# Renaissance Armor as an Inspiration for 21st Century Clothing Design

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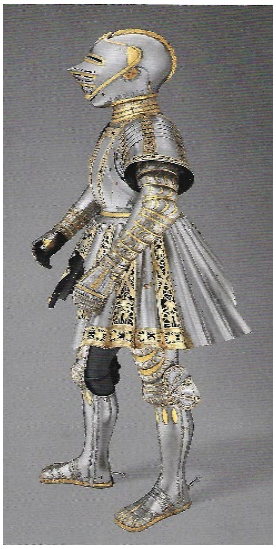
The goal of this research was to create a 21st Century garment inspired by the jaw-dropping armor designs of the 15th and 16th centuries. They were at once delicate and powerful, subtle and indomitable. The challenge for this design was to edit myriad armor features and to adapt them to a cohesive fabric design, rather than directly transplanting metal features onto a garment. As well, the design had to derive concepts from armor without producing costume wear.



Armor of the period was beautiful and functional, providing protection in battle and adornment in tournaments and ceremonies[1]. Constructed of steel, silver, gold, brass, copper and leather, armor could be pleated and layered, inlaid and etched, riveted and hinged[2]. These were works of art designed to show off the skill of craftsmen and the stylishness of the wearer by adapting to metal or leather the fashion of the era: peascod bellies[3], sabatons[4], and even organ-pipe pleats[5]. Often all of these features and more were found in a single suit of armor (picture at right[1]).

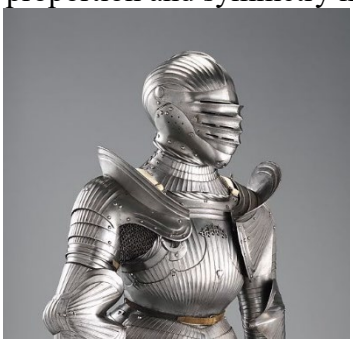
Modern designers' armor-inspired creations tend toward the literal: e.g., Paco Rabanne's spring 2021 use of chain mail[6] in ready-to-wear, or Versace's[7] full suit of armor, worn by Zendaya at the 2018 MET Gala. It is hard to look at these designs and not think "armor" in all of its fabulous complexity. The goal of this design, however, was to create innovative fabric structures and a unique silhouette with careful editorial consideration of various armor components and applications. This design modernizes and combines just six elements in a cohesive presentation: the haute/shoulder flange, gorget, gauntlet, organ-pipe pleat, and armor "hardware": rivets and hinges.

Draping the jacket established the form required to create a pattern that could replicate the continuous flow of the lines of armor "seams": from the shoulder cap through the bustline, bustline to "pocket" haute pieces, "gauntlet" trim to peplum line. Developing curves creates vertical and horizontal cohesion and symmetry. Repetition of the shoulder design and the sleeve cap creates a smooth rhythm, and the mirrored version of the same design line below the waist balances the symmetrical form.

Flat-pattern techniques informed construction of the sleeve cap, which suggests a pauldron, the piece of armor covering the shoulder where the body and arm pieces join. Each component of the garment required experimentation with several muslin mock-ups to identify and resolve design issues. Muslin "drafts" determined the optimal height, depth, width and angle of the sleeve cap and ensured the correct hang of the sleeve. Muslin prototypes ensured seaming

matched consistently in the body of the jacket and defined the shape and depth of the gauntlet, which flares slightly from the sleeve.

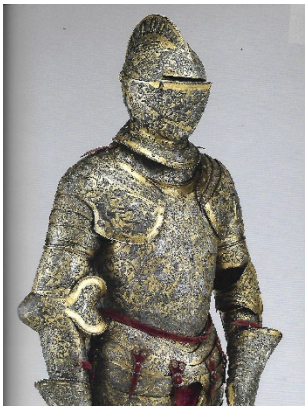
Muslin proto-types of organ-pipe pleats defined the degree and depth of curve in the bottom and top of the pleat. Experimentation examined the effect of two and three pleats side-by-side and stacked; some muslins were much bigger at bottom while others were drafted parallel with each other. The preferred solution is a single waist-to-hem pleat that provides the adornment, proportion and symmetry needed for this back focal point.



The shoulder haute (image at left[8]) required several drafts to match its curve to its twin at the waist. In order to hold the hautes upright, experimentation included a plastic insert, which proved too stiff. The solution was to use a quilting technique, stitching together the two bulky pieces in horizontal lines ¼ inch apart.

Foundational design skills helped create the clean execution intended for this complex garment: exact pattern making and cutting of fabric to ensure precise seam allowances, critical to achieving matched seams and the overall intended result; careful pressing and exact top stitching resulted in the clean lines one would see in metal armor. Attention to "turn-of–the-cloth" problems avoided clumsy joining of four fabrics of varying thickness at the ends of the sleeves: the outer turquoise sleeve and lining, and cuff fabric and lining. Cutting off hem allowances of the sleeve and cuff linings reduced turn layers to one. The outer, turquoise sleeve layer was turned under and hand sewn with lace for a smooth finish of all four layers.

An effective strategy to connect and complement the design elements into a cohesive and beautiful garment was piping basic lines/seams to represent the metallic and functional design work. The extensive piping used nine yards of pewter-colored satin and three techniques—including an entirely new technique—to achieve the desired effect. The location of the piping determined the method. The bias, bound-edge technique was used where the back of the garment isn't evident, as in the sleeve gauntlets, which were finished with narrow lace sewn by hand; the set-in piping method was used for seams. Using these methods on outside curves, however, would have created bulk, due to the addition of extra layers of fabric. Instead, a new technique resolved the issue by sewing a single strip of bias satin directly to the edges of the curve and turning it right-side out.



A metal-colored, mail-textured double-weave fabric provides contrast to the turquoise body of the jacket as well as the slacks, and suggests the highly ornamented texture of some more elaborate armor (see photo at right[9]). The grey fabric's bulky and rough texture contrasts with the smooth, glow of the teal tapestry fabric. The rather loosely woven contrasting fabric required a great deal of pressing, inside trimming, topstitching and the new method of piping the outside edges of the haute pieces. Well-hidden topstitching helped to keep a press in the heavy fabric. Because of the bulk of the fabric, the need for interfacing was minimal. Interfacing was only used in the collar of the gorget.

The hems and waist lining seams are handsewn. Gauntlets bias binding were handsewn with narrow lace to cover inside seam edge. Haute pieces inside seam allowances were hand-sewn in

place. Pewter-colored closures at the bodice and pant ankles are hand-sewn and recall leather straps and metal hinges that connected various armor pieces. Rivets are placed by hand on the organ pipe pleat and top of the ankle vents.

This design reaches 600 years into the past to create a modern garment. It references a unique period and way of constructing "attire," but from these references builds a new silhouette using new techniques. The design brings forward the powerful and male design lines of the late 15th century, but uses these to construct a beautiful, balanced, and innovative garment.

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[1] Donald La Rocca. *How to Read European Armor*. (New York, The Metropolitan Museum of Art, 2017), 97.
[2] J. Anderson Black and Madge Garland. *A History of Fashion* (London: William Morrow Co., Inc., Orbis Publishing Limited, 1975), 156.
[3] Donald La Rocca. *How to Read European Armor.* (New York, The Metropolitan Museum of Art, 2017), 40.
[4] Donald La Rocca. *How to Read European Armor.* (New York, The Metropolitan Museum of Art, 2017), 36.
[5] Pierre Terjanian. *The Last Knight, the Art, Armor and Ambition of Maximilian I.* (New York: The Metropolitan Museum of Art, 2019), 172
[6] Laird Borrelli-Persson. "How Paco Rabanne's Craft Techniques From the 1960s Inspired the Spring 2021 Collections." *Vogue.* November 2020. https://www.vogue.com/article/paco-rabanne-link-dresses-inspire-designers-for-spring-2021.
[7] Exame. "Rihanna de Papa e Zendaya de Joana d'Arc: as ousadias do MET Gala 2018." August 5, 2018. https://exame.com/estilo-de-vida/rihanna-de-papa-e-zendaya-de-joana-darc-as-ousadias-do-met-gala-2018/
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