

Appendices A: Research



Figure 1.—This is a miniature from a 15th century Latin codex. The manuscript could have originated in northern Italy, but we are not sure. This miniature shows three boys picking cherries. The boys wear knee-length tunics with colorful hose and shoes. Click on the image to see a second miniature showing a woman and a boy (I think because of the short hair). They are picking dill. This boy wears a tunic cut quite long. He has bare legs and feet. That seems more common for a rural scene.

Nobles and aristocrats began wearing intricately designed stockings made from luxurious silk and wool and would be elaborately embroidered to showcase the wearer's status and wealth – especially if the stocking was imported from specialists in Spain.

Men's tights

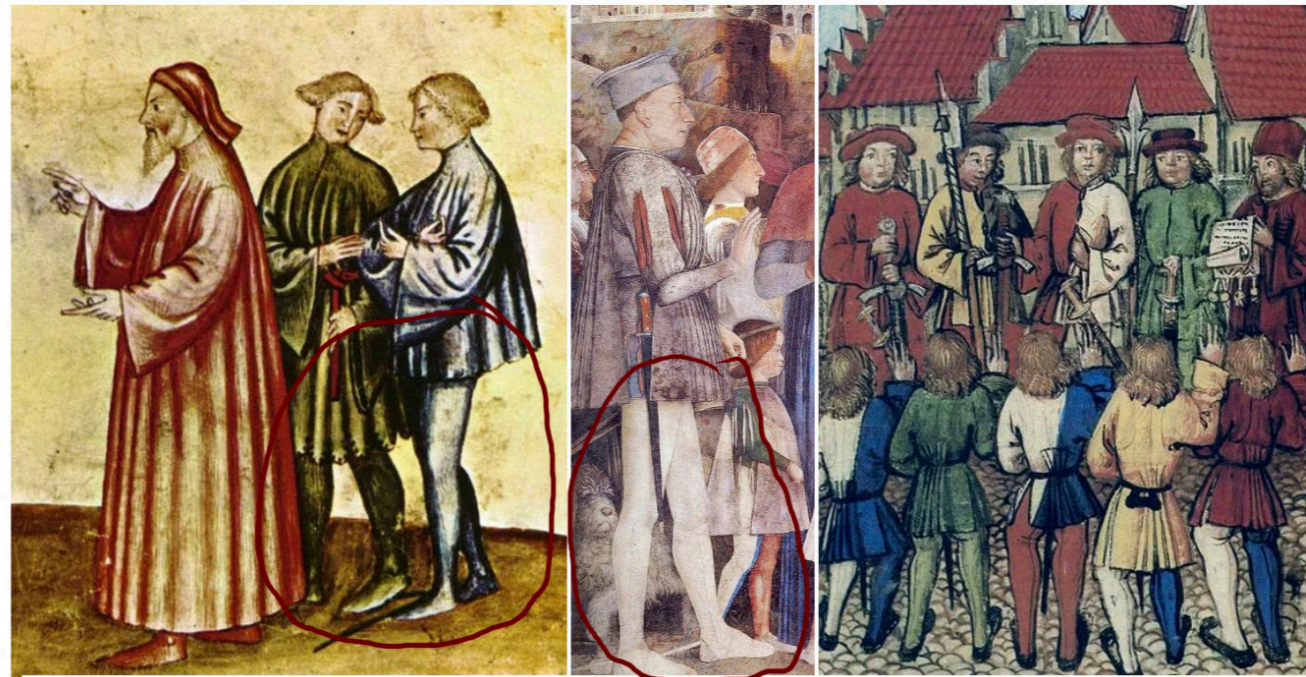


Fig. 1 - Thomas Gainsborough (British, 1727-1788). *John Plampin*, ca. 1752. Oil on canvas; 50.2 x 60.3 cm. London: The National Gallery, NG5984. Source: [The National Gallery](#).

1350 - 1550

Fashionable men and the upper classes wore fitted jackets ⁶ (trøje/jakke). Jackets and tunics became to be very short – around the buttocks. On their legs men would wear stockings (hoser), either short ones to the knee or longer ones to mid- to top thigh. Some had a foot, some didn't. In the later part of the period some stockings were tied to the jacket.

In the late 1300's robes ⁷ (kåbe) became popular. Men wore them belted at the waist. Particularly worn by monks, scribes, scholars and the like.



Nevertheless, for many young aristocratic and wealthy British men, the Grand Tour of the Continent was part of their formal education. Extended sojourns in France and Italy, visiting and becoming knowledgeable about their art and monuments, especially of classical antiquity, offered these tourists encounters with the refined manners and elegant sociability that distinguished a "Person of Quality." Unlike Arthur Murphy's dour assessment of being made into a "Frenchman," Lord Chesterfield's letters to his son, who began the Grand Tour in 1750, underscore the importance of acquiring a French polish. Writing on November 12, 1750, he advised his son that,

"When you come to Paris you must take care to be extremely well dressed, that is, as the fashionable people are; this by no means consist in the finery, but in the taste, fitness, and manner of wearing your clothes... Get the best French tailor to make your clothes, whatever they are, in the fashion, and to fit you: then wear them, button them, or unbutton them, as the genteest people do. Let your man learn of the best *friseur* to do your hair well, for that is a very material part of your dress. Take care to have your stockings well gartered up, and your shoes well buckled; for nothing gives a more slovenly air to a man than ill-dressed legs." (quoted in McNeil 19)

Fig. 4 - Maker unknown (Italian). *Suit*, 1740–60. Silk, metal, cotton, linen. New York: The Metropolitan Museum of Art, 2009.300.2480a–d. Source: [The Met](#)



Fig. 5 - Jean-Étienne Liotard (Swiss, 1702-1789). *Portrait of John, Lord Mountstuart, later 4th Earl and 1st Marquess of Bute*, 1763. Pastel on vellum; 114.9 x 90.2 cm. Los Angeles: The J. Paul Getty Museum, 2000.58. Source: [Getty](#).

Roaring Twenties: Hosiery as Fashion Statement
 The 1920s marked a turning point in hosiery fashion with the rise of flapper culture and the popularity of shorter hemlines.

How Much Leg
 Can a girl be modish though modest? Paris decrees complete freedom of the knees.

Josephine Dunn, the Paramount Junior star, is perfectly willing to meet the new style half way. A little hiking at the hip line will do it and there is, you can see, no reason why Josephine shouldn't do so.

Find the man who wouldn't like to be a traffic cop in Paris this spring. Legs across the sea will support the mode as Miss Marcella Lucas illustrates.

Very well suited is charming Anna Q. Nilsson with her trim tailor-made. The modesty test of any short skirt is the sitting position.

But when she's just being herself around the studio, Miss Dunn doesn't go in for the higher things. She drops her skirt a little below her knees and lets it go at that.

1920s hosiery advertisement, showing a range of colours

Our Popular No. 100
 Pure Thread SILK Hose \$1.00 Pair
 Finest Pure Silk Extends Well Over the Knee

FINE QUALITY Hosiery

Our Famous No. 150
 Genuine Full Fashioned Pure Thread SILK \$1.50 Pair
 All Silk, Top to Toe

Color Chart: Roseblush, Seem Back, Full Fashioned Ankle Leg and Foot, Blonde, Seem Metal, High Silk Boot, Contrasting Color Clocks, Latest Shades.

Satisfaction Guaranteed

The 1940s: Elegance and Resilience in Every Thread

The 1940s was a decade defined by resilience, courage, and a spirit of unity, as the world grappled with the challenges and restrictions of wartime. To stay well dressed remained a symbol of hope and expression of strength across Britain.

1960s advert for tights

A New Concept for Freedom in Fashion

Panti Hose

by **Glen Raven**

ONE PIECE sheer stretch stockings topped by a stretch panty brief, All nylon... full fashioned all the way.

For dress • For play
 For evening • For comfort all the time.

Luxurious Plain Knit and Non-Run \$2.50

From the makers of fine Glen Raven Hosiery and Glen Tights

IN NEW YORK: A. Altman & Co., The M. O'Neil Co., Atlanta, The South Co., Beverly Hills, J. W. Robinson Co., Boston, The Hat Co., Bridgeport, B. W. Reed Co., Chicago, Adler's Inc., Cleveland, Sterling Lingerie Co., Dallas.

DES MOINES: Youkers Dept. Store, Joseph C. Spess, Fort Lauderdale, Indianapolis, H. P. Watson & Co., Louisville, Los Angeles, Miami, Milwaukee, Ed Scheer & Co. Inc., Minneapolis, Powers Dry Goods Co., Oakland, B. Klein, Inc., Palm Springs, Franklin, J. W. Robinson Co.

PORIA: P. A. Berger & Co., Philadelphia, John Wagoner, Pittsburgh, Kaufman's, Providence, Clonting's, Richmond, Sears, San Francisco, The Emporium, San Francisco, The Emporium, Seattle, B. Altman & Co., Spokane, The Emporium, Washington, D.C., Westward & Lathrop.

AND FINE STORES EVERYWHERE OR WRITE: GLEN RAVEN KNITTING MILLS, INC., 1430 BROADWAY, NEW YORK 18

The Utility of Nylon. 1930s Innovation

In 1938 DuPont created the first nylon stockings which revolutionised the hosiery industry, offering a more durable and affordable alternative to silk – especially when silk became hard to import during the Second World War (in 1939, the US was dependent on Japan for 90% of its silk imports). Nylon (also created as 'fiber 66') was originally named 'norun' – but the fabric could run and ladder, so was renamed to nylon.



Wallace Carothers, creator of 'nylon 66' at DuPont's research facility

CORDURA RAYON
 In Toe and Heel to strengthen it and for wear. TRUSTY 23¢ 3 Pcs. 6X

Full Fashioned CORDURA
 Sheer, Fine Gauge Nylon and Silk. SPECIAL 39¢ 3 Pcs. 6X

capricornvintage.com

RAYON PLUS CORDURA REINFORCEMENTS: A brand new non-ladder stocking of sheer, soft, long-wearing fabric. There's more wear in the toe and heel because they're reinforced with Cordura Rayon, one of DuPont's strongest and most resilient fibers. Cordura Rayon was first developed for auto tire cords, so that means it will stand a lot of abuse. Add the Rayon-Bronze Trim, and you have unusually durable stockings for such a low price. Fine texture. 100% made in France. Colors: Navyblue, Burgundy, Black. Sizes: 8 1/2 to 10 1/2. State size and color in order. 20 MA 941. 20 MA 942. 20 MA 943. 20 MA 944. 20 MA 945. 20 MA 946. 20 MA 947. 20 MA 948. 20 MA 949. 20 MA 950. 20 MA 951. 20 MA 952. 20 MA 953. 20 MA 954. 20 MA 955. 20 MA 956. 20 MA 957. 20 MA 958. 20 MA 959. 20 MA 960. 20 MA 961. 20 MA 962. 20 MA 963. 20 MA 964. 20 MA 965. 20 MA 966. 20 MA 967. 20 MA 968. 20 MA 969. 20 MA 970. 20 MA 971. 20 MA 972. 20 MA 973. 20 MA 974. 20 MA 975. 20 MA 976. 20 MA 977. 20 MA 978. 20 MA 979. 20 MA 980. 20 MA 981. 20 MA 982. 20 MA 983. 20 MA 984. 20 MA 985. 20 MA 986. 20 MA 987. 20 MA 988. 20 MA 989. 20 MA 990. 20 MA 991. 20 MA 992. 20 MA 993. 20 MA 994. 20 MA 995. 20 MA 996. 20 MA 997. 20 MA 998. 20 MA 999. 20 MA 1000.

1941 catalog

History of tights

"What are the qualities essential to feminine allure? What is it that attracts and holds the eye of the male? Let me give you a hint. It begins at the tip of the toes and runs to the top of the hose ... legs and feet" (Batters, p. 10).

The advent of the cinema heightened the appeal, and facilitated the marketing of stockings. Film stars like [Betty Grable](#) propelled the sleek, stockinged leg to iconic status—and it was an attainable glamour. In tandem, packaging design took on all the qualities of gift-wrapped candy—lined paper boxes tied with a bow made stockings a desirable gift. Brands such as Aristoc, launched in the 1920s, Wolford (1946), and Pretty Polly (1950s), are still major players in the hosiery market in the twenty-first century, principally by playing on the glamorous associations of their product—and the idea of womanhood as object of masculine desire, a sensual package waiting to be unwrapped.

It was in performance that the stocking took on an erotic charge; the art of striptease pivoted on the deliberate, prolonged undressing of the female form. Not coincidentally, the "Naughty Nineties" (1890–1900)—the decade of the cancan and the Moulin Rouge—defined the stocking as an erotic symbol. The rustle of petticoats against silk stockings came to signify the repressed sexual energy of the times. For respectable ladies, it was dances like the waltz and the polka, the Charleston and the tango that allowed them to flash gentlemen a glimpse of a silk-clad ankle.

The sleek, seamed black stocking was synonymous with postwar fashion, and a focal point for [Christian Dior's](#) "New Look" in Paris in 1947. It was another designer, [Mary Quant](#), who revolutionized hosiery fashions a decade later—and signaled the downfall of the stocking as a standard mass-market product. Targeting the new teen, Quant commissioned lacy and patterned tights, emblazoned with her daisy logo, that flattered the miniskirt she made famous in 1963 and expressed the feelings of vibrancy and emancipation that characterized the times. In contrast, by 1971 stockings, now stigmatized as a masculine fetish, held only 5 percent of the market.

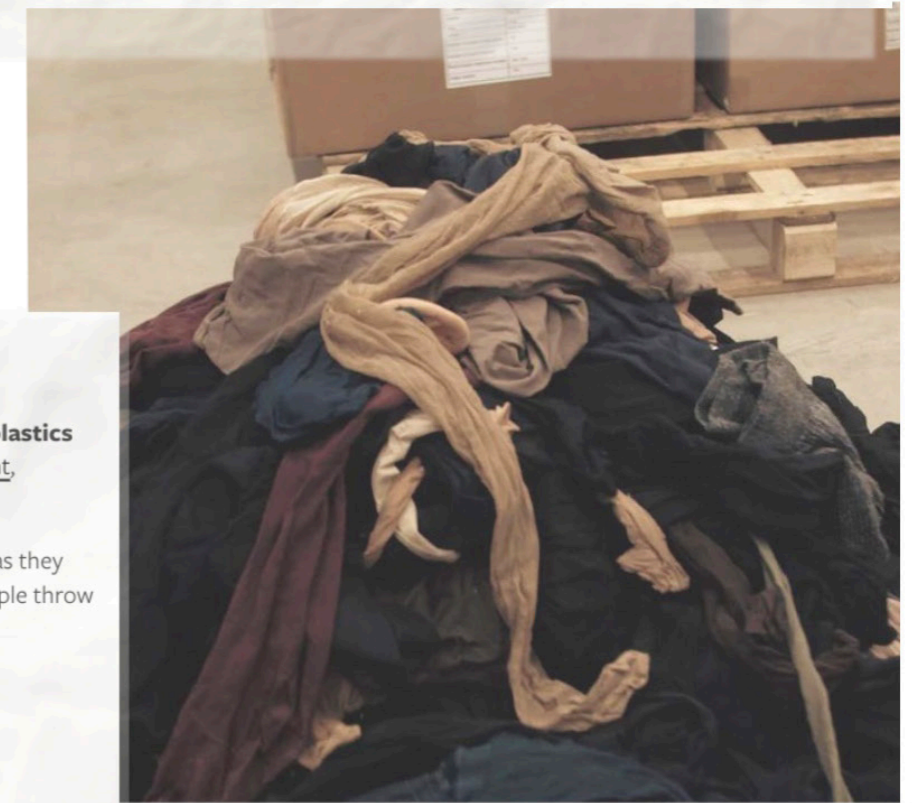
History of tights

Most tights are made from synthetic fibers such as nylon and polyester. These materials, while offering stretch and durability, are derived from petrochemicals—non-renewable resources that contribute to environmental degradation during extraction and production.

1. **Nylon:** This is a primary material used in tights, created through a process that releases greenhouse gases. The production of nylon also requires significant use of energy and water, contributing to pollution and resource depletion.
2. **Polyester:** Like nylon, polyester is another plastic-based fiber. The production of polyester involves oil extraction, refining, and significant water use, leading to carbon emissions and chemical runoff that can harm local ecosystems.
3. **Elastane (Spandex):** Often blended with other materials to provide stretch, elastane is also synthetic and contributes to the overall plastic content of tights.



Tights are “the single-use plastic of the textile industry”, says Daniel Clayton, who in January set up the Legwear Company to sell what it describes as “sustainable hosiery”. He estimates there is “in excess of 103,000 tons of hosiery waste created every year around the world ... the equivalent of more than 8,000 double-decker buses”.



WHY TIGHTS CONTRIBUTE TO PLASTIC POLLUTION

The use of synthetic materials in tights has a direct connection to plastic pollution. **When tights are washed, microfibers—tiny plastic particles—are released into waterways. These microplastics are not only harmful to marine life but can also enter the food chain, impacting human health.** According to research, a single wash can release thousands of microfibers into the environment, highlighting the scale of the problem.

Furthermore, **tights are typically designed for short-term use and are notoriously prone to damage.** Most people wear them a few times before they snag or tear, leading to significant waste, as they basically become useless and are thrown in the trash. In fact, **it's estimated that 8 billion tights are thrown away each year, adding to the global plastic waste crisis.** Unfortunately, many people throw them away without considering recycling options.

Once they are disposed of, **most tights end up in landfills**, where they can take hundreds of years to decompose. The breakdown process releases harmful chemicals into the soil and groundwater, contributing to environmental pollution.

EFFECTS OF TIGHTS ON THE ENVIRONMENT

The cumulative impact of tights on the environment is significant. The most important points to consider, especially if you're considering buying tights are the following:

- **Greenhouse Gas Emissions:** The production of synthetic materials used in tights emits substantial greenhouse gases, contributing to climate change.
- **Water Pollution:** Microfibers from tights, when washed, pollute rivers and oceans, threatening marine ecosystems and wildlife.
- **Landfill Waste:** The short lifespan of tights leads to increased landfill waste, contributing to the growing problem of plastic pollution.

Jessica Kosak, of the Sustainability Consortium, says “the main environmental impact from tights is due to the energy needed to create workable yarn. Nylon requires a great deal of heat to create fibres and to form them into strands used to spin yarn”.

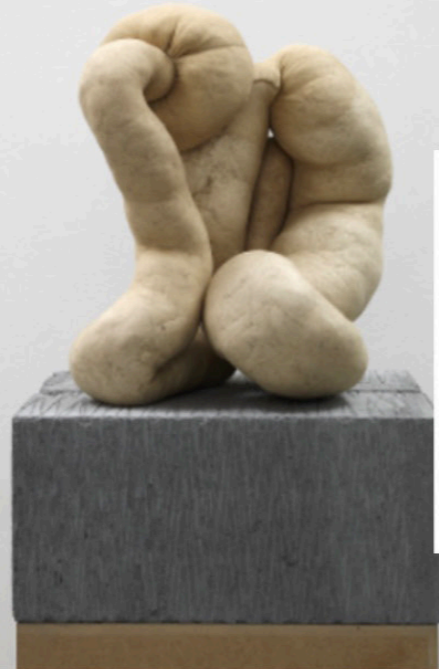
Then there is a secondary impact: “When you wash things like nylon there's a lot of microplastics that are released into the water,” says Sarah Needham, from the Centre for Sustainable Fashion at London College of Fashion, UAL. “It's sometimes very complex to be able to recycle it, so it's a material that will end up at landfill and not be able to be broken down.”

Hosiery waste, Clayton says, often goes under the radar: “Exactly the same polymer raw material goes into hosiery tights as plastic bottles and bags. They will meticulously recycle their household waste, but wouldn't think twice about throwing a laddered pair of tights in the bin.”

The environmental impact of tights

Sarah Lucas (b. 1962) emerged in the 1990s as one of Britain's leading contemporary artists. Spanning sculpture, photography and installation, her works are characterized by confrontational humor, sexual puns and an iron exploration of Englishness. In 1988 Lucas participated in the seminal group show 'Freeze', which launched the careers of major British artists including Damien Hirst, Angus Fairhurst and Gary Hume.

After learning about the environmental impact of tights, I sought out artists who use them as a medium, hoping to find inspiration for what else can be created with tights



The pieces NUDS Cycladic which Sarah Lucas created especially for the exhibition at the Museum of Cycladic Art are part of her ongoing series of sculptures NUDS, initially created in 2009.

Each is made from nylon tights stuffed with pale-coloured fluff and twisted into an ambiguous, biomorphic form. The works lean towards primitivism and abstraction, a self-reflecting series that moves away from the gender-based critique of her work in the 1990s and takes the earlier figurative 'bunny' sculpture series to a more abstract form.

The indeterminate organic shapes of the NUDS, offset by plinths of stacked breeze blocks, recall the smooth-contoured sculptures of British Modernists such as Barbara Hepworth and Henry Moore. The influence of other canonical figures, notably Hans Bellmer and Louise Bourgeois, is manifested by the works' suggestion of limbs, breasts, orifices and other corporeal fragments.

In the context of the Museum of Cycladic Art, by playfully referencing the smooth and stylized female forms of Cycladic figurines, Lucas's transformation of nylon stockings into twisted bodily contortions constitutes a feminist response to such canonical sculpture. The best-known objects from this period (3rd millennium BC), however, are strangely modern, marble

SARAH LUCAS

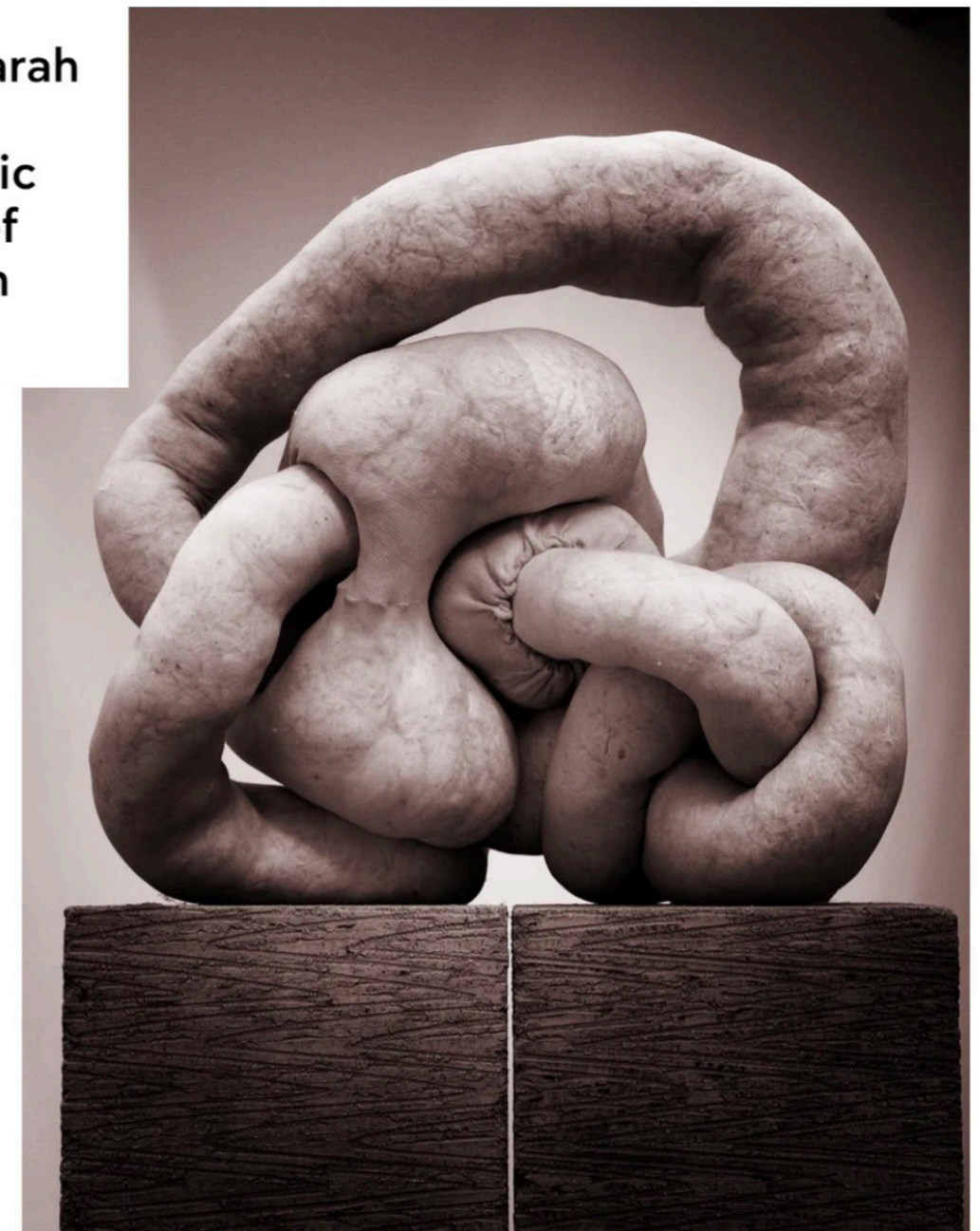
NUD CYCLADIC 7

DATE: 2010

MEDIUM: Sculpture, Textile

ARTWORK DETAILS: 47 x 44 x 39cm base/plinth: breeze block each; 121.5 x 43 x 43cm base/plinth: 100 x 43 x 43cm

Sarah Lucas' NUD CYCLADIC 7 is one of a series of works made in 2010 that are constructed from beige tights and fluffy stuffing. They sit atop plinths of various heights, built from medium-density fibreboard and breeze blocks, presenting an interesting contrast of hard and soft textures. Lucas has often used tights in her work, and has said of these: 'I thought there was something so human about them... something quite sexy'. These are fashioned into ambiguous, biomorphic forms, the stuffing bulging forth looks like dimpled flesh as the shapes twist and coil, seemingly folding in on itself to hide. However, the figure doesn't quite present itself as male or female and tilts towards abstract, recalling the smooth forms evident in the work of Modernist sculptors such as Barbara Hepworth.

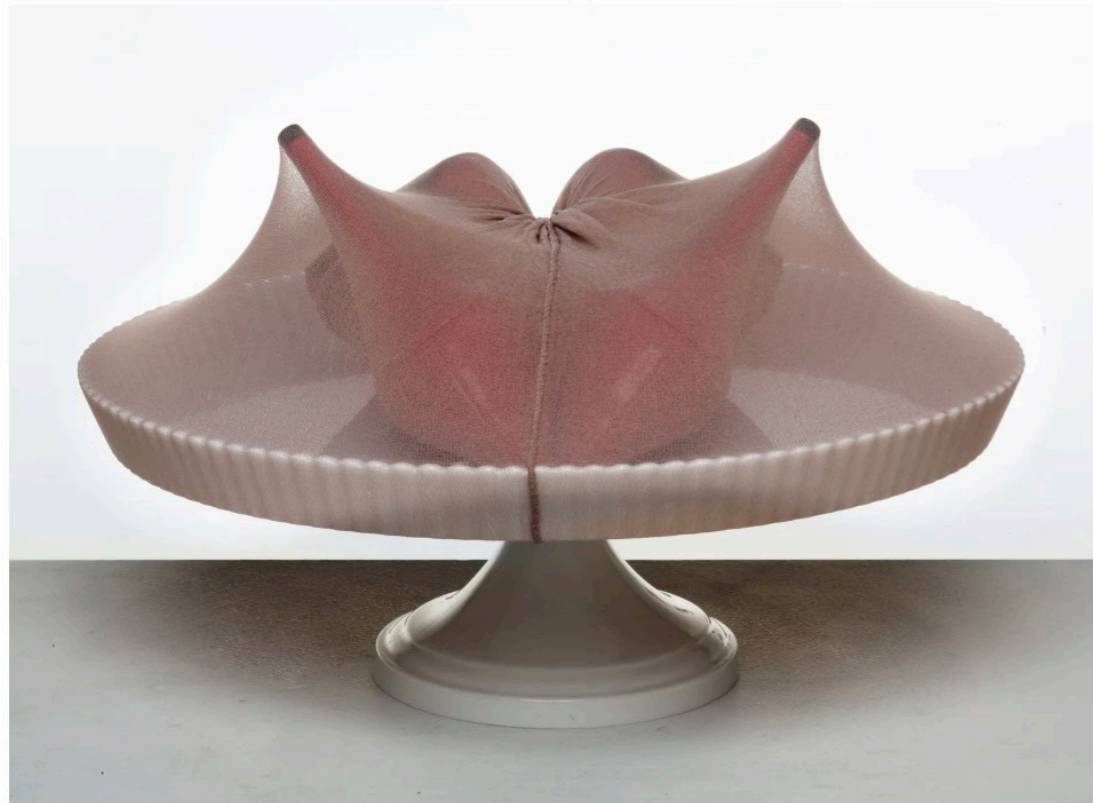


02

NUD CYCLADIC (15), 2010

Sarah Lucas

© SARAH LUCAS, photography Julian Simmons, courtesy Sadie Coles HQ, London

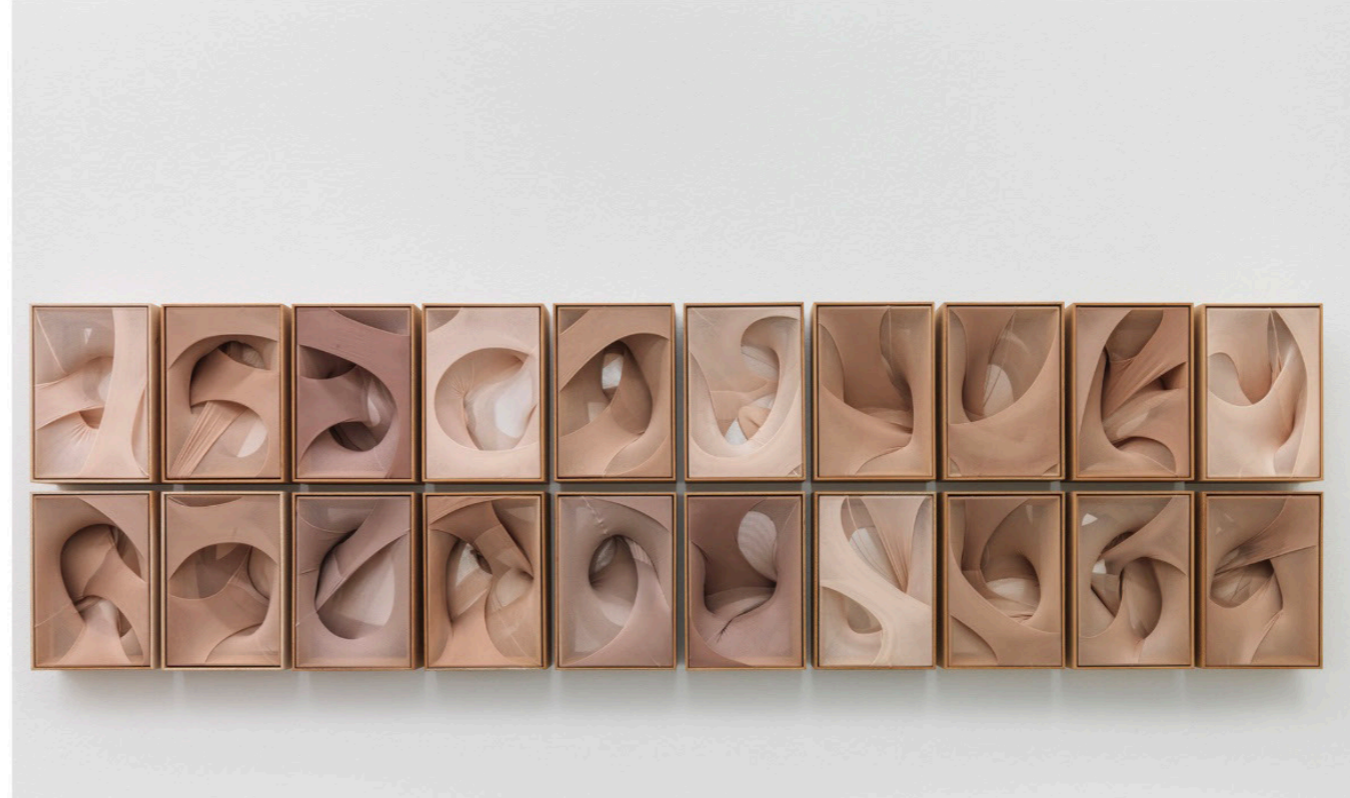
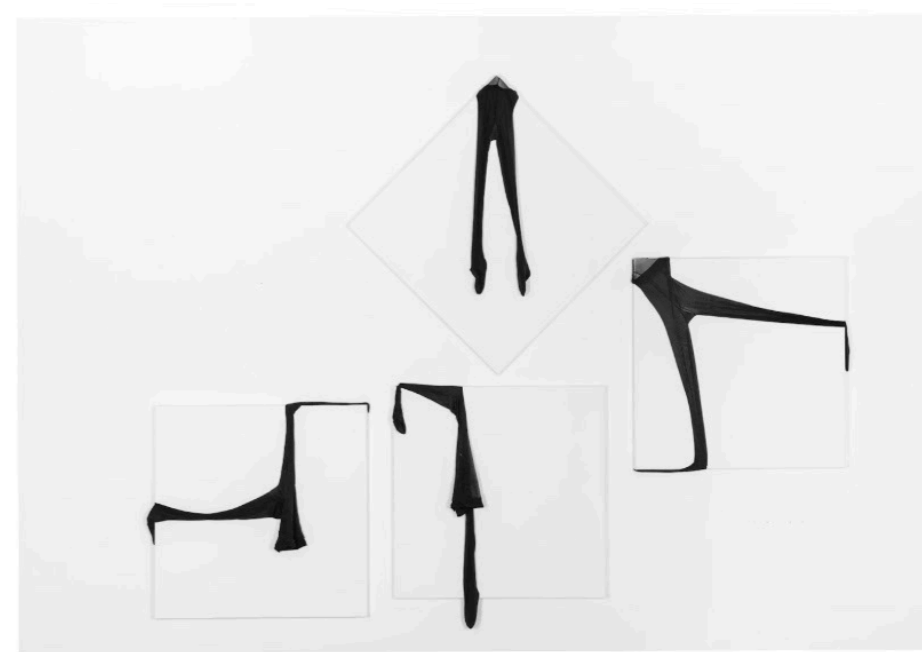


⑦
Martin Soto Climent

Thanksgiving Turkey for SculptureCenter NY, 2012

Pair of high-heeled red shoes, nude stockings, cake platter
 8 x 12 x 12 in | 20.3 x 30.5 x 30.5 cm
 Editions #4-27 of 27
 Part of a [limited edition set](#)
 Includes a [Certificate of Authenticity](#)

Martin Soto Climent
Tight on Canvas
 YEAR OF WORK
 2007
 MATERIALS
 Stockings on canvas
 DIMENSIONS
 35 1/2 x 35 1/2 in.
 YEAR OF ACCESSION
 2017
 ACCESSION DETAILS
 Gift of Stanley and Nancy Singer



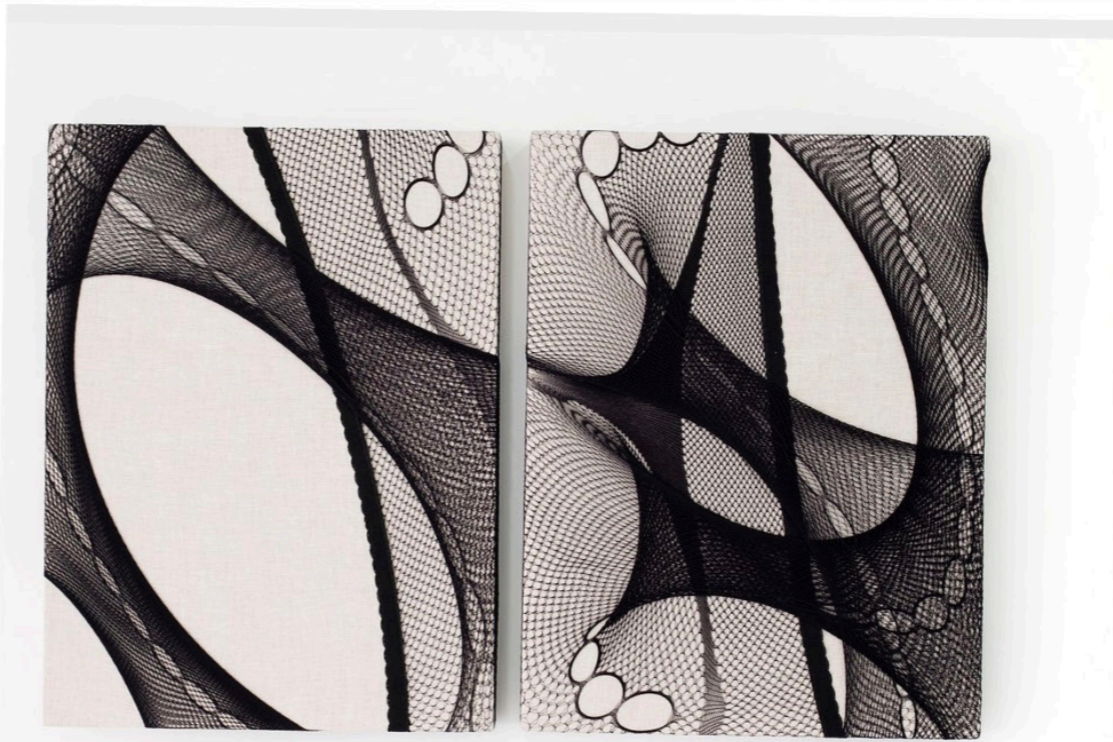
Martin Soto Climent
Gossip
 2019
 tights, plexiglass mirror,
 mounted in cedar boxes
 20 parts, each 30 x 20 x 10 cm
 (11 3,4 x 7 7,8 x 3 7,8 inches)



Martin Soto Climent
Gossip, 2016

Tights, mirror and banak wood
 12 1/4 x 8 1/4 x 4 1/4 in | 31.1 x 21 x 10.8 cm

Wright: 20|21 Art: The Chicago Edition



Martin Soto Climent
The Phantom's Shadow
 Karma International, Zürich
 February 9 – March 19, 2022
 Curated by Giorgia von Albertini
 Press Release
 Worklist
 Images courtesy Karma International,
 Zürich. Photos by Annik Wetter.

Appendices B: Process

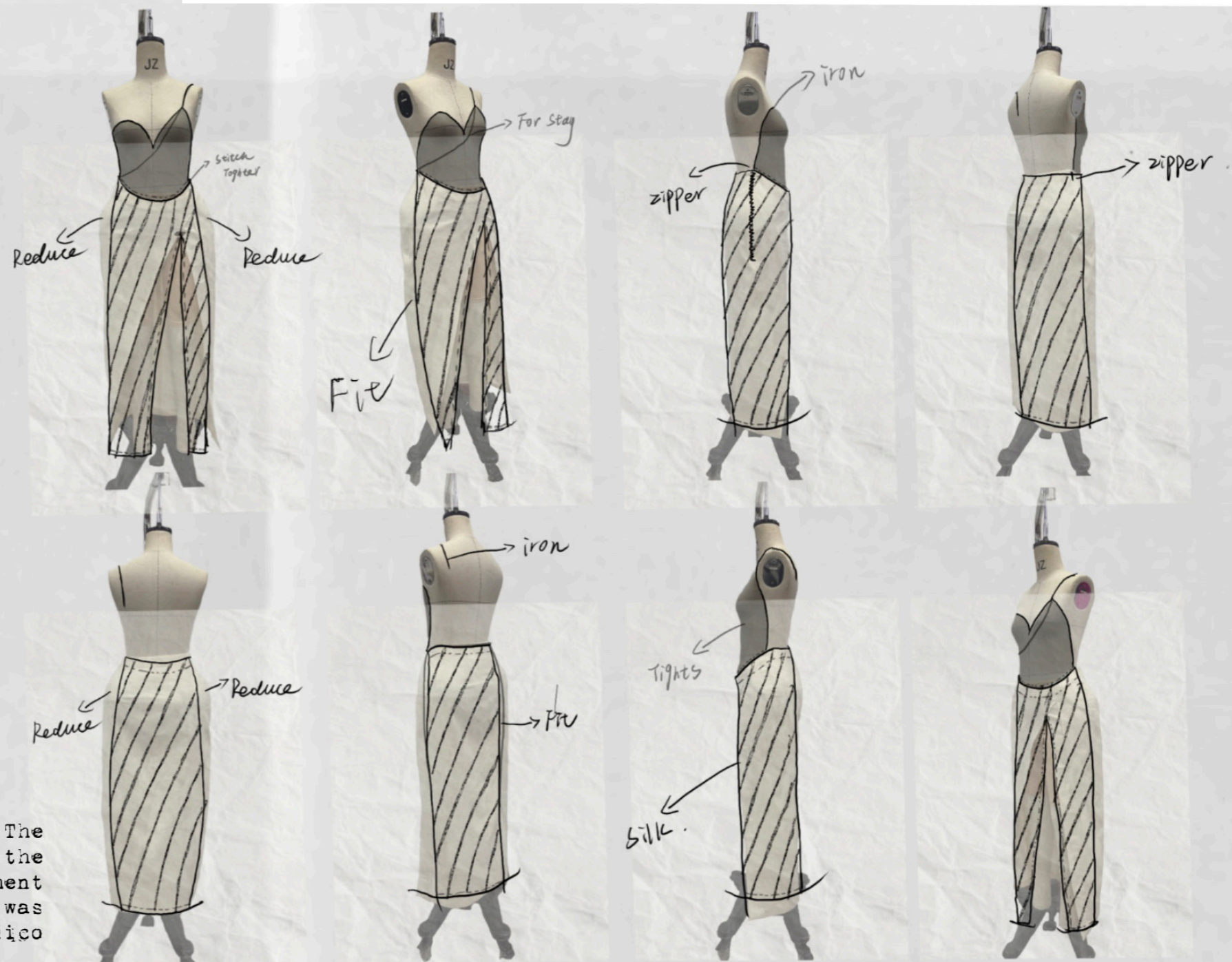


Figure 1: The first time the garment silhouette was on Calico

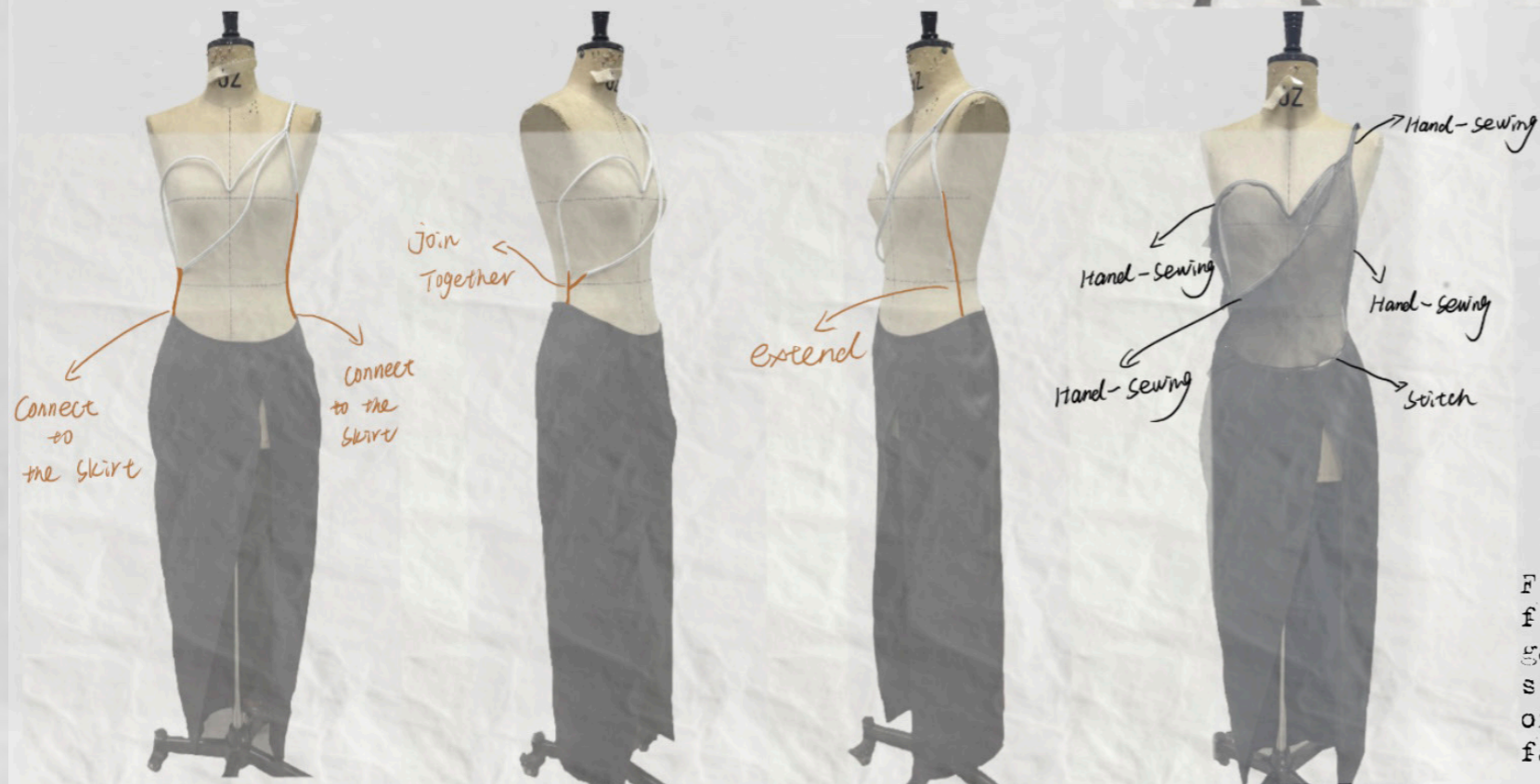


Figure 2: The first time the garment silhouette was on final fabric

First garment silhouette:
The dress in Look 1

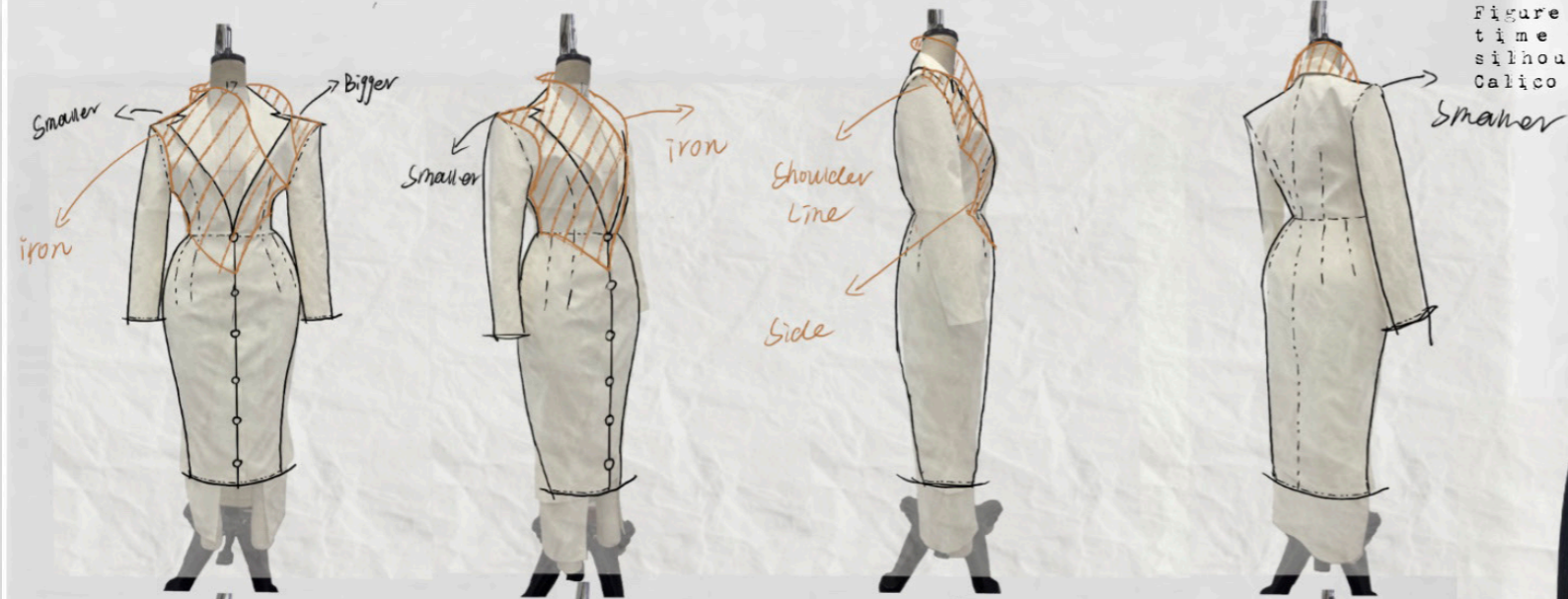


Figure 1: The first time the coat silhouette was on Calico

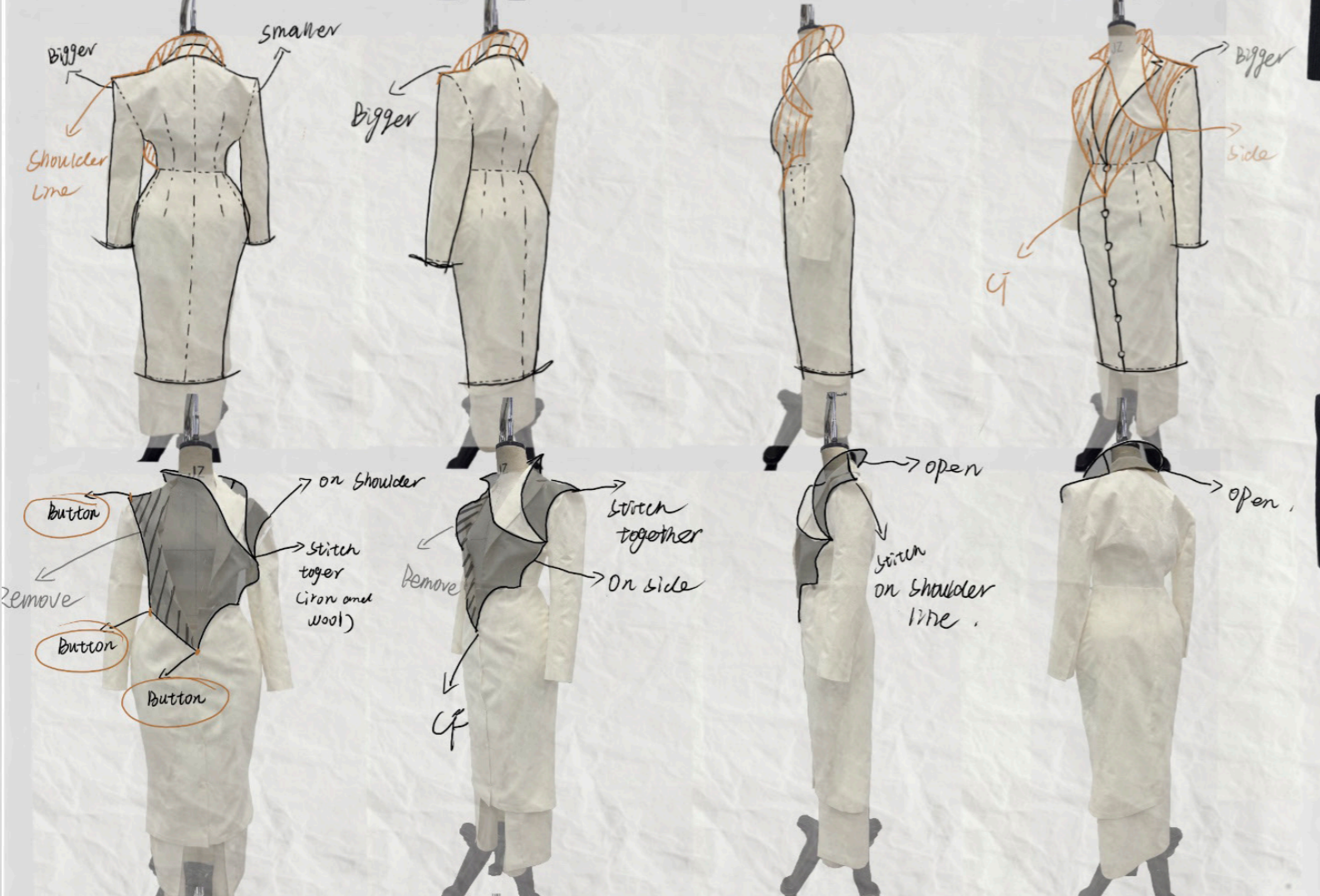


Figure 2: The first time the coat silhouette combined with tights



Figure 3: The first time the coat silhouette on final fabric

First garment silhouette: The coat in Look 1

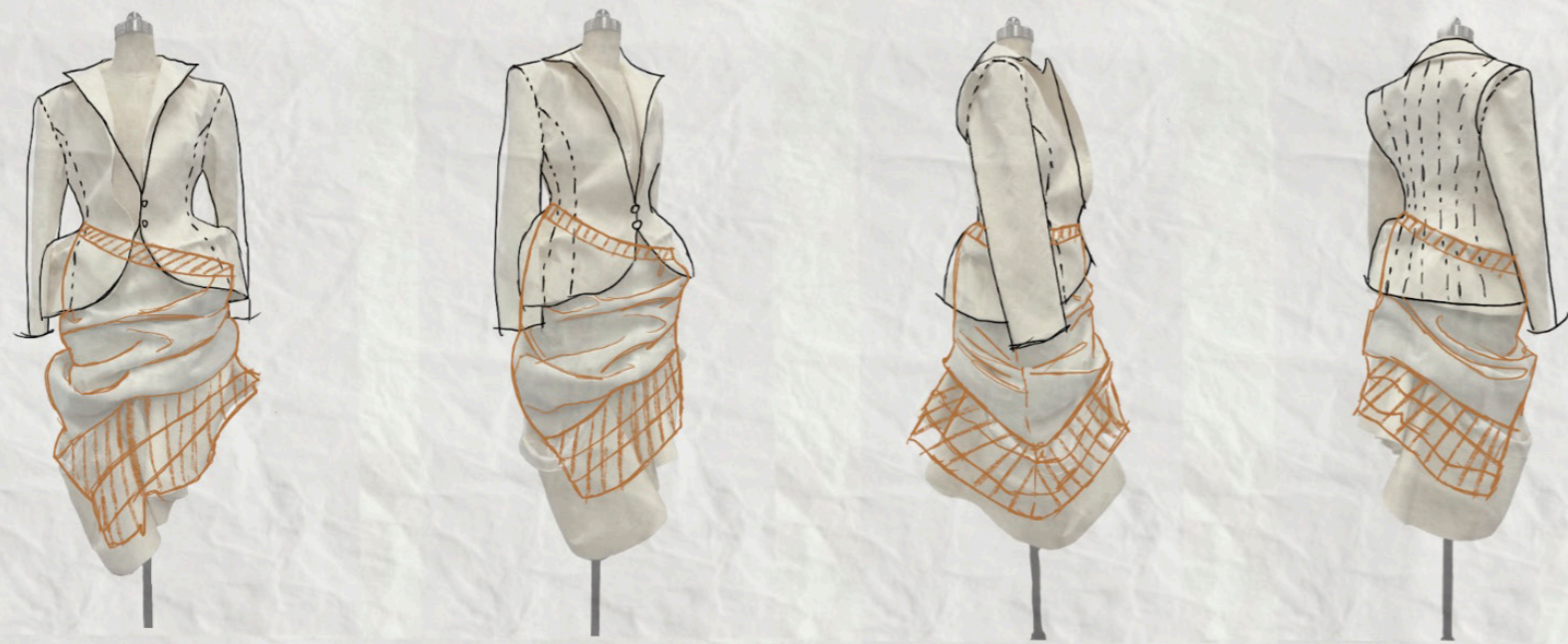


Figure 1: The first time the garment silhouette was on Calico

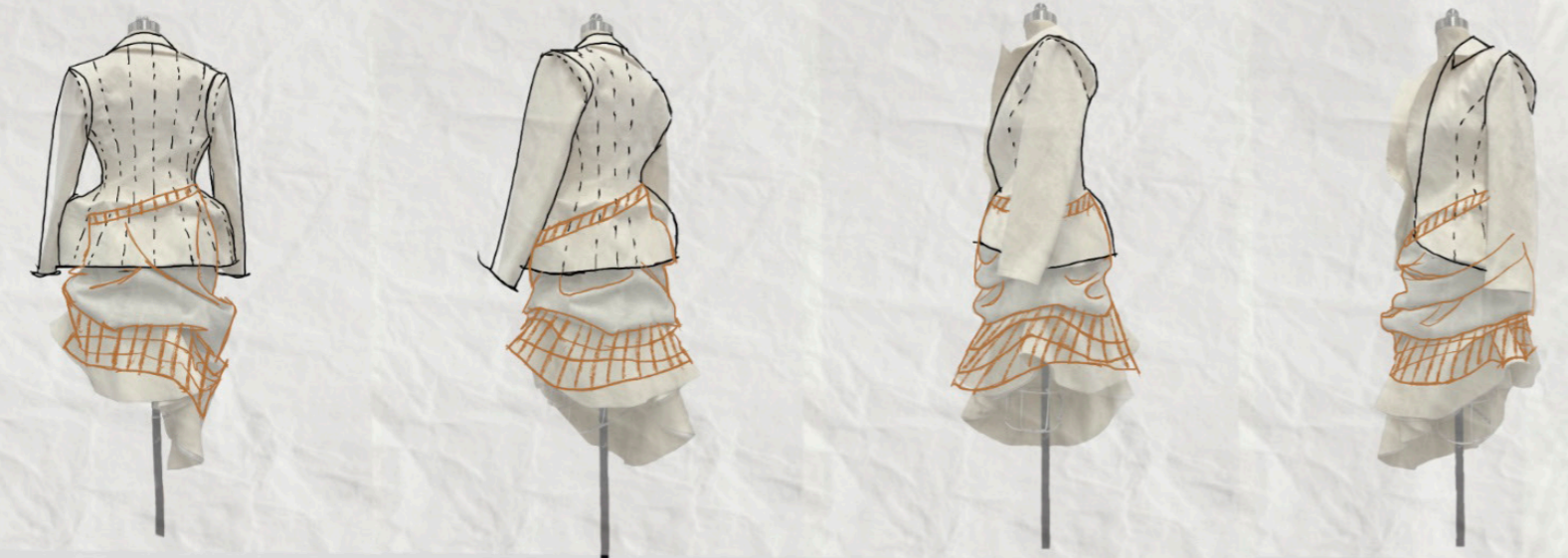


Figure 3: The first time the jacket silhouette on final fabric



Figure 2: The first time the skirt silhouette on final fabric

First garment silhouette:
The garment in Look 2

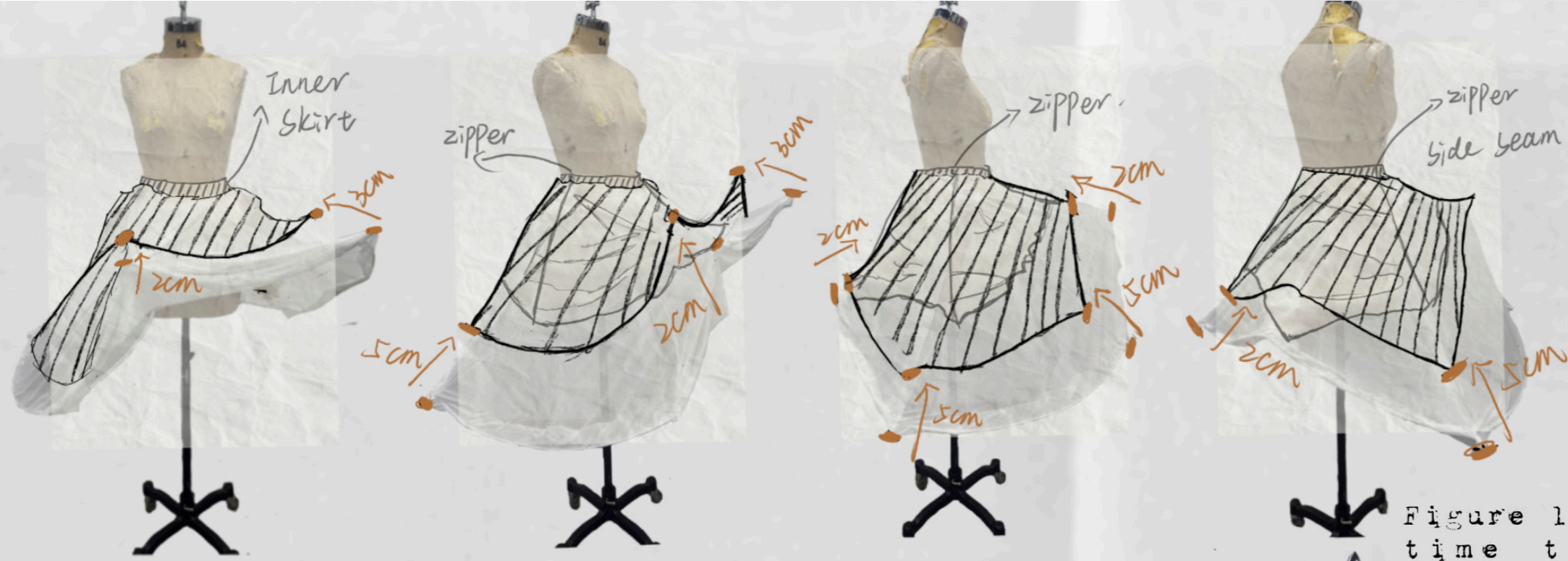


Figure 1: The first time the skirt silhouette test

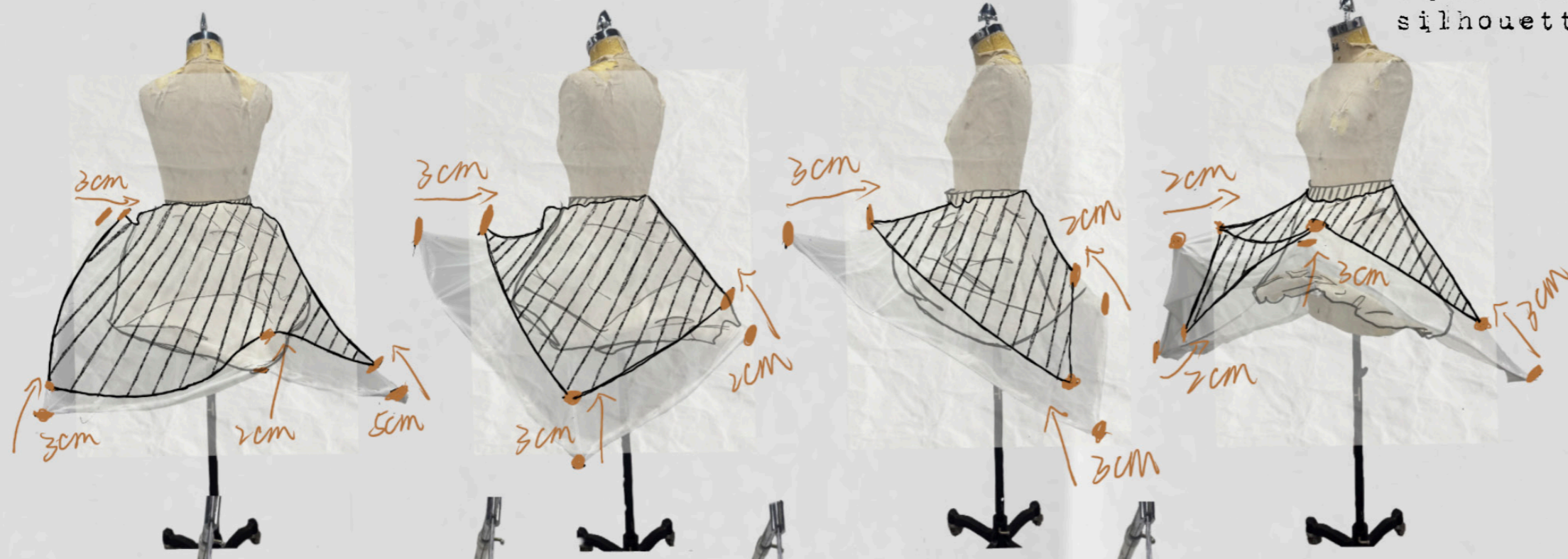
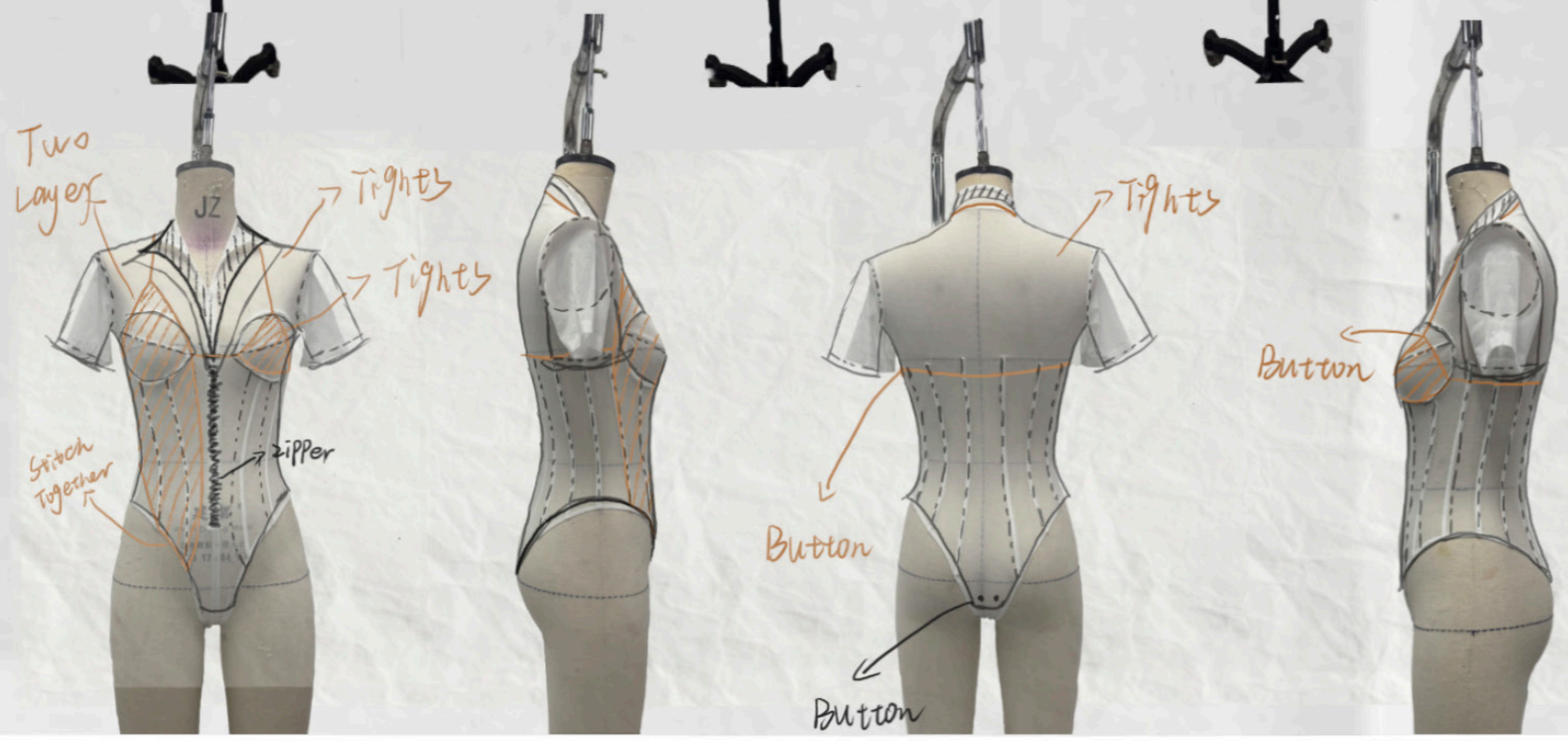


Figure 2: The first time the bodysuit silhouette on stretch fabric



First garment silhouette: The garment in Look 3

First garment silhouette: The garment in Look 3

Figure 1: The first time the skirt silhouette combine with tights test



Figure 2: The first time the skirt silhouette on final fabric

First time garment silhouette on the mannequin



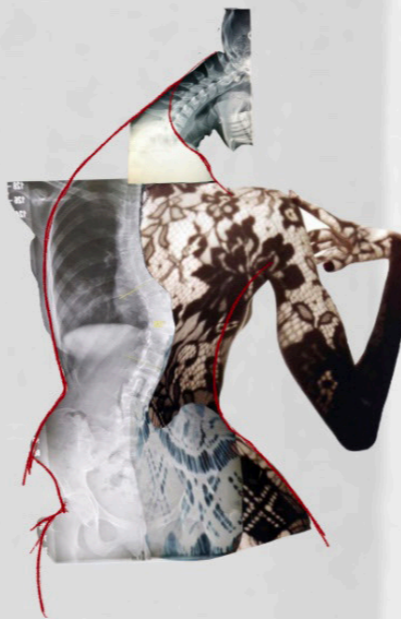
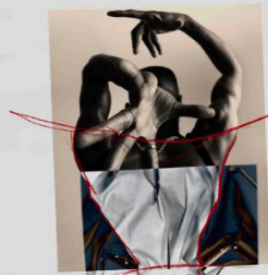
Figure 1: Look 1



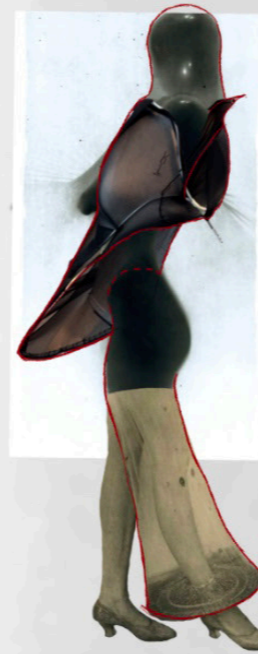
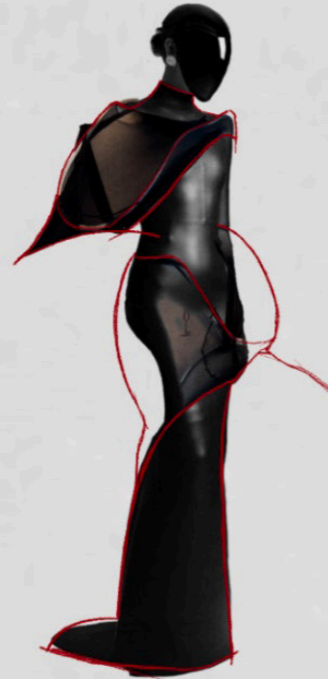
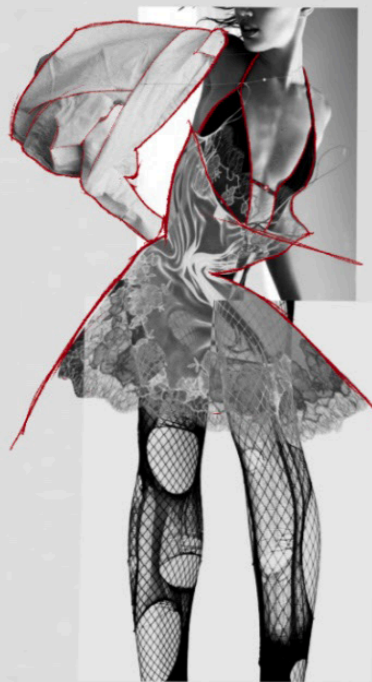
Figure 2: Look 2

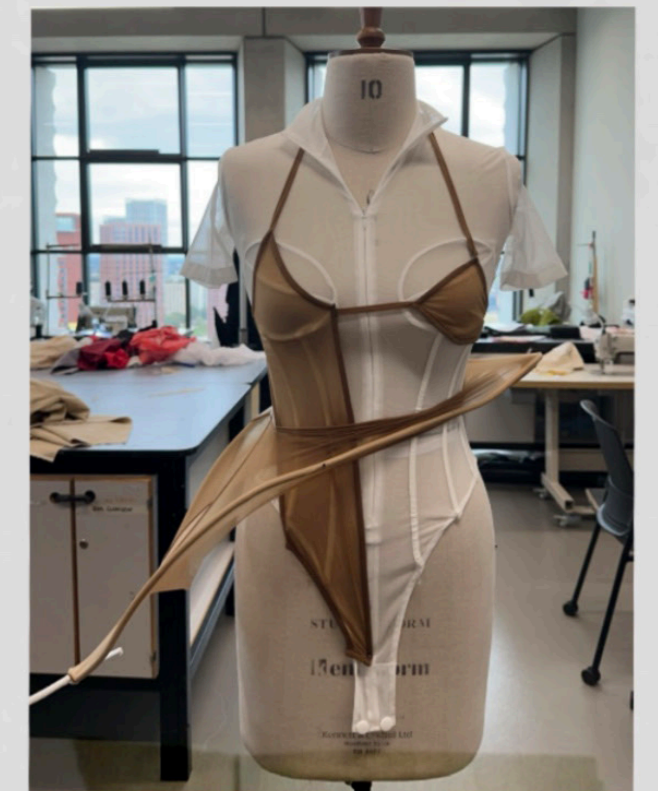
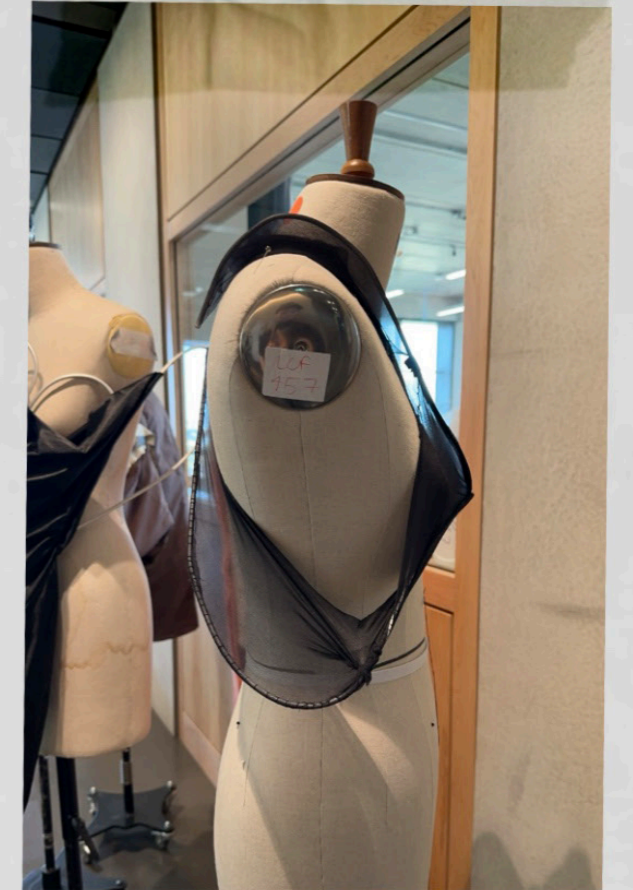


Figure 3: Look 3



After the first tutorial, I realized that specific garment shapes were limiting my design. This led me to remove them and explore silhouettes and structures through collage instead.





This showcases the final integration of the collage-developed structures with tights and garment design.

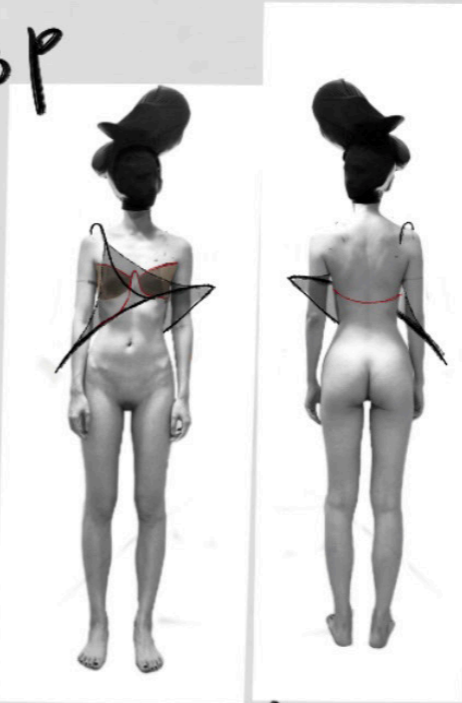


The first fitting

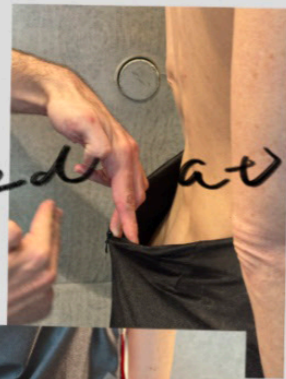
Fabric and width



Top



Pants



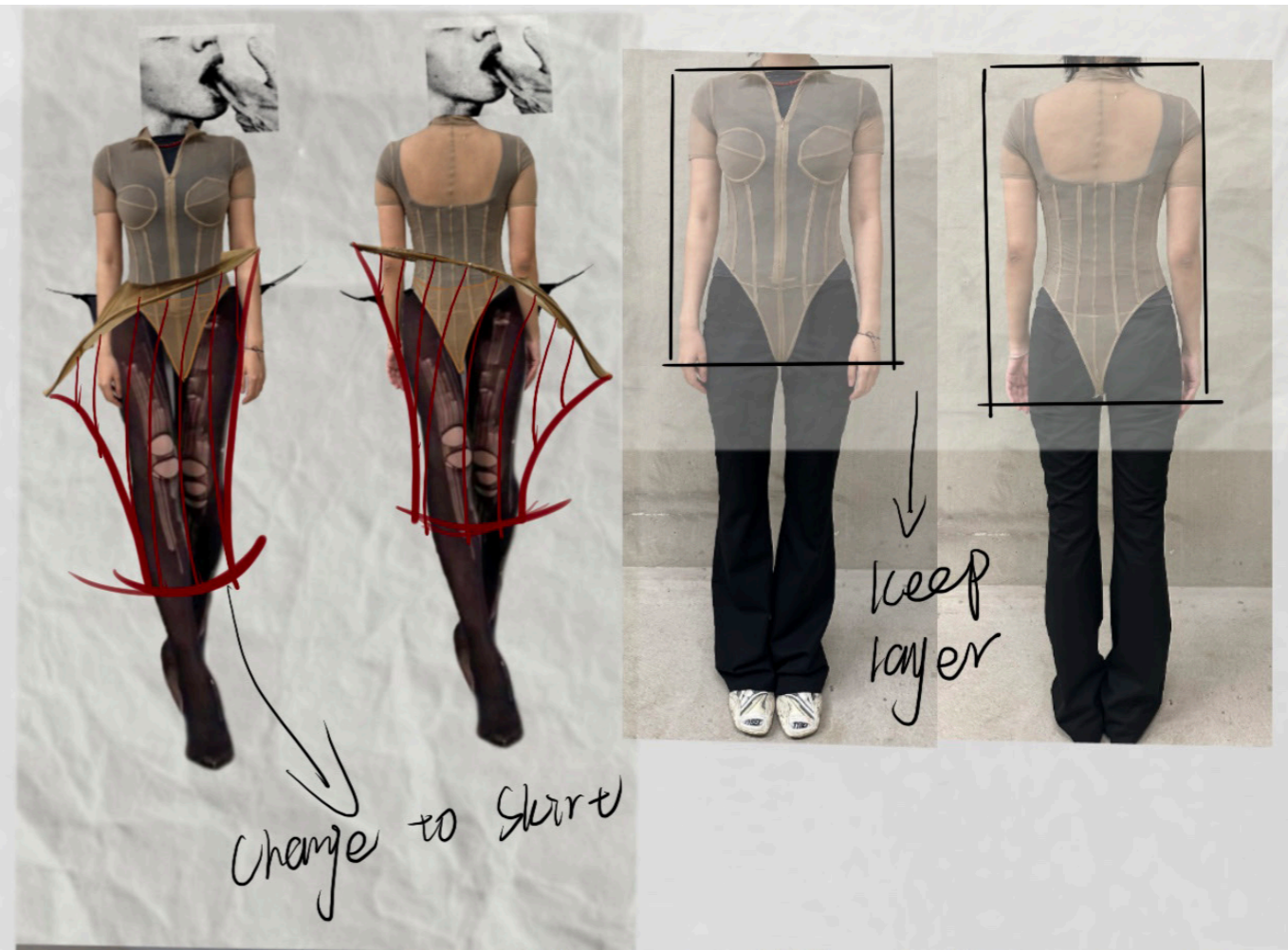
Built-in aluminum wire



The supporting shorts worn inside to sculpt the silhouette.



Look 1 process



Look 3 process



Top with aluminum wire and steel frame.



Shorts crafted from tights.



Look 2 process



Look 4 process

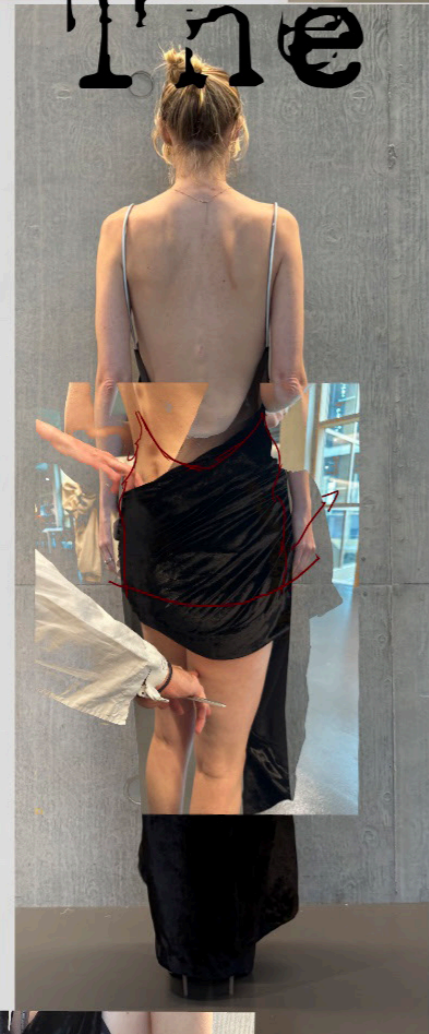




The second fittings

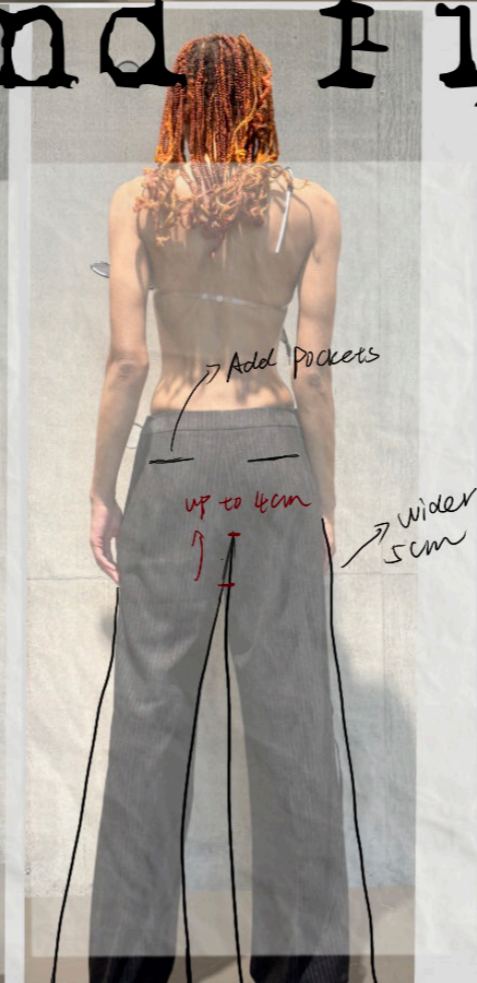


Very long



Big Fold

more longer



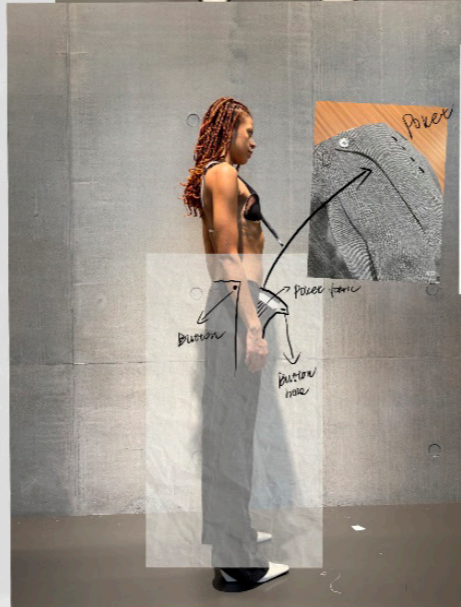
Add Pockets

up to 4cm

wider 5cm



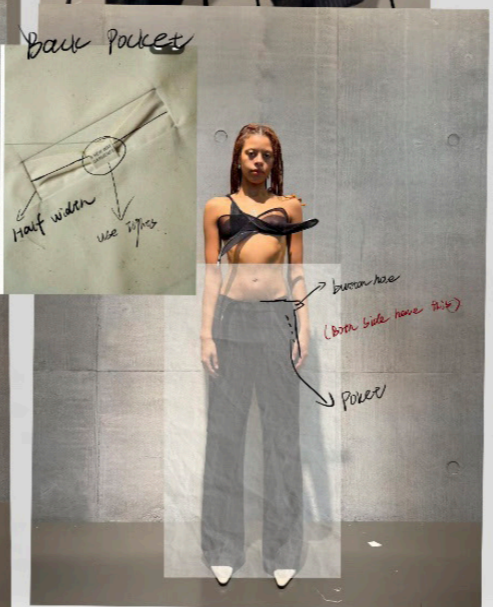
All line twist (((



button

button hole

Pocket



Back Pocket

Half width use tapes

button hole

(both side have 2x)

Pocket



Inside Bodysuit

armhole line

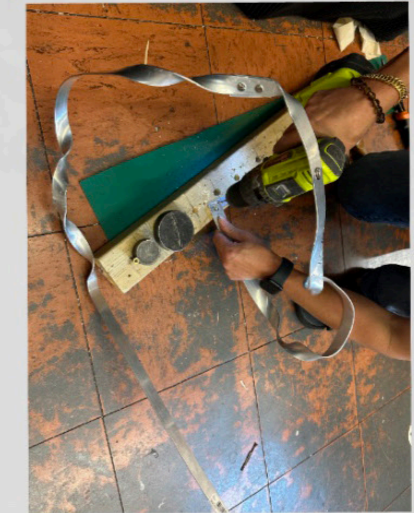
The process of hand polished the collar.



Look 4 seam placement

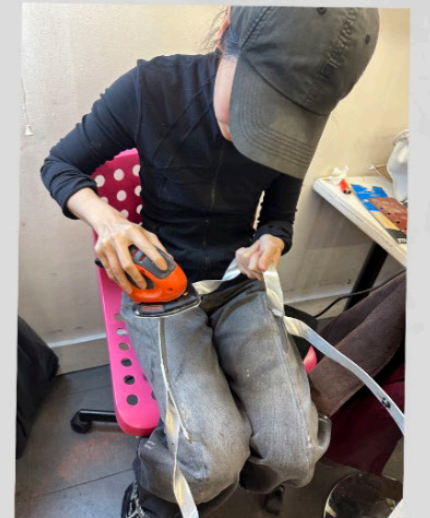


hand-stitching



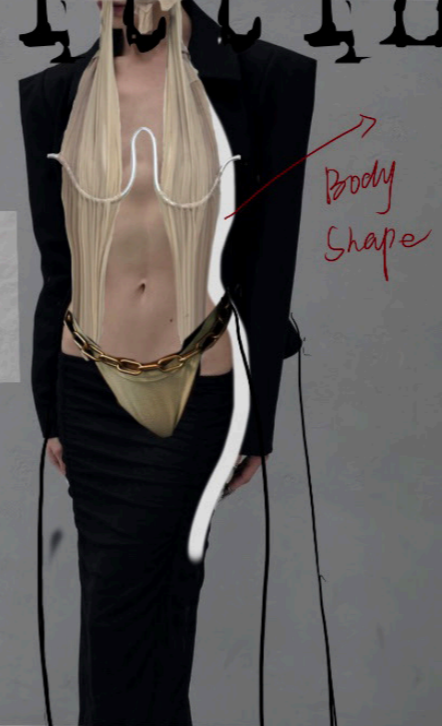
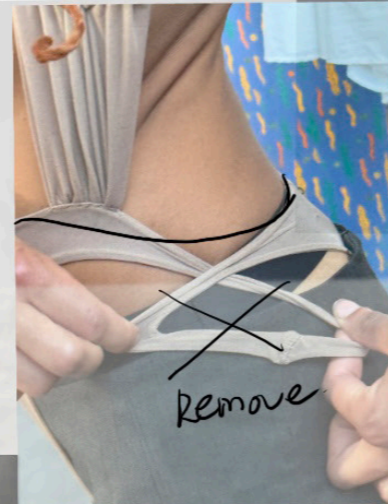
Look 3 curve seam

The process of hand polished the waistband

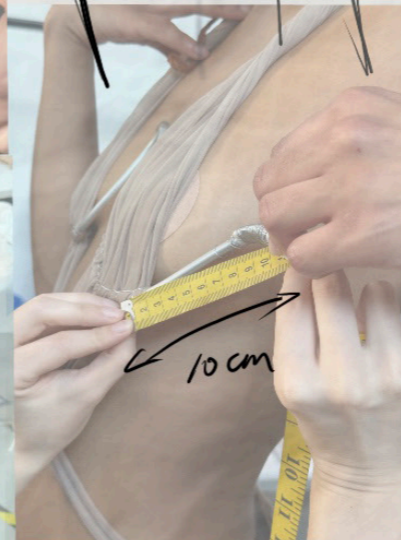
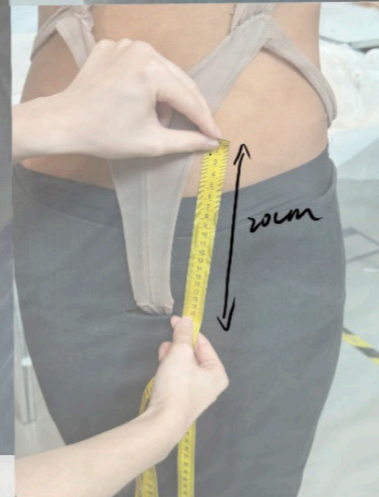
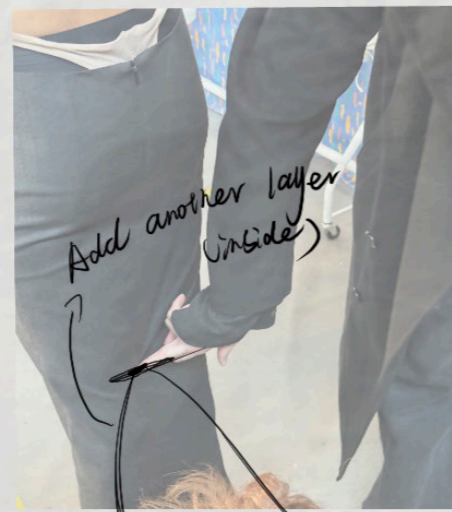




The third fittings



Look 5 draping development



Appendices C: Material

Figure 1: Testing different metallic materials



Figure 2: Study the Vintage frame structure



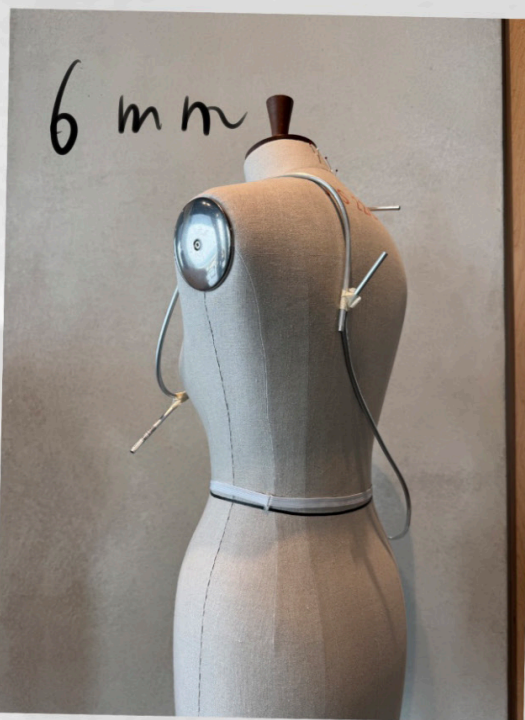
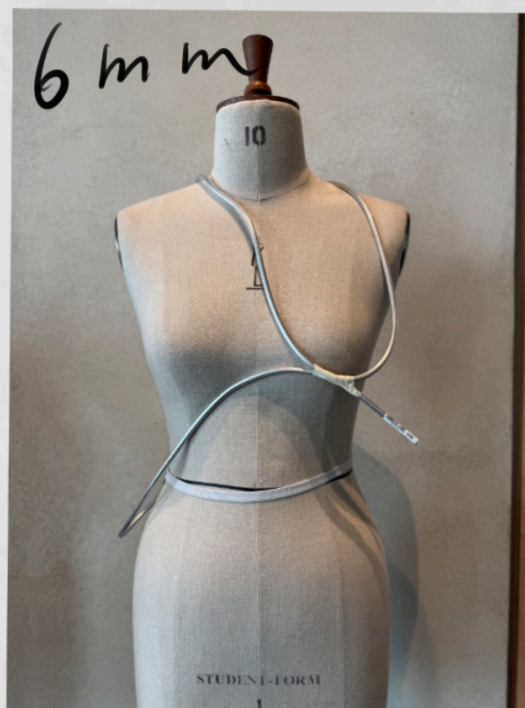
Figure 3: Testing aluminum tubes of different diameters



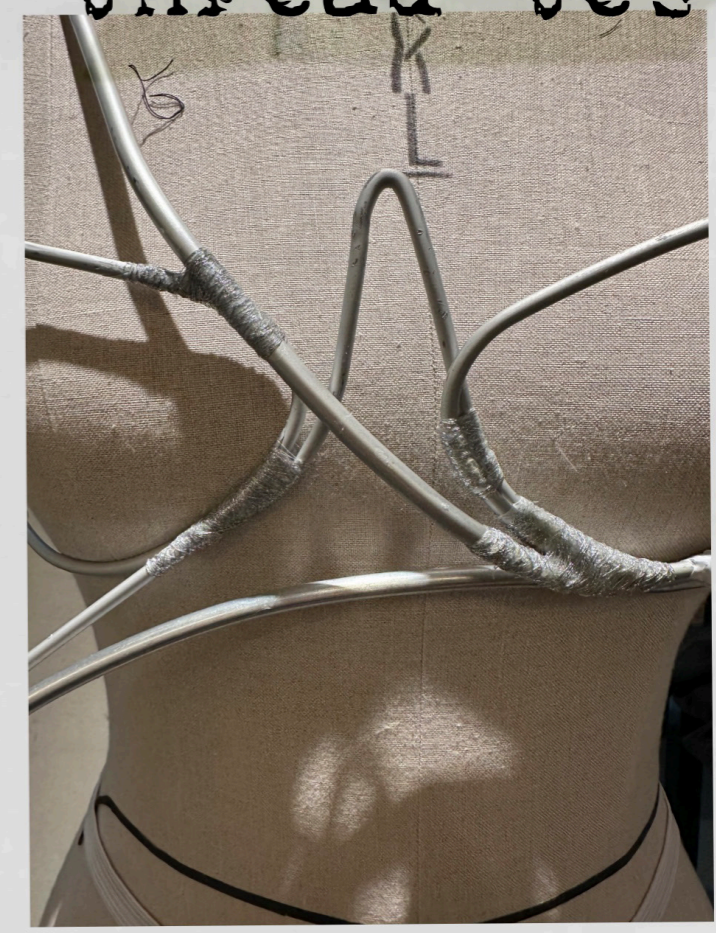
Figure 4: Testing the effect of aluminum tubes of different thicknesses on the body



Figure 5: Test aluminum strip



Hand-wound thread test






Different
structural
shapes
combined with
tights



Tests on
tightness of
different
colors,
transparency



Here are some vintage-style tights I've been studying, focusing on their knitting pattern and level of sheerness.



Here are some bodysuits I've been studying, focusing on their construction.

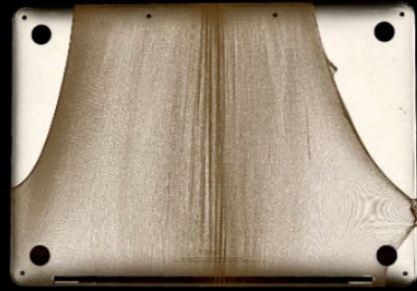
Appendices D: From the development of the previous projects



Tights beginning:

CTI project mainly alters the pattern and structure through the stretching of tights

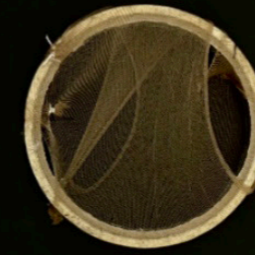
computer



Plate



tape



water bottle



Phone



mannequin



table lamp



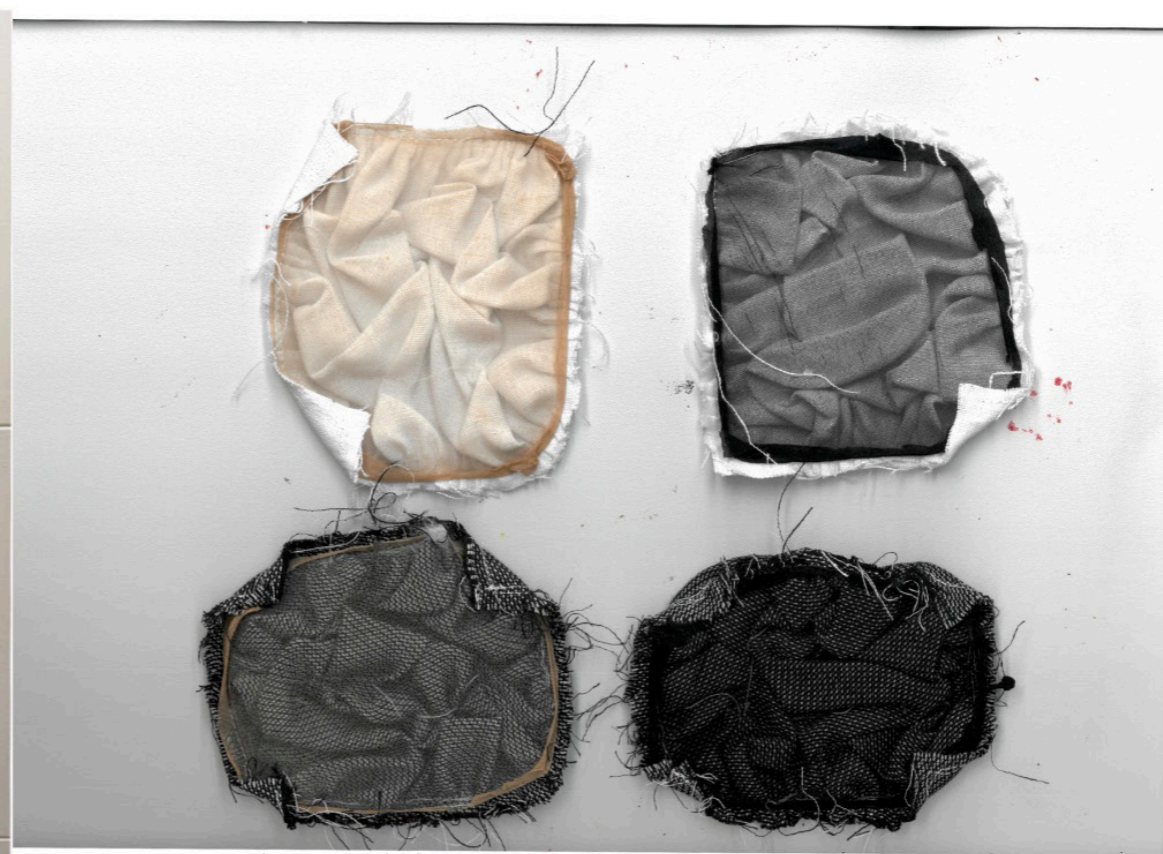
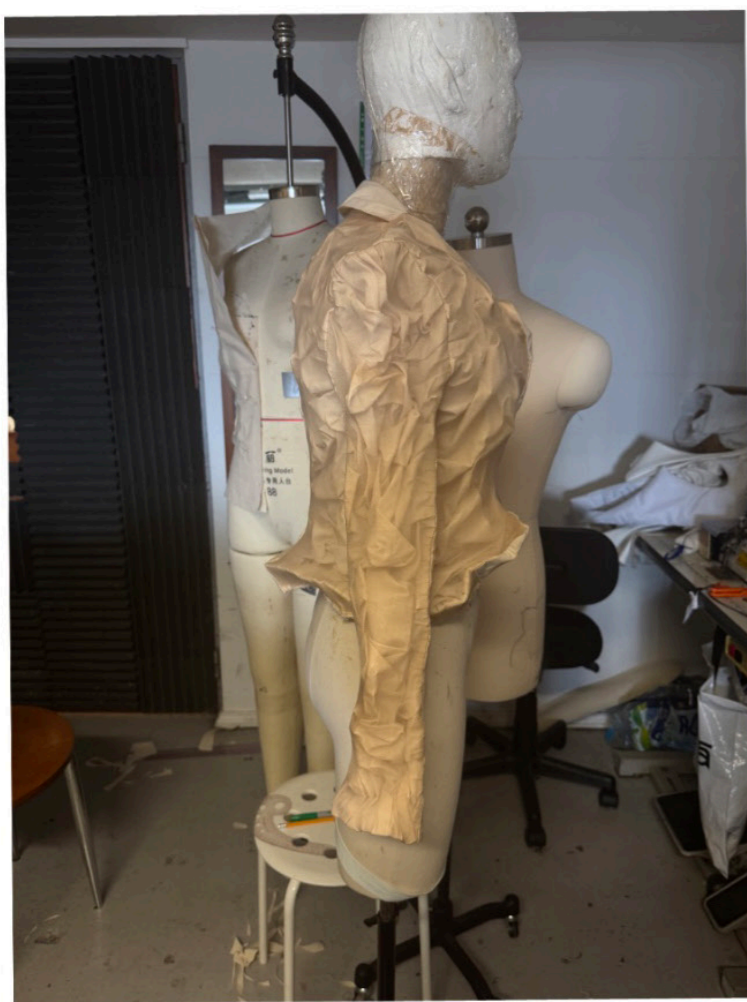
card holder



stereo



Established tights as the primary material for mine. I began experimenting by wrapping and combining them with various objects, materials and shapes



Fabrics of different materials and colors



EPT uses tights to wrap fabric, creating wrinkles and altering the silhouette