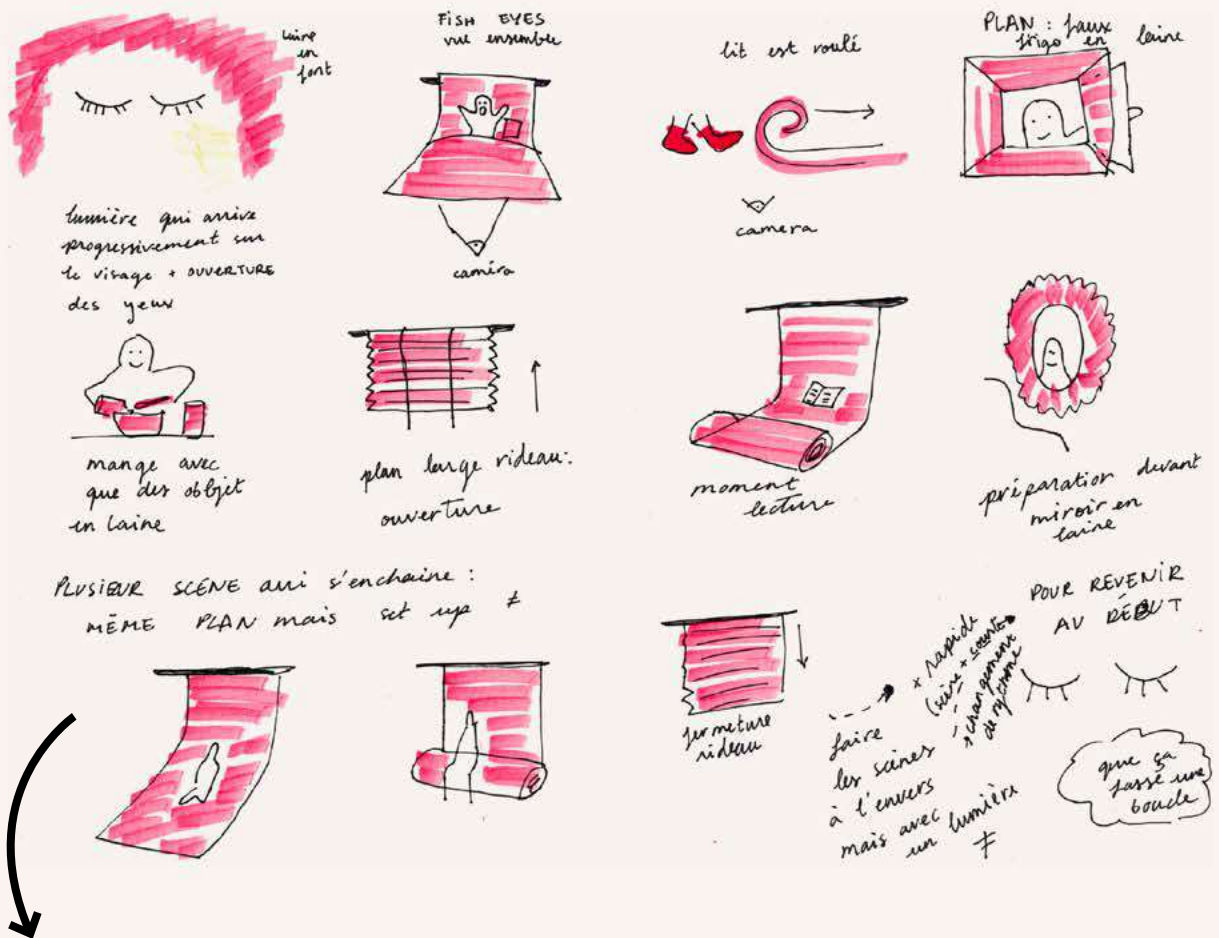
I chose to design a living space entirely composed of wool, inviting us to question our future daily lives. The final output takes the form of a video following a character through simple, intimate gestures, immersed in an omnipresent material: waking up, having breakfast, reading...

Everything is made of wool. The camera lingers on the material and its textures, but also on the body—the face, the hands—in constant interaction with it. A few wider shots reveal the project as a

whole, showcasing the textile space and its volumes.

The final video, lasting between 1 and 5 minutes, primarily seeks to convey a narrative and an atmosphere. Light plays a central role, oscillating between natural light and warmer tones—orange and red hues—to build a soft, enveloping atmosphere. Together, it tells a poetic story at the crossroads of habitat, material, and intimacy.





STORYBOARDING



CREATION OF THE WOOL FRIDGE



PACKAGING DESIGN REFLECTING THE ORIGIN OF THE WOOL





Wool House

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Fabricademy / Thesis 2026



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