

COFFEE HOUSES & ARCADES:

A Forensic Inquiry into the Myths of Modernity

by

Levi Mullan

A thesis
presented to the University of Waterloo
in fulfillment of the
thesis requirement for the degree of
Master of Architecture

Waterloo, Ontario, Canada, 2018

© Levi Mullan 2018

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

ABSTRACT

Two founding myths of modernity, British coffee houses and Parisian arcades, have both been described as stages for the public display of private persons. The former was a “micro-stage where visitors could enact their chosen personalities”¹ and the latter, a promenade for the bourgeoisie to “display itself to the world.”² Central to these two spaces of appearance are two objects of inquiry: fashion and architecture. By forensically reconstructing these objects, the myths are put to the test. In the first, the egalitarian ideal claimed by the coffee house is pitted against reality, where architecture and fashion conspire to produce new lines of exclusion. In the second, the aesthetic character of the Arcade as phantasmagoria is dissected, and again architecture and fashion are charged as conspirators in producing the politically debilitating dream state.

Coffee house interiors dissolved social hierarchies, leaving space for fashion to emerge as a primary vehicle of power. A study of 17th C. British interiors crossed with a forensic reconstruction of coincident fashions reveals the transfer of power from space to fashion. This transfer of power led to fashion-based forms of exclusion. Literal lines of exclusion are identified in the silhouette of a cuff or an overcoat. It is in these “trivial” sartorial nuances that power embedded itself.

Arcade architecture and its coincident fashions both framed modernity in the images of earlier epochs. Arcades cited early eastern and classical architecture, while coincident fashions cited the Elizabethan age. At the same time, a number of technological innovations were emerging in architecture and fashion. These include gas lighting, iron construction, mechanical looms, and new sartorial forms. This coupling, of citation and innovation, past and future, represents the principal aesthetic quality of the phantasmagoria. The phantasmagoria created

¹Christoph Grafe, *Cafés and Bars: The Architecture of Public Display* (New York: Routledge, 2007), 28.

²Johann Friedrich Geist, *Arcades, The History of a Building Type*, (Cambridge: MIT Press, 1983), 114.

a false sense of progress and consequentially hindered concerted political action. A forensic reconstruction of arcade architecture and fashion unearths the material properties of these time-transcendent citations, premature innovations, and the phantasmagoria produced by their coupling.

While centering on the problematic, this thesis recognizes these relationships are dialectical, and exist as problem and potential. In the coffee house, potential laid in the new opportunity to make oneself uniquely visible in the public realm. In the arcades the potential laid in their ability to reveal the inefficacies of the capitalist system, and paradoxically, provided the necessary shock to spark concerted political action.

ACKNOWLEDGMENTS

I would like to thank my co-supervisors, Adrian Blackwell and David Correa, for their help with this thesis. Thank you for your theoretical and methodological insights. While it sometimes felt theory and method were in competition, it was their weaving that made this research exciting and representative of the education fostered at Waterloo Architecture. Thank you to my committee member, Rick Haldenby for your encouragement and excitement.

Thank you, Maya Przbylski, for your attentive ear at my final review. Your introduction to computational tools in third year motivated me to find more to throw in the architect's toolkit. To my TRD1 and TRD2 professors, Andrew Levitt and Dereck Revington, thank you for your early guidance in this research.

Thank you to my parents and sisters for their enduring support. My dearest friend, Elena Mucibabic, thank you.

For my fellow Mollies and those fashionable flaneuses.

TABLE OF CONTENTS

<i>ii</i>	<i>authors declaration</i>
<i>iv</i>	<i>abstract</i>
<i>vi</i>	<i>acknowledgements</i>
<i>viii</i>	<i>dedication</i>
<i>x</i>	<i>table of contents</i>
<i>xi</i>	<i>list of figures</i>
1	Introduction
3	Methodology
23	Lines
57	Illusions
77	Extended Fashion Pipeline & Animated Experiments
87	Conclusion
89	<i>Bibliography</i>
91	<i>Appendix</i>

LIST OF FIGURES

Page	Figure Number	Description
4	fig. 001	Index of coffee houses used to map the public sphere retrieved from: Lillywhite, Bryant. <i>London Coffee Houses</i> . Crows Nest: Allen & Unwin, 1964.
4	fig. 002	<i>Interior of a London Coffee-House</i> . 1600-1700 C. Drawing on paper, 147mm X 220mm. The British Museum, London. http://www.britishmuseum.org (accessed April 29, 2018).
5	003	Bench illustration used as reference for reconstruction retrieved from: Charles H. Hayward, <i>English Period Furniture</i> (New York: Harper Collins Publishers Ltd, 1984), 26.
5	fig. 004	Small dining or living room, 1686 - 90 retrieved from: Doreen Yarwood, <i>The English Home</i> (Essex: The Anchor Press Ltd., 1979), 105.
6	fig. 005	Fashion pattern retrieved from: Margot Hamilton Hill and Peter A. Bucknell, <i>The Evolution of Fashion</i> (Hollywood: Costume & Fashion Press, 1967), 104.
7	fig. 006	Archival architectural drawings of the Galerie Colbert retrieved from: Jean-Charles Krafft and François Thiollet, <i>Choix des plus jolies maisons de Paris et de ses environs</i> (Paris, 1949), 176.
8	fig. 007	Archival architectural drawings of the Galerie Vivienne retrieved from: Jean-Charles Krafft and François Thiollet, <i>Choix des plus jolies maisons de Paris et de ses environs</i> (Paris, 1949), 174.
9	fig. 008	1820 and 1830 sleeve patterns retrieved from: Jean Hunnisett, <i>Period Costume for Stage & Screen</i> (Studio City: Players Press., 1991), 57.
10	fig. 009	1860 Ruff sewing pattern retrieved from: Janet Arnold, <i>Patterns of Fashion 4</i> (London: Macmillan, 2008), 76.
12	fig. 010	Sculpted coffee house bench and fashionable living room details, image by author
12	fig. 011	Sculpted arcade ornament, image by author
14	fig. 012	3D scan, image by author
15	fig. 013	Resulting triangulated mesh, image by author
15	fig. 014	Retopologized mesh, image by author
15	fig. 015	Bounding boxes drawn, image by author

15	fig. 016	Fashion patterns made into meshes, image by author
16	fig. 017	Mesh wrapped to corresponding cylinders, image by author
16	fig. 018	Cloth solver calculation starts, image by author
16	fig. 019	Calculating, image by author
16	fig. 020	Cloth solver calculation ends, image by author
17	fig. 021	Garment pieces layered to create a single outfit, image by author
18	fig. 022	Example of 2D sewing pattern, derived from: Hunnisett, Jean. <i>Period Costume for Stage & Screen</i> . Studio City: Players Press., 1991.
19	fig. 023	Sartorial details like button holes achieved through digital sculpting, image by author
20	fig. 024	Sartorial details like lace achieved through digital sculpting, image by author
21-22	fig. 025	Map of British coffee houses, image by author
24	fig. 026	<i>Interior of a London Coffee-House</i> . 1600-1700 C. Drawing on paper, 147mm X 220mm. The British Museum, London. http://www.britishmuseum.org (accessed April 29, 2018).
26	fig. 027	Forensic reconstruction of <i>Interior of a London Coffee-House</i> , image by author
27	fig. 028	Coffee house worms-eye axonometric, image by author
27	fig. 029	Coffee house trestle table front elevation and side elevation, image by author
28	fig. 030	Coffee house bench front elevation and side elevation, image by author
28	fig. 031	Coffee house settle front elevation and side elevation, image by author
28	fig. 032	Coffee house stall front elevation and side elevation, image by author
30	fig. 033	Edward Ward, "The Coffeehouse Mob" in <i>Vulgus Britannicus</i> , 1710.
31	fig. 034	Fashionable living room (1690) reconstruction, image by author
31	fig. 035	Fashionable living room worms-eye view, image by author

32	fig. 036	Oak gate-leg table front and side elevation, image by author
32	fig. 037	High-back William and Ashley dining chair front view and side elevation image by author
32	fig. 038	Lacquered chest, image by author
35	fig. 039	1665 outfit, image by author
36	fig. 040	1665 outfit seated and standing, image by author
37	fig. 041	1675 outfit, image by author
38	fig. 042	1675 outfit seated and standing, image by author
39	fig. 043	1690 outfit, image by author
40	fig. 044	1690 outfit seated and standing, image by author
41	fig. 045	1705 outfit, image by author
42	fig. 046	1705 outfit seated and standing, image by author
43	fig. 047	1720 outfit, image by author
44	fig. 048	1720 outfit seated and standing, image by author
45	fig. 049	1740 outfit, image by author
46	fig. 050	1740 outfit seated and standing, image by author
47	fig. 051	1755 outfit, image by author
48	fig. 052	1755 outfit seated and standing, image by author
49	fig. 053	1770 outfit, image by author
50	fig. 054	1770 outfit seated and standing, image by author
51	fig. 055	1785 outfit, image by author
52	fig. 056	1785 outfit seated and standing, image by author
54	fig. 057	Detail comparison of coffee house fashions, image by David Correa
55-6	fig. 058	Forensic reconstruction of <i>Interior of a London Coffee-House</i> highlighting sartorial lines of excluding during the coffee house era, image by author
58	fig. 059	Map of Parisian arcades, image by author
60	fig. 060	Galerie Colbert and Galerie Vivienne plan, image by author
60	fig. 061	Susan Buck-Morss's parti of <i>The Arcades Project</i> retrieved from: Susan Buck-Morss, <i>The Dialectics of Seeing</i> (Cambridge: The MIT Press, 1991), 211.
61	fig. 062	Fragment of forensically reconstructed Bazaar at Acre, image by author

61	fig. 063	Fragment of forensically reconstructed Galerie Vivienne, image by author
62	fig. 064	Bazaar at Acre section, image by author
62	fig. 065	Galerie Vivienne section, image by author
64	fig. 066	Diagram of major innovations and citations in the Galerie Vivienne, image by author
66	fig. 067	Diagram of major innovations and citations in the Galerie Colbert, image by author
67	fig. 068	Fragment of forensically reconstructed St. Peter's Basilica, image by author
67	fig. 069	Fragment of forensically reconstructed Galerie Colbert, image by author
68	fig. 070	Old St. Peter's Basilica section, image by author
68	fig. 071	Galerie Colbert section, image by author
71	fig. 072	1560 Dress, image by author
71	fig. 073	Detail of puffed slashed sleeve from 1560 dress, image by author
72	fig. 074	1826 dress, image by author
72	fig. 075	Puffed slashed sleeve wrapped to a gauze oversleeve from 1826 dress, image by author
73	fig. 076	1580 dress, image by author
73	fig. 077	Detail of massive sleeve and ruff from 1580 dress, image by author
74	fig. 078	1830 dress, image by author
74	fig. 079	Detail of 1830 dress showing the massive gigot sleeve and ruff, image by author
75	fig. 080	Forensic reconstruction of 1826 dress in the Galerie Vivienne, image by author
76	fig. 081	Forensic reconstruction of 1830 dress in the Galerie Colbert, image by author
78	fig. 082	Motion data acquisition, image by author
78	fig. 083	Rigging and skinning, image by author
78	fig. 084	Motion data applied to rig, image by author
79	fig. 085	Dress layered onto animated rig, image by author
80	fig. 086	Dress animation exported as geocache, image by author

82	fig. 087	Animation still of 1826 dress in the Galerie Vivienne, image by author
82	fig. 088	Animation still of 1830 dress in the Galerie Colbert, image by author
83-84	fig. 089	Daytime animated sequence of 1830 dress in the Galerie Colbert, image by author
85-86	fig. 090	Nighttime animated sequence of 1826 dress in the Galerie Vivienne, image by author
91	fig. 091	Dress cross section (front to back) illustrating viscoelastic properties, image by author
92	fig. 092	Dress section (left to right) illustrating viscoelastic properties, image by author
93-94	fig. 093	Map legend using index from: Lillywhite, Bryant. <i>London Coffee Houses</i> . Crows Nest: Allen & Unwin, 1964.
95	fig. 094	Pattern for 1665 outfit derived from: Margot Hamilton Hill and Peter A. Bucknell, <i>The Evolution of Fashion</i> (Hollywood: Costume & Fashion Press, 1967), 104.
96	fig. 095	Pattern for 1675 outfit derived from: Margot Hamilton Hill and Peter A. Bucknell, <i>The Evolution of Fashion</i> (Hollywood: Costume & Fashion Press, 1967), 108.
97	fig. 096	Pattern for 1690 outfit derived from: Margot Hamilton Hill and Peter A. Bucknell, <i>The Evolution of Fashion</i> (Hollywood: Costume & Fashion Press, 1967), 112.
98	fig. 097	Pattern for 1705 outfit derived from: Margot Hamilton Hill and Peter A. Bucknell, <i>The Evolution of Fashion</i> (Hollywood: Costume & Fashion Press, 1967), 116.
99	fig. 098	Pattern for 1720 outfit derived from: Margot Hamilton Hill and Peter A. Bucknell, <i>The Evolution of Fashion</i> (Hollywood: Costume & Fashion Press, 1967), 120.
100	fig. 099	Pattern for 1740 outfit derived from: Margot Hamilton Hill and Peter A. Bucknell, <i>The Evolution of Fashion</i> (Hollywood: Costume & Fashion Press, 1967), 124.
101	fig. 100	Pattern for 1755 outfit derived from: Margot Hamilton Hill and Peter A. Bucknell, <i>The Evolution of Fashion</i> (Hollywood: Costume & Fashion Press, 1967), 128.
102	fig. 101	Pattern for 1770 outfit derived from: Margot Hamilton Hill and Peter A. Bucknell, <i>The Evolution of Fashion</i> (Hollywood: Costume & Fashion Press, 1967), 132.
103	fig. 102	Pattern for 1560 dress derived from: Margot Hamilton Hill and Peter A. Bucknell, <i>The Evolution of Fashion</i> (Hollywood: Costume & Fashion Press, 1967), 69.

104	fig. 103	Pattern for 1826 dress derived from: Hunnisett, Jean. <i>Period Costume for Stage & Screen</i> . Studio City: Players Press., 1991.
105	fig. 104	Pattern for 1585 dress derived from: Margot Hamilton Hill and Peter A. Bucknell, <i>The Evolution of Fashion</i> (Hollywood: Costume & Fashion Press, 1967), 77.
106	fig. 105	Pattern for 1830 dress derived from: Hunnisett, Jean. <i>Period Costume for Stage & Screen</i> . Studio City: Players Press., 1991.
107	fig. 106	Bazaar in Acre retrieved from: Forbin, <i>Comte de. Voyage dans le Levant en 1817 et 1818, / par M. le Cte. de Forbin</i> . Paris: Delaunay, 1819.
108	fig. 107	Old St. Peter's Basilica retrieved from: Saiko. "basilica di San Pietro," Wikimedia Commons, June 13, 2007. https://commons.wikimedia.org/wiki/File:Affresco_dell%27aspetto_antico_della_basilica_costantiniana_di_san_pietro_nel_IV_secolo.jpg (accessed April 29, 2018).
109	fig. 108	Method presentation panel, image by author
110	fig. 109	Coffee house map presentation panel, image by author
111	fig. 110	Coffee house interior panel, image by author
112	fig. 111	Fashionable living room interior panel, image by author
113	fig. 112	1665 outfit presentation panel, image by author
114	fig. 113	1675 outfit presentation panel, image by author
115	fig. 114	1690 outfit presentation panel, image by author
116	fig. 115	1705 outfit presentation panel, image by author
117	fig. 116	1720 outfit presentation panel, image by author
118	fig. 117	1740 outfit presentation panel, image by author
119	fig. 118	1755 outfit presentation panel, image by author
120	fig. 119	1770 outfit presentation panel, image by author
121	fig. 120	1780 outfit presentation panel, image by author
122	fig. 121	Arcades map presentation panel, image by author
123	fig. 122	Bazaar at Acre presentation panel, image by author
124	fig. 123	Galerie Vivienne presentation panel, image by author
125	fig. 124	Old St. Peter's Basilica presentation panel, image by author
126	fig. 125	Galerie Colbert presentation panel, image by author
127	fig. 126	1560 dress presentation panel, image by author
128	fig. 127	1826 dress presentation panel, image by author
129	fig. 128	1580 dress presentation panel, image by author
130	fig. 129	1830 dress presentation panel, image by author

INTRODUCTION

Western democratic capitalism can trace its political and economic lineage through British Coffee Houses and Parisian Arcades—the two great founding myths of modernity. Both were early instances of private property commodified into public space and both were fueled by commodities: the coffee bean and textiles respectively. Coffee houses and arcades were also, however, spaces of appearance. The space of appearance is a political space in which “I appear to others as others appear to me, not merely as living things or inanimate objects but to make appearance explicit.”¹ Through these founding myths it is easy to see how politics and economics, or more specifically capitalism and democracy, became so irrevocably entwined.

With the entwining of politics and economics in Coffee Houses and Arcades, it comes as little surprise that fashion would be central to both. Fashion is the paramount political-economic object. Fashion’s political function lies in its incredible revelatory potential, which brings identity to the surface making “appearance explicit.”² As an economic object, fashion’s ephemerality turns the cog of consumer capitalism.

Fashion’s centrality to these politically and economically entwined architectural types is then not surprising. There are, however, gaps in the literature as to how the sartorial and architecture relate in these typologies. The gaps were narrowed when Walter Benjamin’s *Arcades Project* (finally published in 1988) tied fashion and architecture together as two of modernity’s leading players in the site of the Parisian Arcades, players whose radical potential was never realized within the capitalist mode of production. His chapter on fashion catalyzed a sizable body of scholarship on fashion in the arcades, especially from fashion theorists. Expectedly, much of this scholarship skims the architectural in favour of the

¹ Hannah Arendt, *The Human Condition* (Chicago: The University of Chicago Press, 1958), 199.

² *Ibid.*

sartorial. Similarly, architectural theorists working with Benjamin's *magnus opus* often neglect fashion's important role, and its relationships with architecture. This thesis aims for a more balanced analysis of the architectural and sartorial in both British coffee houses and Parisian arcades.

Through a forensic reconstruction, this thesis brings the sartorial and architectural into a single space of analysis. The forensic reconstruction pieces together architectural and sartorial data in an attempt to reconstruct coffee houses and arcades as the complex assemblages that they were. Through this reconstruction, relationships emerge at various scales and the complexity of both spaces is brought into focus. Furthermore, these assemblages prove the modern urban environment, and public space more specifically, is as much influenced by the architectural as it is by the sartorial, especially when the two are imbricated. Through this method, imbrications are unearthed, effectively destabilizing or corroborating public space theories like Habermas's public sphere and Benjamin's phantasmagoria. Architecture and fashion are both potent forces, and ones that have piloted us to our current democratic capitalist model. Their centrality to the two great founding myths of modernity, British coffee houses and Parisian arcades, proves the potency of these forces.

The primary findings of this research center on the architectural-sartorial relationship as it relates to public space of the 18th and 19th centuries. Secondary findings concern the actual tools and processes used to pursue the primary findings.

METHODOLOGY

A forensic reconstruction of the mundane

Eyal Weisman's practice, Forensic Architecture, provides the methodological precedent for this investigation. Forensic architecture is the "production of architectural evidence" and its subsequent exhibition "in juridical and political forums."³ Weizman's work focuses on the extremes—on the human rights and environmental violations that leave their traces in the built and natural environments. Cases range from drone strikes in Gaza to the Grenfell Tower fire of 2017.

Forensic architecture, however, is not limited to buildings. It is rather an inquiry of all spatial, material and temporal relations pertaining to the event under investigation. Here, the events under investigation are the 18th-century public sphere and the 19th-century phantasmagoria. As forensics is about relations, it is never focused on an object in isolation but rather the "complex assemblage" of several objects.⁴ These objects can include peoples, spaces, temporalities and even theories. The potential of the reconstructed object or space is not intrinsic, but rather as it is understood in relation to other reconstructions. While the primary relation in this thesis surrounding the public sphere and phantasmagoria is an architectural-sartorial one, other subsidiary relationships emerge such as relations between fields of study like economics and politics, and theorists like Arendt and Benjamin. The complexity of these two events, or assemblages, is made legible in the forensic reconstruction process.

This thesis takes forensic architecture and applies it to quotidian arenas of life rather than the extremes. In applying a rigour typically reserved for missile strikes to benches, jacket cuffs, sconces and puffed sleeves, the unsung powers of the seemingly mundane emerges. Furthermore, this application brings

³ Eyal Weizman, *Forensic Architecture: Violence at the Threshold of Detectability* (Cambridge: MIT Press, 2017), 9.

⁴ Eyal Weizman, Paulo Tavares, Susan Schuppli, and Situ Studio. "Forensic Architecture." *Architectural Design* 80, no. 5 (2010): 62.

the theoretical into an empirical space. This space is created by a number of visual effects and game industry tools that, I argue, should be added to the architectural toolkit. A pipeline of cloth solvers, rigging and skinning systems, and sculpting tools work to process and pipe sartorial and architectural data into a single analytical space. These tools provide great insight into malleable and time-dependent materials as opposed to the rigid and static for which much of architectural curriculum gravitates.

The process begins with data collection. Forensic reconstruction requires the amalgamation of data from various sources. While Weizman’s data is collected from sources like the media and remote sensing technologies, data here is collected from museum databases, artistic recreations of domestic interiors, archival architecture drawings, 19th C. travelogues, and costume books (*figures 001–009*). Data collected also addresses various scales of the sartorial-architecture relationship, from the urban to the ornamental.

Coffee Houses—Alphabetical List	
00	COFFEE HOUSES
01	01.0000
02	02.0000
03	03.0000
04	04.0000
05	05.0000
06	06.0000
07	07.0000
08	08.0000
09	09.0000
10	10.0000
11	11.0000
12	12.0000
13	13.0000
14	14.0000
15	15.0000
16	16.0000
17	17.0000
18	18.0000
19	19.0000
20	20.0000
21	21.0000
22	22.0000
23	23.0000
24	24.0000
25	25.0000
26	26.0000
27	27.0000
28	28.0000
29	29.0000
30	30.0000
31	31.0000
32	32.0000
33	33.0000
34	34.0000
35	35.0000
36	36.0000
37	37.0000
38	38.0000
39	39.0000
40	40.0000
41	41.0000
42	42.0000
43	43.0000
44	44.0000
45	45.0000
46	46.0000
47	47.0000
48	48.0000
49	49.0000
50	50.0000
51	51.0000
52	52.0000
53	53.0000
54	54.0000
55	55.0000
56	56.0000
57	57.0000
58	58.0000
59	59.0000
60	60.0000
61	61.0000
62	62.0000
63	63.0000
64	64.0000
65	65.0000
66	66.0000
67	67.0000
68	68.0000
69	69.0000
70	70.0000
71	71.0000
72	72.0000
73	73.0000
74	74.0000
75	75.0000
76	76.0000
77	77.0000
78	78.0000
79	79.0000
80	80.0000
81	81.0000
82	82.0000
83	83.0000
84	84.0000
85	85.0000
86	86.0000
87	87.0000
88	88.0000
89	89.0000
90	90.0000
91	91.0000
92	92.0000
93	93.0000
94	94.0000
95	95.0000
96	96.0000
97	97.0000
98	98.0000
99	99.0000
100	100.0000



Figure 001 Index of Coffee Houses used to map the public sphere (see figure 025).

Figure 002 “Interior of a London Coffee-House” illustration used in forensic reconstruction

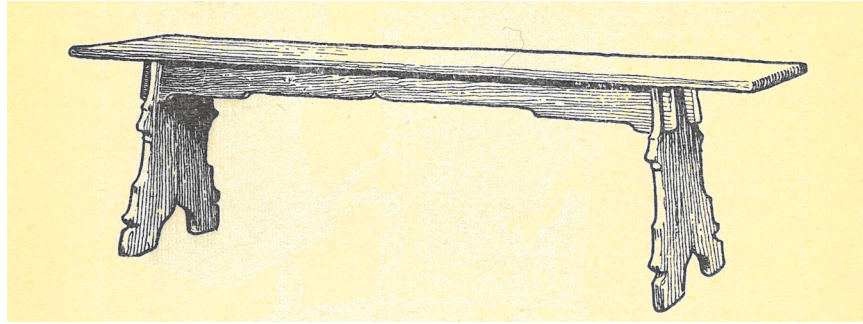


Figure 003 Bench illustration used as reference for reconstruction



Figure 004 Artistic rendering of fashionable living room (1690)

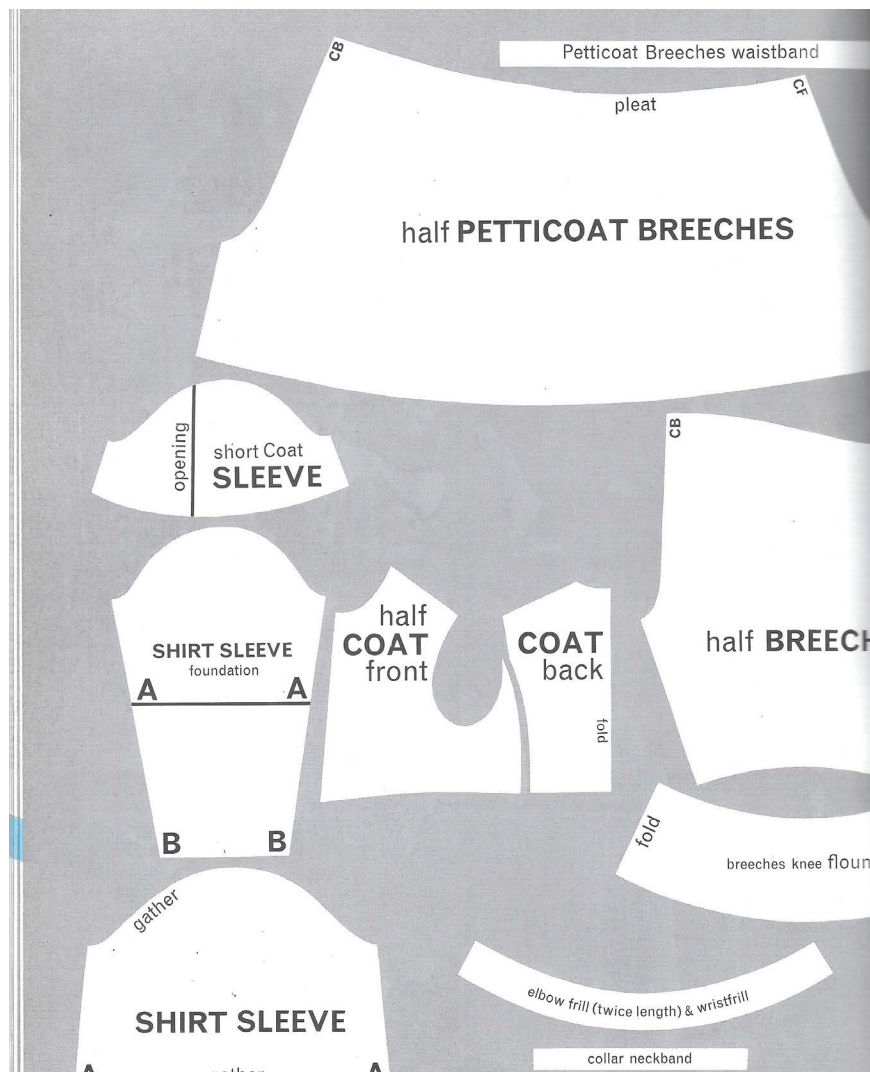


Figure 005 Fashion pattern used to reconstruct men's fashions during the coffee house era

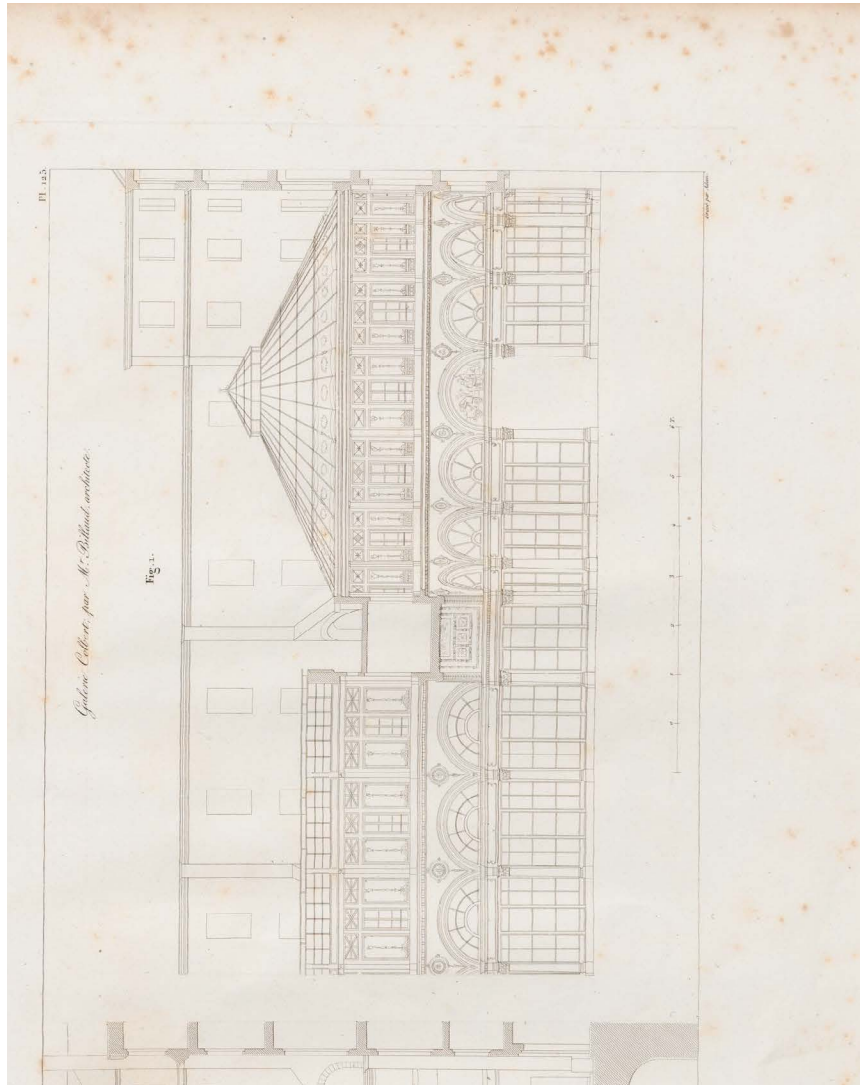


Figure 006 Archival architectural drawings of the Galerie Colbert

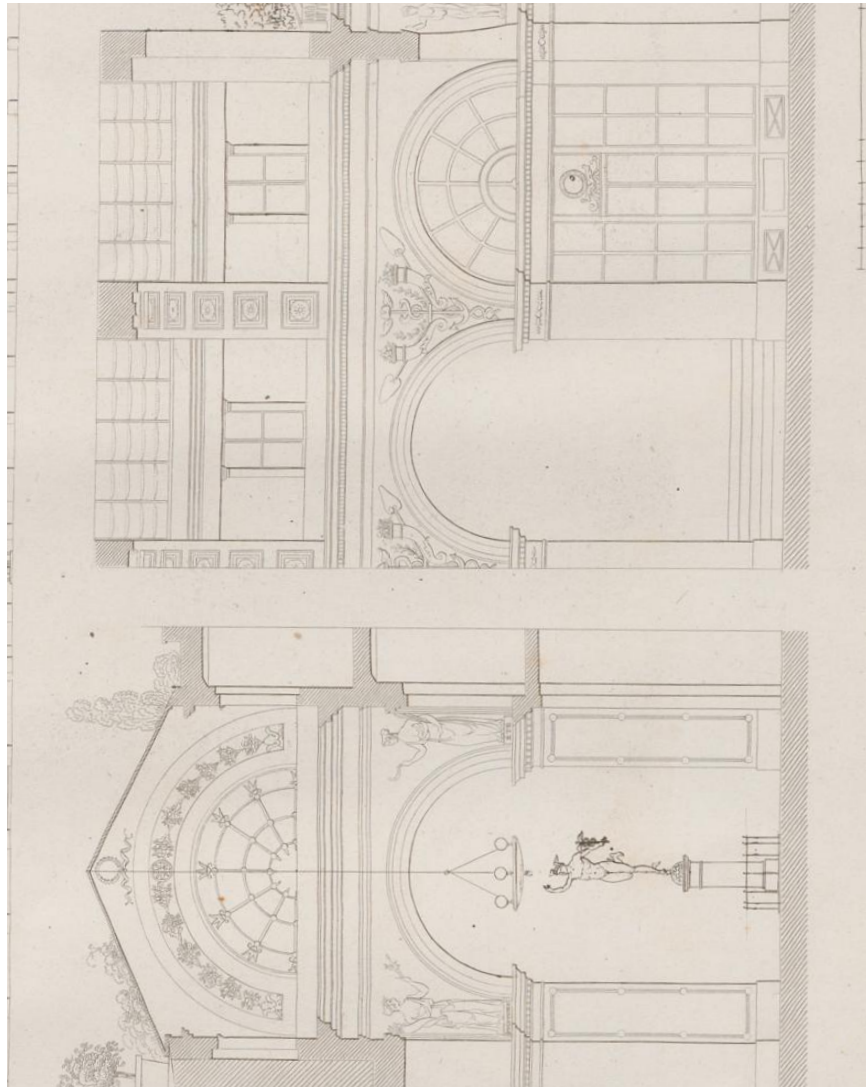


Figure 007 Archival architecture drawings for the Gallerie Vivienne

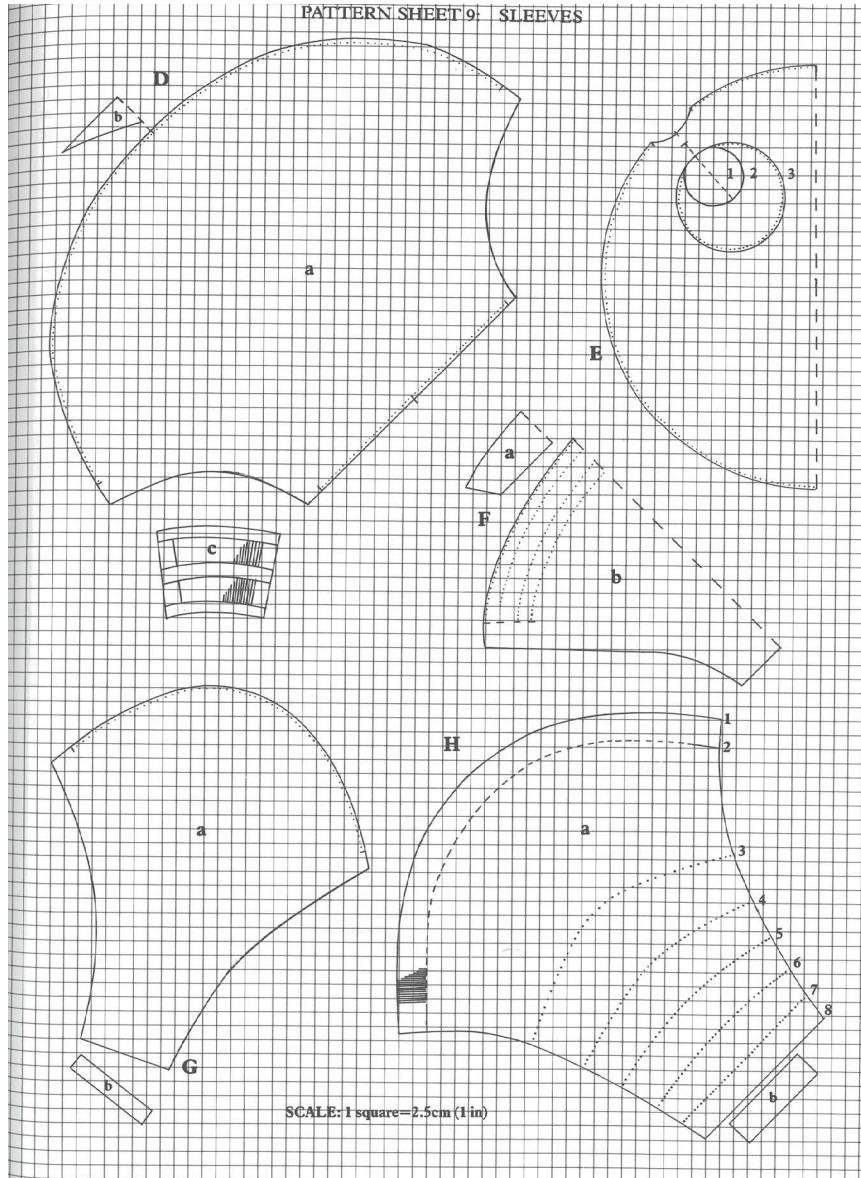


Figure 008 1820 and 1830 sleeve patterns to reconstruct arcade fashions

Architecture Pipeline

The architectural and sartorial data is then processed through appropriate pipelines. A pipeline is a linear set of instructions or computations aligned to achieve some output. The architectural pipeline involves tracing archival drawings in 2D and extruding them into 3D models. This is not new. Additions to the conventional process came at the detail level, when reconstructing worn oak furniture in the coffee house and friezes in the arcades (figures 010–011). These detail level reconstructions were accomplished using virtual sculpting tools.

A virtual sculpting tool is defined as a “computer modeling system in which the goals and techniques of traditional sculpting are emulated.”⁵ Virtual sculpting involves pushing and pulling vertices on polygonal meshes at various subdivision levels. Sculpting on a lower subdivision level works to acquire a general mass, while higher subdivision levels contain detail. Unlike nurbs modelling, which uses curves and surfaces, polygonal modelling works on vertices, lines and faces. Polygonal modelling is considered more intuitive than nurbs modelling but has higher memory requirements.⁶

The intuitive process is made more intuitive by a pressure-sensitive pen user-interface, as opposed to more esoteric user-interfaces of modelling tools like Grasshopper. Polygonal models are sculpted to the desired level of detail and then baked into displacement maps for use in rendering engines like Redshift. Displacement maps store height information in pixels that, at render time, displace vertices on a tessellated mesh. The sartorial pipeline, discussed next, also ended in virtual sculpting.

⁵ James R. Bill and Suresh K. Lodha, “Sculpting Polygonal Models using Virtual Tools,” *Graphics Interface*, (1995): 272.

⁶ *Ibid.*, 273

The goal of the architectural pipeline is to reconstruct architectural objects through which relationships can emerge at various of scales. These relations might exist at the perspective level, such as the perspective down the Galerie Vivienne compared with the Galerie Colbert, or at the detail level, when contrasting worn oak in Coffee Houses with more refined materials in coincident domestic spaces. Using a digital medium, relationships can be seen at a range of scales that wouldn't be possible, at least not with any level of efficiency, using a physical medium. Furthermore, a digital medium limits the need for traditional sartorial techniques when reconstructing sartorial forms (see Fashion Pipeline, p. 13).



Figure 010 Sculpted coffee house bench (*left*) and fashionable living room details (*right*). Red circles represent the sculpting brush's area of influence.

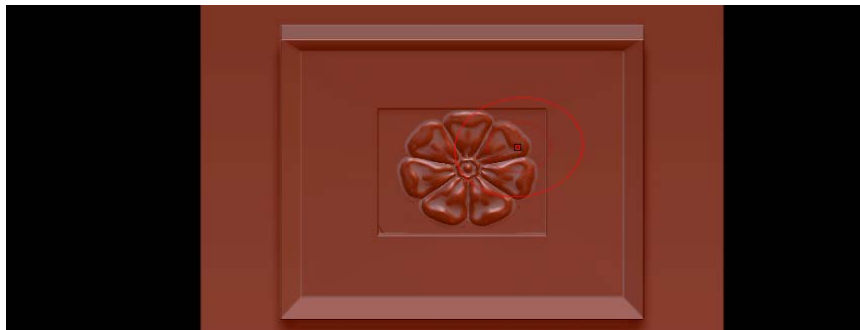


Figure 011 Sculpted arcade ornament

Fashion Pipeline

The process for sartorial reconstruction was much more involved. It required the use of cloth solvers, rigging and skinning systems, as well as the aforementioned sculpting tools. First, a body was needed to model on top of. My body was set as a constant datum from which I could measure the sartorial against. The body is the fundamental common denominator of architecture and fashion. “Both building and clothes are a mediating layer between the body, the environment and others.”⁷ Three methods of translating the physical body into the digital were tested. These include photogrammetry, scratch modelling and 3D scanning. 3D scanning proved the optimal balance of accuracy and efficiency (*figure 012*). The resulting triangulated mesh (*figure 013*) was retopologized into quads to optimize cloth solving calculations later in the pipeline (*figures 014*).

Next, cylinders were modelled onto major body parts including the head, neck, limbs shoulders and torso (*figure 015*). These acted as surfaces on which 2D garment meshes were wrapped. Fashion patterns, which can be found in the appendix (*figures 094-106*) were then traced as 2D meshes and wrapped to appropriate cylinders (*figures 016-017*). A shirt front was wrapped to the front of the torso cylinder, a sleeve to the arm cylinder, and so on. Mesh edges are then “digitally sewn” using a cloth solver (*figures 018-020*). A cloth solver is a computational tool that takes a mesh surface and recreates and applies physical forces like gravity to it. Fabric properties can be defined in the cloth solver, so if the costume book specified a piece should be stiffened, as was the case with many coats and waist coats, fabric properties were adjusted to match. Finally, virtual sculpting was used to model sartorial details like embroidery or button holes (*figure 023-024*).

⁷ Louise Crewe, *The Geographies of Fashion* (London: Bloomsbury, 2017), 15.

The primary goal of the fashion pipeline was an attempt at accurately recreate the events—that is the public sphere and the phantasmagoria—with all relevant objects. Fashion, as many theorists have suggested, was incredibly relevant to both. To have sartorial reconstructions in digital media meant relations could be more easily made with architectural objects of the same material. Architecture constructions can be seen as static, while garment constructions are incredibly more time-dependent. This difference is clear when cutting sections through a dress (*figures 091-092*), which reveals the vast number of layers required to achieve the dress's final form. This layered construction can only be achieved using tools like the cloth solver. In contrast, digital architectural reconstructions are simply hollow shells. Obviously, architectural forms are, in reality, not hollow, but for this research, relations can emerge using hollow shells.



Figure 012 3D Scan

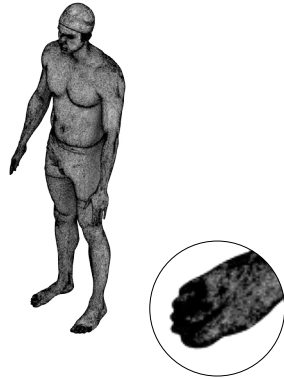


Figure 013 Resulting triangulated mesh

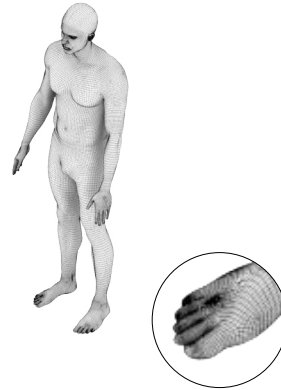


Figure 014 Retopologized mesh



Figure 015 Bounding boxes drawn



Figure 016 Fashion pattern made into mesh



Figure 017 Mesh wrapped to corresponding cylinders



Figure 018 Cloth solver calculation starts



Figure 019 Calculating



Figure 020 Cloth solver calculation end



Figure 021 Garment pieces layered to create a single outfit.

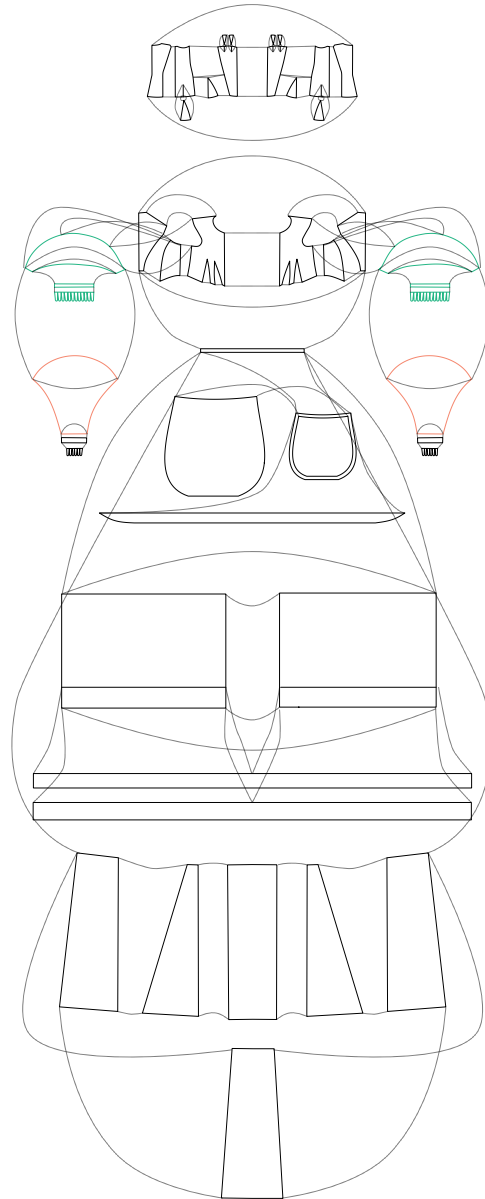


Figure 022 Example of a 2D sewing pattern. These patterns constitute the initial data to be processed by the sartorial pipeline. Sewing lines are depicted with dashed lines.

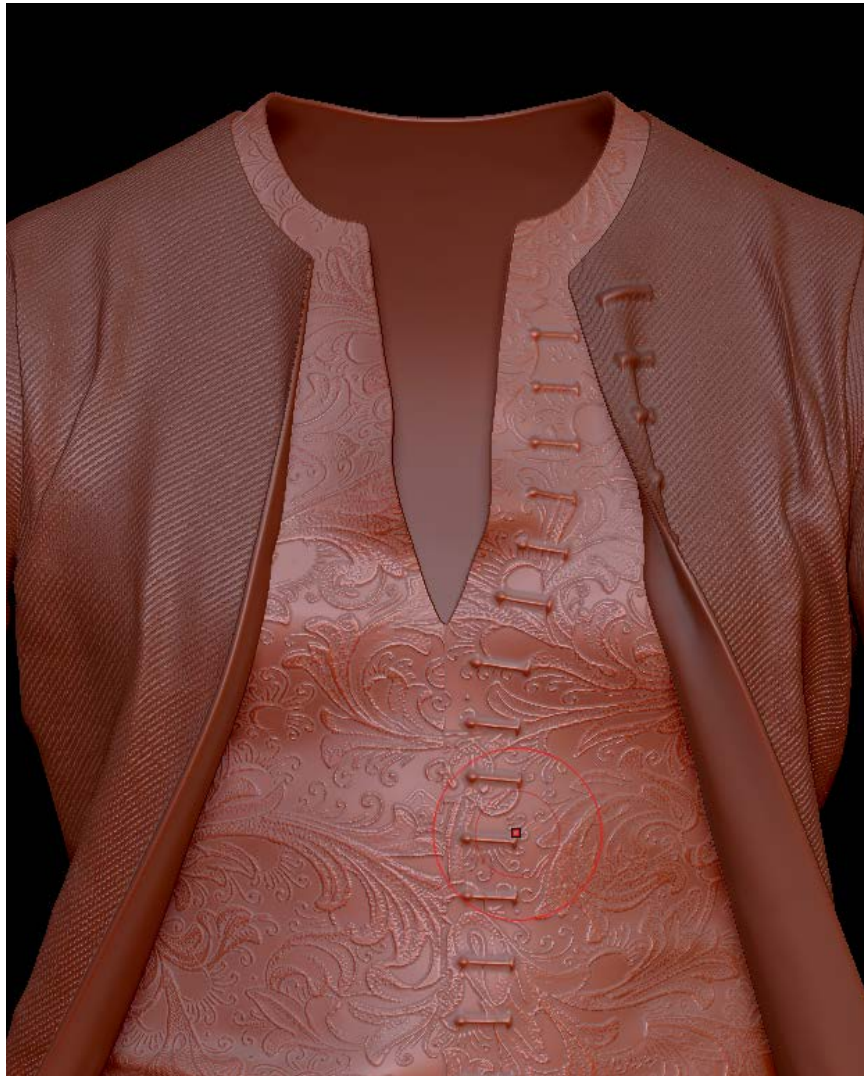


Figure 023 Sartorial details like button holes achieved through digital sculpting



Figure 024 Sartorial details like lace achieved through digital sculpting

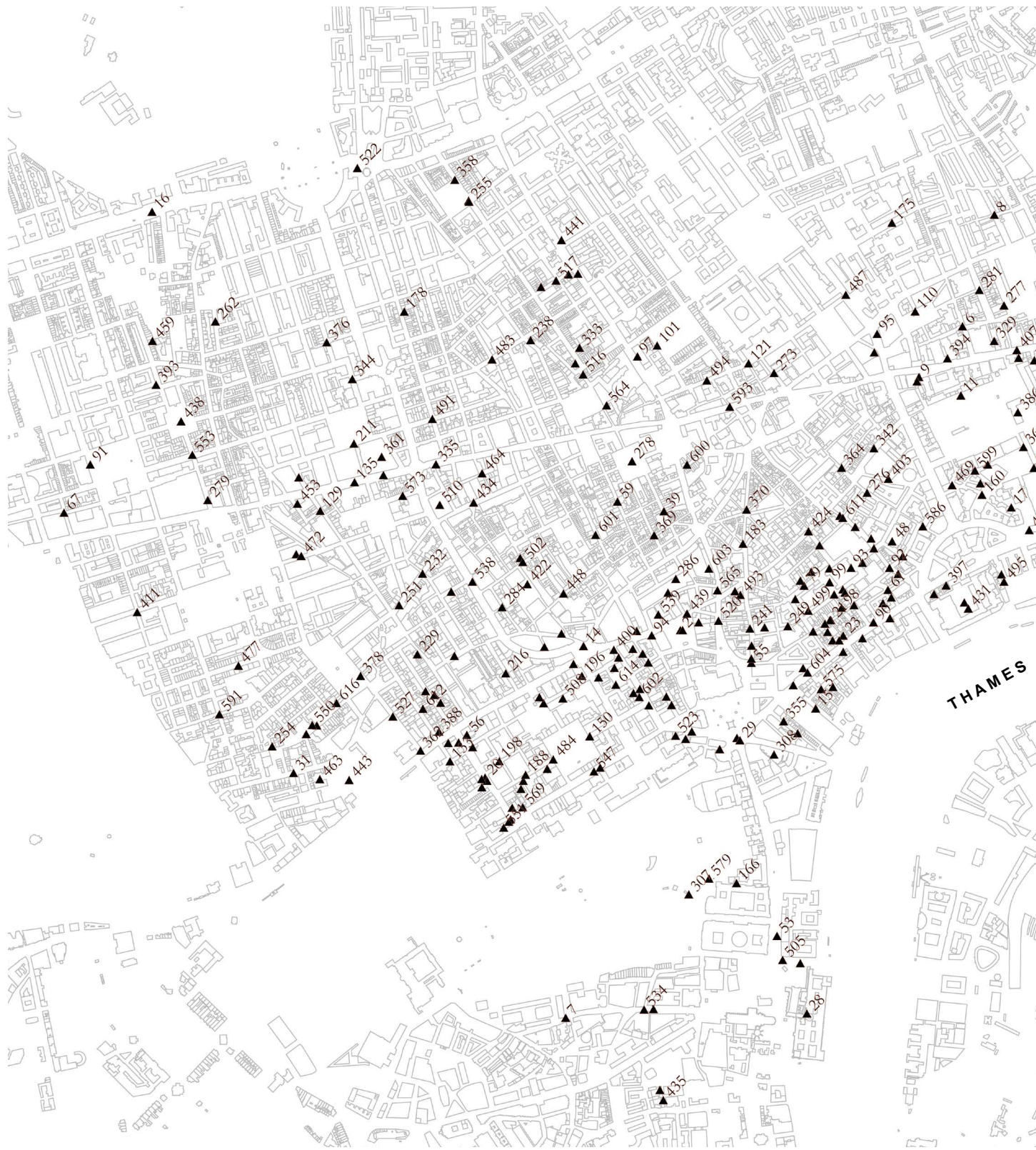


Figure 025 Map of London coffee houses using index from Bryant Lillywhite's *London Coffee Houses*. Pink dot indicates first coffee house. Coffee houses mapped do not all necessarily exist simultaneously. See appendix for legend (*figure 093*).



LINES

Fashion, Architecture and the “Public Sphere”

The coffee house represented the new social and political frame of the post-feudal world. Consumer revolutions in the 17th and 18th C., spawned by the transition from feudalism to capitalism, led to the expansion of British foreign trade. A number of imperialist outfits were established, with the East India Trading Company (C. 1600) claiming majority control of coffee imports by the early 18th C.⁸ The coffee house was deeply indebted to the expansion of western capitalism and its colonialist practices.

In 1652, the first British coffee house opened in St. Michael’s Alley, Cornwall (*figure 025*).⁹ In these early years the Virtuosi was the primary if not only patrons of the British coffee house.¹⁰ The Virtuosi was a bourgeois circle of men who were tied by their preoccupation with the intellectual and exotic.¹¹ Coffee’s exotic character, in its early years, deemed it of great interest to this bourgeois circle. Simply put, they were the coffee house’s early adopters. The Virtuosi were also absorbed in matters of taste. Being that their headquarters was the coffee house, it is ironic that the coffee house ideal claimed to disregard objects of taste, like fashion. Furthermore, coffee’s own characters as a fashionable object—a novelty of exotic origins, that is first consumed by the upper classes and trickles to the lower—adds to this irony. As coffee imports increased, costs decreased until coffee was accessible across all socio-economic classes. A mere penny for a cup meant lower classes could mingle with the upper around the exotic drink. This coincides with a multiplication of coffee houses from one in 1665 to 3000 by 1710, when coffee houses reached their height (*figure 025*).¹²

Coffee’s pharmacological properties drastically differentiate this space from other public spaces like taverns and pubs. For the first time, men could come together

⁸ Brian Cowan, *The Social Life of Coffee* (New Haven: Yale University Press, 2005), 66.

⁹ *Old English Coffee Houses* (Emmaus: The Rodale Press, 1954), 5.

¹⁰ Cowan, *The Social Life*, 87.

¹¹ *Ibid.*, 90.

¹² Jürgen Habermas, *The Structural Transformation of the Public Sphere* (Cambridge: The MIT Press, 1991), 32.

under sober conditions rather than the drunk and disorderly conditions taverns and pubs were infamous for.¹³ While taverns and pubs were a public space long predated the coffee house, they could never have been the site for the deliberative democracy that unfolded in the coffee houses. Men congregating under sober conditions and with rational faculties was critical to the success of coffee houses as a political space. This level of sobriety also opened up perceptions of sartorial nuances that this thesis claims are of critical importance to the undermining of the public sphere. Furthermore, the coffee houses central to this thesis are those in London. While Vienna has an elaborate history of coffee houses, the Viennese coffee house wasn't as central to the dominant discourse surrounding the public sphere.



Figure 026 "Interior of a London Coffee-House"

¹³ Cowan, *The Social Life*, 105.

The British coffee house, or “public sphere” as it is famed, fostered a deliberative democracy in which status was meant to be left at the door.¹⁴ The only thing to be evaluated in political and philosophical debate was the strength of the argument, any indications of class were intentionally disregarded.¹⁵ Habermas first gave definition to the non-hierarchical ambitions of the coffee house in *The Transformation of the Public Sphere* (1991). In it he writes, “The coffee house not merely made access to the relevant circles less formal and easier; it embraced the wider strata of the middle class, including craftsmen and shopkeepers. Ned Ward reports that the ‘wealthy shopkeeper’ visited the coffee house several times a day, this held true for the poor one as well.”¹⁶ In many ways the coffee house was spatially staged to be non-hierarchical. The illustration, titled “Interior of a London Coffee-House” (*figure 026*), was the spatial template for British coffee houses. While thousands of coffee houses existed in their golden age between 1680 and 1730, this illustration is one of the few that exists.¹⁷ From the rarity of illustrations, we can deduce coffee houses were architecturally mundane and unworthy of record. “Interior of a London Coffee-House” shows the coffee house was little more than a converted living room in a house.

When looking at the furnishings and spatial arrangement of the interior, we see the space is in agreement with a non-hierarchical objective. Two primary observations are made: the absence of chairs and the plainness in furnishing. Chairs have historically conditioned tendencies to set up hierarchies. Chairs, which only emerged in domestic settings at the beginning of the 17th C., were typically reserved for heads of the house with lesser ranks sitting at benches.¹⁸ The term “chairman” originates from this practice.¹⁹ Benches and settles being the only forms of seating in the coffee house provide spatial equality (*figures 030–031*).

¹⁴ Habermas, *Transformation*, 36.

¹⁵ Ibid.

¹⁶ Ibid., 33.

¹⁷ Habermas, *Transformation*, 32; Cowan, *The Social Life*, 79.

¹⁸ Charles H. Hayward, *English Period Furniture* (New York: Harper Collins Publishers Ltd, 1984), 26.

¹⁹ Ibid.

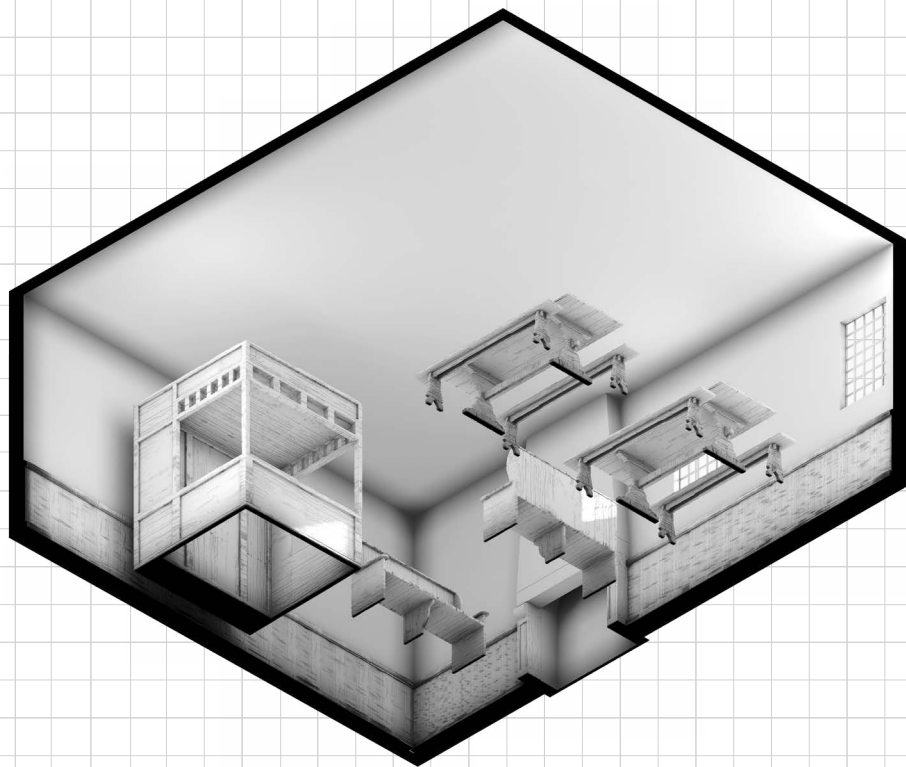


Figure 027 Forensic Reconstruction of "Interior of a London Coffee House"

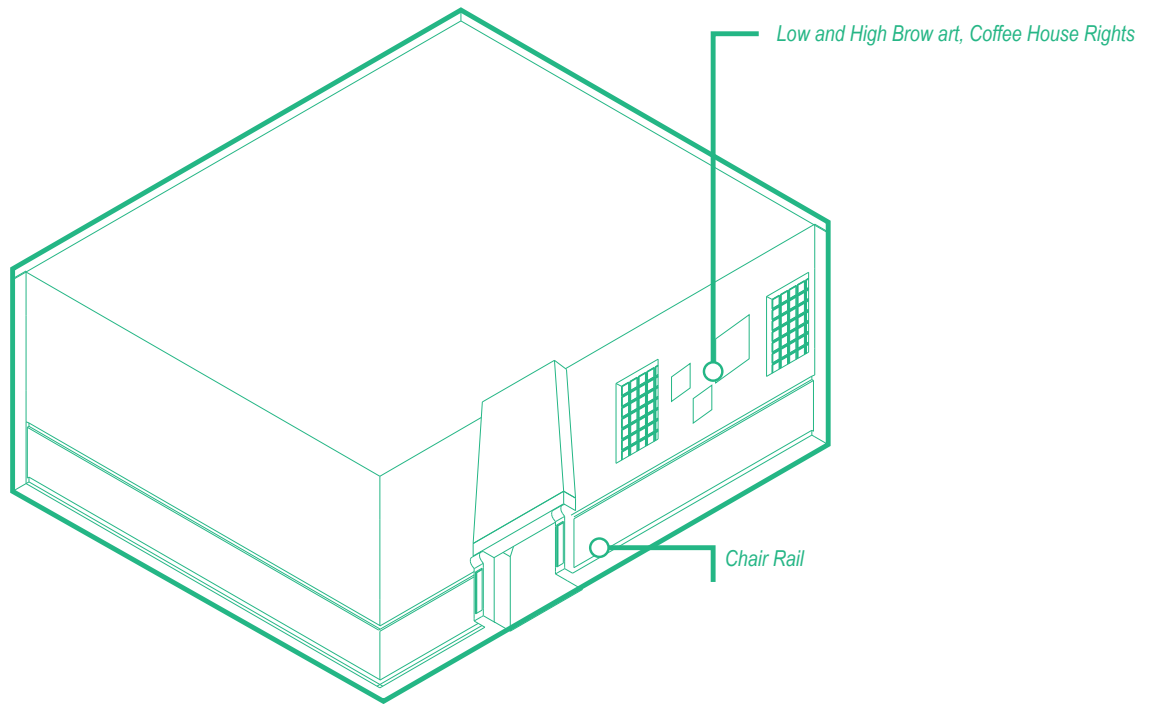


Figure 028 Coffee house worms-eye axonometric

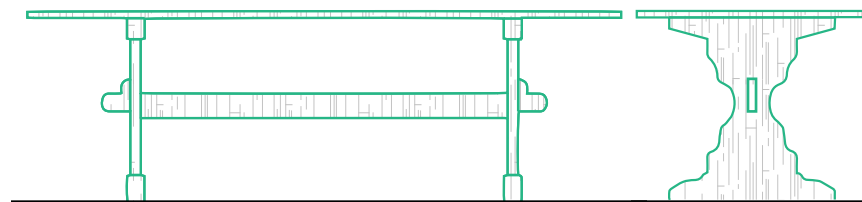


Figure 029 Coffee house trestle table, front elevation (*left*) and side elevation (*right*)

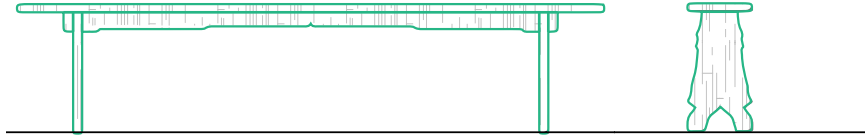


Figure 030 Coffee house bench, front elevation (*left*) and side elevation (*right*)

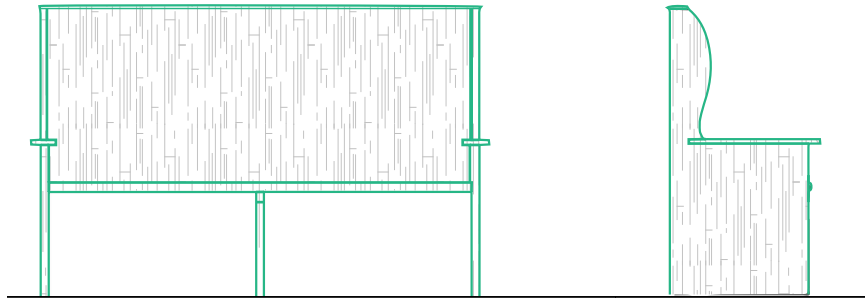


Figure 031 Coffee house settle, front elevation (*left*) and side elevation (*right*)

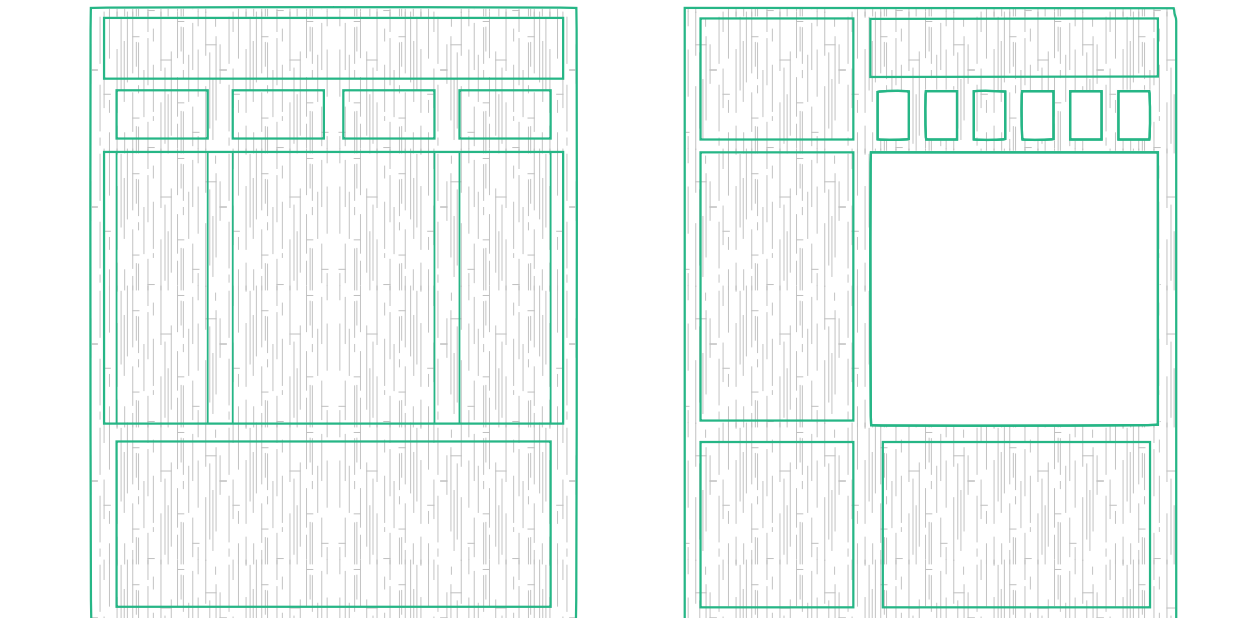


Figure 032 Coffee house stall, front elevation (*left*) and side elevation (*right*)

A nearly identical coffee house to “Interior of a London Coffee-House” is illustrated in “The Coffee House Mob”, save for a chair (*figure 033*). Under the power of the chair the coffee house degenerates into a mob. This illustrates that in the coffee house power could be challenged. The power imbalance created by the chair has nullified the spatial equality, leaving the “chairman” with a face full of coffee. This illustration proves the power held in a single chair, and why its absence from the “Interior of a Coffee House” illustration is so important.

Secondly, there is an obvious plainness in furnishing, especially when contrasted against a fashionable living room of the same decade (*figure 004,034*). The contrasted living room is furnished in the William and Ashley style, popular during the late 17th C. William and Ashley furniture is characterized by high backs, and extensive turning—something more expensive woods like yew and walnut could better achieve.²⁰ The absence of decorative woodwork in the coffee house suggests a less expensive oak furnishing. Oval-topped gateleg tables (*figure 036*) were a signature of the William and Ashley style and a fashionable living space was typically outfitted with several of these.²¹ Comparatively, the coffee house is furnished by a limited number of trestle tables (*figure 029*), a considerably more utilitarian furniture. Further contributing to the richness of the “fashionable” living room are polished oak floors, carpets, sash windows and expensive artwork.²² The “coffee house interior” illustrates an absence of carpets, and earlier casement windows instead of the new sash ones. The coffee house would also have been furnished with a combination of high and low brow artwork as opposed to only expensive works.²³ Plainness in furnishing decreases intimidation produced by luxury environments and their implicit accusations of socioeconomic trespassing.²⁴ The lack of chairs and plainness in furnishing were clearly in alignment with the public sphere egalitarian ideal.

²⁰ Ivan Sparkes, *An Illustrated History of English Domestic Furniture* (Buckinghamshire: Spurbooks Ltd., 1980), 114; Maurice Tomlin, *English Furniture* (London: Faber and Faber, 1972), 39.

²¹ Tomlin, *English Furniture*, 48.

²² Doreen Yarwood, *The English Home* (Essex: The Anchor Press Ltd., 1979), 127.

²³ Cowan, *The Social Life*, 87.

²⁴ U. Okonkwo, *Luxury Fashion Branding: Trends, Tactics, Techniques* (Basingstoke: Palgrave Macmillan, 2007), 238.



Figure 033 "The Coffee House Mob"

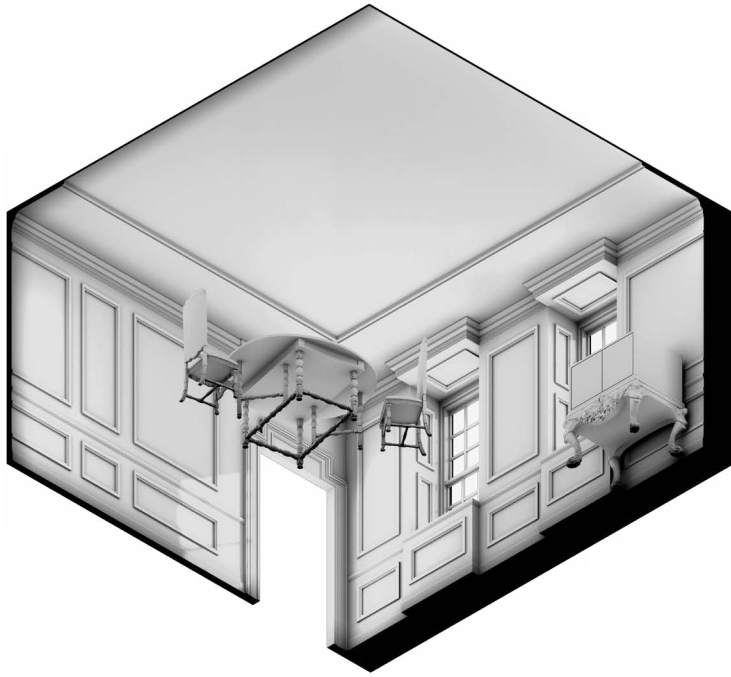


Figure 034 Forensic reconstruction of 1690 fashionable living room

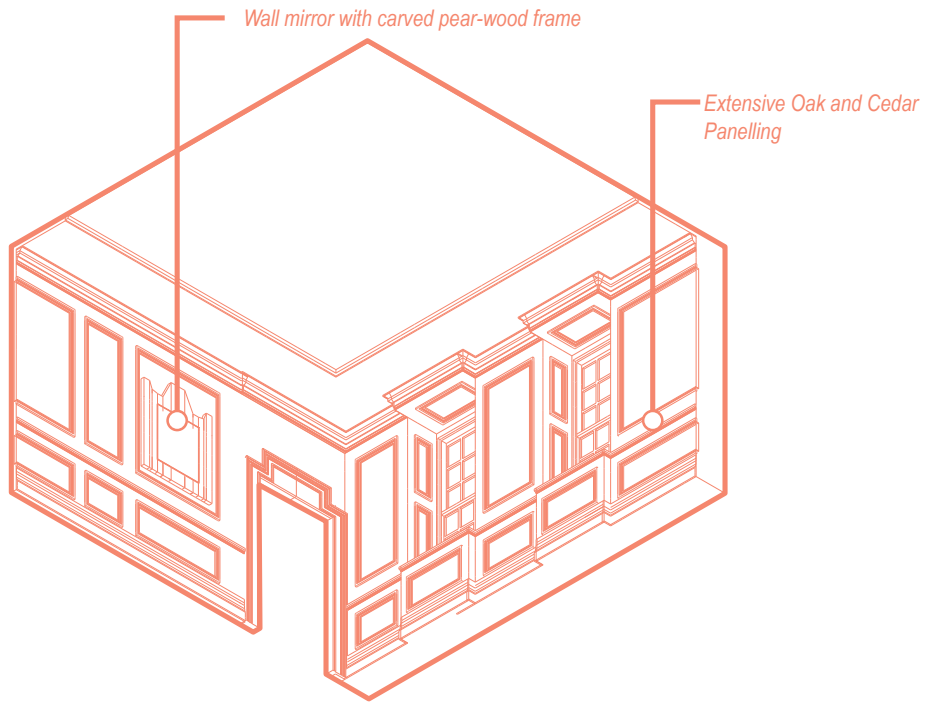


Figure 035 Fashionable living room worms-eye view

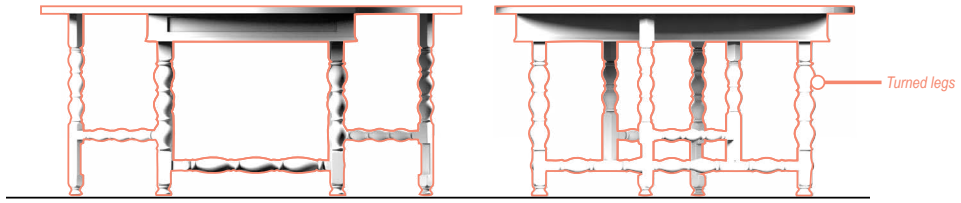


Figure 036 Oak gate-leg table

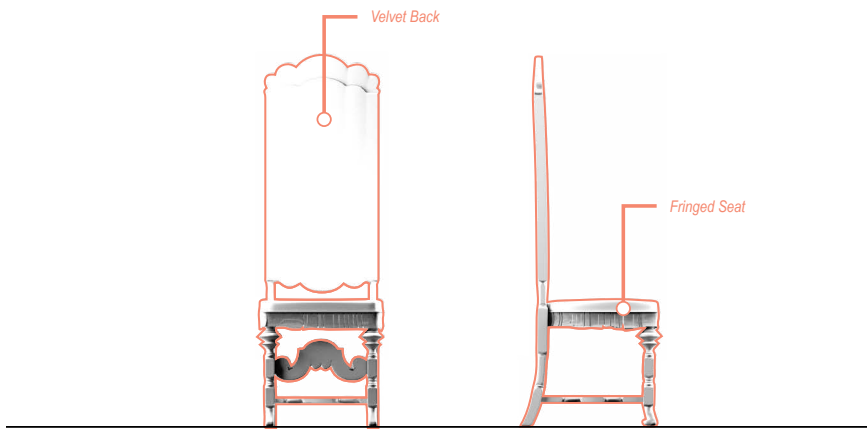


Figure 037 High-back William & Ashley dining chair

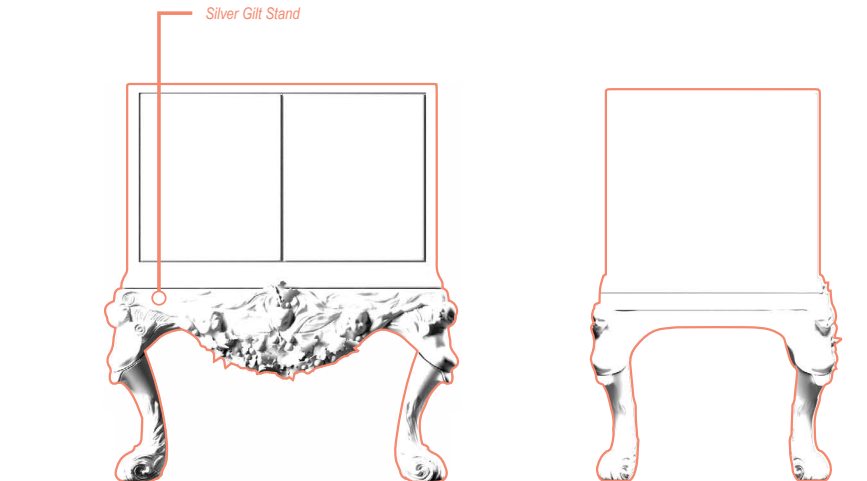


Figure 038 Lacquered Chest

Understanding that power in the coffee house was not spatially contained, and in fact the space actively suppressed hierarchies, where was power embedded? While scholars like Richard Sennett have commented on fashion's insignificance to the public sphere, for others like Erin Mackie, fashion's very triviality meant it could thrive as an unnoticed container for power in this seemingly power free zone.²⁵ Erin writes: "Power embeds itself in those apparently non-political and nonideological arenas of everyday life that it represents as unexceptional, even trivial. Manner, taste and style, not despite of but by virtue of their status as mundane, even trivial arenas of activity, become all important avenues of control."²⁶ Power was then embedded in fashion.

The centrality of fashion to coffee house society was clearest in a number of lifestyle magazines perused there. Lifestyle magazines exploded in popularity during the late 17th and 18th C. and the rise of the coffee house was as much indebted to the news commodity as it was to the coffee bean. Lower classes who couldn't afford a personal news subscription instead visited coffee houses which served news with coffee. Two of the more popular magazines, *The Tatler* and *The Spectator*, addressed literary and aesthetic issues emerging in modernity's infancy.²⁷ The bourgeois duo Joseph Addison and Richard Steele, under the pseudonym Mr. Bickerstaff, authored the magazines. As the arbiter of genteel manners and fashions, Bickerstaff set the course to securing a position in the now malleable social hierarchy. This course involved the abandon of falbala or duvillier wigs, buckles, colourful fabrics, and pumps, for "men of sense would not impose such encumbrances on themselves."²⁸ While the magazines claimed to liberate men from the foolish distractions of fashionable life, they were effectively drawing lines of exclusion in the ideally egalitarian public sphere.

²⁵ Richard Sennett, *The Fall of Public Man* (Cambridge: Cambridge University Press, 1977), 82; Erin Mackie, *Market à la Mode* (Baltimore: The Johns Hopkins University Press, 1997) 19.

²⁶ Mackie, *Market*, 19.

²⁷ *Ibid.*, 218.

²⁸ George A. Aitken, *The Tatler* (New York: Adler's Foreign Books, Inc., 1970), 238.

Fashion's innate capacity to draw lines was first addressed by George Simmel in his aptly titled sartorial analysis, *Fashion*. "Fashion on the one hand signified union with those in the same class, the uniformity of the circle characterized by it, and uno actu, the exclusion of all other groups."²⁹ He explains that the upper classes are the first to pick up a new fashion, in an attempt to differentiate themselves from the lower class. These fashions are immediately adopted by the lower class forcing the upper class to, again, develop new fashions distance themselves from the lower. By this means, it is easy to see how coffee itself initially operated as fashion. The bourgeois Virtuosi were coffee's early adopters and eventually it trickled down to the "lowly shopkeeper". Coffee, however, didn't succumb to the inevitable demise most fashions do when adopted by lower classes and this is where it breaks from the fashion paradigm. The popularity of fashion-centric lifestyle magazines and the fashionable character of coffee, two primary ingredients for the coffee house, shake the idea that status and those objects indicative of it, could merely be ignored here.

Using a forensic reconstruction method, sartorial lines of exclusion are identified, shaking the foundations of Habermas' coffee house ideal. I by no means argue Habermas was wrong, for the ideal of the coffee house was to disregard status. Decrees like "Rights of the Coffee House" institutionalized this ideal (see appendix). I argue, along with Erin Mackie, that in reality there were sartorial lines of exclusion that undermined this ideal. It must be noted that, as the public sphere was male dominated, these lines only address exclusions among men. Sartorial reconstructions start in 1665, after the first coffee house opened, and continue until the 1780s, long after the coffee house golden age.

²⁹ George Simmel, "Fashion", *International Quarterly* 10, (1904), 134.



Figure 039 1665 Outfit (*for pattern see figure 094*)

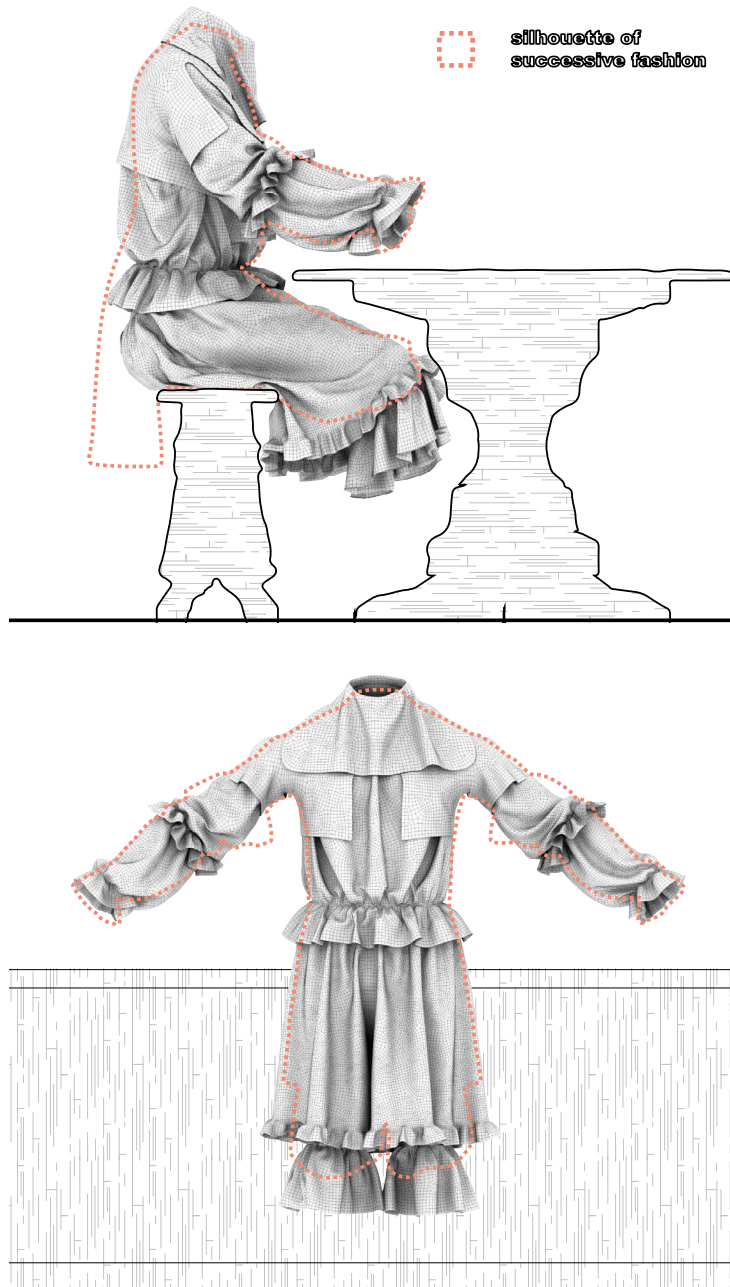


Figure 040 1665 outfit seated (*top*) and standing (*bottom*)



Figure 041 1675 outfit (for pattern see figure 095)

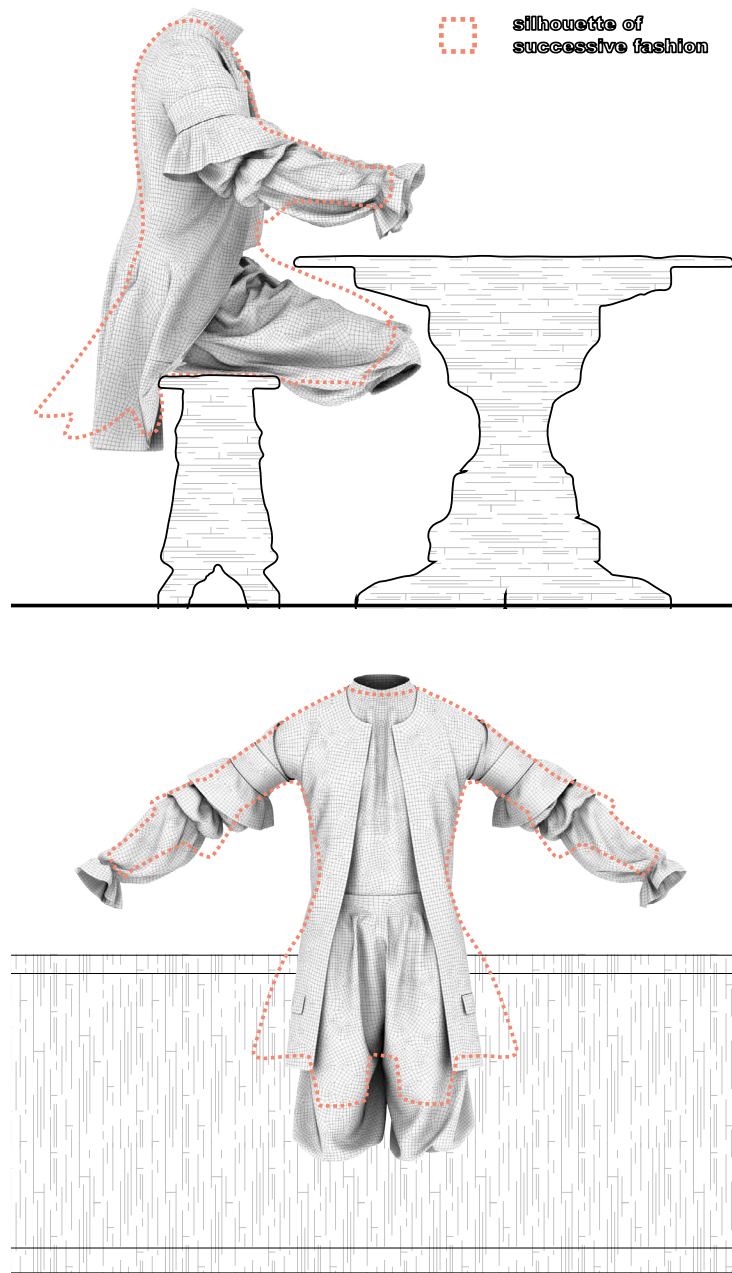


Figure 042 1675 outfit seated (*top*) and standing (*bottom*)



Figure 043 1690 outfit (for pattern see figure 096)

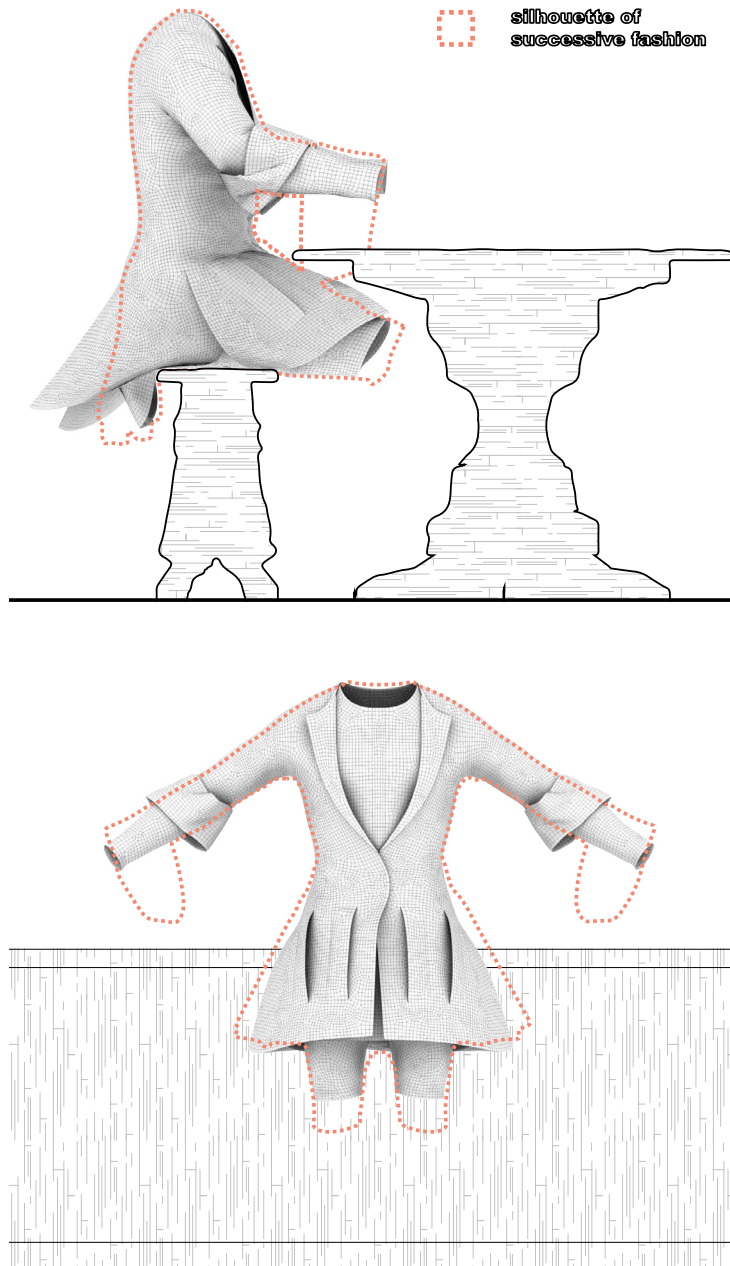


Figure 044 1690 outfit seated (*top*) and standing (*bottom*)



Figure 045 1705 outfit (for pattern see figure 097)

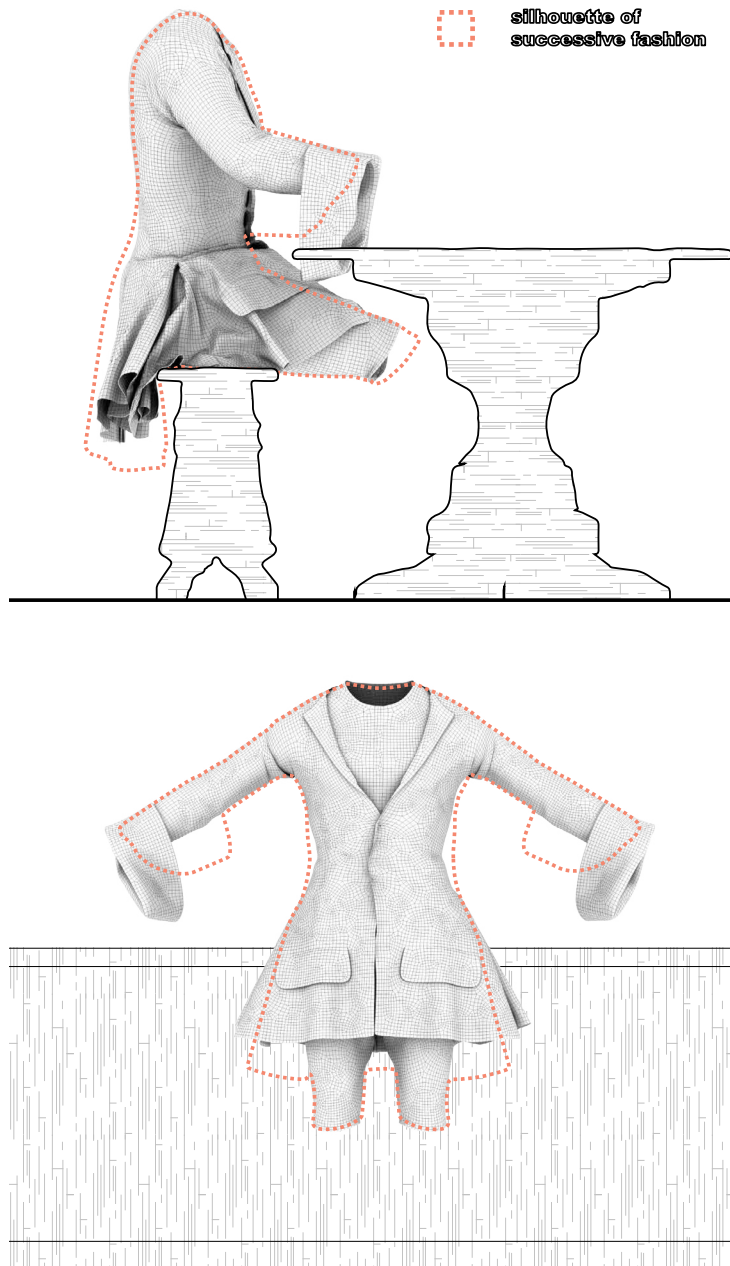


Figure 046 1705 outfit seated (*top*) and standing (*bottom*)



Figure 047 1720 outfit (for pattern see figure 098)

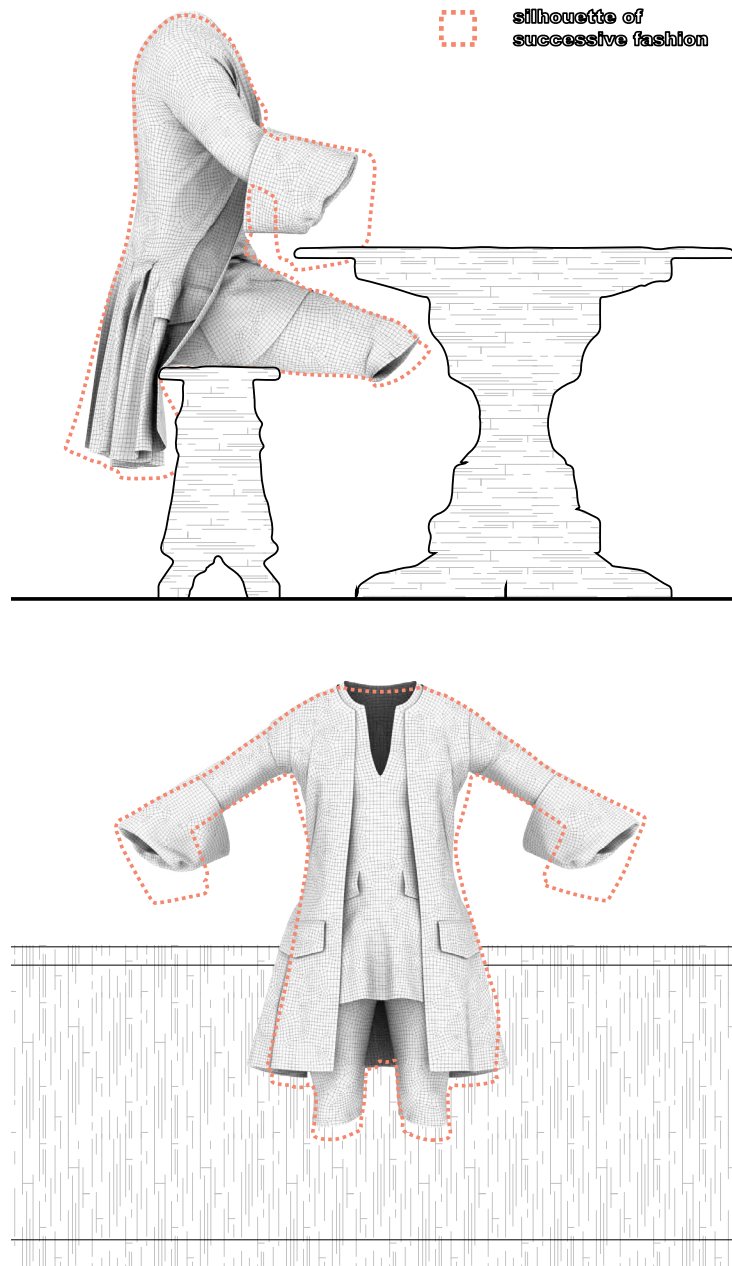


Figure 048 1720 outfit seated (*top*) and standing (*bottom*)



Figure 049 1740 outfit (for pattern see figure 099)

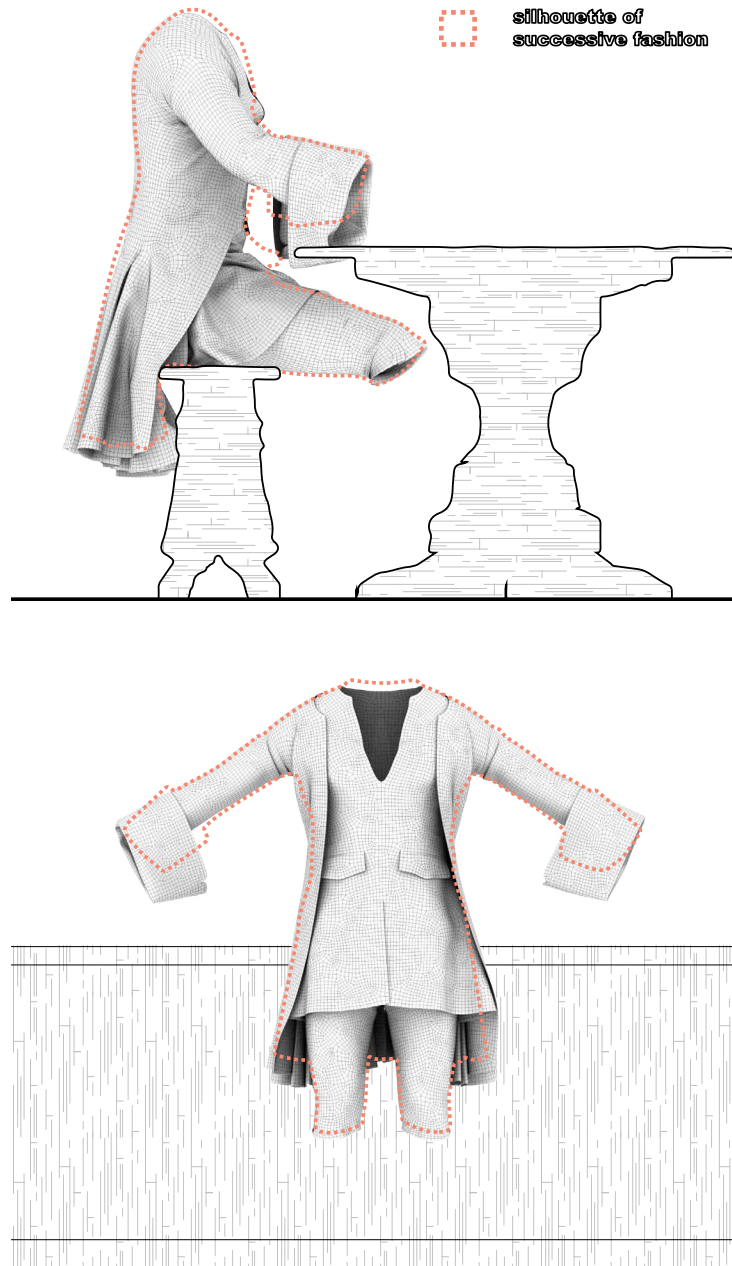


Figure 050 1740 outfit Seated (*top*) and standing (*bottom*)



Figure 051 1755 outfit (for pattern see figure 100)

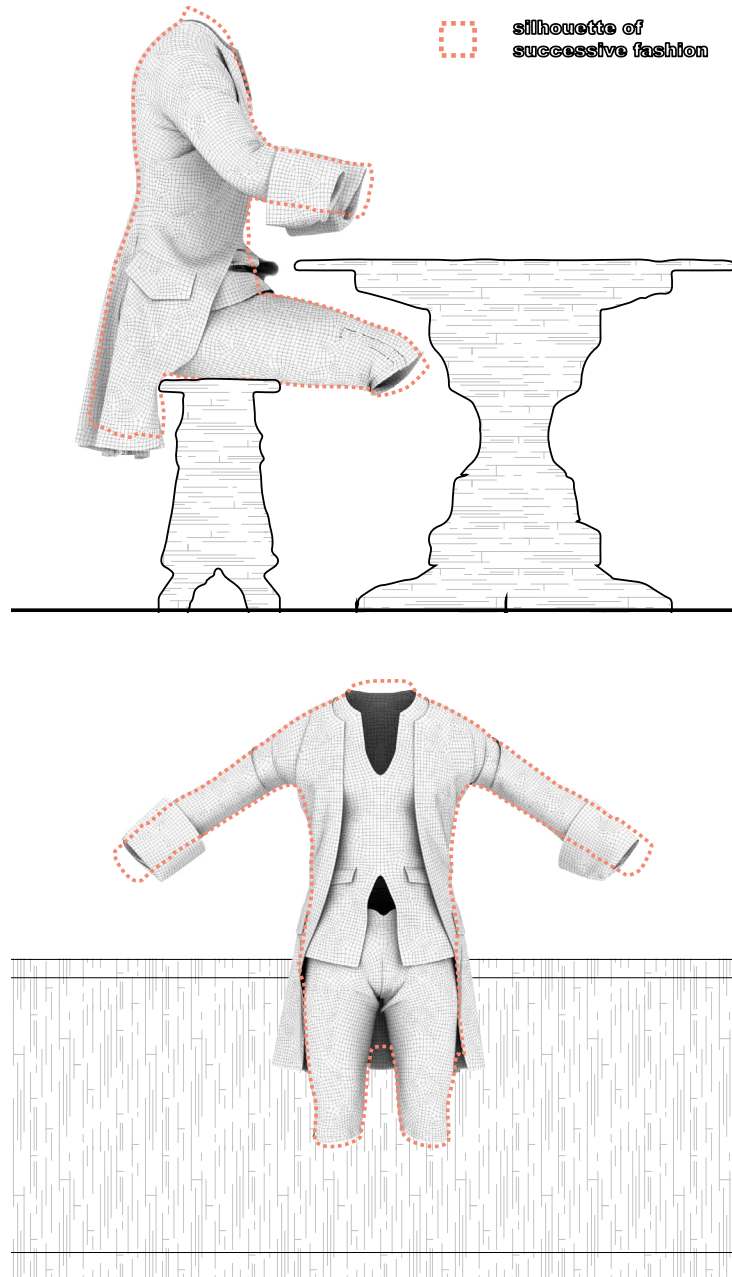


Figure 052 1755 outfit seated (*top*) and standing (*bottom*)



Figure 053 1770 outfit (for pattern see figure 101)

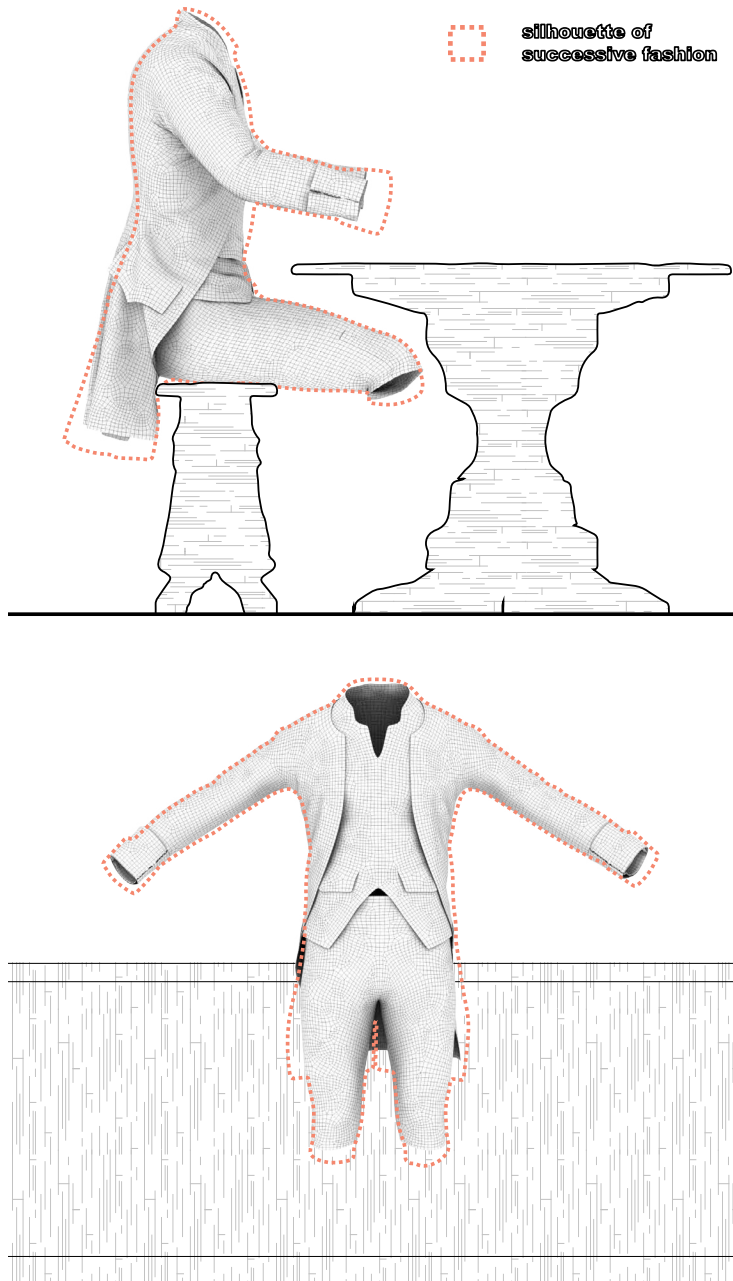


Figure 054 1770 outfit seated (*top*) and standing (*bottom*)



Figure 055 1780 outfit (for pattern see figure 102)

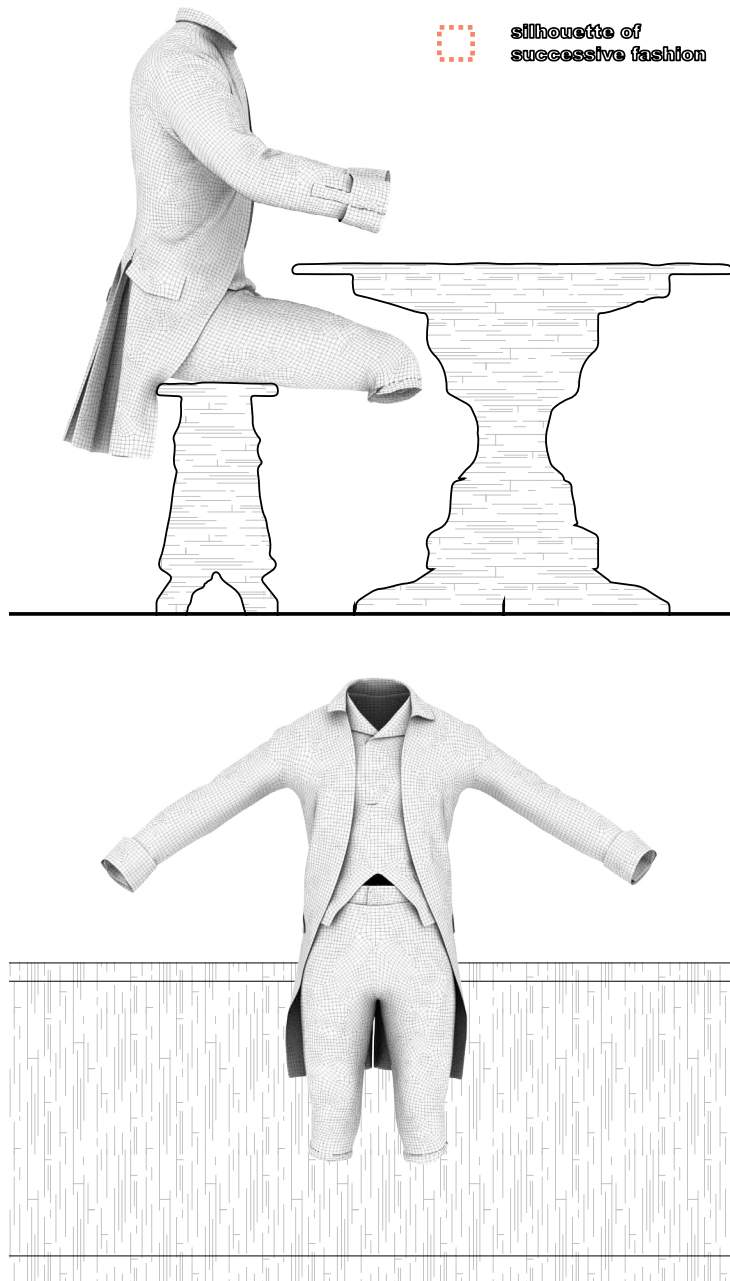


Figure 056 1780 outfit seated (*top*) and standing (*bottom*)

Two primary findings came from this sartorial reconstruction: Firstly, clothes became more fitted. This can be seen when contrasting a stiffened coat skirt of 1690 with the relaxed and slimmer coats of the later 17th C (*figure 057*). Secondly, cuff sizes decreased. These observations align with what fashion historians have termed “the great masculine renunciation”, a revolution in men’s fashion during the 18th century that saw the restraining of sartorial forms.²⁹

These lines represent the limits to inclusivity in the coffee house. Lower classes unable to keep up with the latest fashions, fell outside these lines and were excluded from effectively participating in political debate. Mollies were another group excluded by these sartorial lines. The Molly was an 18th C. term for queer men who preferred to dress in frills, laces, large cuffs and wide coat skirts.³⁰ Instead, Mollies frequented Molly clubs, a London counter public where these lines of exclusion didn’t exist. While there were no explicit rules barring the lower classes, or those dressing in alternative fashion, their voices would be heard as irrational, or lacking “sense” in political debate.³¹ Their perceived irrationality would render them invisible.

The public sphere was a space of action—the Arendtian action here being speech. It is plain to see how fashion undermines action in this space by redrawing spatial lines of exclusion as sartorial ones. That being said, according to scholars like Nancy Fraser, in stratified societies like modern London, a single public like the coffee house is not as effective as a multiple simultaneously occurring publics.³² Despite these sartorial lines, the public sphere was destined to fall short in reality.

²⁹ J. C. Flugel, *The Psychology of Clothes* (New York: International Universities Press, Inc., 1971), 110.

³⁰ Mackie, *Market*, 167.

³¹ Oliver Davis. *Jacques Rancière* (Cambridge: Polity Press, 2010), 85.

³² Nancy Fraser, *Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy* (Durham: Duke University Press, 1990), 64.



Figure 057 Detail comparison of Coffee House Fashions (1665 - 1780)



Figure 058 Forensic reconstruction of “The Coffee House Interior” highlighting all sartorial lines of exclusion during the coffee house era.



ILLUSIONS

Fashion, Architecture and the “Phantasmagoria”

The consequence of the fashion-architecture relationship in the coffee house is an obstruction of action. The consequence of the fashion-architecture relationship in arcades, is also an obstruction of action, although less explicitly. In the arcades, action is not obstructed through lines of exclusion but rather fashion and architecture’s coupling to produce the phantasmagoria. The phantasmagoria is defined as a “magic lantern show of optical illusions, rapidly changing size and blending into one another.”³³ The main illusion is the promise of techno-utopia so long as we continue to consume and thereby feed the capitalist system. This is not to say that technology isn’t progressive, but so long as it serves capitalist aims, it merely creates an illusion of progress. If the social relationships do not change then no progress is made.

In “Cultural/Political Theory and a Re-invigoration of the Idea of ‘the Public’, George Baird sets up action and distraction as limits to the spectrum of consciousness in public space. Distraction is a state that emerged as a response to the modern urban environment. It prevents psychological exhaustion caused by the flurry of objects in this environment including advertising, lighting, fashion, etc.³⁴ This is a great benefit of distraction. Distraction can even be revelatory, as in the case of the Dadaist who in a narcotic induced state of distraction experienced “profane illumination”.³⁵ Distraction, however, is a double-edged sword. In it, we passively accept the phantasmagoria, falling into a trance like dream state in which we might miss the keys to awakening from it. 19th C. Paris, and in particular, arcades, were considered by Walter Benjamin to be the birth place of the phantasmagoria and central to its production were architecture and fashion.

³³ Susan Buck-Morss, *The Dialectics of Seeing* (Cambridge: The MIT Press, 1991), 81.

³⁴ George Baird, *Public Space: Cultural/political Theory: Street Photography: an interpretation* (Amsterdam: Sun Publishers, 2011), 44.

³⁵ *Ibid.*, 49.

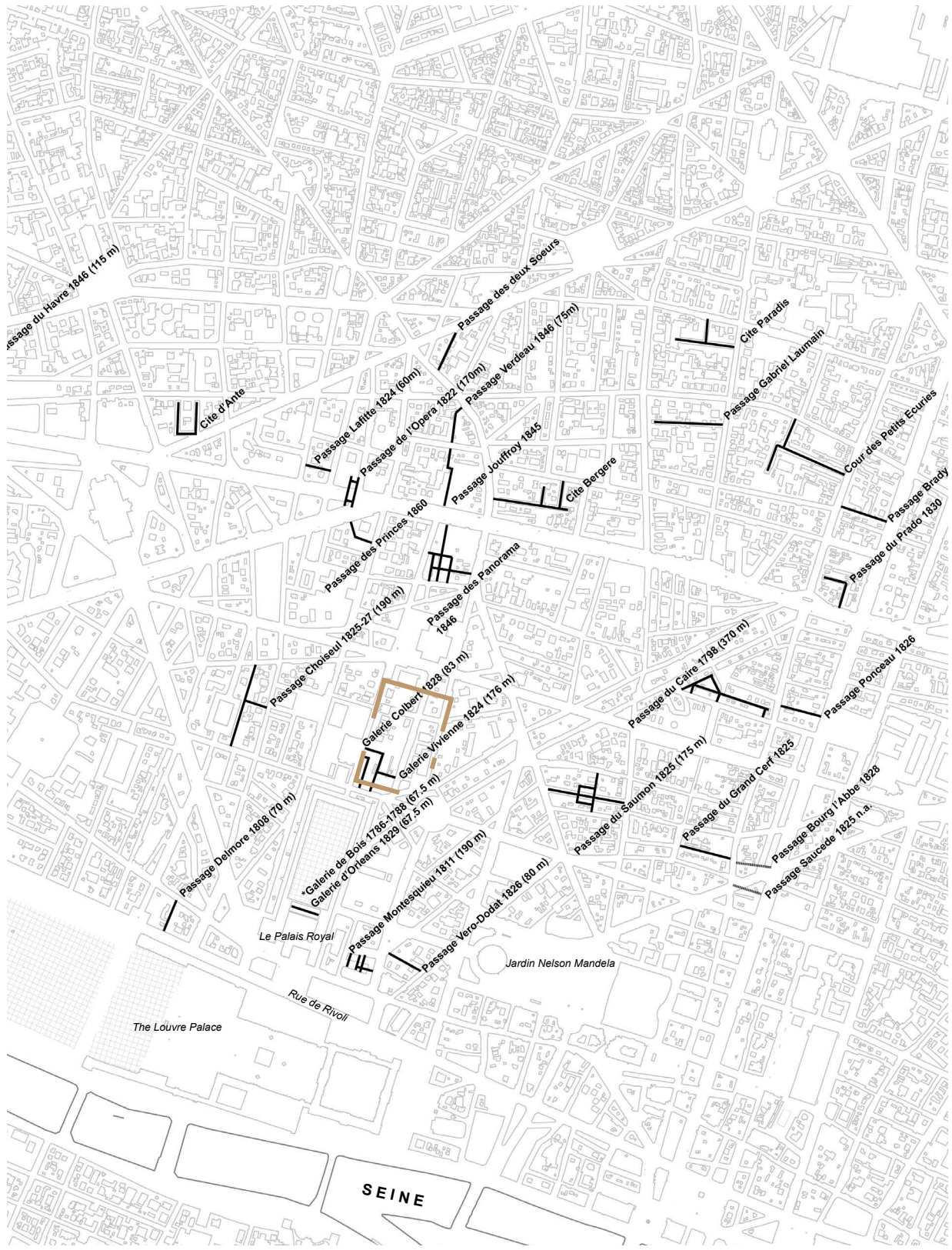


Figure 059 Parisian arcades, N.T.S. Brown line indicates arcades of interest. This map only includes arcades from Johann Friedrich Geist's *Arcades; The History of a Building Type*.

To understand the arcade as the birthplace of the phantasmagoria we look to Benjamin, whose magnum opus *The Arcades Project*, saw the arcades as problematic but also having great potential. Although there are many interpretations of Benjamin's unfinished work, Susan Buck-Morss's Marxist interpretation builds a solid foundation to link the architectural and sartorial. When Buck-Morss diagrams Benjamin's dialectical image, the key to awakening from the capitalist phantasmagoria, she draws the commodity at its center (*figure 061*). The commodity is bisected by two axes: the consciousness axis and temporal axis. These axes divide the diagram into four quadrants, each representing a different "face" of the commodity. Some faces like the fetish are problematic and some carry massive potential, like the fossil. Architecture and fashion most clearly intersect in the wish image.

The wish image is a framing of modernity's new experiences in images of past epochs.³⁶ These new experiences emerge via innovations like those in iron and gas during the 19th C. Buck-Morss claims "the wish image is not to redeem the past, but to redeem the desire for utopia to which humanity has persistently given expression..." and later "by attaching themselves as surface ornamentation to the industrial and technological forms which have just come into existence, collective wish images imbue the merely new with radical political meaning, inscribing visibly on the products of the new means of production an ancient image of the desired social ends of their development."³⁷ Fundamentally, the wish image earnestly desires utopia and makes these desires explicit. The wish image—the framing of the new in the old—is not wholly Benjamin's. Benjamin derives the referencing character of the wish image from Georg Simmel, who first illustrates it in *Fashion*. Simmel explains the referencing character of fashion occurs to conserve energy when the upper class develops new sartorial forms to differentiate themselves from the lower classes.³⁸ Essentially, the upper classes recycle forms from past epochs to save energy. While Simmel focuses on the causes of the reference character, Benjamin moves beyond causation, to the problems and potentials offered by it.

³⁶ Buck-Morss, *Dialectics*, 110.

³⁷ Buck-Morss, *Dialectics*, 117; Buck-Morss, *Dialectics*, 195.

³⁸ Simmel, "Fashion", 152.

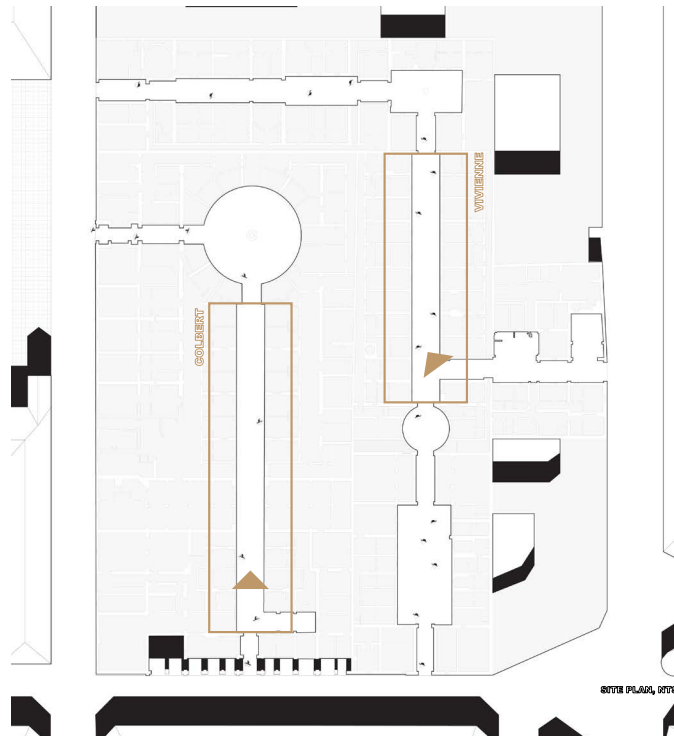


Figure 060 Gallerie Colbert and Gallerie Vivienne Plan, N.T.S. Arrow indicates views illustrated in figures 081-082.

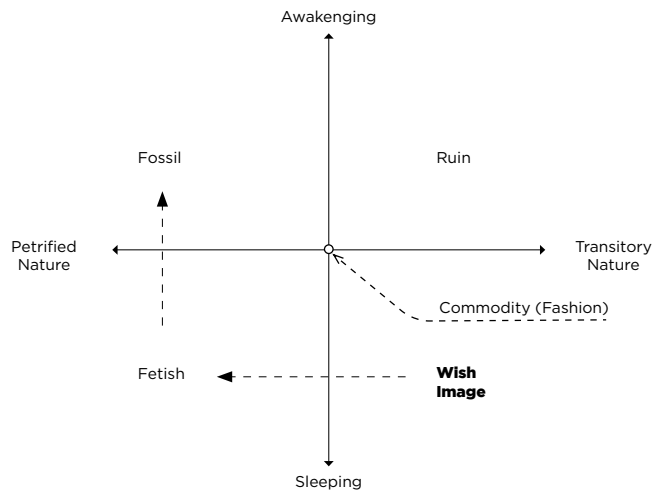


Figure 061 Susan Buck-Morss's parti of *The Arcades Project*

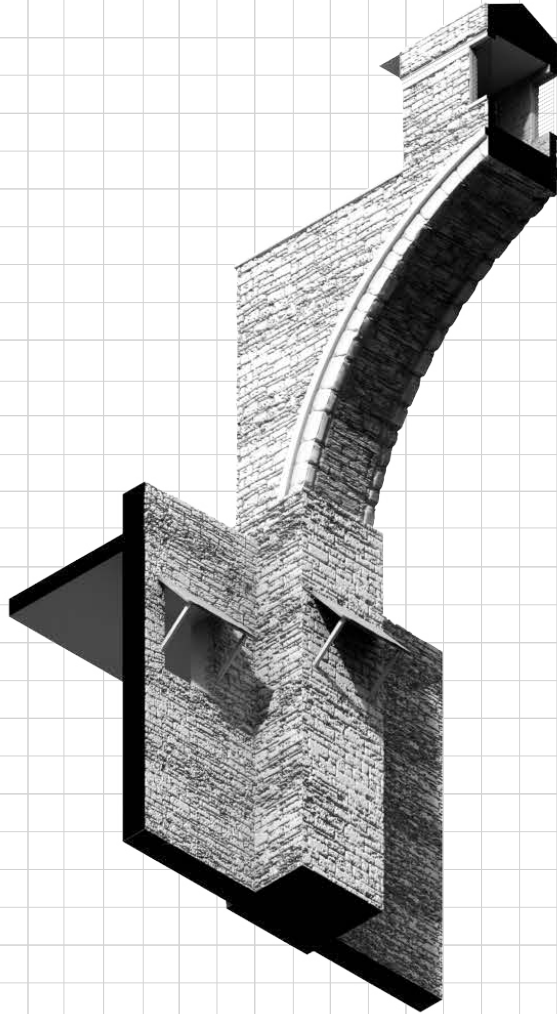


Figure 062 Fragment of forensically reconstructed Bazaar at Acre using an illustration from *Voyage en Orient* (figure 105)



Figure 063 Fragment of forensically reconstructed Gallerie Vivienne

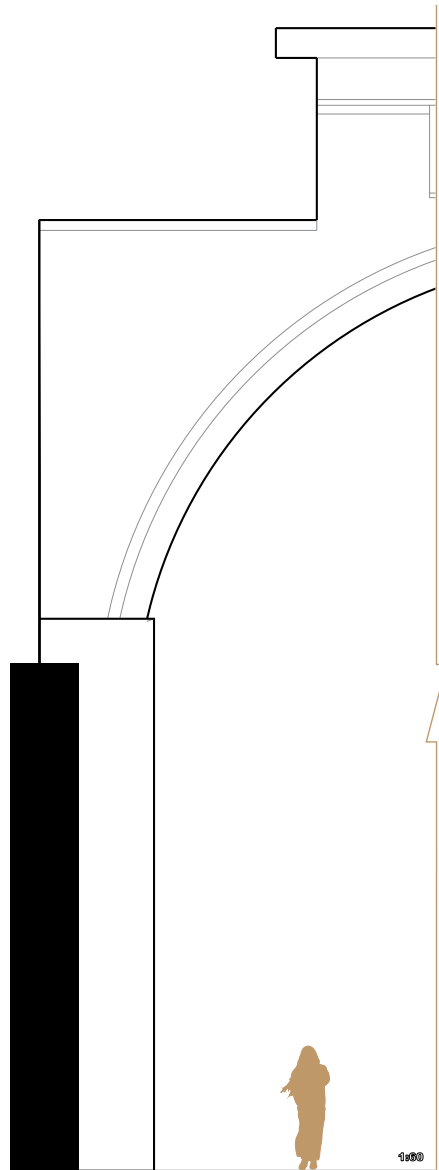


Figure 064 Bazaar at Acre Section, N.T.S

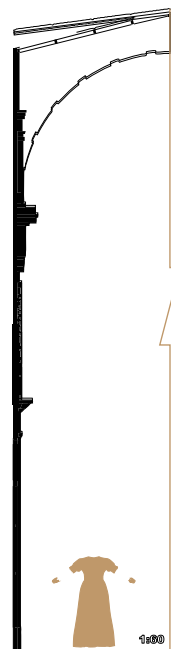


Figure 065 Galerie
Vivienne Section, N.T.S

Problems arise when the wish image is used for capitalist gain, which happens when wish images are turned to fetishes (*figure 061*). When the wish image is commodified, it becomes a fetish: the magical value an object gains when commodified and the primary hallucinogenic for the phantasmagoria.³⁹ These powers can best be compared to totems in occult culture. The last two faces, the ruin and fossil, emerge as the commodity falls from fashion and once it has become fully outmoded, respectively. In the ruin, the commodity takes an allegorical form which tells the story of failing capitalist material. The fossil is the last trace of that failed material, and as discussed later, it is in this trace that awakening is possible. This thesis, however, is primarily interested in the wish image and fetish. If the phantasmagoria is produced by the fetish, and fetishes are commodified wish images, the objective of this research became a hunt for wish images in architecture and fashion. I would reconstruct the new experiences of the city and the innovations which produced them, but I would also reconstruct their historical references. By seeing the strength of the citation, we might understand the strength of the arcade phantasmagoria.

The paramount new experience arcades offered was that, for the first time, passage was made *through* urban city blocks.⁴⁰ Arcades provided refuge from the rain and an escape from the street, which was dirty and dangerous due to increasing traffic.⁴¹ As public spaces, the street and the arcade offered vastly different temporal experiences. The former was experienced hastily, and the latter—leisurely. Another important distinction between streets and arcades, was the latter was, like the coffee house, a privately-owned public space. The profitability of this new urban experience led to the construction of fifty arcades in Paris (*figure 059*).⁴² Most Parisian arcades were built between 1820 and 1840.⁴³ This period in arcade construction was called “The Period of Fashion” because of the booming fashion and textile industries.⁴⁴ It is no wonder the link between architecture and fashion would be clearest in a period when both were

³⁹ Ulrich Lehmann, *Tigersprung: Fashion in Modernity* (Cambridge: MIT Press, 2000), 271; Buck-Morss, *Dialectics*, 81.

⁴⁰ Johann Friedrich Geist, *Arcades: The History of a Building Type* (Cambridge: The MIT Press, 1983), 12.

⁴¹ Andrew Ayers, *The Architecture of Paris* (Stuttgart: Edition Axel Menges, 2004), 384.

⁴² *Ibid.*

⁴³ Geist, *Arcades*, 117.

⁴⁴ *Ibid.*, 68; *Ibid.*, 117.

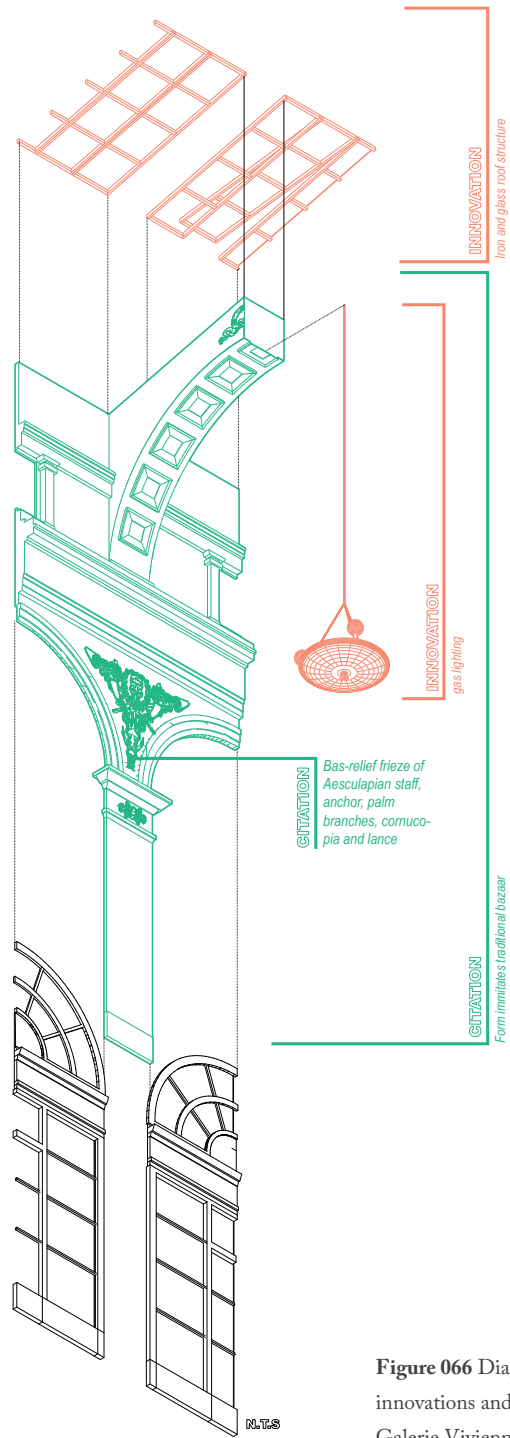


Figure 066 Diagram of major innovations and citations of the Galerie Vivienne

at their height. Two Arcades built during “the period of fashion”, the Galerie Vivienne (1826) and the Galerie Colbert (1827), most clearly employed wish images.

For both Vivienne and Colbert, the primary technological innovation or “form that has just come into existence” was the continuous iron and glass roof, which blended interior and exterior. Another major innovation of this period was gas lighting, which extended the temporal experience of Paris, blending day into night. Innovations in iron and glass were considered closely linked: “The two great advances in technology—gas and cast iron—go together.”⁴⁵ These new spatial and temporal experiences were framed in ancient forms. Both galleries were designed by Percier and Fontaine, French architects often hired by Napoleon and working in the Empire style.⁴⁶ This style can best be described as a combination of “greco-roman and egyptian forms and motifs”.⁴⁷ After Napoleons campaigns in the east at the end of the 18th century, European exploration of countries like Israel and Egypt grew.⁴⁸ Illustrated travelogues from these explorations, like Forbin’s *Voyage en Orient*, were increasingly published in France and had a considerable influence on architecture. The Galerie Vivienne was certainly influenced by these travelogues. When comparing a forensically reconstructed Galerie Vivienne (*figure 063*) with a reconstructed Bazaar (*figure 062*) from *Voyage en Orient*, there is an undeniable formal likeness. The travelogue was published in 1819 and the arcade was built in 1826. This chronology supports the hypothesis that Vivienne was framed in the ancient forms illustrated by Forbin (*figure 107*). Furthermore, the Galerie Vivienne was ornamented with a number of ancient motifs including the Episcopalian staff, anchor, palm branches, cornucopia and lance.⁴⁹ Many of these are symbols of past epochs. The cornucopia is a symbol from ancient Greek mythology and the and the lance was the cavalry soldier’s weapon in the middle ages.⁵⁰

⁴⁵ Walter Benjamin, *The Arcades Project* (Cambridge: MIT Press, 1988), 151.

⁴⁶ Geist, *Arcades*, 503

⁴⁷ *Encyclopaedia Britannica*, s.v. “Charles Percier and Pierre Fontaine.”

⁴⁸ Geist, *Arcades*, 4.

⁴⁹ *Ibid*, 496.

⁵⁰ “Bountiful Beginnings: What is a Cornucopia?,” Bright Hub Education, accessed May 8, 2018. <https://www.brighthubeducation.com/history-homework-help/126590-what-is-a-cornucopia/>; “Lance,” Lords and Ladies, accessed May, 8, 2018. <http://www.lordsandladies.org/lance.htm>.

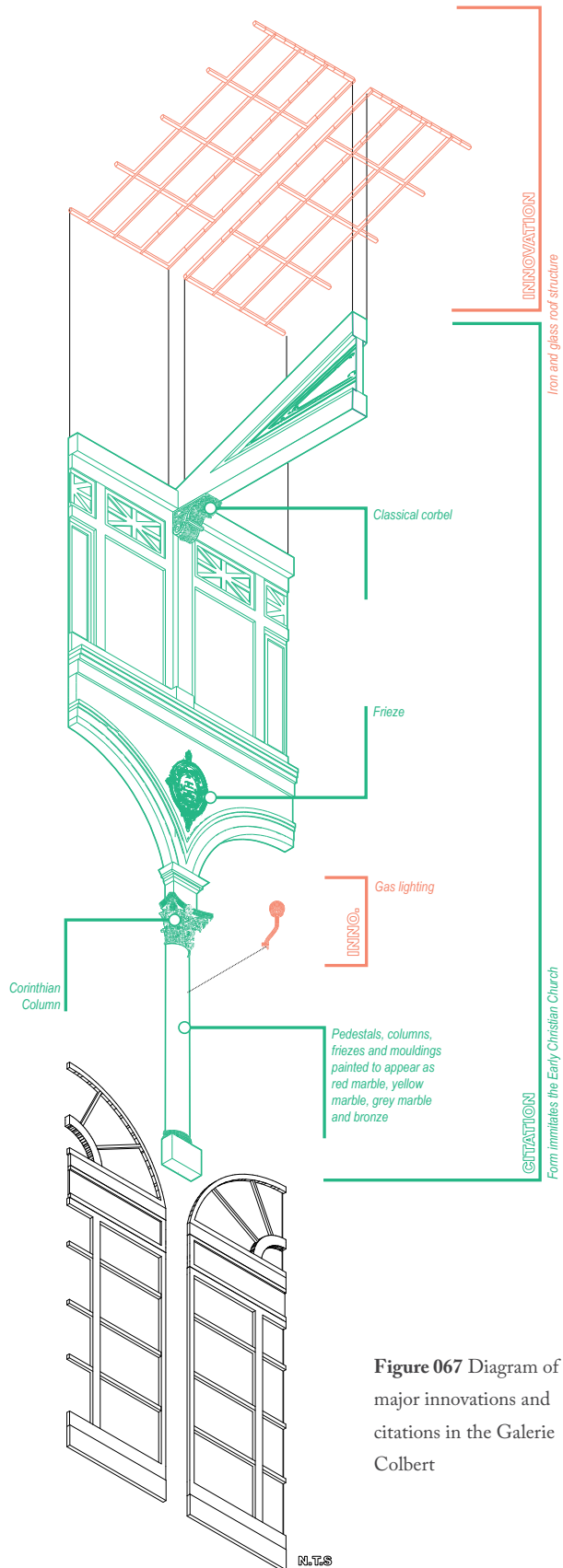


Figure 067 Diagram of major innovations and citations in the Galerie Colbert

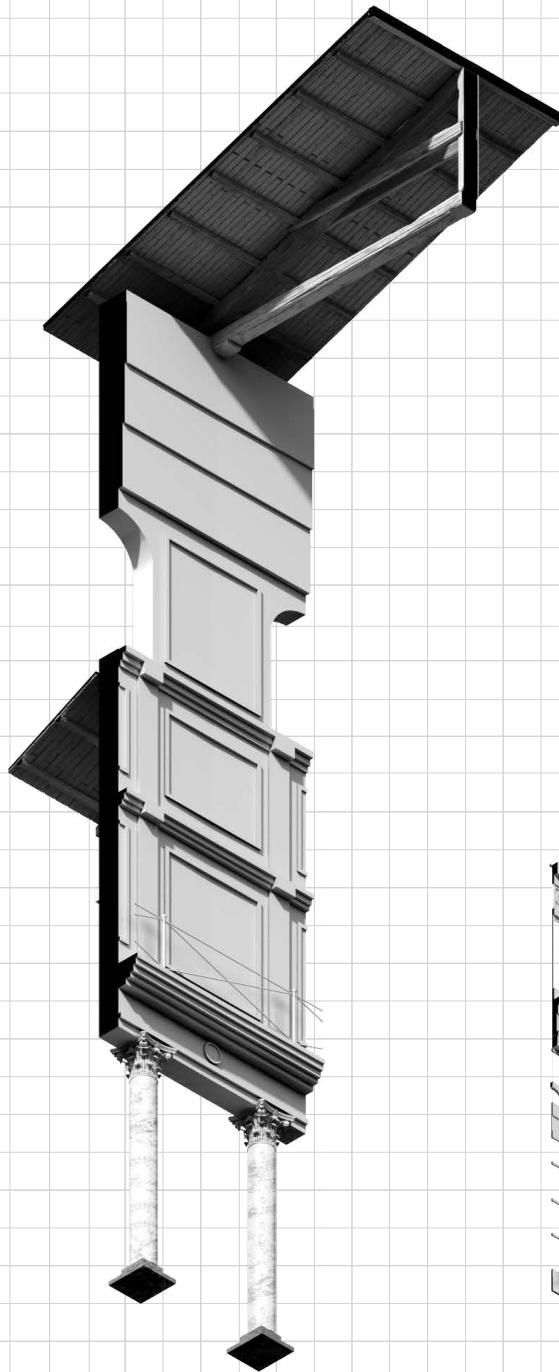


Figure 068 Fragment of forensically reconstructed Old St. Peter's Basilica using figure 108



Figure 069 Fragment of forensically reconstructed Galerie Colbert

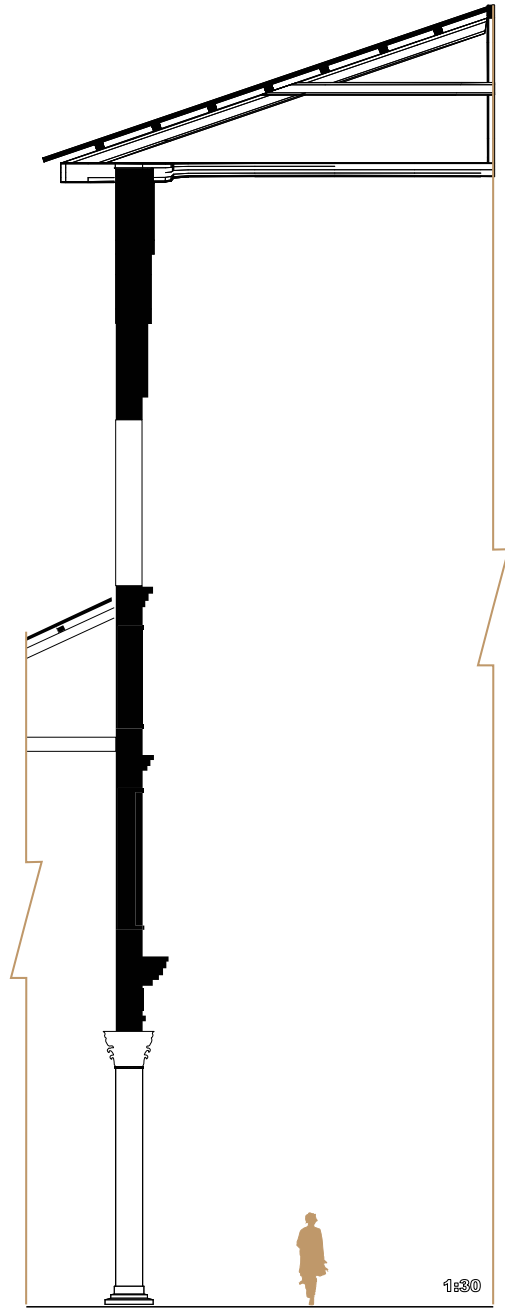


Figure 070 Old St. Peter's Basilica, N.T.S



Figure 071 Galerie Colbert Section, N.T.S

The Galerie Colbert shares the same gas and iron innovations as the Galerie Vivienne. Instead of the ancient east, however, the Galerie Colbert cites the early Christian Church.⁵¹ A comparison of a forensically reconstructed Old St Peter's Basilica (*figure 068*) and Galerie Colbert (*figure 069*) shows an even stronger referencing than in the Galerie Vivienne. The citations include: Corinthian columns, decorative friezes, classical corbels, and an ornamented pediment that formally imitates the open roof structure of Old St. Peter's Basilica.⁵² In perspective, the Galerie Colbert is experienced like the early Christian Church (*figure 081*).⁵³ The darkness of the shop windows and the depth of the columns create the illusion of aisles flanking a central nave.⁵⁴ The Galerie Colbert, though, takes the citations even further. Not only are forms and ornaments imitated, but materials are too. The columns are painted to look like yellow marble; the bases, red marble; and the friezes, grey marble.⁵⁵ Architecture in both arcades clearly operates as a wish image, only one that is commodified into fetish in support of the arcade's capitalist objective.

Benjamin most explicitly ties architecture and fashion in the wish image when he writes, "fashion like architecture, stands in the darkness of the lived moment."⁵⁶ "Darkness" is a metaphor for the unrealized potential of architectural and sartorial innovations, and their premature application under capitalism. This prematurity shows itself in the intense framing of the new in the old—the wish image. During the "period of fashion", wish images pervaded sartorial forms with an unprecedented intensity and arguably, one never again matched.

From the 1820's till the 1840's, a period fashion historians have titled the Romantic era, French fashions heavily cited the Elizabethan mode. Elizabethan fashions were characterized by ruffs, massive sleeves, farthingales, and extreme

⁵¹ Geist, *Arcades*, 503.

⁵² Ibid.

⁵³ Ibid.

⁵⁴ Ibid.

⁵⁵ Ibid.

⁵⁶ Buck-Morss, *Dialectics*, 114.

sartorial extravagance.⁵⁷ Popular literature of the Romantic Era was preoccupied with the 16th C. so its understandable to see French fashions frame themselves in an Elizabethan image.⁵⁸ By reconstructing these fashions we can see sartorial forms transcend time in the way architectural forms did. For example, an 1826 dress (*figure 075*) cites the puffed and slashed sleeves of a 1560 dress (*figure 073*). It tries to differentiate itself, however, by wrapping itself in a gauze mesh which can be considered an “innovation”. Similarly, an 1830 dress (*figure 079*) cites the massive sleeves and ruff of a 1580 dress (*figure 077*). The sleeve, however, grows to be three times the size of its historical reference. From the reconstruction it is clear to see just how strong these references were and, coupled with the various architectural wish images, why the arcades were so phantasmagorical.

Finally, as aforementioned, there are faces to the commodity that are revelatory and not problematic as is the fetish. The commodity puts us into the dream state but it’s also, paradoxically, the key to awakening from it. When the fetish character fades from the wish image it turns into a fossil.⁵⁹ This happened when the arcades fell into ruin at the end of the 18th century, capturing all the fashions and commodities that failed to engender their utopian promise.⁶⁰ The fossils potential lies in its capacity to reveal the inefficacies of the capitalist system. Furthermore, the revolutionary potential of these objects is multiplied by the fact that they are wish images. In seeing the unrealized utopian desires of the generation immediately-passed as well as those of ancient epochs, we are supplied with additional motivation to act. We see a constant failure to move towards utopia, which was the promise of linear time and the techno-utopian narrative that commonly accompanies it. We instead determine that only concerted political action will take us to utopia.

⁵⁷ James Laver, *Taste and Fashion* (London: George G. Harrap & Company Ltd., 1937), 33.

⁵⁸ *Ibid*, 32.

⁵⁹ Buck-Morss, *Dialectics*, 211.

⁶⁰ *Ibid*, 65.



Figure 072 1560 dress (for pattern see *figure 101*)

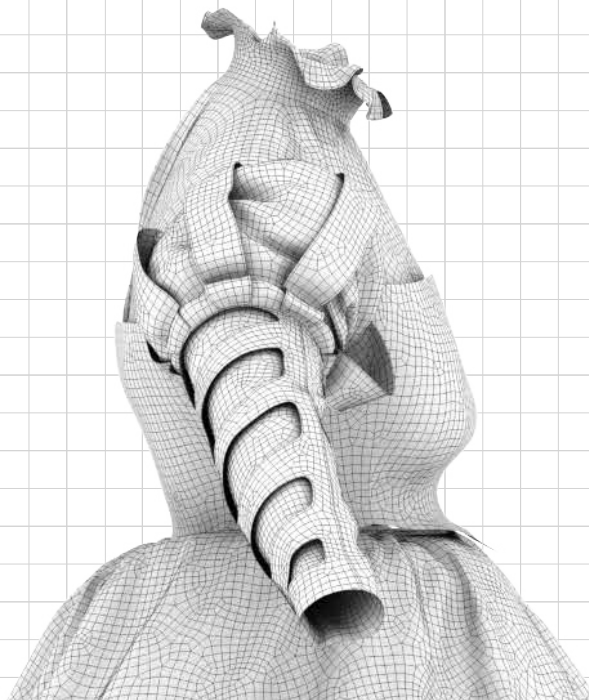


Figure 073 Detail of fuffed slashed sleeve from 1560 dress



Figure 074 1826 dress (for pattern see *figure 102*)

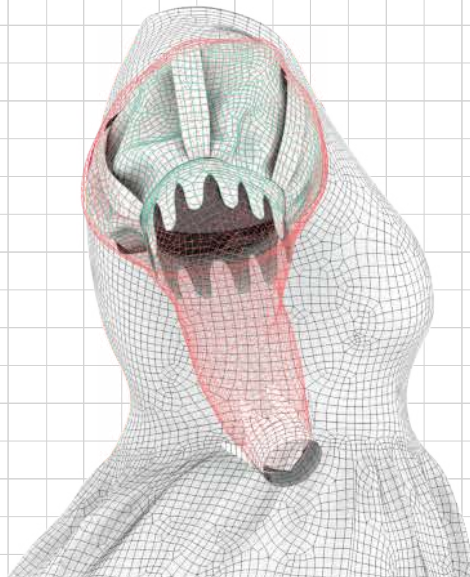


Figure 075 Puffed Slashed sleeve wrapped in a gauze oversleeve from 1826 dress.
Teal indicates a citation of the 1560 dress and pink indicates a sartorial innovation.



Figure 076 1580 dress (for pattern see *figure 103*)

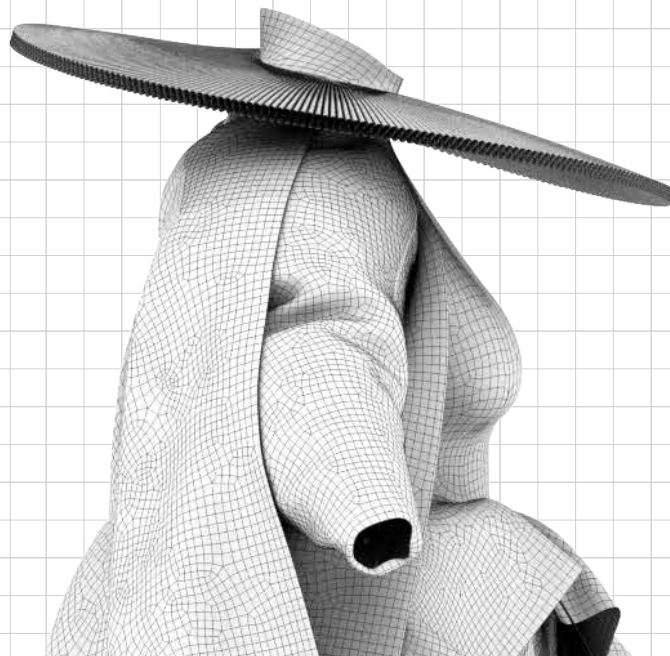


Figure 077 Detail of massive sleeve and ruff from 1580 dress



Figure 078 1830 dress (for pattern see *figure 104*)

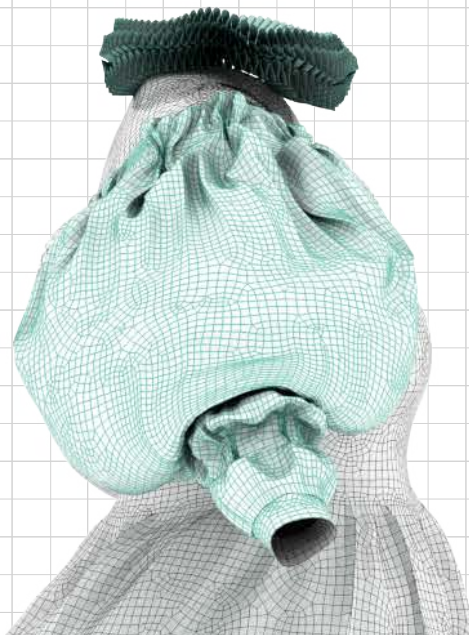


Figure 079 Detail of 1830 dress showing the massive gigot sleeve and ruff. Teal indicates a citation of the 1580 dress.

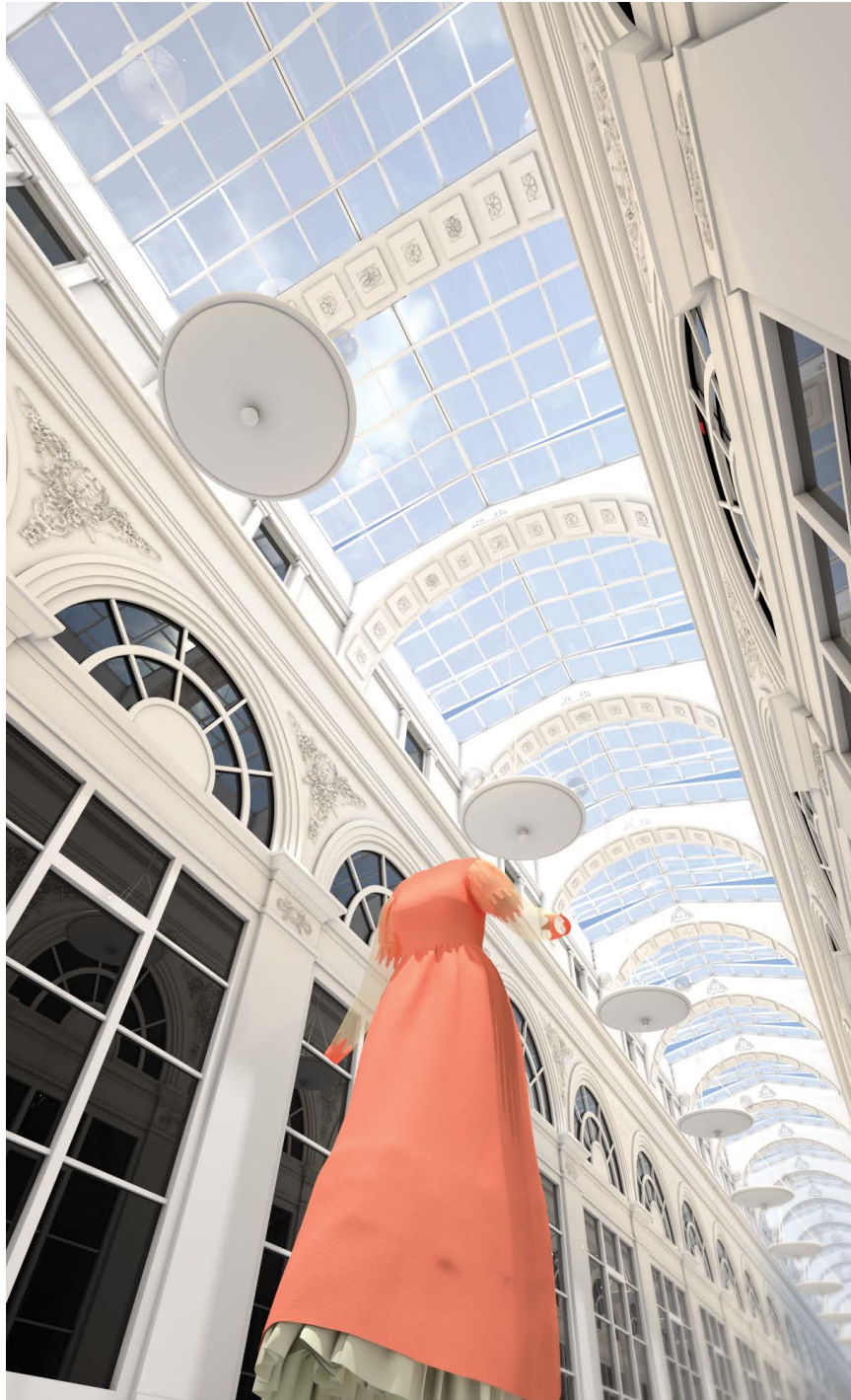


Figure 080 1826 dress cites the Elizabethan mode, and the Gallerie Vivienne cites architecture of the ancient east.



Figure 081 1830 dress cites the Elizabethan mode, and the Gallerie Colbert cites classical roman architecture.

EXTENDED FASHION PIPELINE

An extension of the forensic reconstruction pipeline was necessary to address the phantasmagoria's dynamic character. First, motion capture data needed acquiring. Two methods were tested to record this data: infrared scanning and an IMU (inertial measurement unit) mocap suit. The latter, which uses a gyroscope, accelerometer and magnetometer to track body movements, proved to be more accurate and so was used for sartorial animation (*figure 082*).

A bipedal skeleton, or a human skeleton was then set up inside of the retopologized 3D scan (*figure 083*). This is referred to as “the rig”. Connections were then made to determine which bones influence which vertices on the body mesh in a process called “skin weight painting.” *Figure 083* depicts a shin being painted in full white meaning it is fully influenced by the tibia/fibula bones. After skin weight painting was completed for all bones, the motion capture data can be transferred onto the rig and simulated. For each frame, vertices of the cloth mesh were computed based on the moving rig and skin weights.

Next, the cloth meshes were layered on top of the body mesh (*figure 085*) and simulated using the cloth solver mentioned in the initial sartorial pipeline (see page 13). Finally, the cloth meshes were exported as geometry cache files and imported into Maya for rendering (*figure 086*). A geometry cache is a file that “that store vertex transformation data.”⁶¹ Every vertex of the cloth mesh is stored as data and, at render time, the cache is applied to the mesh which transforms mesh vertices accordingly.

The extended fashion pipeline was an attempt to identify additional relations in the complex web surrounding the 18th-century public sphere and 19th-century phantasmagoria. While the time variable was part of the garment reconstruction process, here it is extended beyond dress's initial construction to understand sartorial forms as being incredibly ephemeral. Using the cloth solver, it becomes clear that any sartorial form lasts only 1/24th of a second before deforming into another. Simply put, there are 24 different forms the dress takes for every second. The incredible ephemerality of sartorial forms is put in stark contrast with architecture which retains its form somewhat indefinitely.

⁶¹ “Geometry Caching”, Maya Guide, Autodesk, <https://knowledge.autodesk.com/support/maya/learn-explore/caas/CloudHelp/cloudhelp/2016/ENU/Maya/files/GUID-AA97DF16-D11F-41E0-A9B8-FAE7A7E5B50F-htm.html>



Figure 082 Motion data acquisition



Figure 083 Rigging and Skinning



Figure 084 Motion data applied to rig



Figure 085 Dress layered onto animated rig and simulated using a cloth solver



Figure 086 Dress animation exported as geocache to Maya for rendering.

Animated Experiments

Because the arcades were a space of circulation, the phantasmagoria was experienced dynamically. If the phantasmagoria was “a magic lantern show of optical illusions, rapidly changing size and blending into one another”, I thought it best to look at the wish image in an animated state that compliments the illusion of progress produced by the phantasmagoria.⁶²

Experimenting with all four dresses—1560, 1580, 1826, and 1830—promenading in the arcade captured some of these shifting forms. The gigot sleeve of the 1830 dress is particularly bewitching in an animated state (*figure 089*). Daytime and nighttime animations were produced to see how these forms interact with natural light and artificial light. Tests were also conducted with a moving camera which puts architecture in motion to maximize phantasmagorical dynamism.

While I hypothesize the animated experience of the arcades to be central to phantasmagoric production and reception, these tests proved less conclusive than anticipated. The framing of the new in the old seems to be the primary aesthetic quality of the phantasmagoria and the point where fashion and architecture conspire most explicitly. Further experimentation of the phantasmagoria’s animated quality is necessary to identify any sartorial-architectural collusions beyond the wish image. The goal of these experiments was to incorporate a temporal dimensions to acknowledge the massive temporal shifts that characterize modernity. More of these experiments can be seen in the following pages.

⁶²Buck-Morss, *Dialectics*, 81.



Figure 087 Animation still of 1826 dress in the Galerie Vivienne (see figure 090 for sequence)



Figure 088 Animation still of 1830 dress in the Galerie Colbert (see figure 089 for sequence)



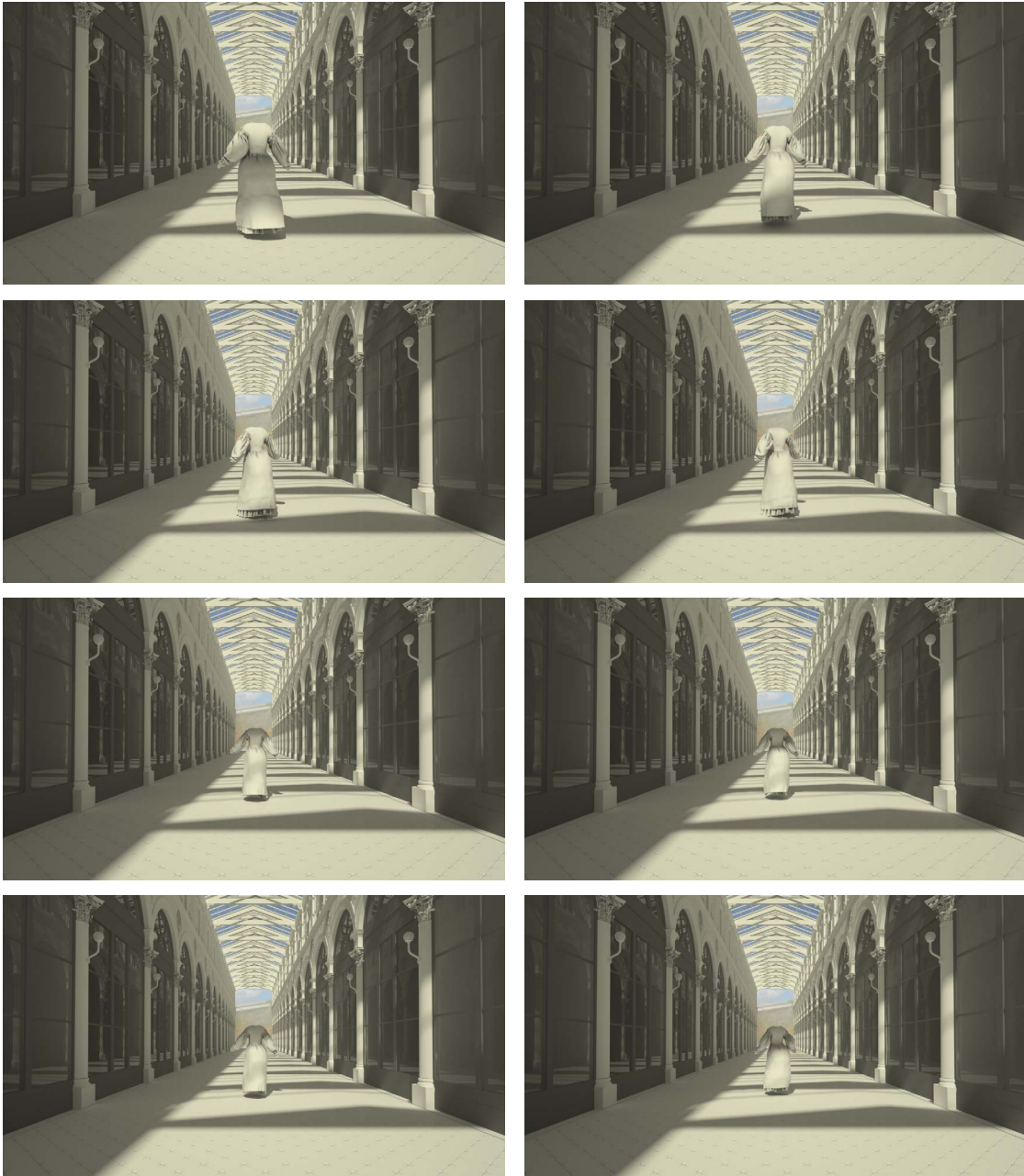


Figure 089 Daytime animated sequence of 1830 dress in the Galerie Colbert



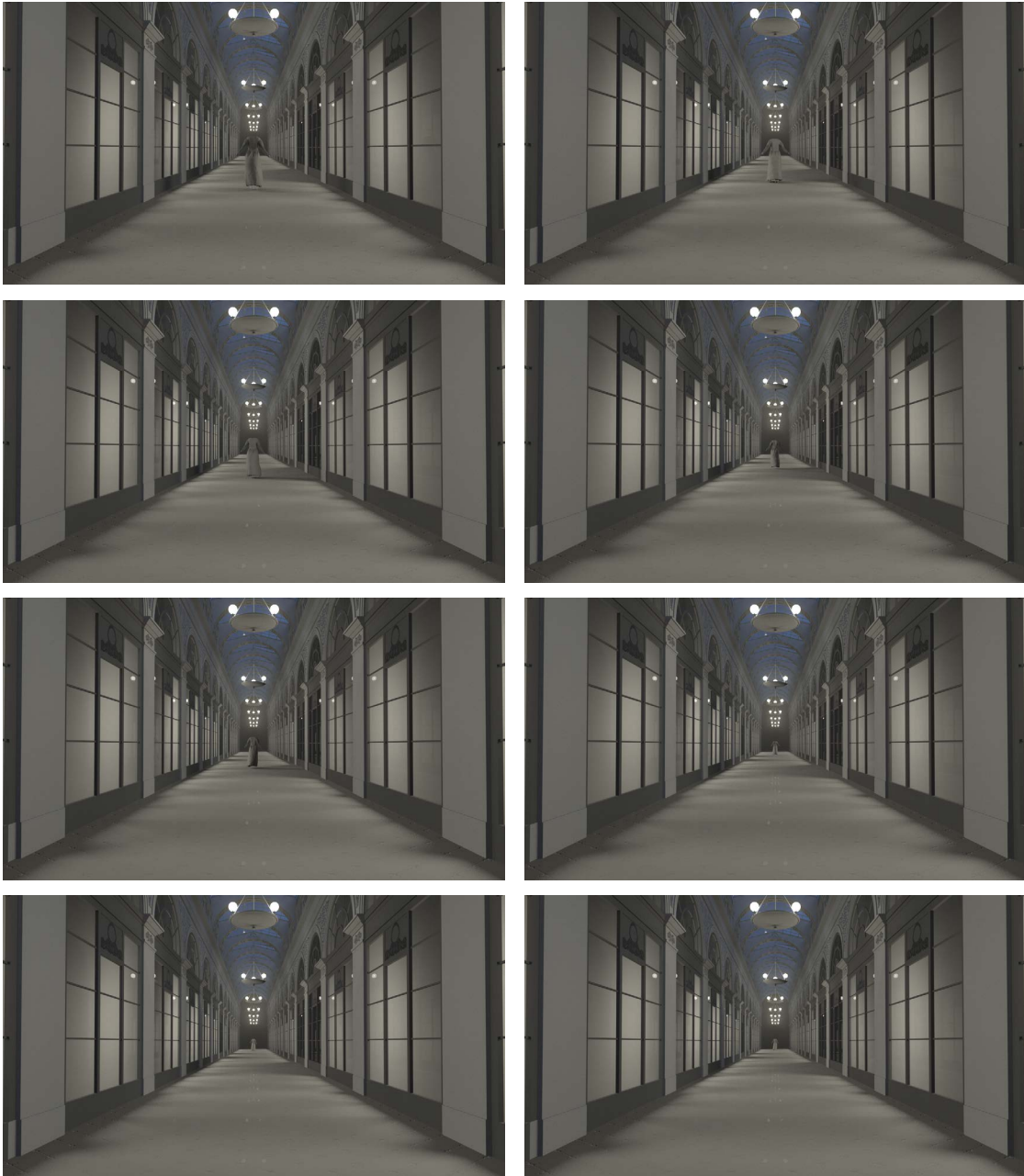


Figure 090 Nighttime animated sequence of 1826 dress in the Galerie Vivienne

CONCLUSION

Using the forensic reconstruction method, the centrality of fashion—an inherently political and economic object—to British coffee houses and Parisian arcades is concretized. As typologies, coffee houses and arcades possess specific architectural characteristics that intersect with fashion in potent and problematic ways.

In the coffee house, hierarchical lines were erased from the space through egalitarian furnishings. An absence of chairs and plainness of furnishings produced an egalitarian atmosphere that supported the public sphere's nonhierarchical objectives. However, the erasure of hierarchical lines led to the redrawing of new ones in fashion. Fashion's inevitable function as a line of demarcation is heightened in a space where no other lines exist. By forensically reconstructing both the furnishings and fashions, the erasure of lines and their subsequent redrawing is explicated. The redrawn lines are made clear in a series of fashion silhouettes (see orange lines on pages 36 - 50).⁵⁹ Those inside these "circles" would be rational participants in political debate and those outside—irrational, and effectively invisible. Furthermore, by employing a method reserved for trials of international importance to the mundane, the trivial is ennobled with its real-world power.

In the second public space on trial, the Parisian arcade, the architectural-sartorial relationship is also problematic albeit less explicitly. This relationship rests on Susan Buck-Morss part of Benjamin's *Arcades Project*, which positions the commodity—for which fashion's ephemerality makes it quintessential—at the center. Her Marxist diagramming of the commodity's various faces creates points of intersection for fashion and architecture. In these faces we can see

how fashion and architecture operate as wish images that, when commodified, become fetishes and release the deceptive phantasmagoria. The forensic reconstruction method rebuilds wish images and their historical references. Through the forensic reconstruction, we can see where the strength of the arcade phantasmagoria originates. By building an evidentiary exhibit for Buck-Morss's interpretation, the forensic reconstruction concretizes the commodity's various physiognomies, which are present in both architecture and fashion. Finally, like the coffee house, this process imbues the "profane" with power. For Benjamin, the key to waking from the capitalist phantasmagoria laid in the profane, which here is the failed material of past epochs.⁶⁰ When a commodity falls from fashion, it sheds its fetish face and turns to a fossil. In the fossil, the unrealized utopian dreams of past epochs, including the one immediately passed, are made visible. We realize the inefficacy of the capitalist system in delivering the techno-utopia it repeatedly promises. Instead of the superficial reconfigurations capitalism relies on, concerted revolutionary action that reconfigures social relationships can ensue.

These are the architectural-sartorial relationships central to British coffee Houses and Parisian arcades—the two founding myths of modernity.

⁶⁰ Buck-Morss, *Dialectics*, 261.

BIBLIOGRAPHY

- Aitken, George A. *The Tatler*. New York: Adler's Foreign Books, Inc., 1970.
- Arendt, Hannah. *The Human Condition*. Chicago: The University of Chicago Press, 1958.
- Arnold, Janet. *Patterns of Fashion 4*. London: Macmillan, 2008.
- Ayers, Andrew. *The Architecture of Paris*. Stuttgart: Edition Axel Menges, 2004.
- Baird, George. *Public Space: Cultural/political Theory: Street Photography: an interpretation*. Amsterdam: Sun Publishers, 2011.
- Benjamin, Walter. *The Arcades Project*. Cambridge: MIT Press, 1988.
- Bill, James R. and Suresh K. Lodha. "Sculpting Polygonal Models using Virtual Tools." *Graphics Interface* (1995): 272-279.
- "Bountiful Beginnings: What Is a Cornucopia?" Bright Hub Education. Accessed May 9, 2018. <https://owl.english.purdue.edu/owl/resource/717/05/>
- Buck-Morss, Susan. *The Dialectics of Seeing*. Cambridge: The MIT Press, 1991.
- Cowan, Brian. *The Social Life of Coffee*. New Haven: Yale University Press, 2005.
- Crewe, Louise. *The Geographies of Fashion*. London: Bloomsbury, 2017.
- Davis, Oliver. *Jacques Rancière*. Cambridge: Polity Press, 2010.
- Flugel, J. C. Flugel, *The Psychology of Clothes*. New York: International Universities Press, Inc., 1971.
- Forbin. Comte de. *Voyage dans le Levant en 1817 et 1818, / par M. le Cte. de Forbin*. Paris: Delaunay, 1819.
- Fraser, Nancy. *Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy*. Durham: Duke University Press, 1990.
- Geist, Johann Friedrich. *Arcades: The History of a Building Type*. Cambridge: The MIT Press, 1983.
- Habermas, Jurgen. *The Structural Transformation of the Public Sphere*. Cambridge: The MIT Press, 1991.
- Hayward, Charles H. *English Period Furniture*. New York: Harper Collins Publishers Ltd, 1984.

- Hill, Margot Hamilton, and Peter A. Bucknell. *The Evolution of Fashion. Hollywood: Costume & Fashion Press*, 1967.
- Hunnisett, Jean. *Period Costume for Stage & Screen*. Studio City: Players Press., 1991.
- Krafft, Jean-Charles and François Thiollet. *Choix des plus jolies maisons de Paris et de ses environs*. Paris: 1949.
- “Lance.” Lords and Ladies. Accessed May 9, 2018. <http://www.lordsandladies.org/lance.htm>
- Laver, James. *Taste and Fashion*. London: George G. Harrap & Company Ltd., 1937.
- Lehmann, Ulrich. *Tigersprung: Fashion in Modernity*. Cambridge: MIT Press, 2000.
- Lillywhite, Bryant. *London Coffee Houses*. Crows Nest: Allen & Unwin, 1964.
- Mackie, Erin. *Market à la Mode*. Baltimore: The Johns Hopkins University Press, 1997.
- Okonkwo, U. *Luxury Fashion Branding: Trends, Tactics, Techniques*. Basingstoke: Palgrave Macmillan, 2007.
- Old English Coffee Houses*. Emmaus: The Rodale Press, 1954.
- Sennett, Richard. *The Fall of Public Man*. Cambridge: Cambridge University Press, 1977.
- Simmel, George. “Fashion.” *International Quarterly* 10 (1904): 130-155.
- Sparkes, Ivan. *An Illustrated history of English Domestic Furniture*. Buckinghamshire: Spurbooks Ltd., 1980.
- Tomlin, Maurice. *English Furniture*. London: Faber and Faber, 1972.
- Weizman, Eyal. *Forensic Architecture: Violence at the Threshold of Detectability*. Cambridge: MIT Press, 2017.
- Weizman, Eyal, Paulo Tavares, Susan Schuppli, and Situ Studio. 2010. “Forensic Architecture.” *Architectural Design* 80 (5): 58-63.
- Yarwood, Doreen. *The English Home*. Essex: The Anchor Press Ltd., 1979.

APPENDIX



Figure 091 Dress section (*front to back*) illustrating viscoelastic properties



Figure 092 Dress section (*left to right*) illustrating viscoelastic properties

0	Abercrombie	61	The Auction	123	Black Boy	185	Buller's	246	Colchester
1	Abington's	62	Auction Mart	124	Blackamoor	186	Burchill's	247	Cole's
2	Abraham's	63	Axe	125	Blackheath	187	Burlington	248	Cole's
3	Adam's	64	Backler's	126	Blacknall's	188	Burton's	249	Cole's
4	Adam's	65	Bagneo	127	Black Queen	189	Burton's	250	Collin's
5	Adam's	66	Baker's	128	Bland's	190	Burton	251	Collins
6	Adams	67	Baker's	129	Blenheim	191	Burton Ale	252	Colonial
7	Adam and Eve	68	Baltic	130	Blue Coat	192	Button's	253	Colonial
8	The Adelphi	69	Baltic	131	Blue Coat Boy	193	Cafe Colosseum	254	Colonnade
9	Adlamb's or Adlam's	70	Bank	132	Blue Coat Boy	194	Cafe de l'Europe	255	Colosseum
10	Admiralty	71	Bantam	133	Blue Posts	195	Caffe Francais	256	Combes
11	Adulan's	72	Baptist's Head	134	Blunt's	196	Caffe Royal	257	Commercial
12	African	73	Baptist's Head	135	Boar and Castle	197	Caledonien	258	Commercial
13	African	74	Barbadoes	136	Boarn's	198	Cameron's	259	Commercial
14	Albany	75	Barbadoes and Jamaica	137	Boddy's	199	Camisards	260	Commercial
15	Albion	76	Barcelona	138	Boiden's	200	Cannon	261	Commercial Sale Rooms
16	Albion	77	Barker's	139	Boman's	201	Cannon	262	Connor's
17	Albion	78	Barley Mow	140	Bond's	202	Carey's	263	Constitution
18	Albion	79	Barnard's	141	Booth's	203	Carey's	264	Cooper's
19	Albion	80	Barnard's Inn	142	Botterill's	204	Carolina	265	Cope's
20	Albion	81	Barnhall's	143	Bourn's	205	Carolina and Hon duras	266	Corbets
21	Alder's	82	Barnes'	144	Bowman's	206	Carolina and Pennsylvania	267	Corn Exchange
22	Alder's	83	Bartholomew	145	Bow Street	207	Carpenter's	268	Couzen's
23	Alder's	84	Bartholomew Lane	146	Placemark	208	Carr's	269	Craven
24	Aldersgate	85	Batler's	147	Boyden's	209	Cathedral	270	Craven
25	Aldermanbury	86	Batson's	148	Braxton's	210	Causey's	271	Cross's
26	Aldgate	87	Baxter's	149	Brett's Furnival's Inn	211	Cavendish Square	272	Cross Keys
27	Aldgate Ward	88	Baxter's	150	Brett's	212	Cecil Street	273	Cross Keys Bagno
28	Westminster Hall	89	The Bay Tree	151	Bridge's	213	Chadwell's	274	Crown
29	Allan's	90	Bayly's	152	Bright's	214	Chancery	275	Crown
30	Allen's	91	Bazaar	153	Brightman's	215	Chancery Lane	276	Crown
31	Almack's	92	The Bedford	154	Bristol	216	Chapman's	277	Crown
32	The American	93	Bedford	155	Bristol	217	Chapter	278	Crown
33	American and Continental	94	Bedford	156	Britannia	218	Chapter	279	Crown
34	American and New England	95	Bedford	157	Britannia	219	Charing Cross	280	Crown
35	Amsterdam	96	Bedford	158	Britannia	220	Chedron's Huntley	281	Crown
36	Amsterdam	97	The Bedford	159	Britannia	221	Child's	282	Crown
37	Anacreon	98	Bedford	160	British	222	Child's	283	Crown and Rolls
38	Anderson's	99	Bedford Arms	161	British	223	Chillingden's	284	Dale's
39	Andlaby's	100	Bedford Divan	162	British	224	Church	285	Danbrook's
40	Andrew's	101	Bedford Head	163	British	225	City	286	Daniel's
41	Andrews	102	Bedford Head	164	Brome's	226	City of London	287	Daniel's
42	Andrews	103	Bedford Head	165	Brooks'	227	City of London	288	Daniel's Welch
43	Angel	104	Bedford Square	166	Brooks'	228	City of London Tavern	289	Danish
44	Angel	105	The Bell	167	Brooke's	229	Clarendon	290	Daphin's
45	Angel	106	The Bell Inn	168	Brown's	230	Clark's	291	Davies
46	Angel and Crown	107	Bell Tavern	169	Brown's	231	Clark's	292	Davis's
47	The Antegoe	108	Belle Sauvage	170	Brown's	232	Clear's	293	Dayphin's
48	The Antelope	109	Besta;ls	171	Brown's	233	Cobham's	294	Deacon's
49	Antigallican	110	Bett's	172	Brown's	234	Cock and Pye	295	Dean Street
50	Antigallican	111	Betty's	173	Brown's	235	Cockerton's	296	Denis's
51	Antigallican	112	Betty's	174	Brown Bear	236	Cocoa Tree	297	Devereux
52	The Antwerp Tavern	113	Bickerstaff's	175	Brownjohn's	237	Coffee House	298	Devonshire
53	Appleby's	114	Bicknel's	176	Brunet's	238	Coffee House	299	Dewell's
54	Arcade	115	Bigg's	177	Bruton's	239	Coffee House	300	Dick's
55	Army and Navy	116	Biggar's	178	Buck's	240	Coffee House Alley	301	Dick's
56	Arthur's	117	Bishop's	179	Buckeridge's	241	Coffee House on the Pavement	302	Dick's
57	Ashley's London	118	Bishopsgate	180	Buckland's	242	Coffee House Court	303	Doctor's Commons
58	Askew's	119	Black Bear	181	Buenos Ayres	243	Coffee House	304	Dog
59	Atkinson's	120	Ye Blackmores Head	182	Bull	244	Coffee Mart	305	Dolly's
60	Atkinson's	121	Blackborns	183	Bull's Head	245	Coffee Pot	306	Dolphin
		122	The Black Boy	184	Bull and Mouth			307	Drury's
								308	Dukes

Figure 093 Map legend using index from Bryant Lillywhite's *London Coffee Houses*

309	Duke of Gordon	371	Grigg's	434	Lawford's	495	Norfolk	557	Saloop
310	Eagle	372	Grigsby's	435	Leake's	496	Norse's	558	Salutation
311	Eastey's	373	Grillion's	436	Lebeck's Head	497	Norton's	559	Salutations
312	East India	374	Groom's	437	Lebeck's Head	498	Nott's	560	Santry's
313	East India	375	Guildhall	438	Le Febre's	499	Offley's	561	Scarlett's
314	East INdia	376	The Gun	439	13 Leicester Square	500	Okeley's	562	Seago's
315	Edinburgh	377	Gurney's	440	Leopard	501	Old Baptist's Head	563	Shakespeare's
316	Edwardson's	378	Gwynn's	441	Leopard	502	Old Coffee House	564	Sheppard's
317	Elliott's	379	Hain's	442	Leoparll	503	Old Post Boy	565	Ship
318	English Opera	380	Ham's	443	Le Tellier's	504	Old Slaughter's	566	Shipwrights Arms
319	Equestrian	381	Hampton Court	444	Lewenden's	505	Oliver's	567	Shirringham's
320	Essex	382	Hancock's	445	Lewis's	506	Olympian	568	Shrawley's
321	Essex	383	Hanover	446	Lincoln's Inn	507	Omnibus	569	The Smyrna
322	Essex and Temple	384	Hanover	447	Lindsey's	508	One Tun	570	Snow's
323	Everitt's	385	Harris's	448	Lion	509	Orange	571	Staple Inn
324	Exchange	386	Hart's	449	Lloyd's	510	Oriental	572	Star
325	Excise	387	Harvey's	450	Lord's	511	Osborne's	573	Storey's Gate
326	Excise	388	Hatchett's	451	Low's	512	Outridge's	574	Stringar's
327	Exeter	389	Heathcock	452	Lowther's	513	Paris	575	The Sun
328	Exeter	390	Heming's	453	Loyal	514	Pavyner's	576	The Sun
329	Feathers	391	Hick's Hall	454	Ludgate	515	Peele's	577	Surrey
330	Fenton's	392	Hilliard's	455	Lunt's	516	Percy of The Percy	578	Sussex
331	Finsbury	393	Hindoostance	456	Lyon's	517	Perren's Royal Standard	579	Stutling House
332	Fisher's	394	Holborn	457	M'Niven's	518	Picket's	580	Swan's
333	Fitzroy	395	Holland's	458	Magdalen	519	The Plough	581	Symond's Inn
334	Fitzroy	396	Holwill's	459	Manchester	520	Ponce's	582	Tanner's
335	Fladong's	397	Holyland's	460	Manns	521	Pontack's	583	Thames
336	Fleet Prison	398	Hood's	461	Mansfield's	522	Portland	584	Theatre
337	Fountain	399	Hope	462	Manwaring's	523	Prince of Orange	585	The Coffee House
338	Fountain	400	Hope's	463	Market	524	Prince of Wales's	586	Thompson's
339	Four Swans	401	Howard's	464	The Marlborough	525	Proball's	587	Tom's
340	Fowler's	402	Howard's	465	Marlborough Head	526	Proctor's	588	Tom's
341	Freemasons	403	Howel's	466	Martin's Street	527	Pulsford's	589	Turf
342	Freemasons'	404	Hoxton Square	467	Maryland and Virginia	528	Queen's Head	590	Turk's Head
343	Fryar	405	Hugh's	468	Meakin's	529	Queenhithe	591	Turk's Head
344	Fulham's	406	Hummums	469	Metheringham's	530	Rainbow	592	Turk's Head
345	Garrick's Head	407	Humphreys	470	Metropolitan	531	Rainbow	593	Turk's Head
346	Gaunt's	408	Hungerford	471	The Middlesex	532	Rainbow and 3 Pidgons	594	Turk's Head
347	George's	409	Huntley	472	Mivart's	533	Rand's	595	Turk and Slave
348	George's and Six Clerks	410	Ibbotson's	473	Moore's	534	Raybould's	596	Union
349	Gerald's	411	Jackson's	474	Moorgate	535	Read's	597	Union
350	Gillard's	412	Jacob's	475	Morecraft's	536	Read's	598	Valentine and Orson
351	Ginn's	413	Joe	476	Morris's	537	Read's	599	Walkers'
352	Giraudier's	414	Joe's	477	Mount	538	Regency	600	Walton's
353	Gliddon's	415	John's	478	Mourning Bush	539	Regent's	601	Wardour Street
354	Globe	416	Johnson's	479	Mulberry Gardens	540	Rider's	602	Waterloo
355	Glove and Royal Hummums	417	Johnson's	480	Munday's	541	Ries's	603	Westminster
356	Globe	418	Jonathan's	481	Mynhill's	542	Ripley's	604	Wheatsheaf
357	Globe	419	Jones's	482	Nando's	543	Robinson's	605	White Bear
358	The Globe	420	Jorden's	483	Nassau	544	Rosemary Branch	606	White Hart
359	Glos	421	Keeble's	484	Nerot's	545	The Rotunda	607	White Hart
360	Gloucester	422	Kigg's	485	Newman's	546	Royal	608	White Horse Cella
361	Gloucester	423	King's Arms and Union	486	Newton's	547	Royal Hotel	609	White Lyon
362	Gloucester	424	King's Bagnio	487	New Bedford	548	Rummer	610	Whyman's
363	Gloucester	425	King's Jead	488	New England and North & South American	549	Rummer	611	Will's
364	Godlington's	426	King's Head	489	New Essex	550	St. Alban's	612	Williams
365	Golden Lion	427	Kingson	490	New Exchange	551	St. James's	613	Wright's
366	Goldsmiths	428	Kirkham's	491	New Exchequer	552	St. James's	614	York
367	Grasshopper	429	Knight's	492	New London	553	St. James's	615	York
368	Green's	430	Lamb's	493	New Slaughter's	554	St James's Street	616	York
369	Greyhound	431	Landon's	494	New Tavistock	555	St. John's Gate		
370	Greyhound	432	Langbourn			556	Salisbury		
		433	Langbourn Ward						

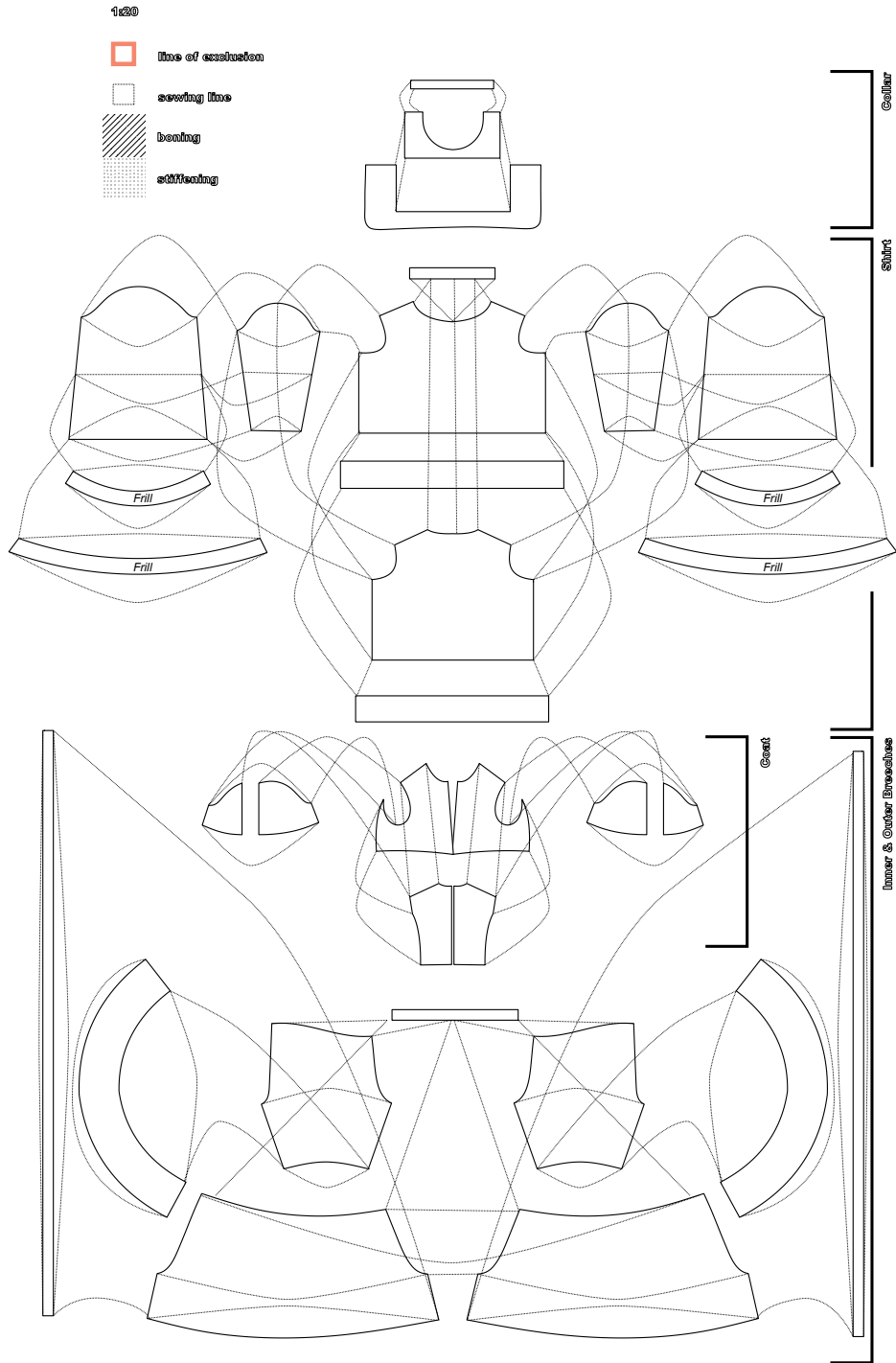


Figure 094 Pattern for 1665 outfit, N.T.S.

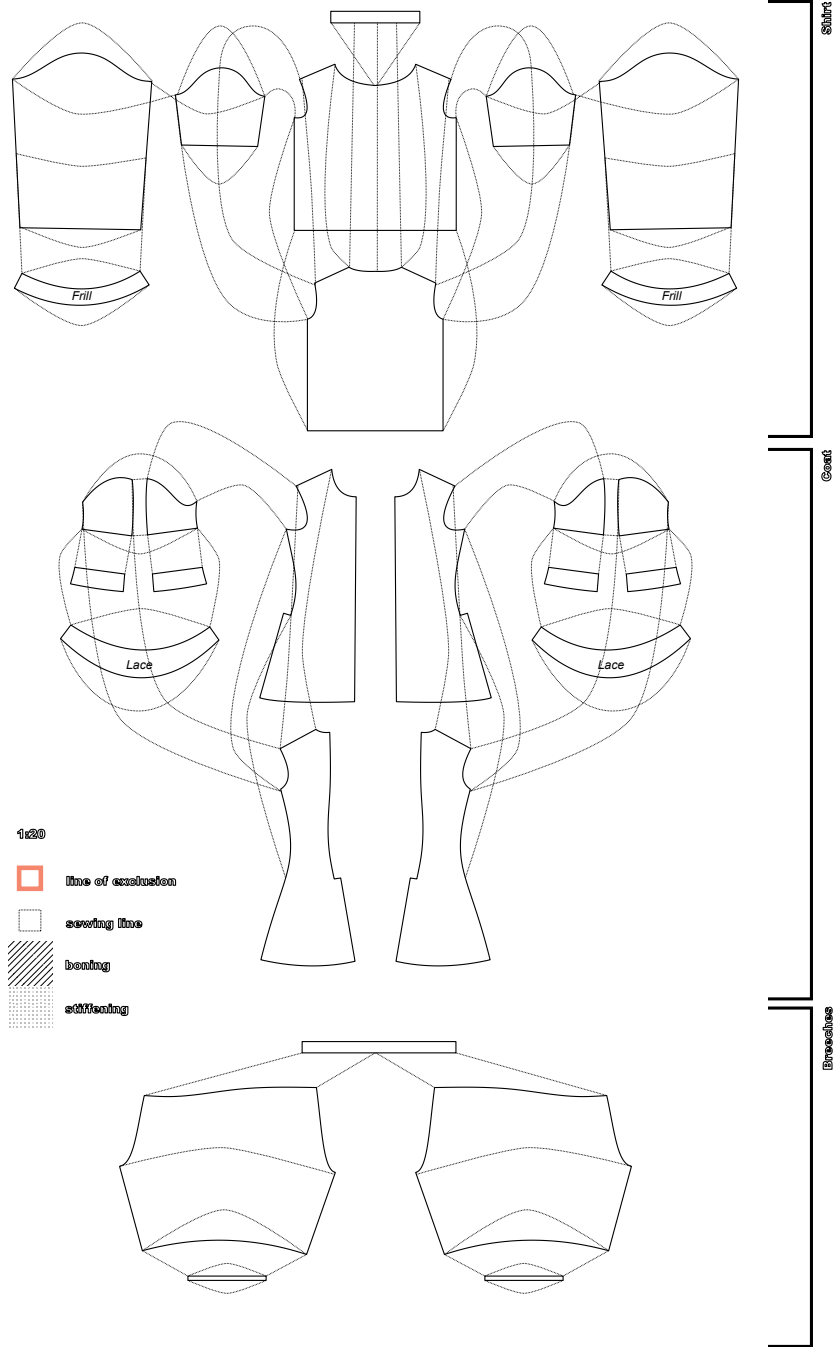


Figure 095 Pattern for 1675 outfit, N.T.S.

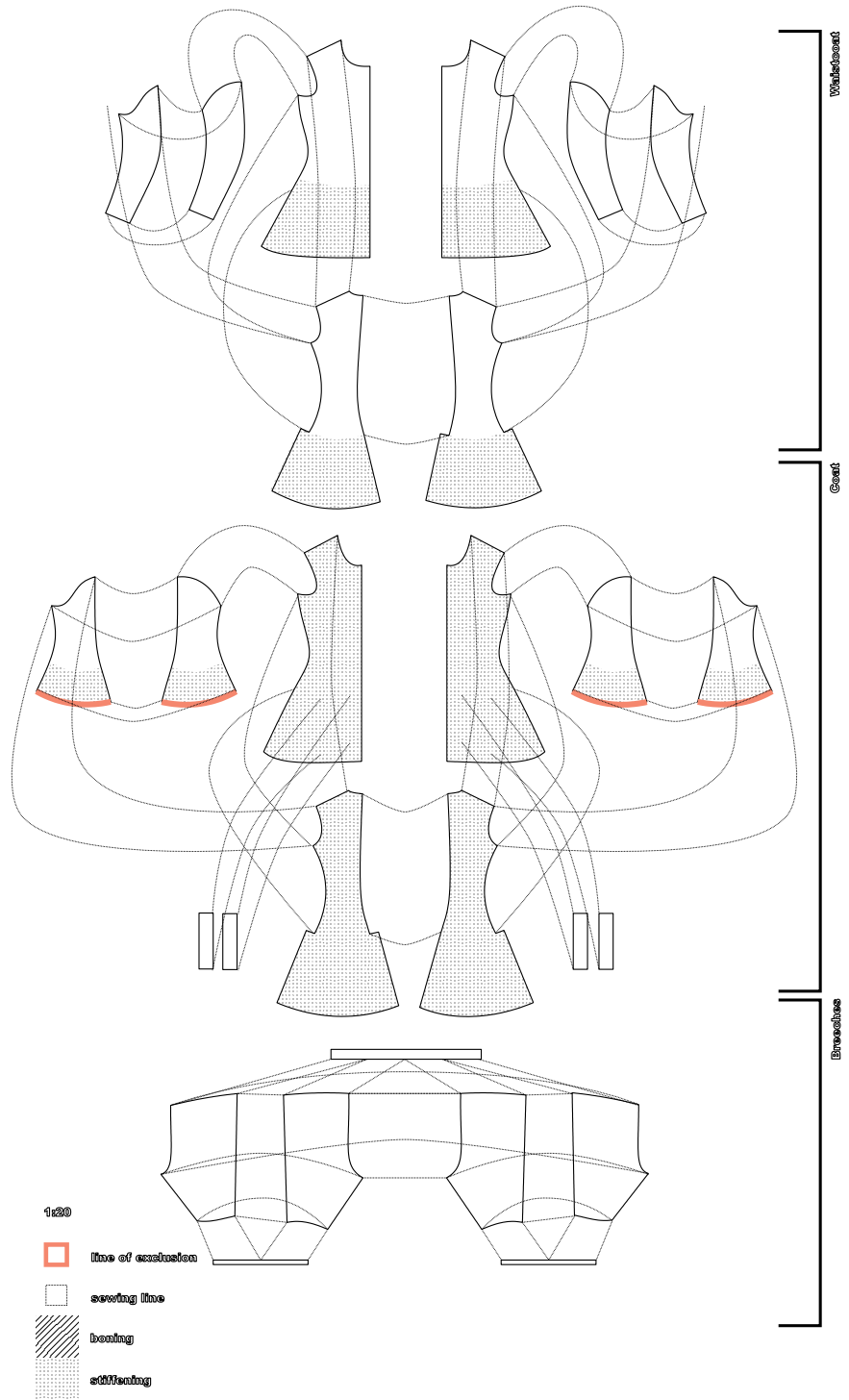


Figure 096 Pattern for 1690 outfit, N.T.S.

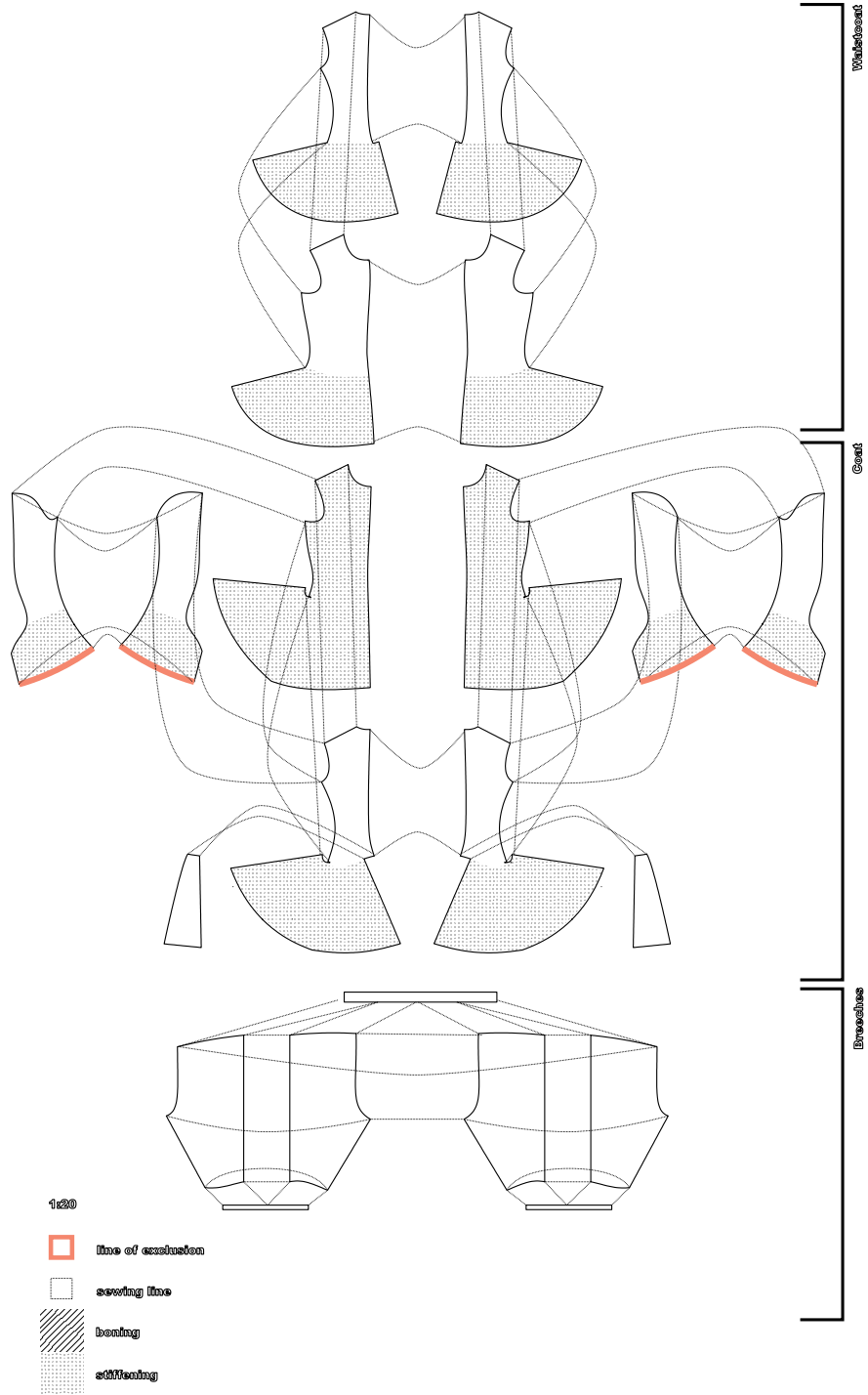


Figure 097 Pattern for 1705 outfit, N.T.S.

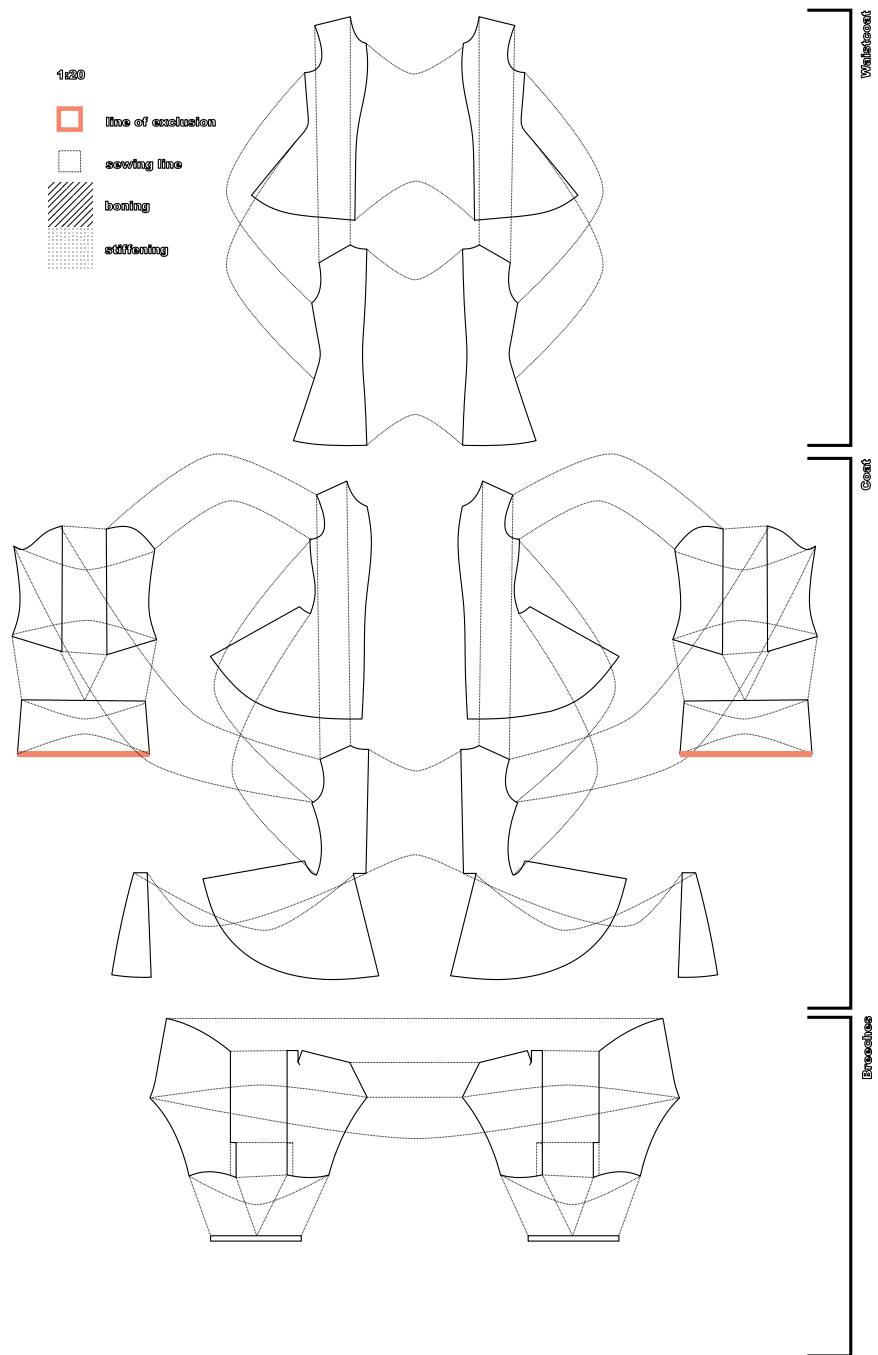


Figure 098 Pattern for 1720 outfit, N.T.S.

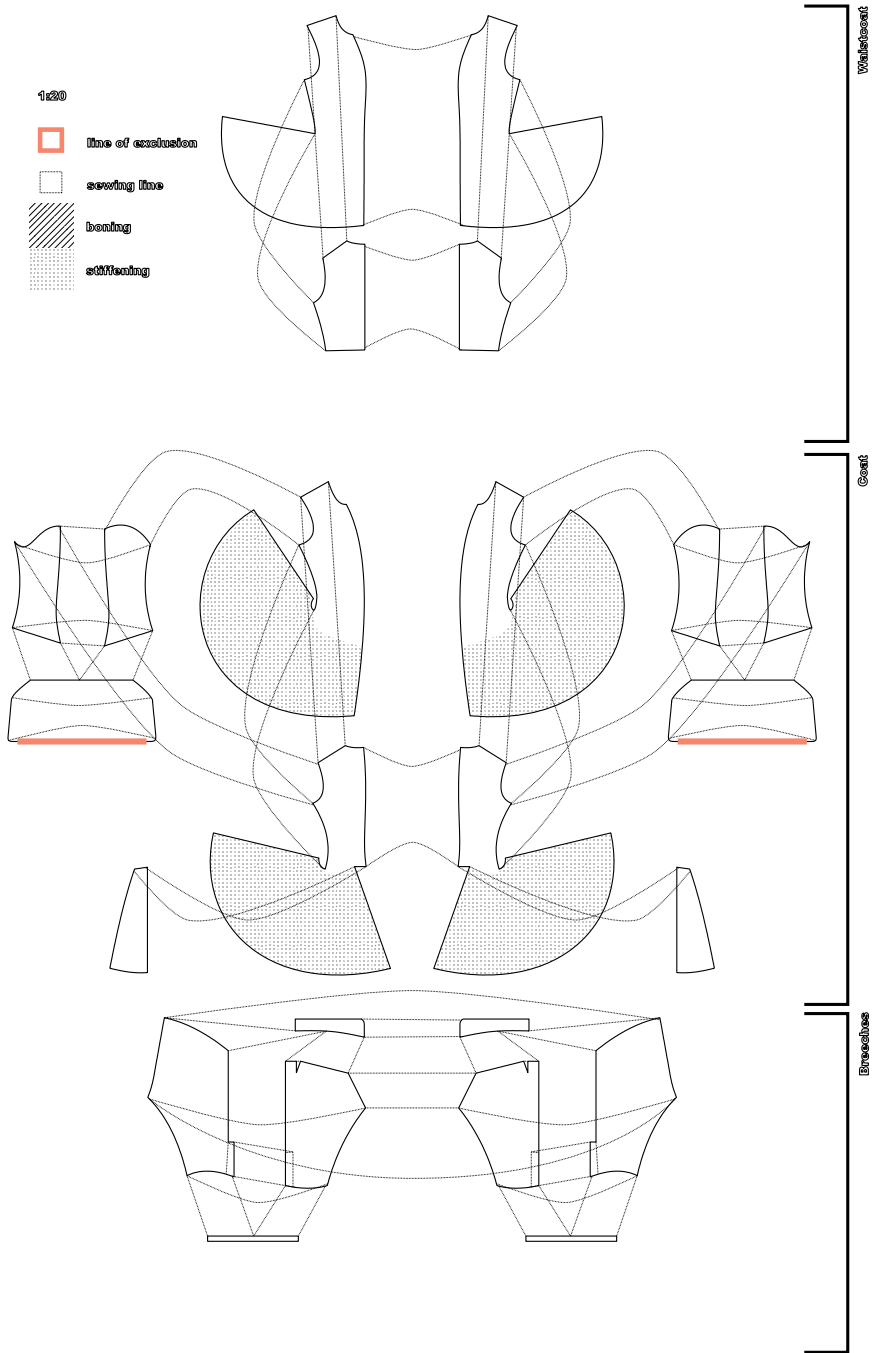


Figure 099 Pattern for 1740 outfit, N.T.S.

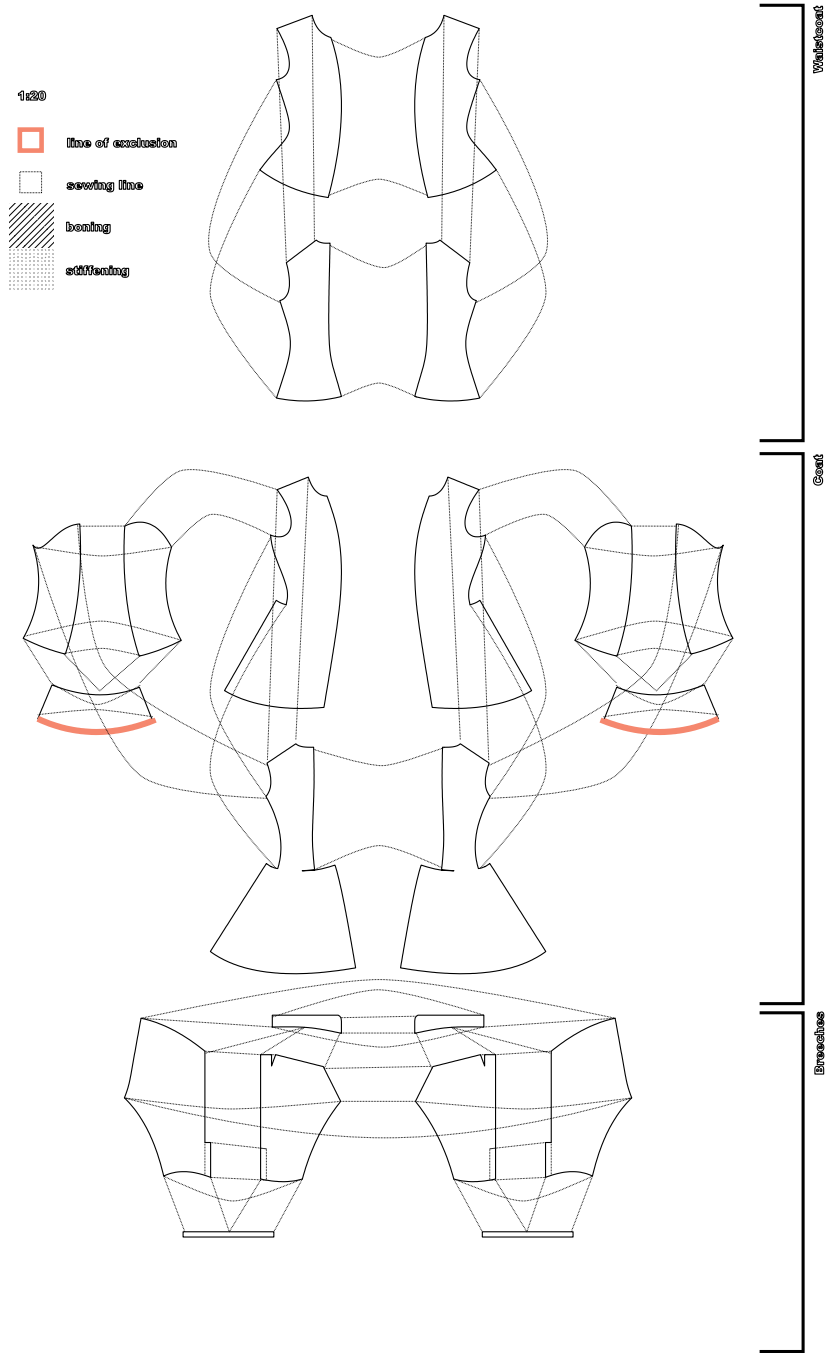


Figure 100 Pattern for 1755 outfit, N.T.S.

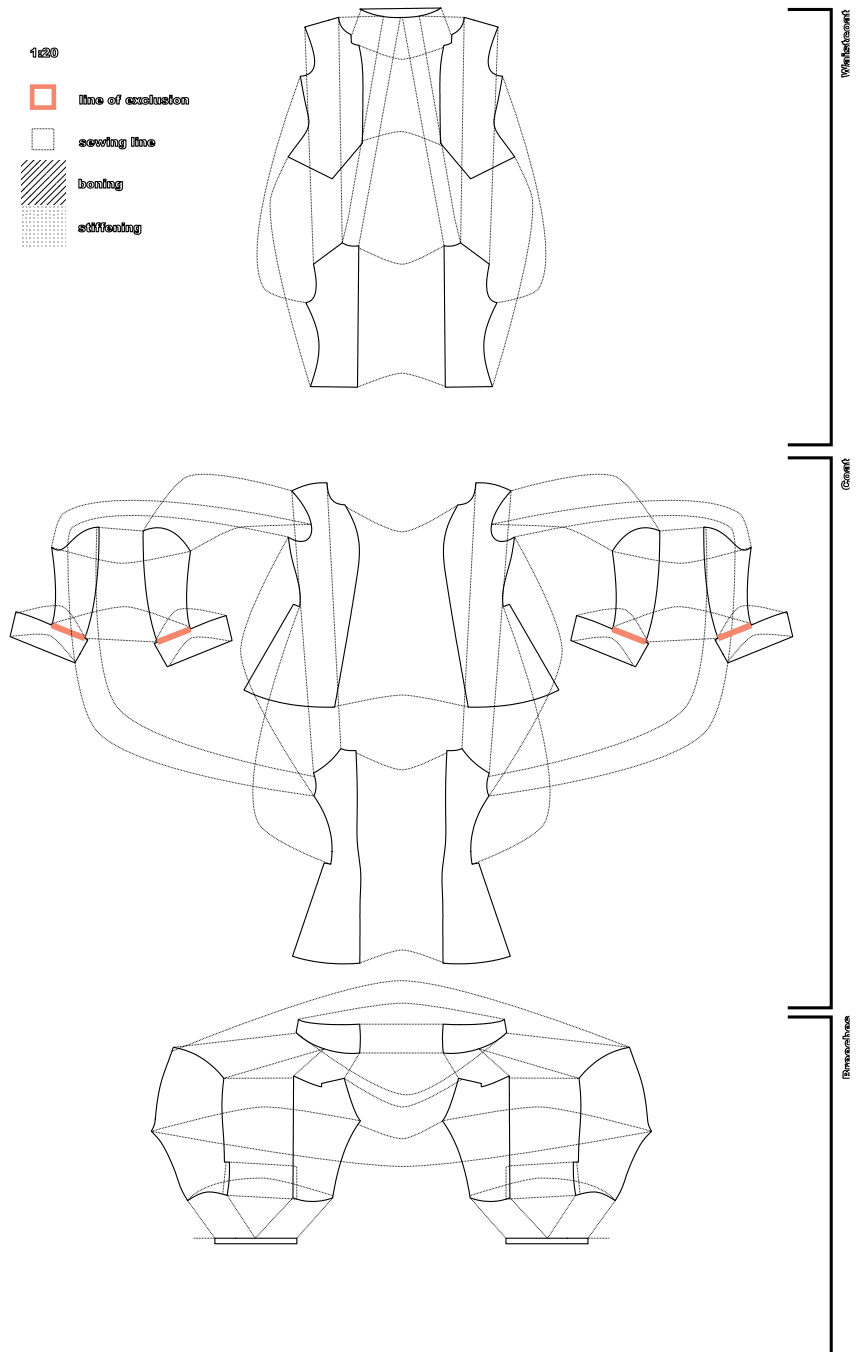


Figure 101 Pattern for 1770 outfit, N.T.S.

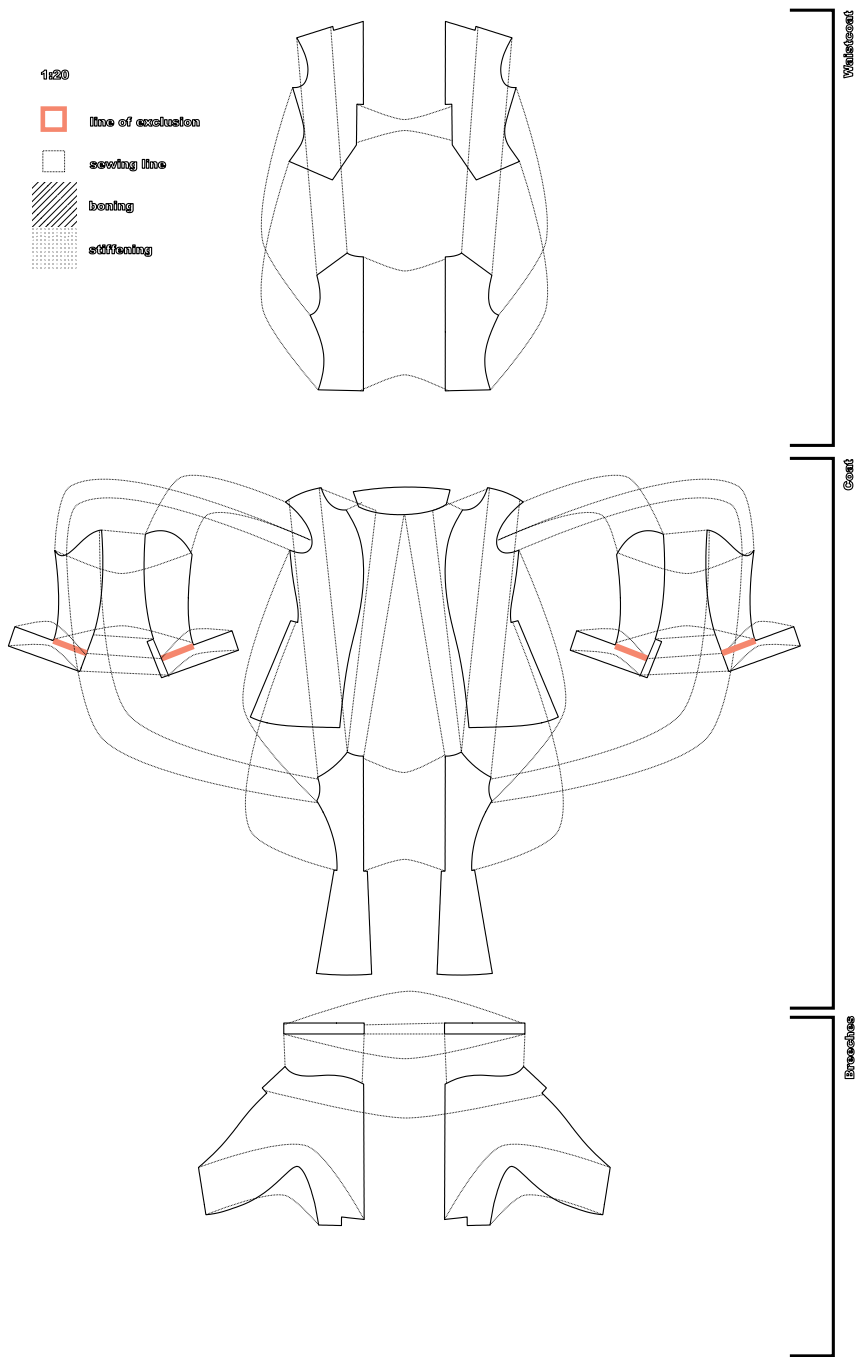


Figure 102 Pattern for 1780 outfit, N.T.S.

Figure 103 Pattern for 1560 dress,
N.T.S.

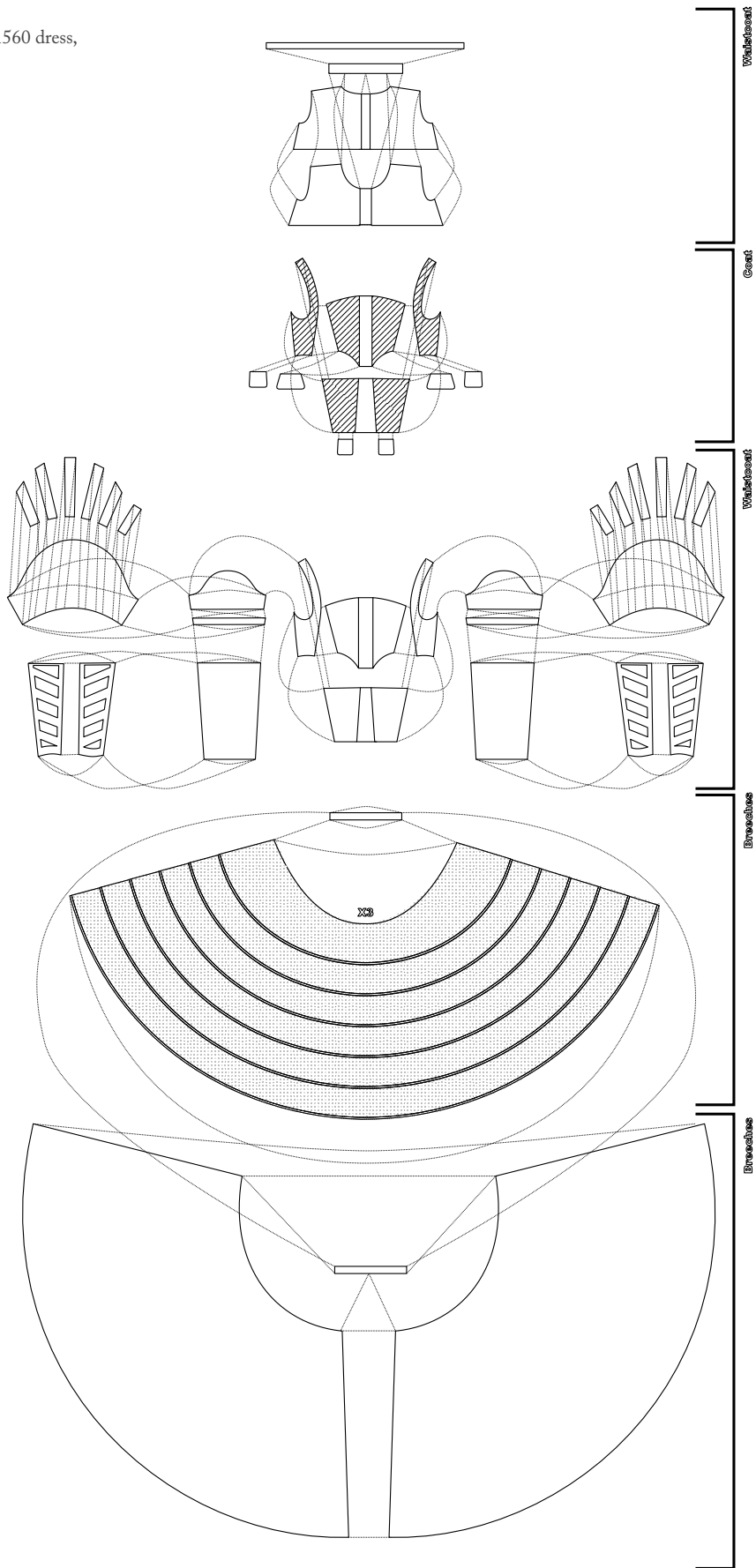


Figure 105 Pattern for 1585 dress, N.T.S.

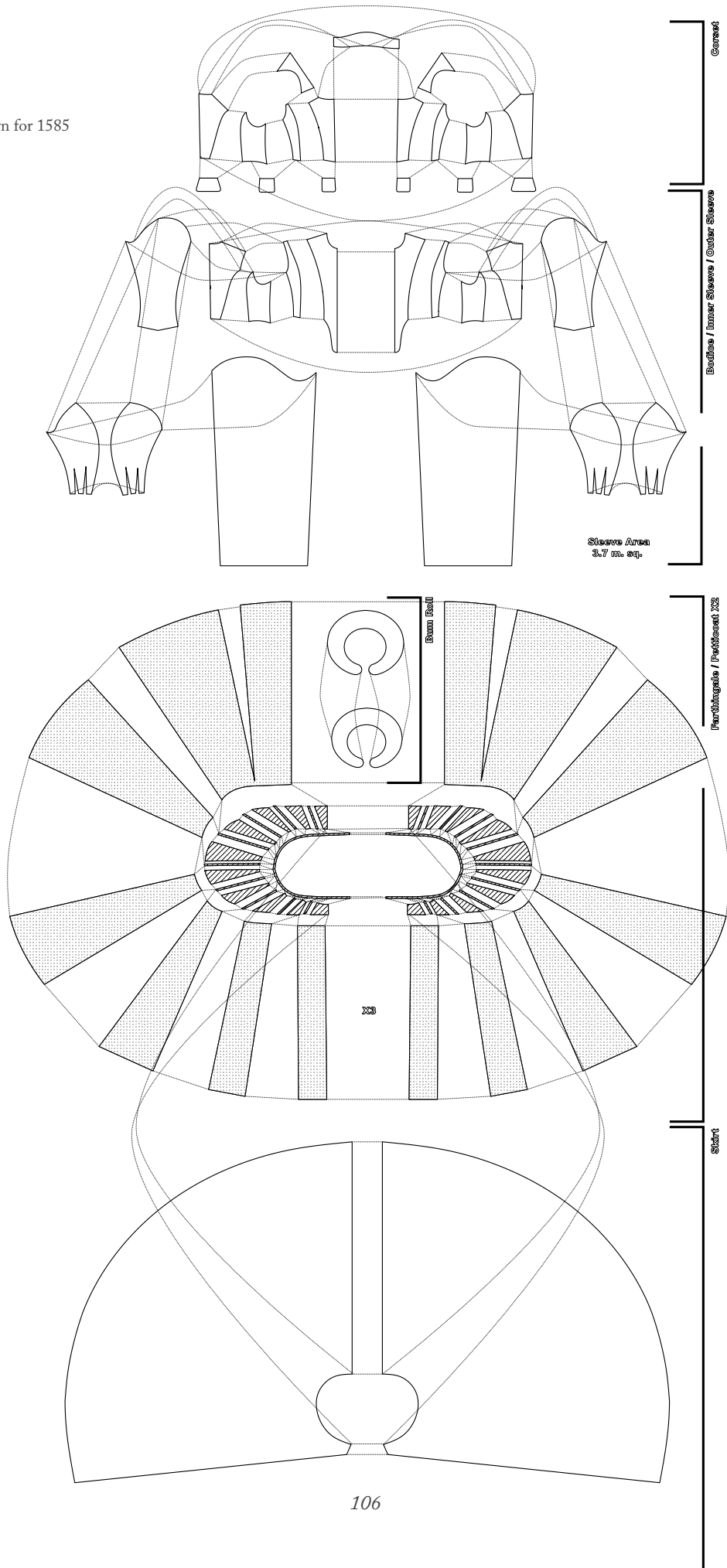
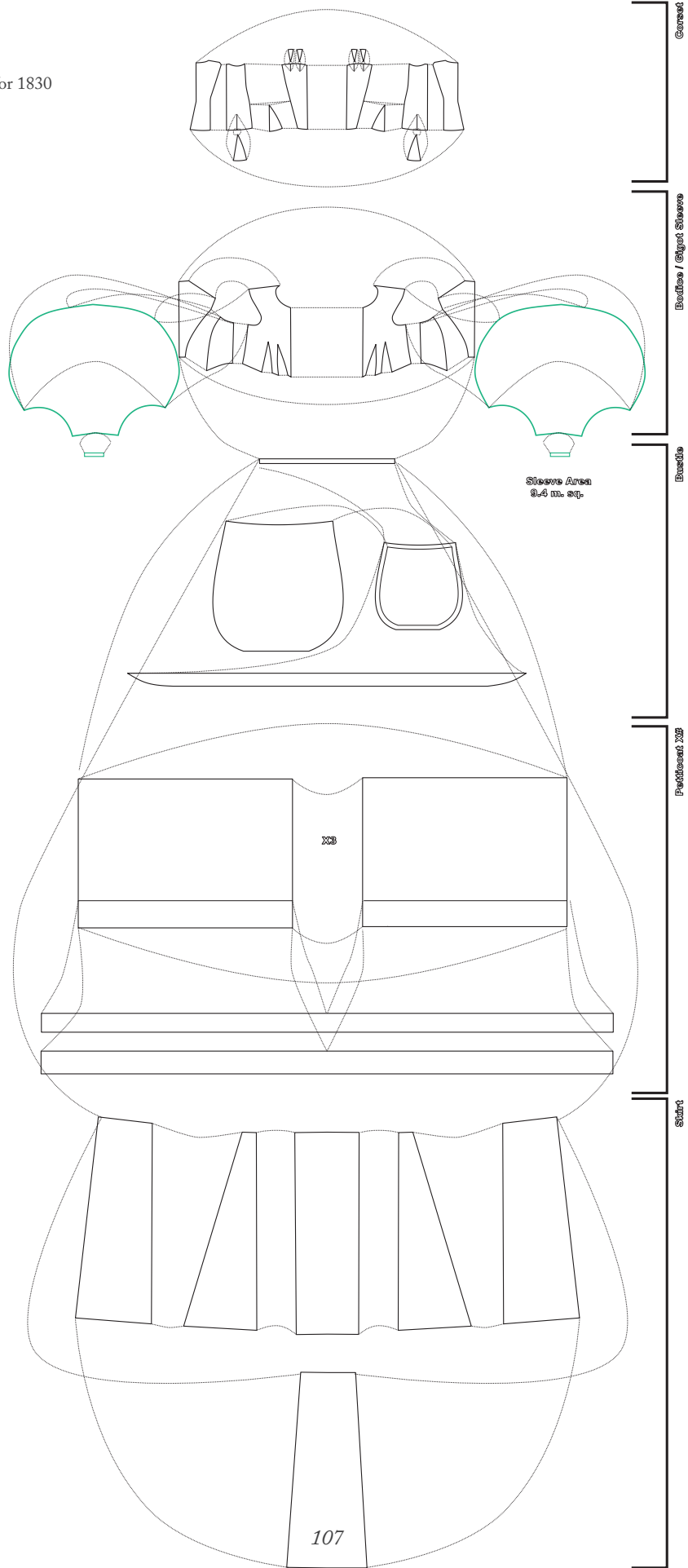


Figure 106 Pattern for 1830 dress, N.T.S.



1830







bending
 stitching

embroidery
 lining



Figure 107 Bazaar in Acre from Forbin's *Voyage en Orient*

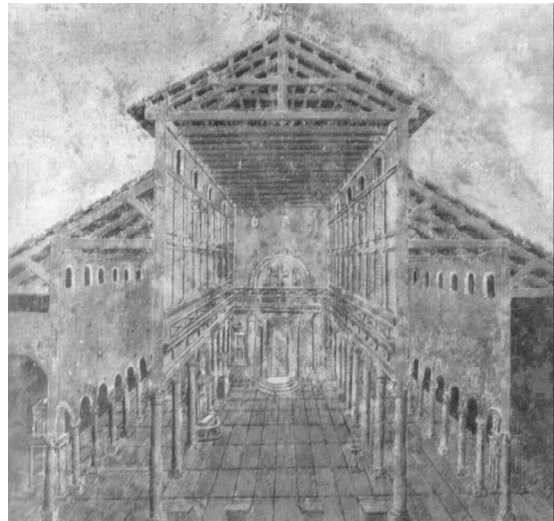
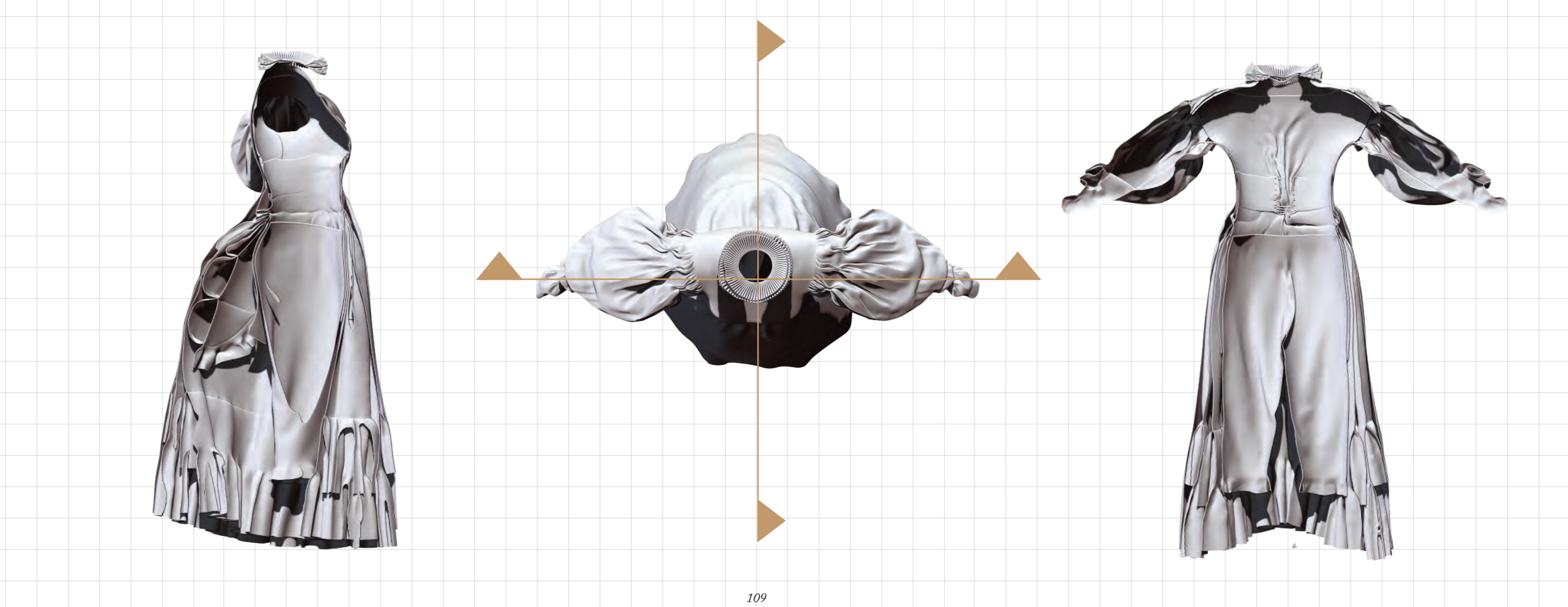
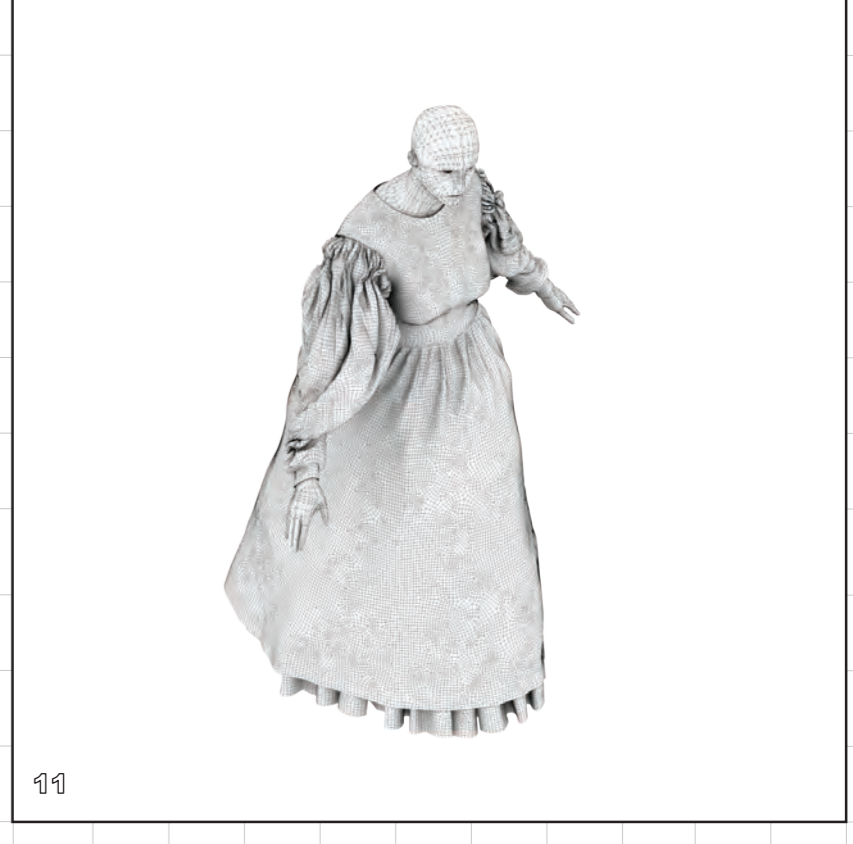
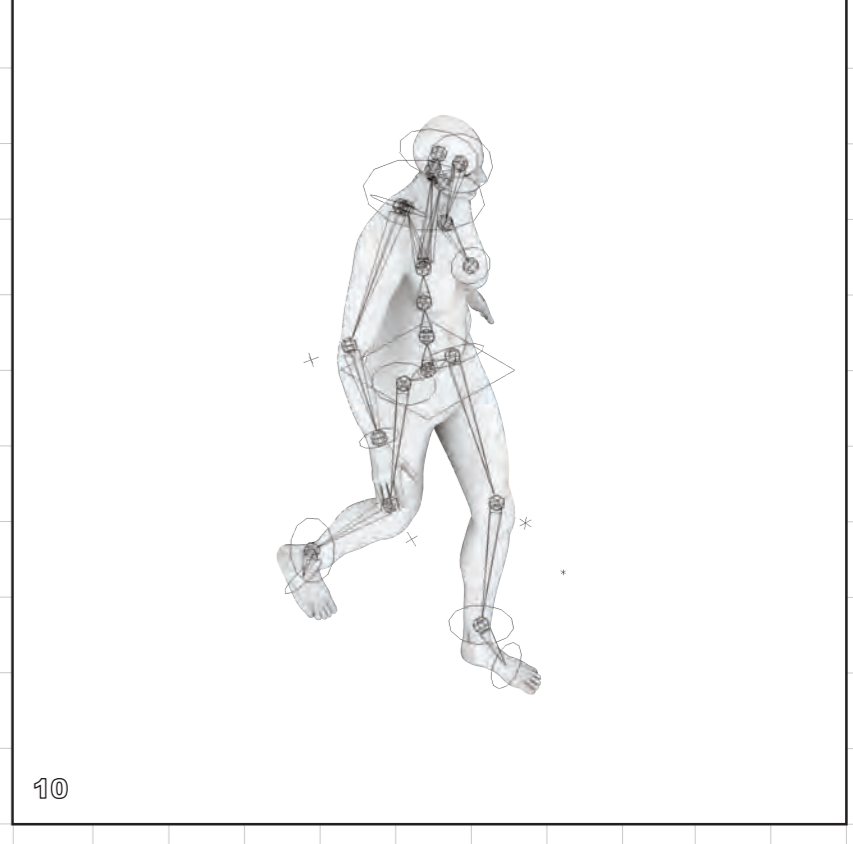
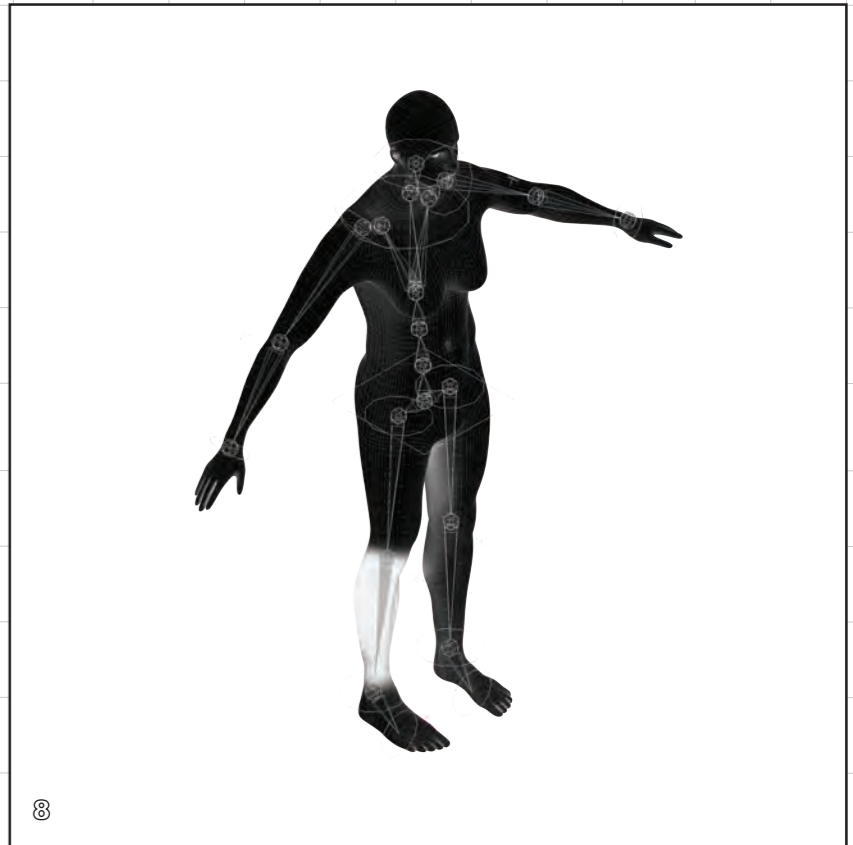
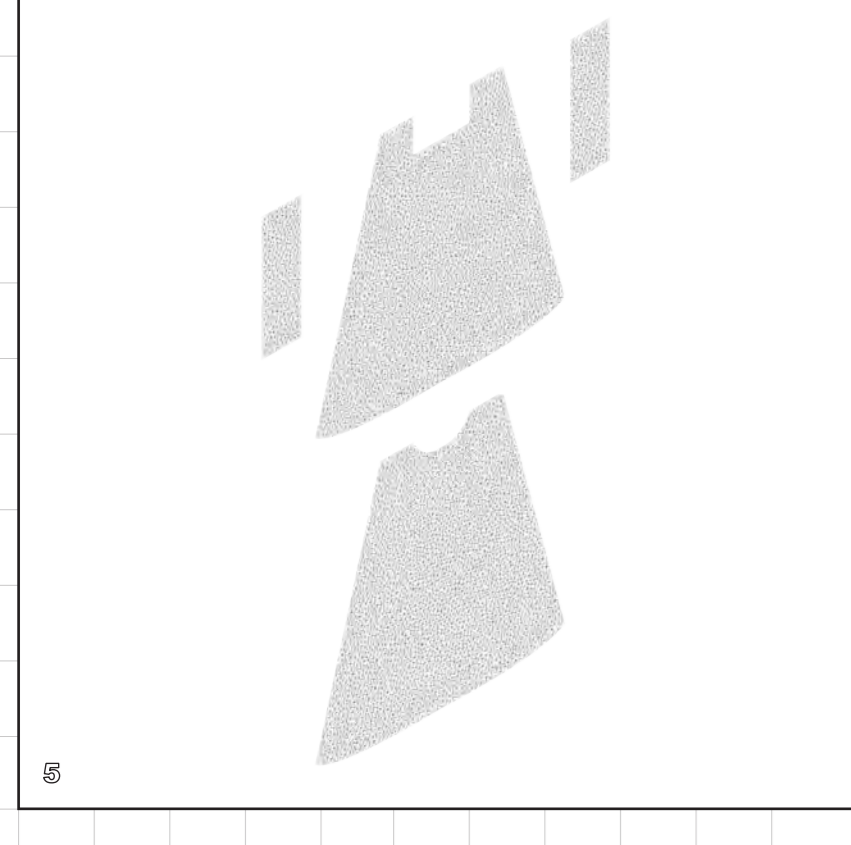
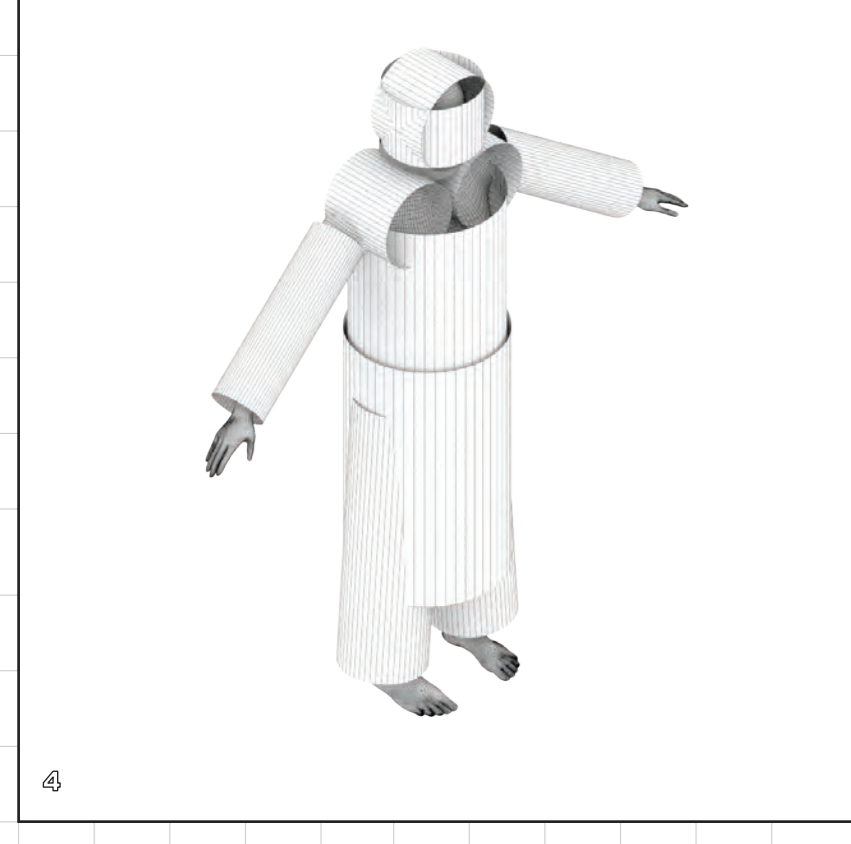
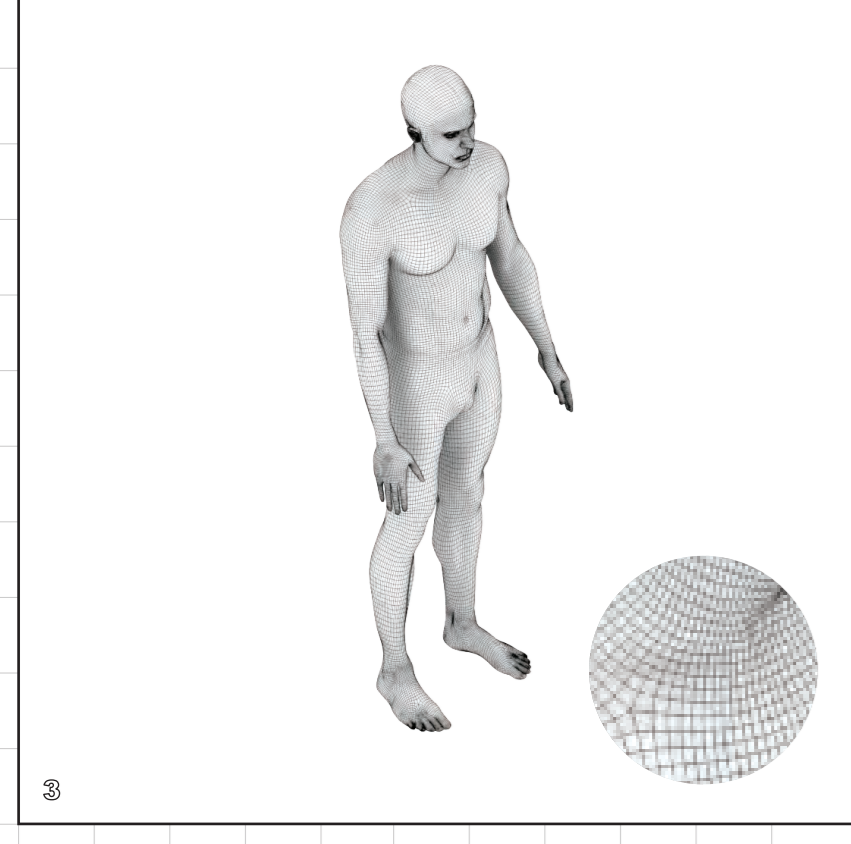
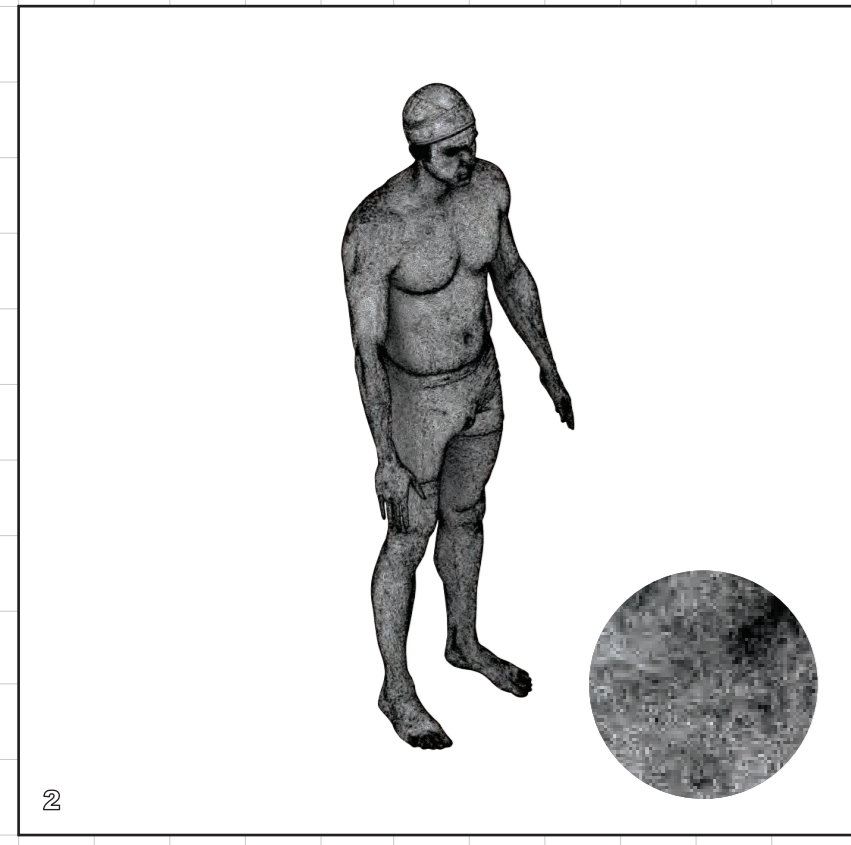


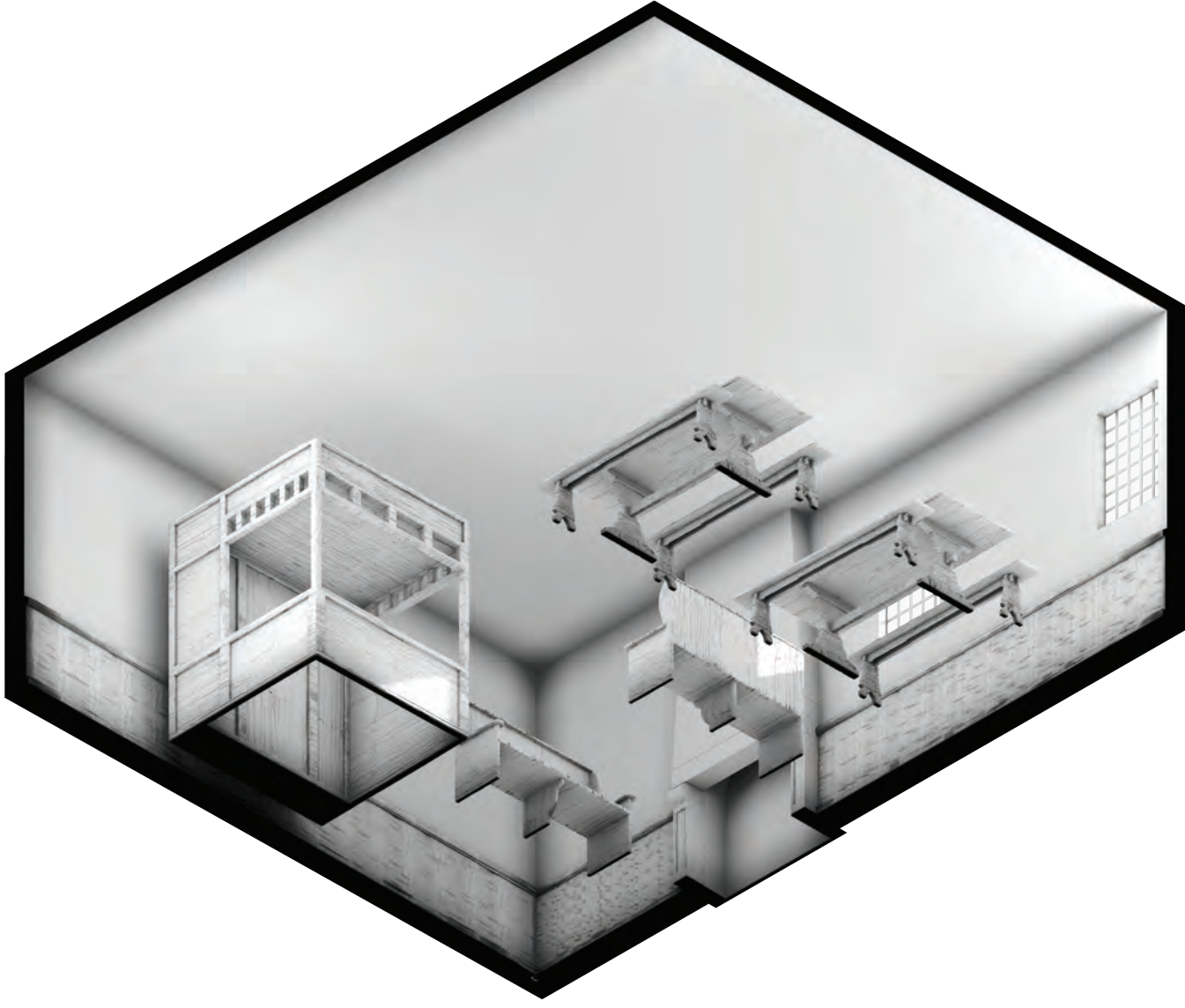
Figure 108 Old St. Peter's Basilica



- ARCADES
COFFEE HOUSE
- 1 scan
 - 2 triangulated mesh
 - 3 retopologized for quicker collision calculation/animation
 - 4 bounding volumes setup on major body parts
 - 5 pattern traced and digitized
 - 6 patterns aligned to bounding volumes and simulated using cloth solver
 - 7 Process repeated for all garment pieces
 - 8 setup bipedal rig and paint skin w
 - 9 capture motion data using motion capture suit
 - 10 retarget motion capture data onto bipedal rig
 - 11 add garment geometry and simulate with collisions
 - 12 export geometry cache from garment and import to Maya for rendering



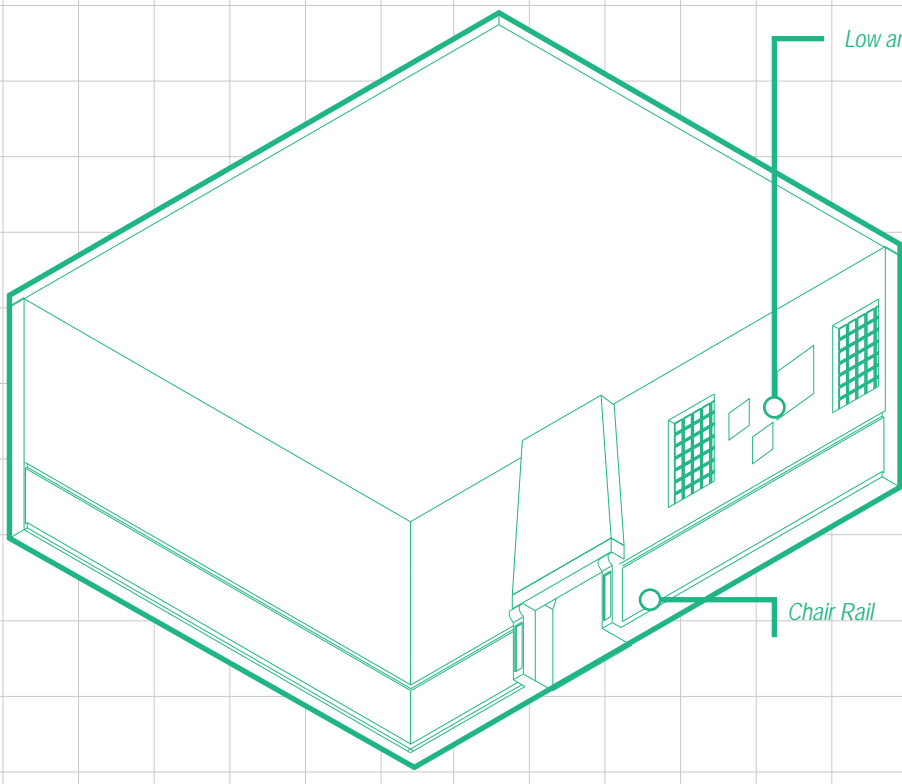
0	Abercrombie	61	The Auction	123	Black Boy	185	Buller's	246	Colchester	309	Duke of Gordon	371	Grigg's	434	Lawford's	495	Norfolk	557	Saloop
1	Abington's	62	Auction Mart	124	Blackamoor	186	Burchill's	247	Cole's	310	Eagle	372	Grigsby's	435	Leake's	496	Norse's	558	Salutation
2	Abraham's	63	Axe	125	Blackheath	187	Burlington	248	Cole's	311	Easte's	373	Grillion's	436	Lebeck's Head	497	Norton's	559	Salutations
3	Adam's	64	Backler's	126	Blacknall's	188	Burton's	249	Cole's	312	East India	374	Groom's	437	Lebeck's Head	498	Nott's	560	Santry's
4	Adam's	65	Bagneo	127	Black Queen	189	Burton's	250	Collin's	313	East India	375	Guildhall	438	Le Febre's	499	Offley's	561	Scarlett's
5	Adam's	66	Baker's	128	Bland's	190	Burton	251	Collins	314	East India	376	The Gun	439	13 Leicester Square	500	Okeley's	562	Seago's
6	Adams	67	Baker's	129	Blenheim	191	Burton Ale	252	Colonial	315	Edinburgh	377	Gurney's	440	Leopard	501	Old Baptist's Head	563	Shakespeare's
7	Adam and Eve	68	Baltic	130	Blue Coat	192	Burton's	253	Colonial	316	Edwardson's	378	Gwynn's	441	Leopard	502	Old Coffee House	564	Sheppard's
8	The Adelphi	69	Baltic	131	Blue Coat Boy	193	Cafe Colosseum	254	Colonnade	317	Elliott's	379	Hain's	442	Leopard	503	Old Post Boy	565	Ship
9	Adlamb's or Adlam's	70	Bank	132	Blue Coat Boy	194	Cafe de l'Europe	255	Colosseum	318	English Opera	380	Ham's	443	Le Tellier's	504	Old Slaughter's	566	Shipwrights Arms
10	Admiralty	71	Bantam	133	Blue Posts	195	Caffe Francois	256	Combes	319	Equestrian	381	Hampton Court	444	Le Tellier's	505	Oliver's	567	Shirringham's
11	Adulan's	72	Baptist's Head	134	Blunt's	196	Caffe Royal	257	Commercial	320	Essex	382	Hancock's	445	Lewis's	506	Olympian	568	Shrawley's
12	African	73	Baptist's Head	135	Boar and Castle	197	Caledonian	258	Commercial	321	Essex	383	Hanover	446	Lincoln's Inn	507	Ornibus	569	The Smyrna
13	African	74	Barbadoes	136	Boarn's	198	Cameron's	259	Commercial	322	Essex and Temple	384	Hanover	447	Lindsey's	508	One Tun	570	Snow's
14	Albany	75	Barbadoes and Jamaica	137	Boddy's	199	Camisards	260	Commercial	323	Essex	385	Harris's	448	Lion	509	Orange	571	Staple Inn
15	Albion	76	Barcelona	138	Boiden's	200	Cannon	261	Commercial Sale Rooms	324	Exchange	386	Hart's	449	Lloyd's	510	Oriental	572	Star
16	Albion	77	Barker's	139	Boman's	201	Cannon	262	Connor's	325	Excise	387	Harvey's	450	Lords	511	Osborne's	573	Storey's Gate
17	Albion	78	Barley Mow	140	Bond's	202	Carey's	263	Constitution	326	Excise	388	Hatchett's	451	Low's	512	Outridge's	574	Stringer's
18	Albion	79	Barnard's	141	Booth's	203	Carey's	264	Cooper's	327	Exeter	389	Heathcock	452	Lowther's	513	Paris	575	The Sun
19	Albion	80	Barnard's Inn	142	Botterill's	204	Carolina	265	Cope's	328	Exeter	390	Heming's	453	Loyal	514	Pavynmer's	576	The Sun
20	Albion	81	Barnard's	143	Bourn's	205	Carolina and Honduras	266	Corbets	329	Feathers	391	Hick's Hall	454	Ludgate	515	Peele's	577	Surrey
21	Alder's	82	Barnes'	144	Bowman's	206	Carolina and Pennsylvania	267	Corn Exchange	330	Fenton's	392	Hilliard's	455	Lunt's	516	Percy of The Percy	578	Sussex
22	Alder's	83	Bartholomew	145	Bow Street	207	Carpenter's	268	Couzen's	331	Finsbury	393	Hindoostance	456	Lyon's	517	Perron's Royal Standard	579	Suttling House
23	Alder's	84	Bartholomew Lane	146	Placemark	208	Carr's	269	Craven	332	Fisher's	394	Holborn	457	M'Niven's	518	Pickett's	580	Swan's
24	Aldersgate	85	Batler's	147	Boydson's	209	Cathedral	270	Craven	333	Fitzroy	395	Holland's	458	Magdalen	519	The Plough	581	Symond's Inn
25	Aldermanbury	86	Batsons'	148	Braxton's	210	Causey's	271	Cross's	334	Fitzroy	396	Holwill's	459	Manchester	520	Ponco's	582	Tanner's
26	Aldgate	87	Baxter's	149	Brett's Furnival's Inn	211	Cavendish Square	272	Cross Keys	335	Fladong's	397	Holyland's	460	Mann's	521	Pontack's	583	Thames
27	Aldgate Ward	88	Baxter's	150	Brett's	212	Cecil Street	273	Cross Keys Bagno	336	Fleet Prison	398	Hoods	461	Mansfield's	522	Portland	584	Theatre
28	Westminster Hall	89	The Bay Tree	151	Bridge's	213	Chadwell's	274	Crown	337	Fountain	399	Hope	462	Manwaring's	523	Prince of Orange	585	The Coffee House
29	Allan's	90	Bayly's	152	Bright's	214	Chancery	275	Crown	338	Fountain	400	Hope's	463	Market	524	Prince of Wales's	586	Thompson's
30	Allen's	91	Bazaar	153	Brightman's	215	Chancery Lane	276	Crown	339	Four Swans	401	Howard's	464	The Marlborough	525	Probbat's	587	Tom's
31	Almack's	92	The Bedford	154	Bristol	216	Chapman's	277	Crown	340	Freemasons	402	Howard's	465	Marlborough Head	526	Proctor's	588	Tom's
32	The American	93	Bedford	155	Bristol	217	Chapter	278	Crown	341	Freemasons	403	Howe's	466	Martin's Street	527	Pulford's	589	Turf
33	American and Continental	94	Bedford	156	Britannia	218	Chapter	279	Crown	342	Freemasons'	404	Hoxton Square	467	Queen's Head	528	Maryland and Virginia	590	Turk's Head
34	American and New England	95	Bedford	157	Britannia	219	Charing Cross	280	Crown	343	Fryar	405	Hugh's	468	Meakin's	529	Queenhithe	591	Turk's Head
35	Amsterdam	96	Bedford	158	Britannia	220	Chedron's Huntley	281	Crown	344	Fulham's	406	Hummus	469	Metheringham's	530	Rainbow	592	Turk's Head
36	Amsterdam	97	The Bedford	159	Britannia	221	Child's	282	Crown	345	Garrick's Head	407	Humphreys	470	Metropolitan	531	Rainbow	593	Turk's Head
37	Anacreon	98	Bedford	160	British	222	Child's	283	Crown and Rolls	346	Gaunt's	408	Hungerford	471	The Middlesex	532	Rainbow and 3 Pidgeons	594	Turk's Head
38	Anderson's	99	Bedford Arms	161	British	223	Chillingden's	284	Dale's	347	George's	409	Huntley	472	Mivart's	533	Rand's	595	Turk and Slave
39	Anderson's	100	Bedford Divan	162	British	224	Church	285	Danbrook's	348	George's and Six Clerks	410	Ibbotson's	473	Moore's	534	Raybold's	596	Union
40	Andlaby's	101	Bedford Head	163	British	225	City	286	Daniel's	349	Gerald's	411	Jackson's	474	Moorgate	535	Read's	597	Union
41	Andrew's	102	Bedford Head	164	Brome's	226	City of London	287	Daniel's	350	Gillard's	412	Jacob's	475	Morecraft's	536	Read's	598	Valentine and Orson
42	Andrews	103	Bedford Head	165	Brooks'	227	City of London	288	Daniel's Welch	351	Ginn's	413	Joe	476	Morris's	537	Read's	599	Walkers'
43	Angel	104	Bedford Square	166	Brooks'	228	City of London Tavern	289	Danish	352	Giraudier's	414	John's	477	Mount	538	Regency	600	Walton's
44	Angel	105	The Bell	167	Brooke's	229	Clarendon	290	Daphin's	353	Gliddon's	415	John's	478	Mourning Bush	539	Regent's	601	Wardour Street
45	Angel	106	The Bell Inn	168	Brown's	230	Clark's	291	Davis	354	Globe	416	Johnson's	479	Mulberry Gardens	540	Rider's	602	Waterloo
46	Angel and Crown	107	Bell Tavern	169	Brown's	231	Clark's	292	Davis's	355	Globe and Royal Hummums	417	Johnson's	480	Munday's	541	Ries's	603	Westminster
47	The Antogoe	108	Belle Sauvage	170	Brown's	232	Clark's	293	Dayphin's	356	Globe	418	Jonathan's	481	Mynhill's	542	Ripley's	604	Wheatstheaf
48	The Antelope	109	Besta's	171	Brown's	233	Clear's	294	Deacon's	357	Globe	419	Jones's	482	Nando's	543	Robinson's	605	White Bear
49	Antigallican	110	Bett's	172	Brown's	234	Cobham's	295	Dean Street	358	The Globe	420	Jordan's	483	Nassau	544	Rosemary Branch	606	White Hart
50	Antigallican	111	Betty's	173	Brown's	235	Cock and Pye	296	Denis's	359	Glos	421	Keeble's	484	Nerot's	545	The Rotunda	607	White Hart
51	Antigallican	112	Betty's	174	Brown Bear	236	Cockerton's	297	Devereux	360	Gloucester	422	Kigg's	485	Newman's	546	Royal	608	White Horse Cellar
52	The Antwerp Tavern	113	Bickerstaff's	175	Brownjohn's	237	Coffee House	298	Devonshire	361	Gloucester	423	King's Arms and Union	486	Newton's	547	Royal Hotel	609	White Lyon
53	Appleby's	114	Bicknel's	176	Brunet's	238	Coffee House	299	Dewell's	362	Gloucester	424	King's Bagno	487	New Bedford	548	Rummer	610	Whyman's
54	Arcade	115	Bigg's	177	Brunton's	239	Coffee House	300	Dick's	363	Gloucester	425	King's Lead	488	New England and North & South American	549	Rummer	611	Will's
55	Army and Navy	116	Biggar's	178	Buck's	240	Coffee House	301	Dick's	364	Godlington's	426	King's Head	489	New Essex	550	St Alban's	612	Williams
56	Arthur's	117	Bishop's	179	Buckridge's	241	Coffee House Alley	302	Dick's	365	Golden Lion	427	Kingson	490	New Exchange	551	St James's	613	Wright's
57	Ashley's London	118	Bishopsgate	180	Buckland's	242	Coffee House on the Pavement	303	Doctor's Commons	366	Goldsmiths	428	Kirkham's	491	New Exchequer	552	St James's	614	York
58	Askew's	119	Black Bear	181	Buenos Ayres	243	Coffee House Court	304	Dog	367	Grasshopper	429	Knights	492	New London	553	St James's	615	York
59	Atkinson's	120	Ye Blackmoors Head	182	Bull	244	Coffee House	305	Dolly's	368	Green's	430	Lamb's	493	New Slaughter's	554	St John's Street	616	York
60	Atkinson's	121	Blackborns	183	Bull's Head	245	Coffee Mart	306	Dolphin	369	Greyhound	431	Landon's	494	New Tavistock	555	St John's Gate		
		122	The Black Boy	184	Bull and Mouth		Coffee Pot	307	Drury's	432	Langbourn	433	Langbourn Ward				Salisbury		



1700 INTERIOR OF A COFFEE HOUSE

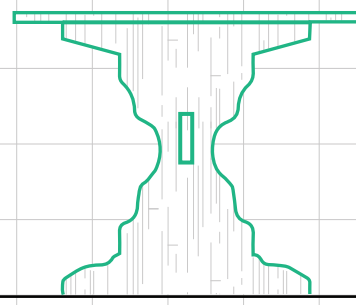
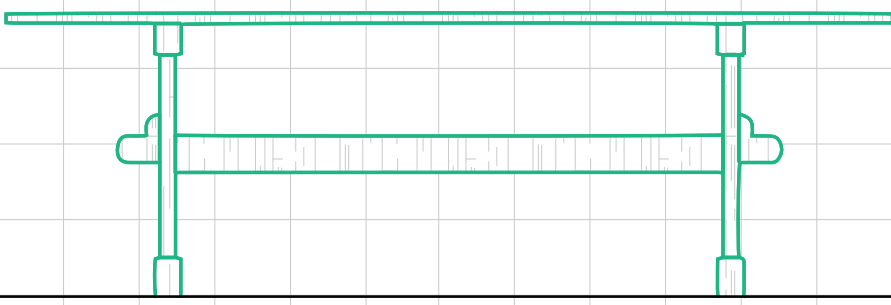


Oak

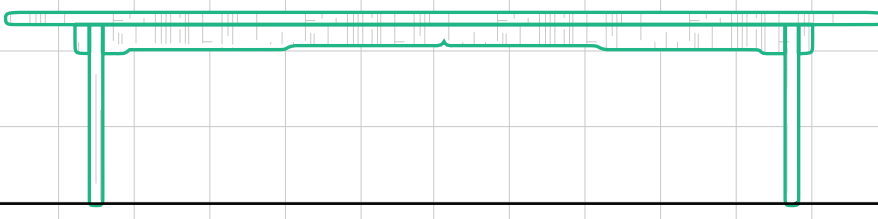


Low and High Brow art, Coffee House Rights

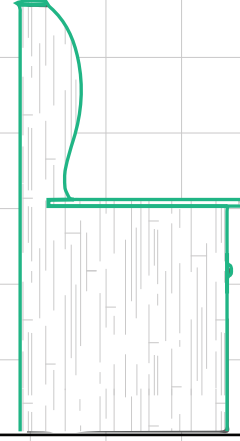
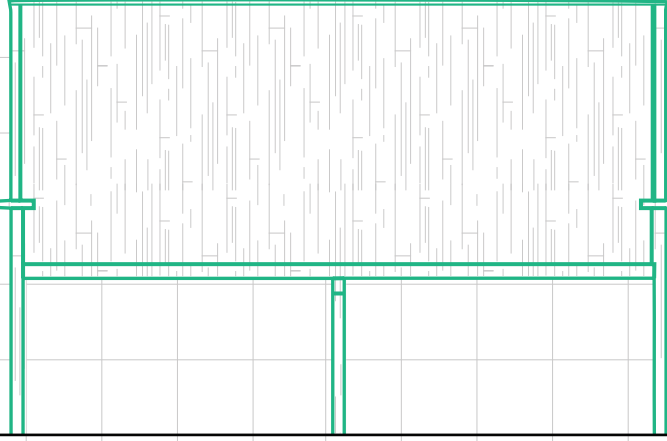
Chair Rail



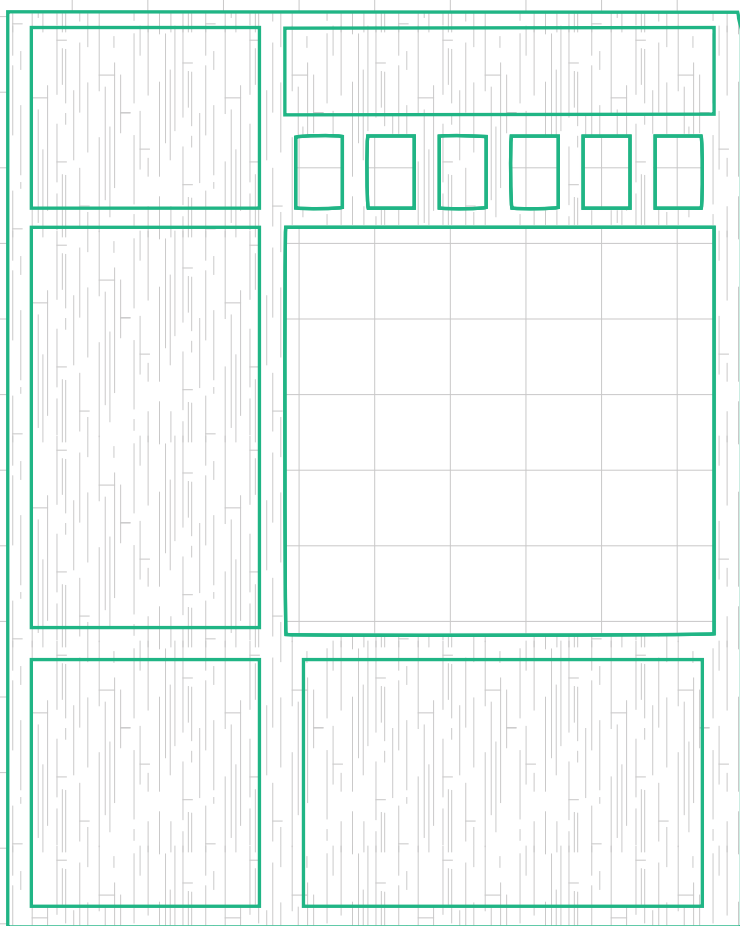
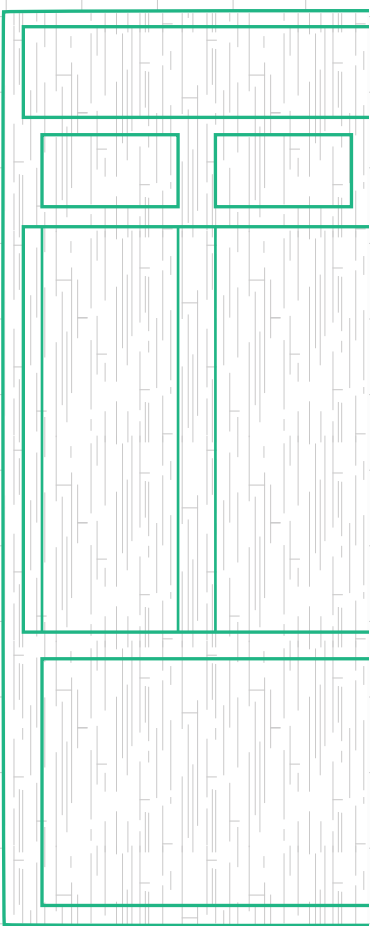
Oak Trestle Table
1:20



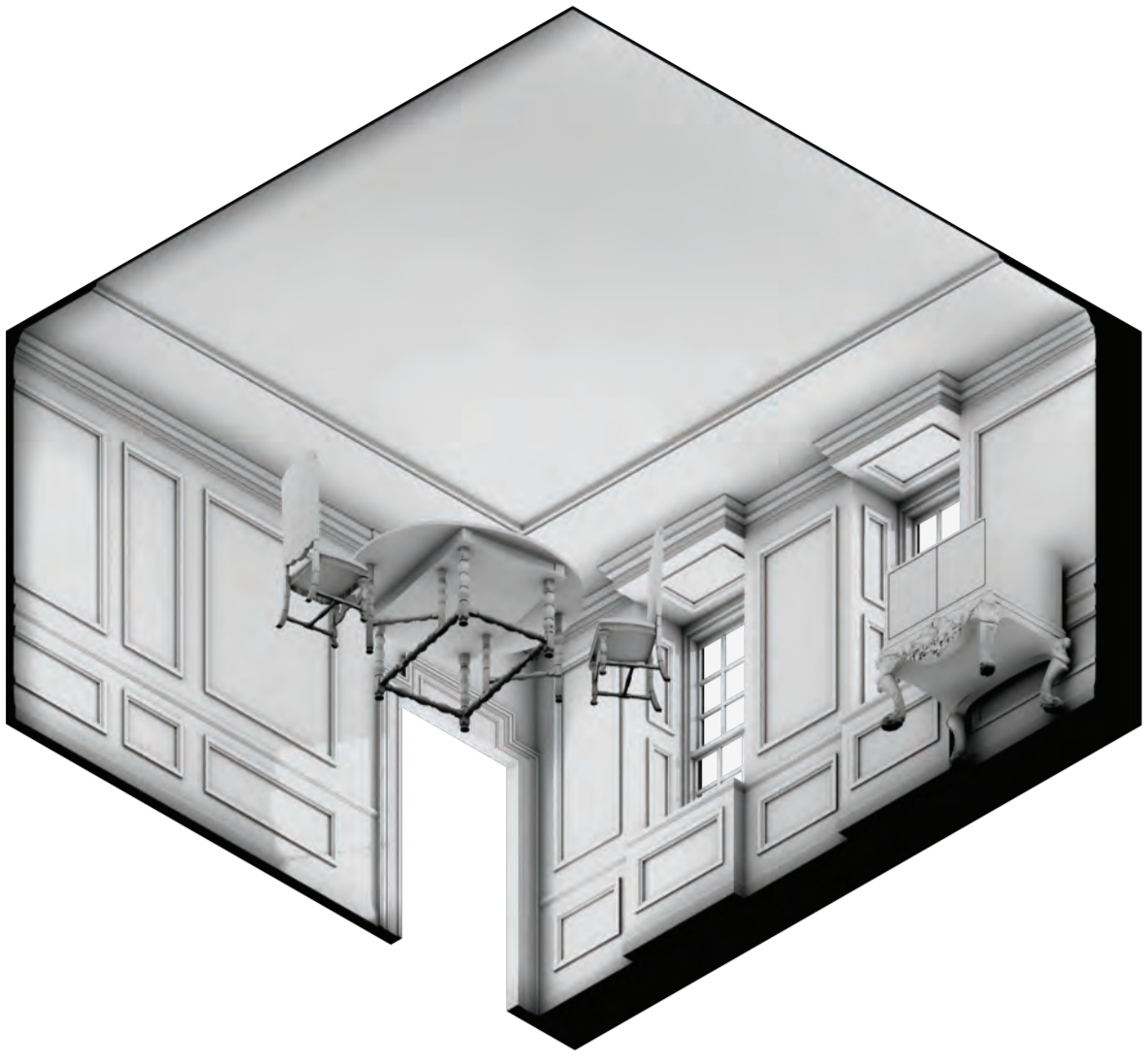
Oak Bench
1:20



Oak Settle
1:20



Oak Coffee Stall
1:20



1690 SMALL DINING/LIVING ROOM



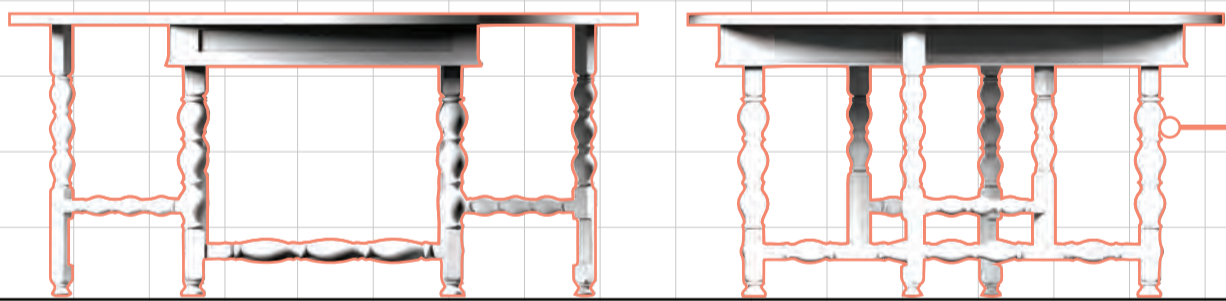
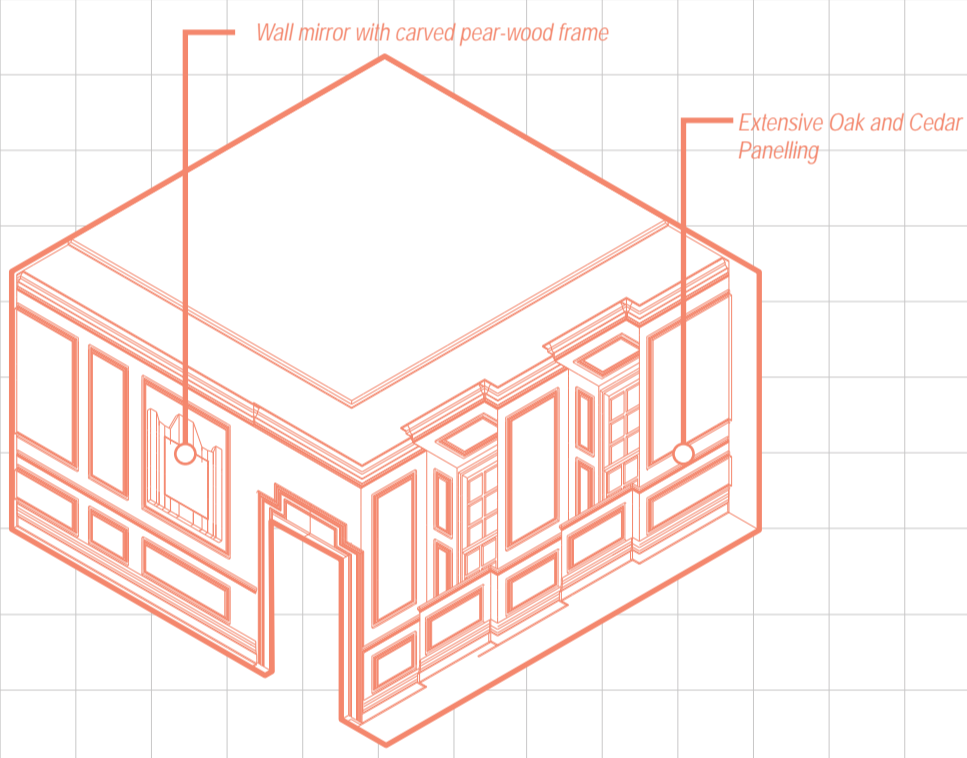
Walnut



Yew

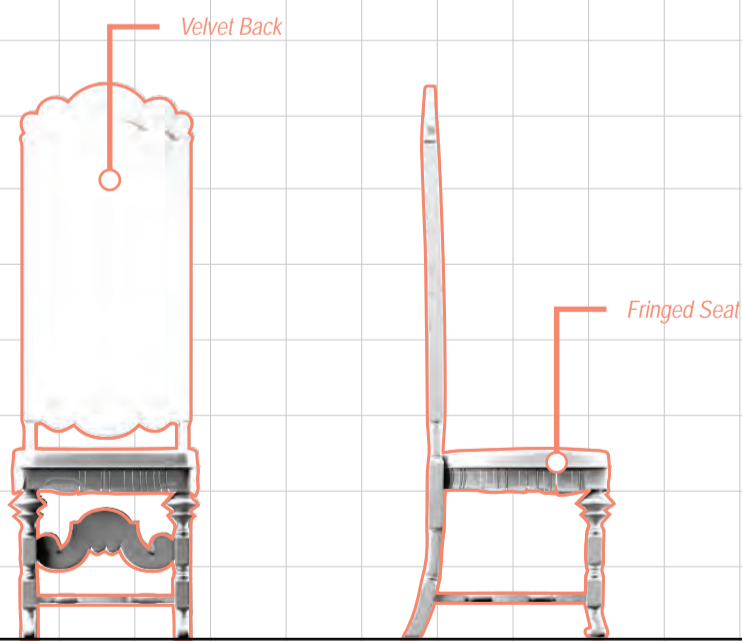


Oak



Turned legs

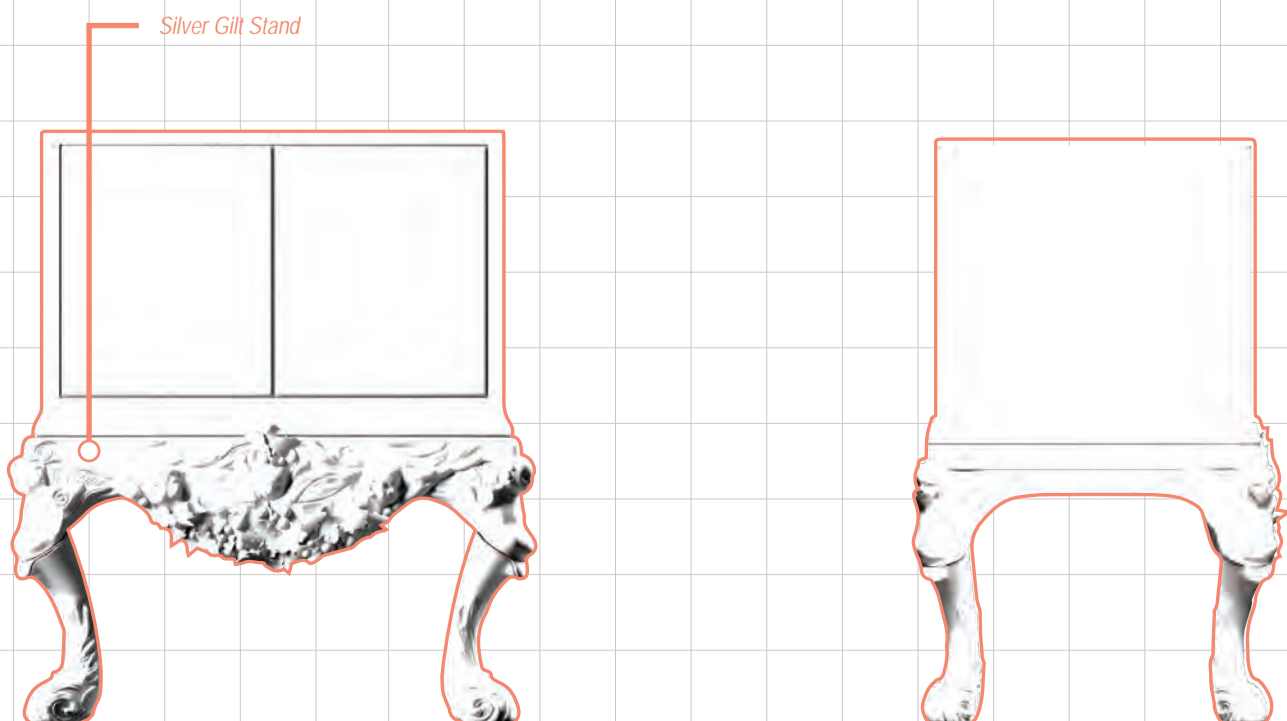
Oak Gate Leg Table
1:20



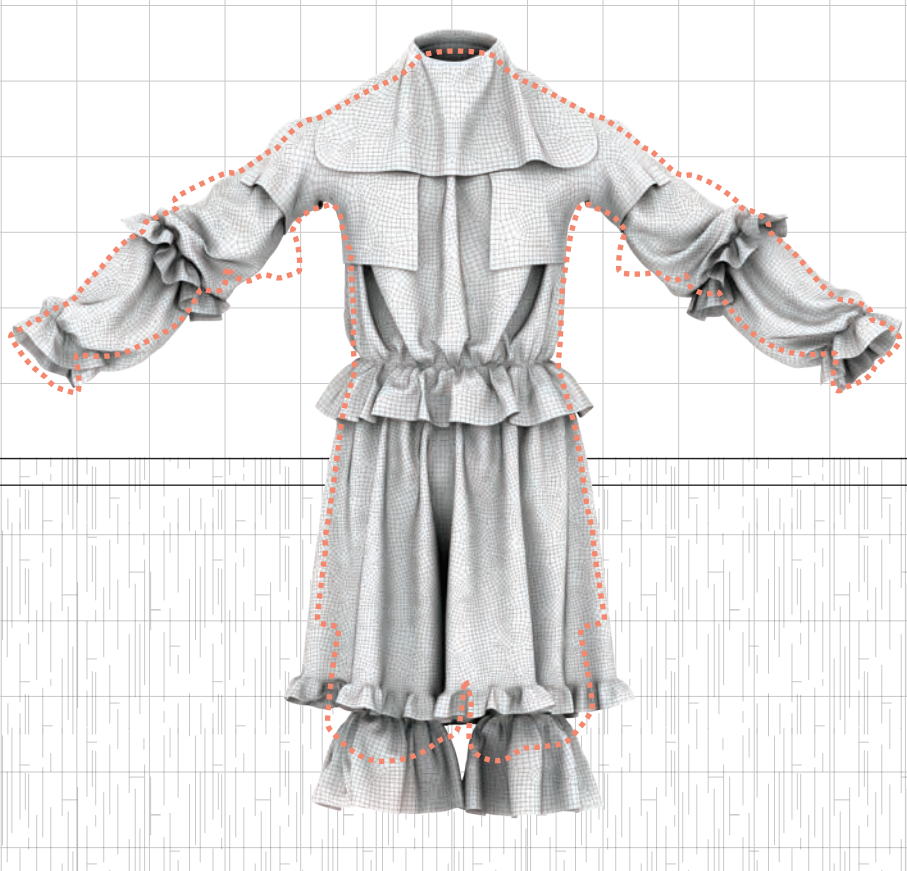
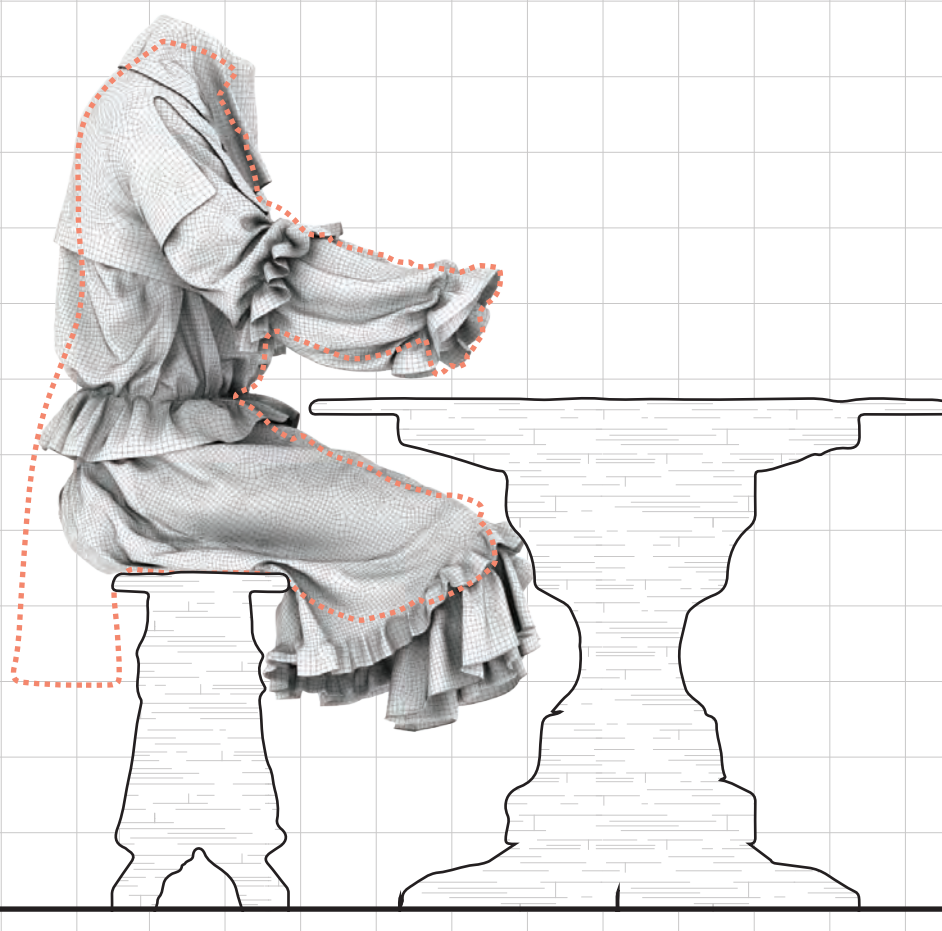
Velvet Back

Fringed Seat

Walnut Dining Chair
1:20

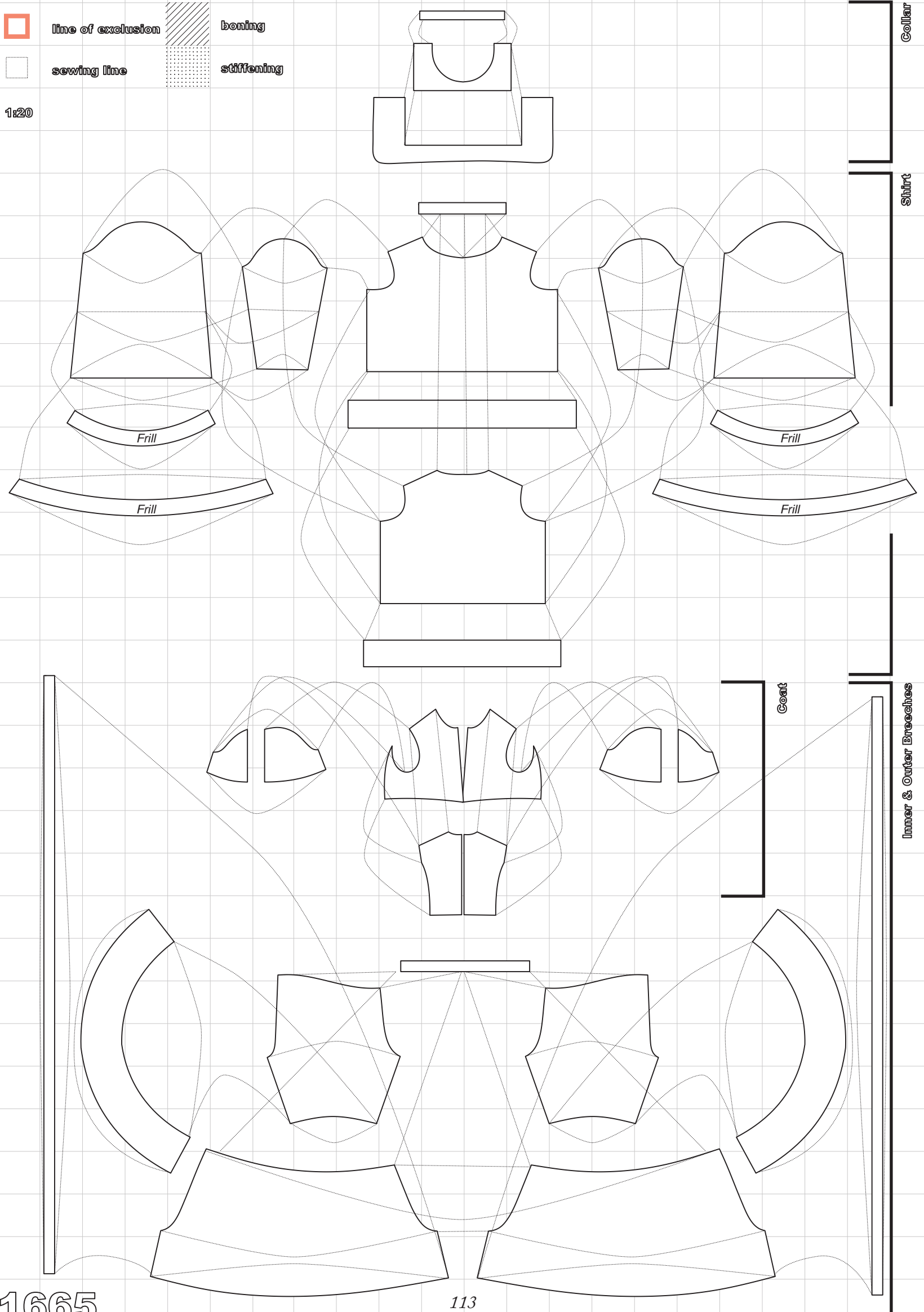


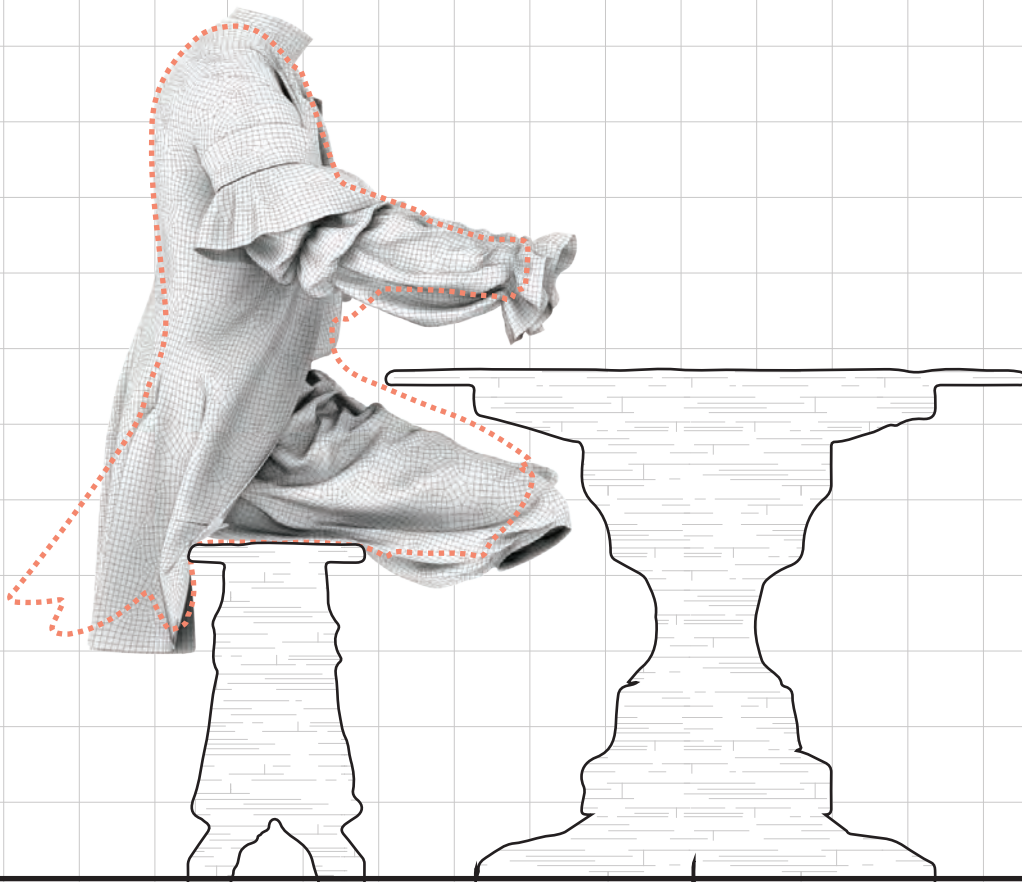
Silver Gilt Stand



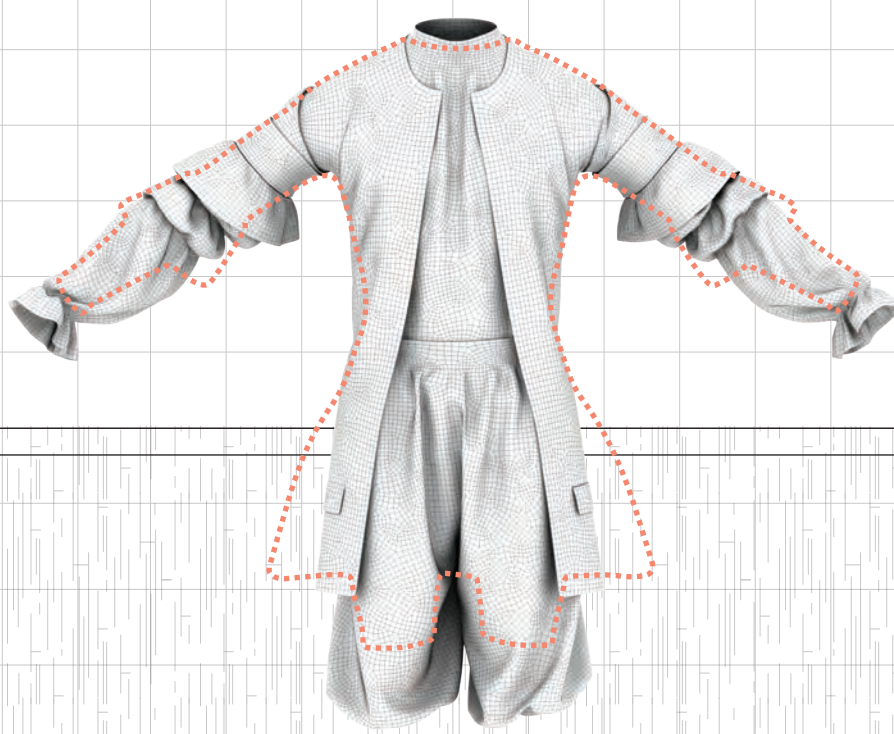
- line of exclusion
- sewing line
- boning
- stiffening

1:20

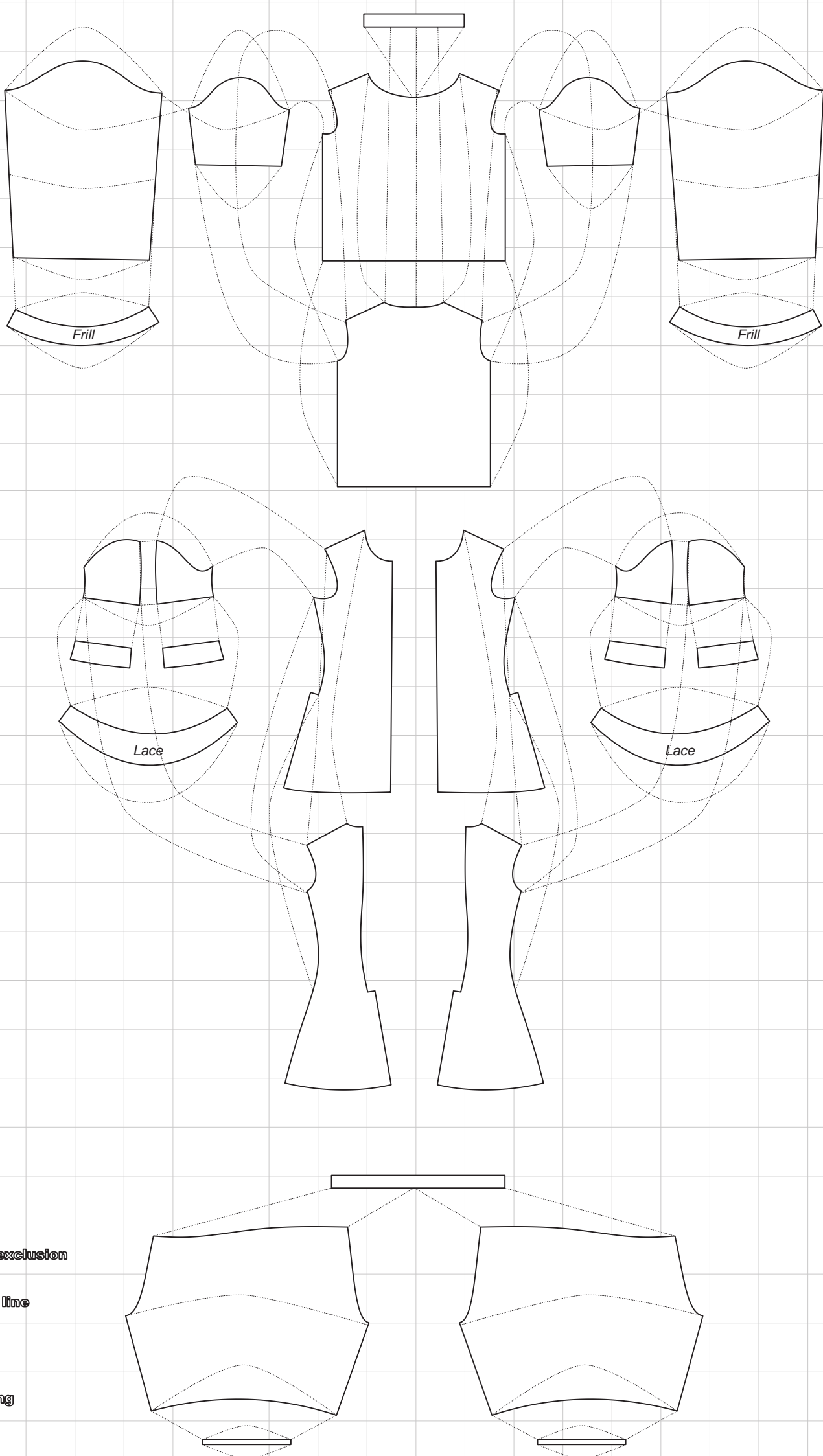




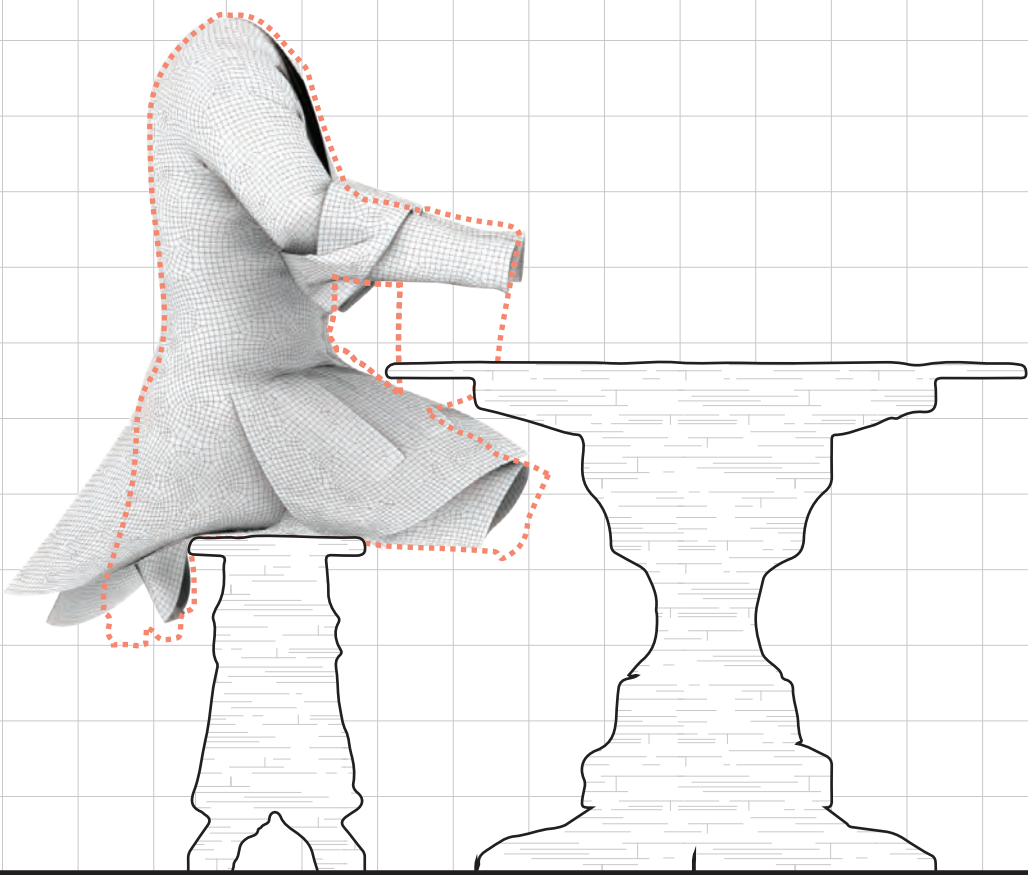
silhouette of successive fashion



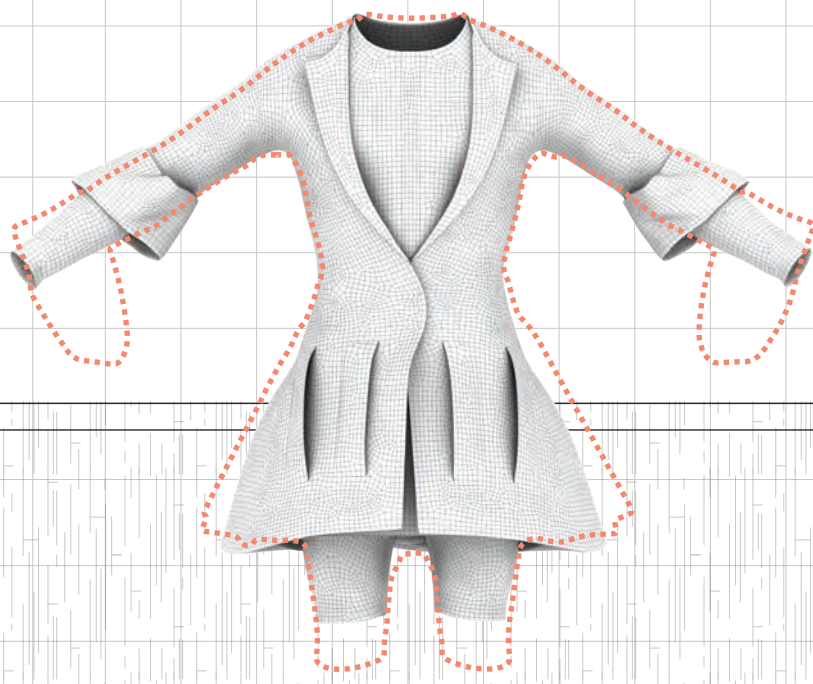
silhouette of successive fashion



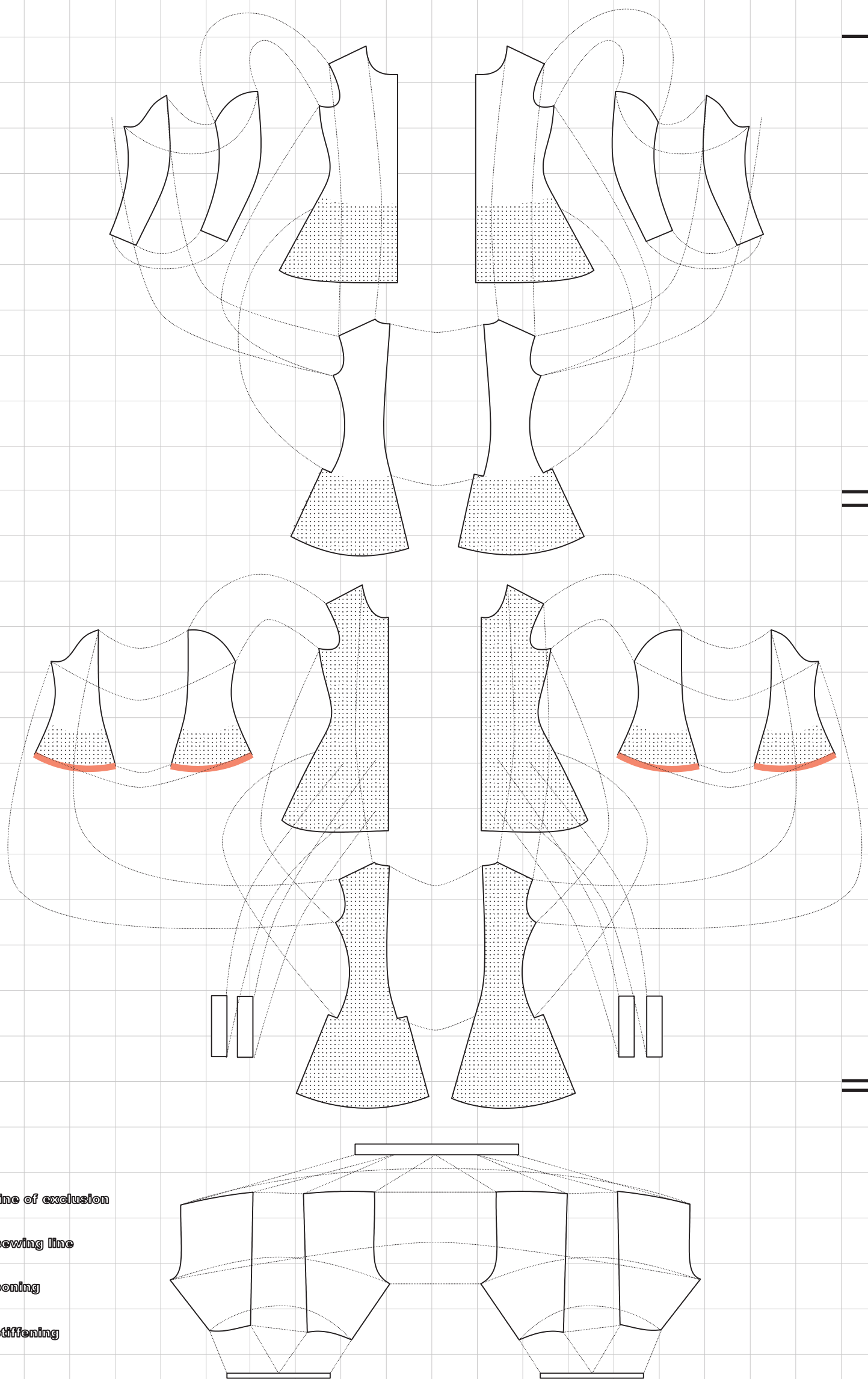
- 1:20
- line of exclusion
- sewing line
- boning
- stiffening

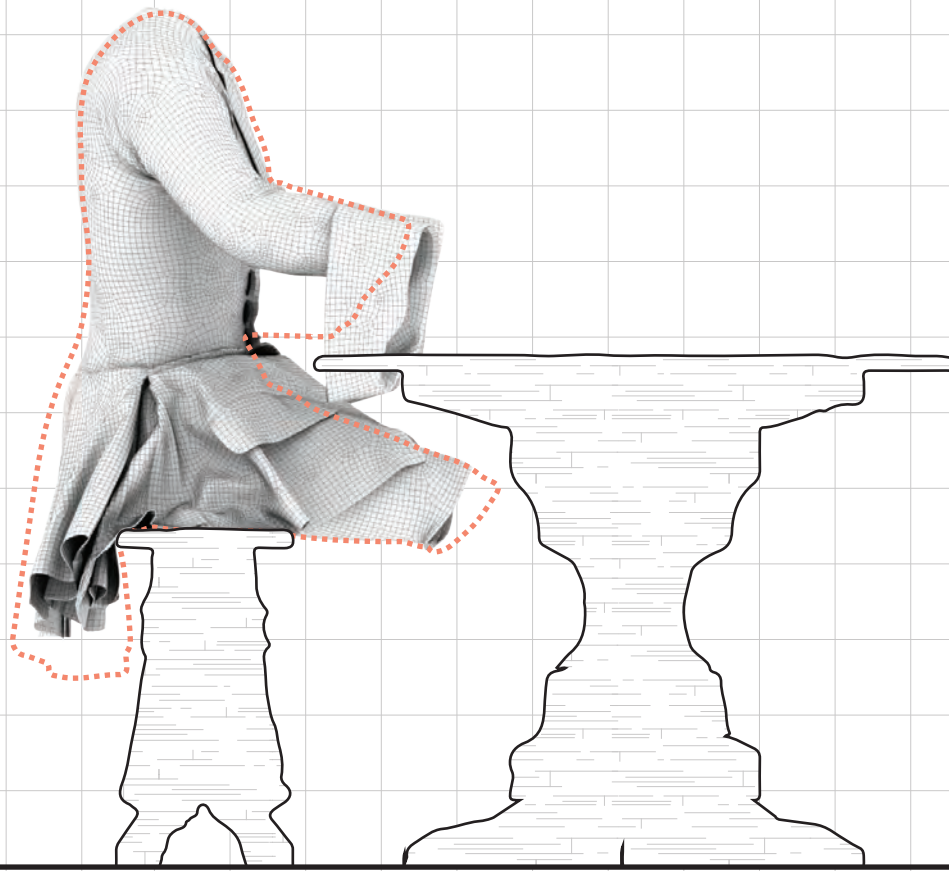


silhouette of successive fashion

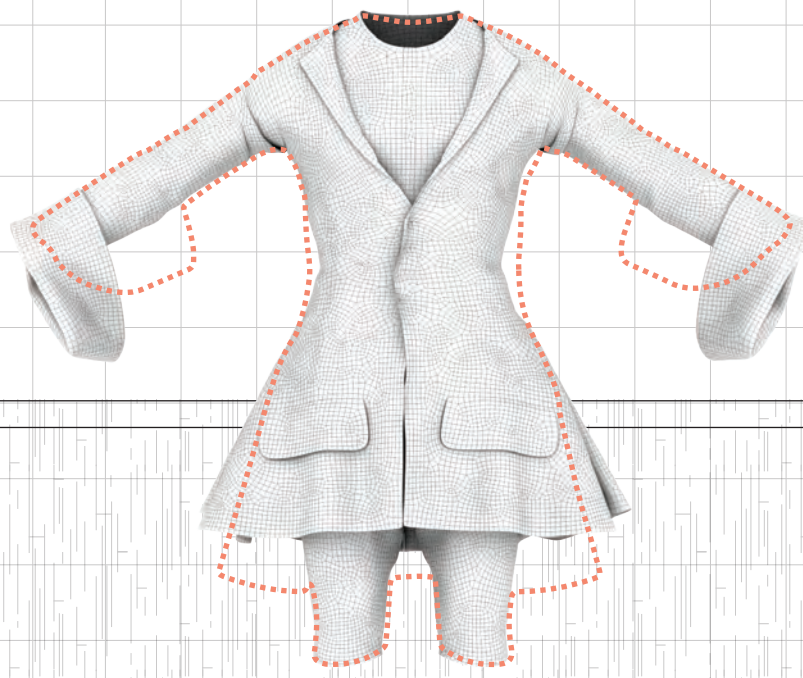


silhouette of successive fashion

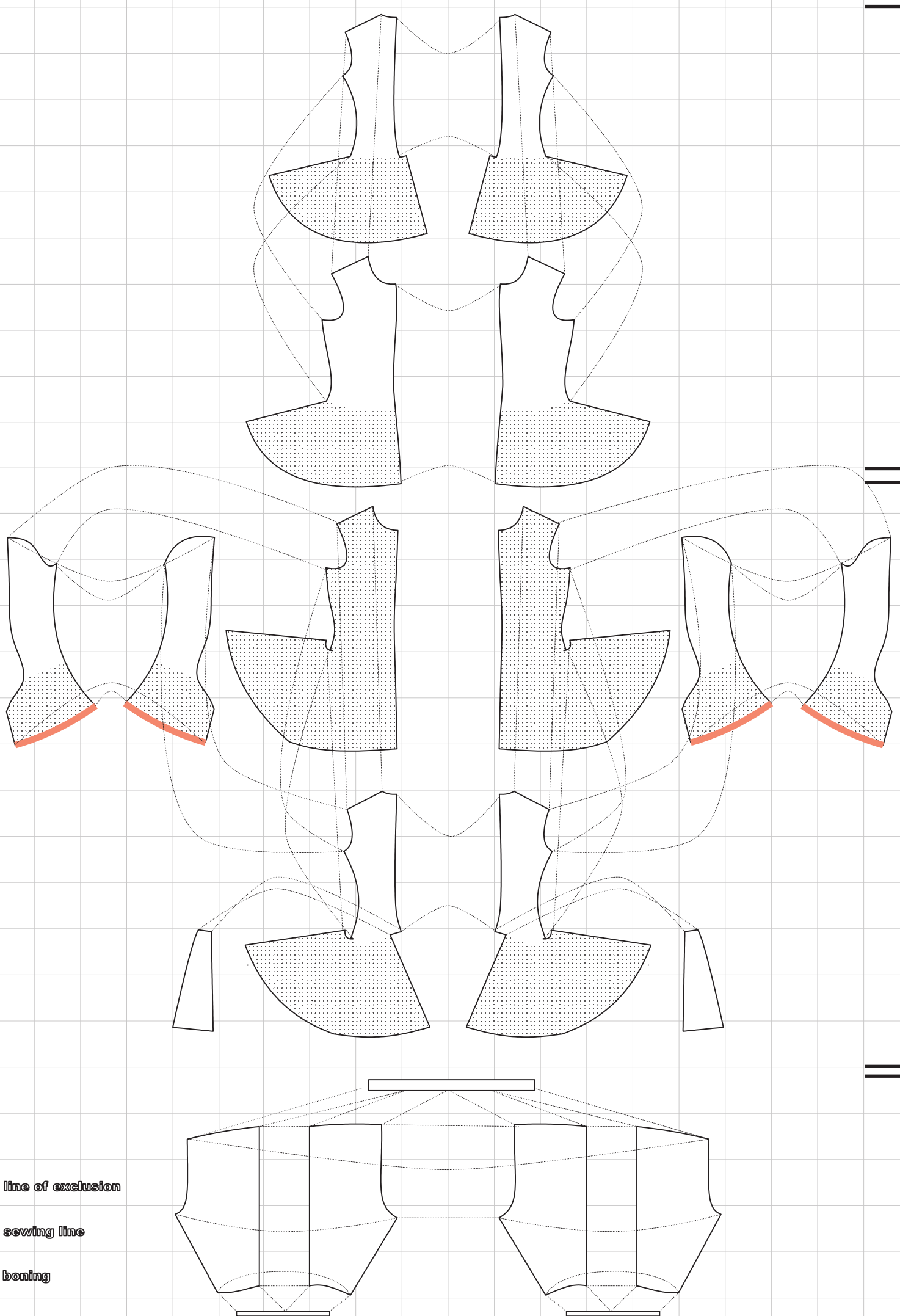




silhouette of successive fashion



silhouette of successive fashion

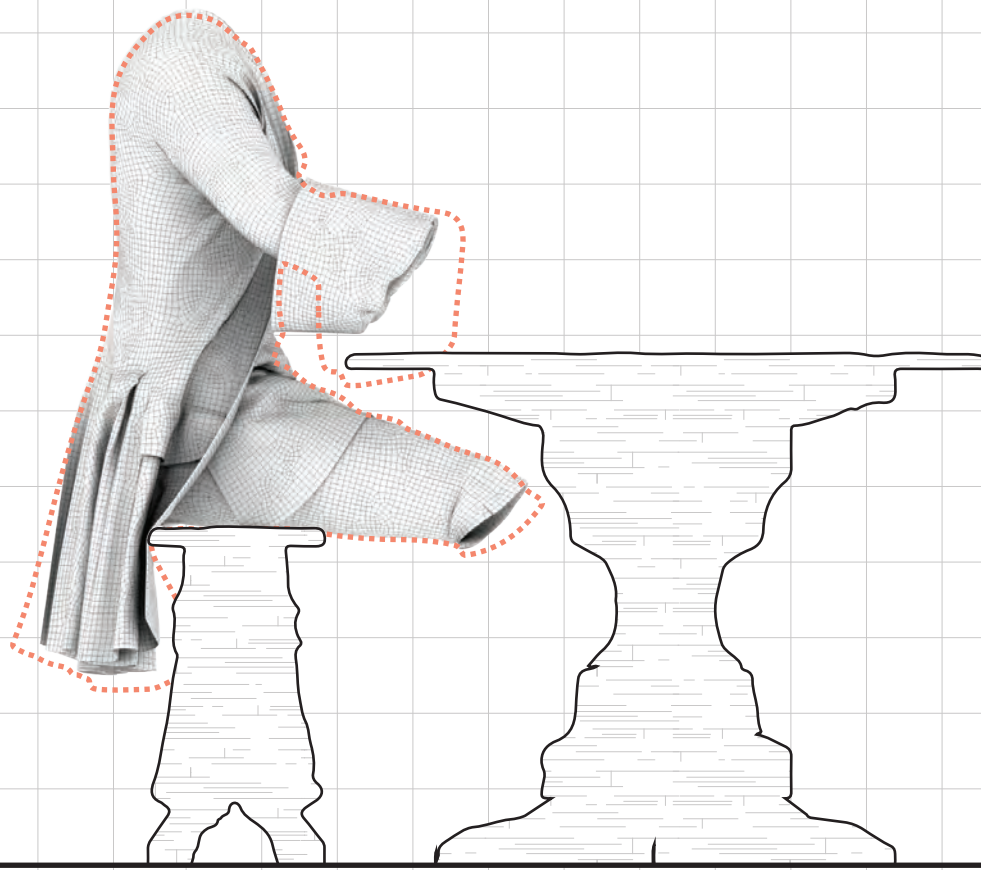


Waistcoat

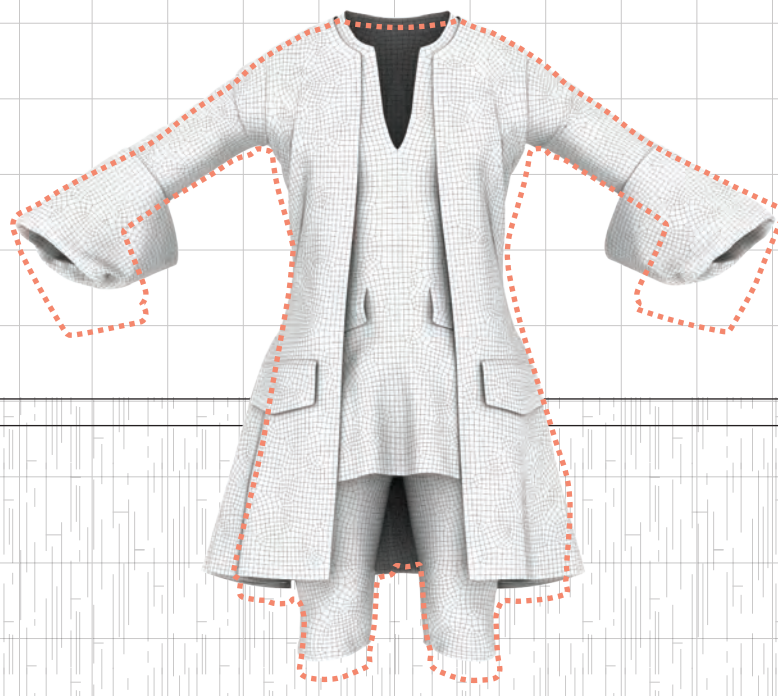
Coat

Breeches

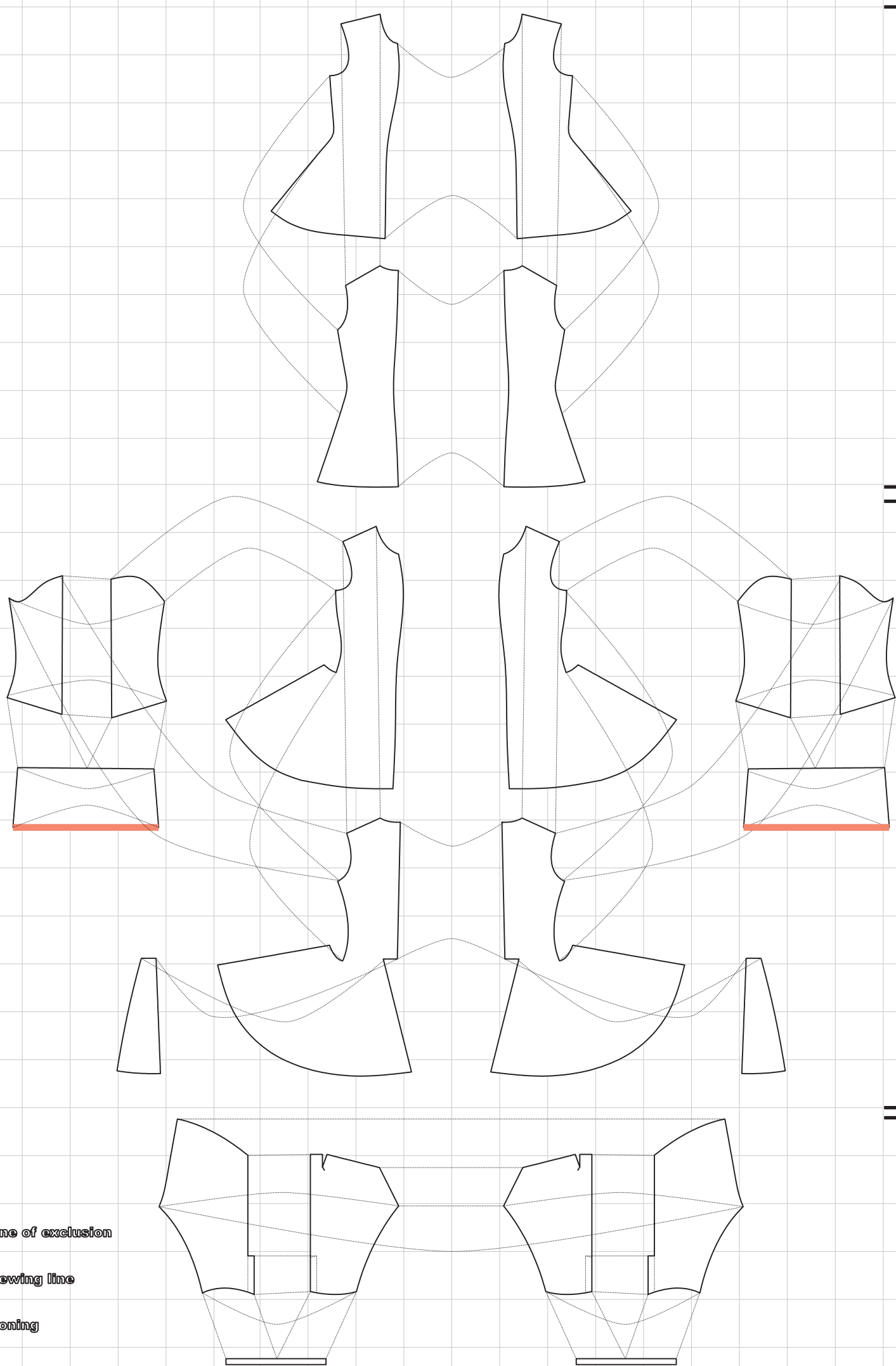
- 1:20
- line of exclusion
- sewing line
- boning
- stiffening



silhouette of successive fashion



silhouette of successive fashion

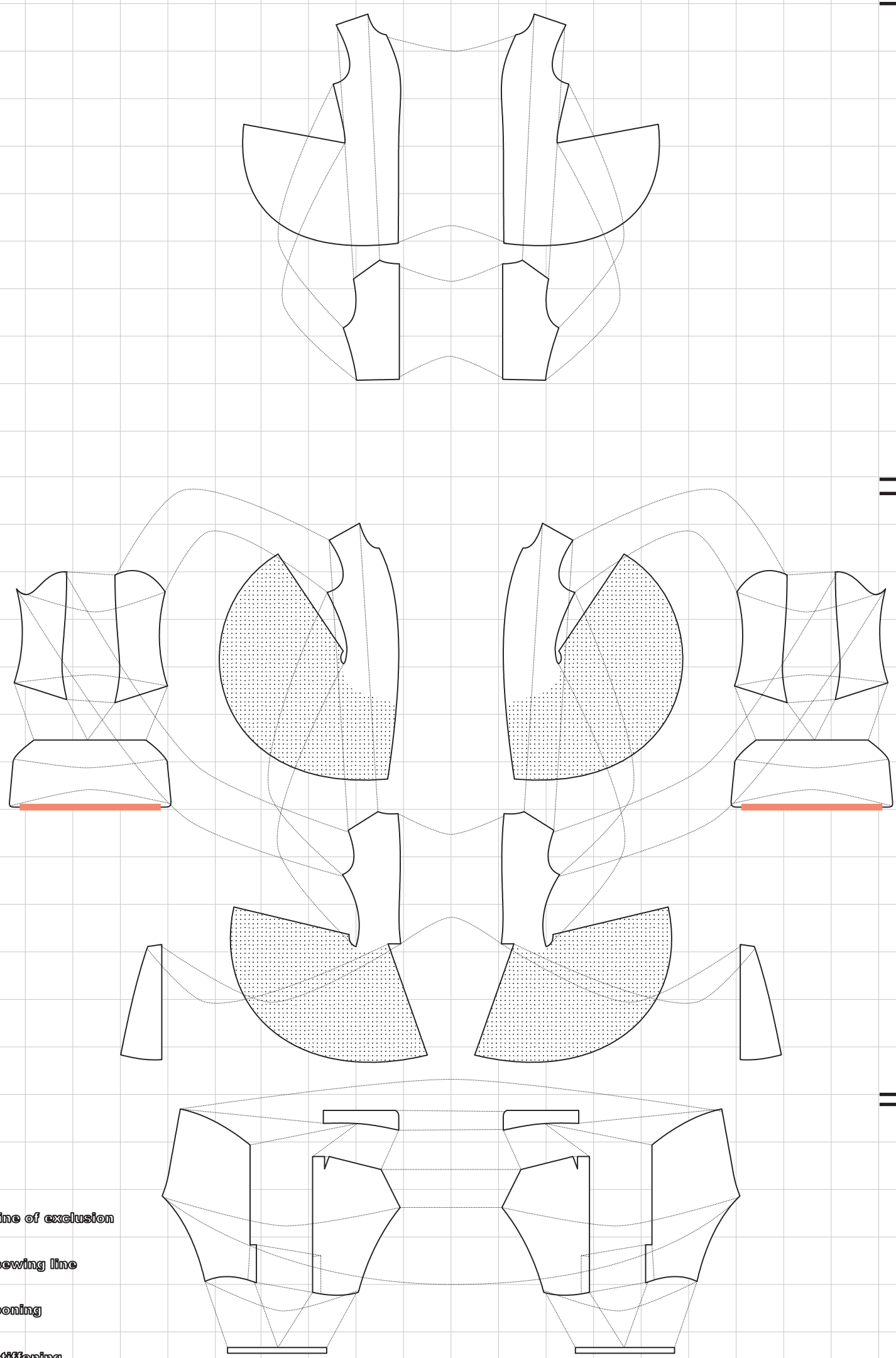
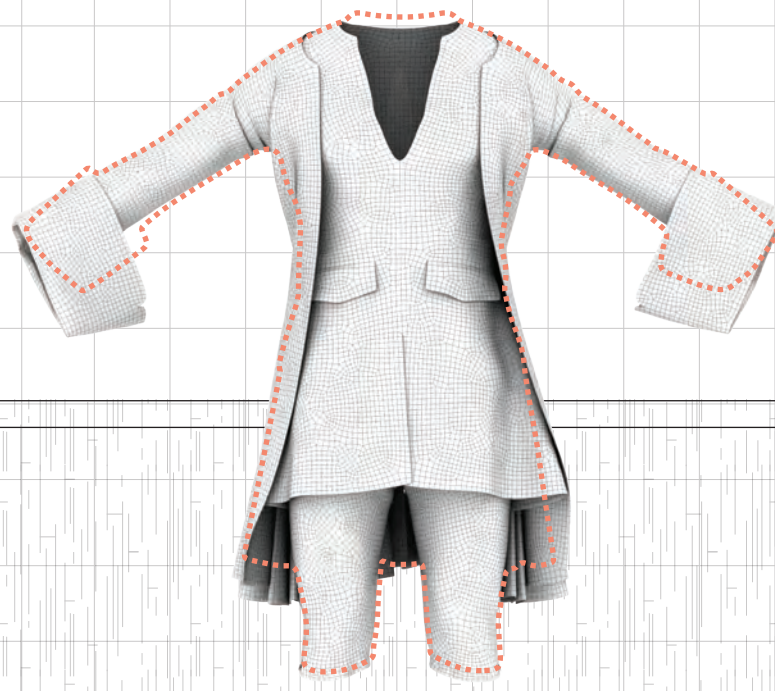
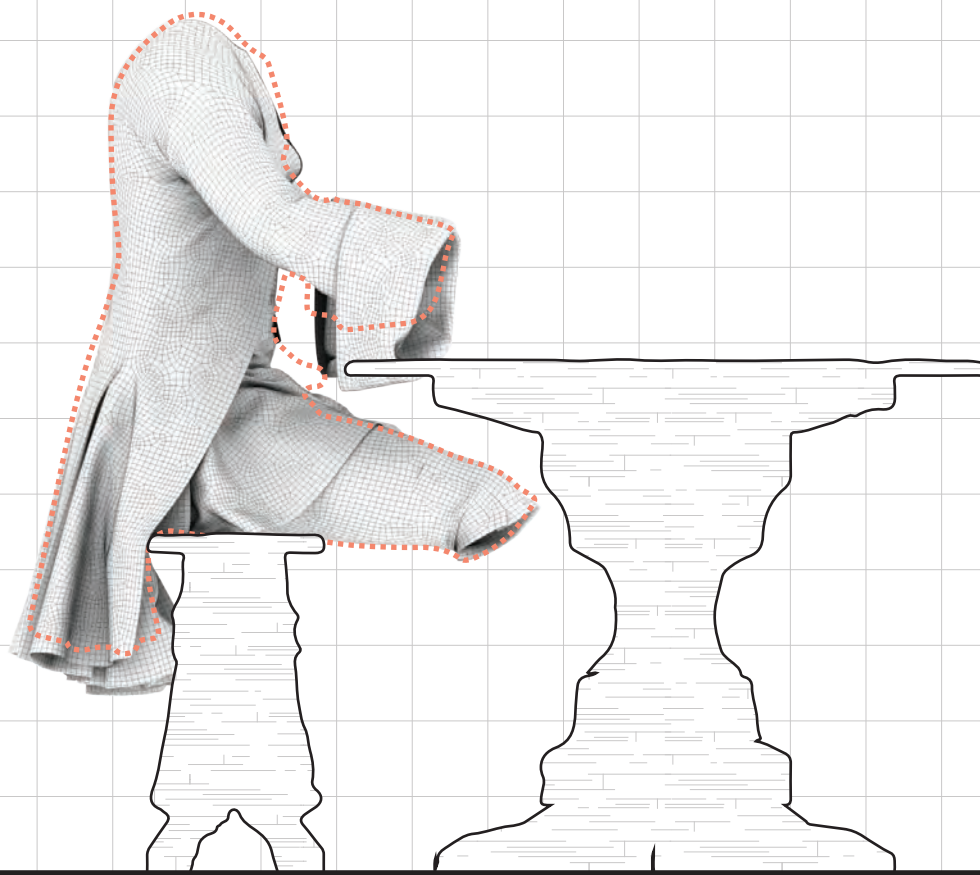


Waistcoat

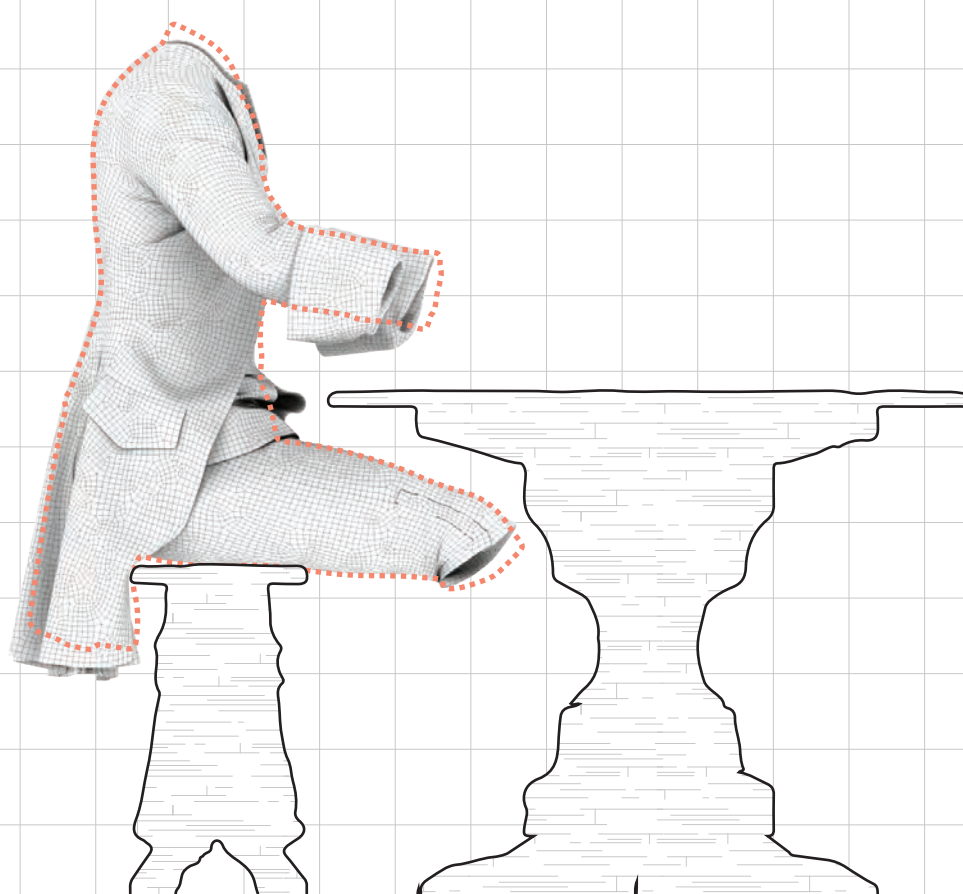
Coat

Breeches

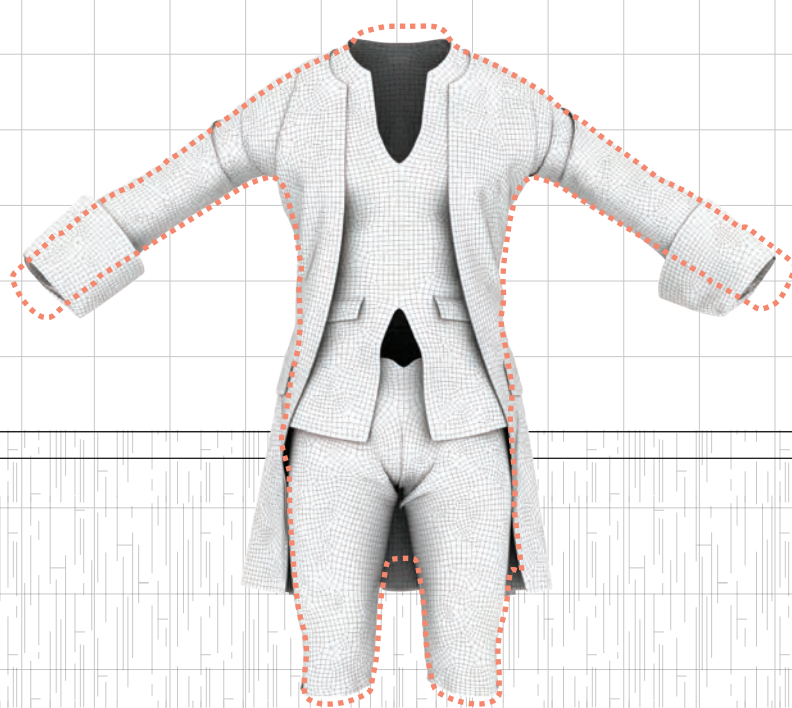
- 1:20
- line of exclusion
- sewing line
- boning
- stiffening



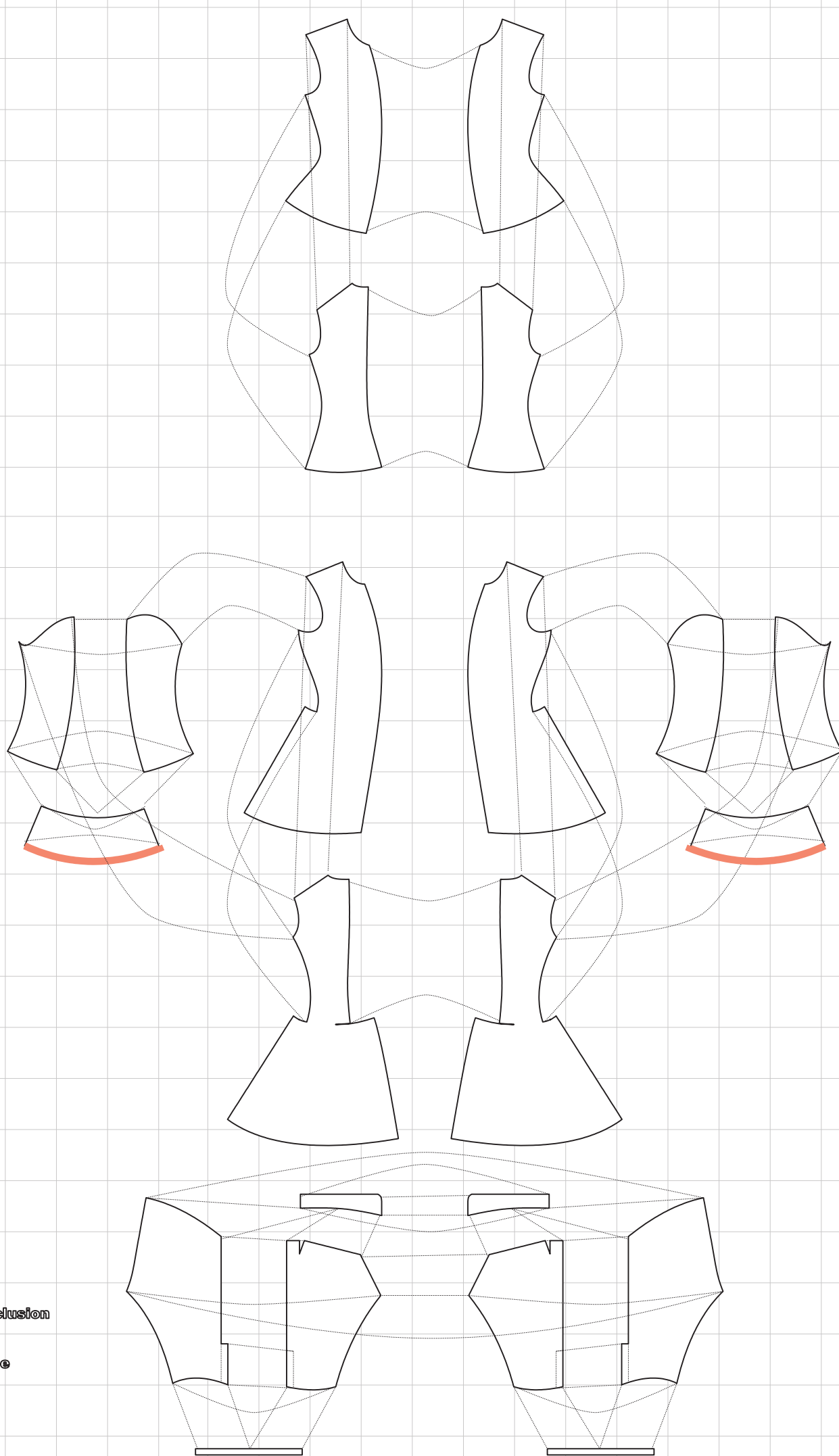
- 1:20
- line of exclusion
- sewing line
- boning
- stiffening



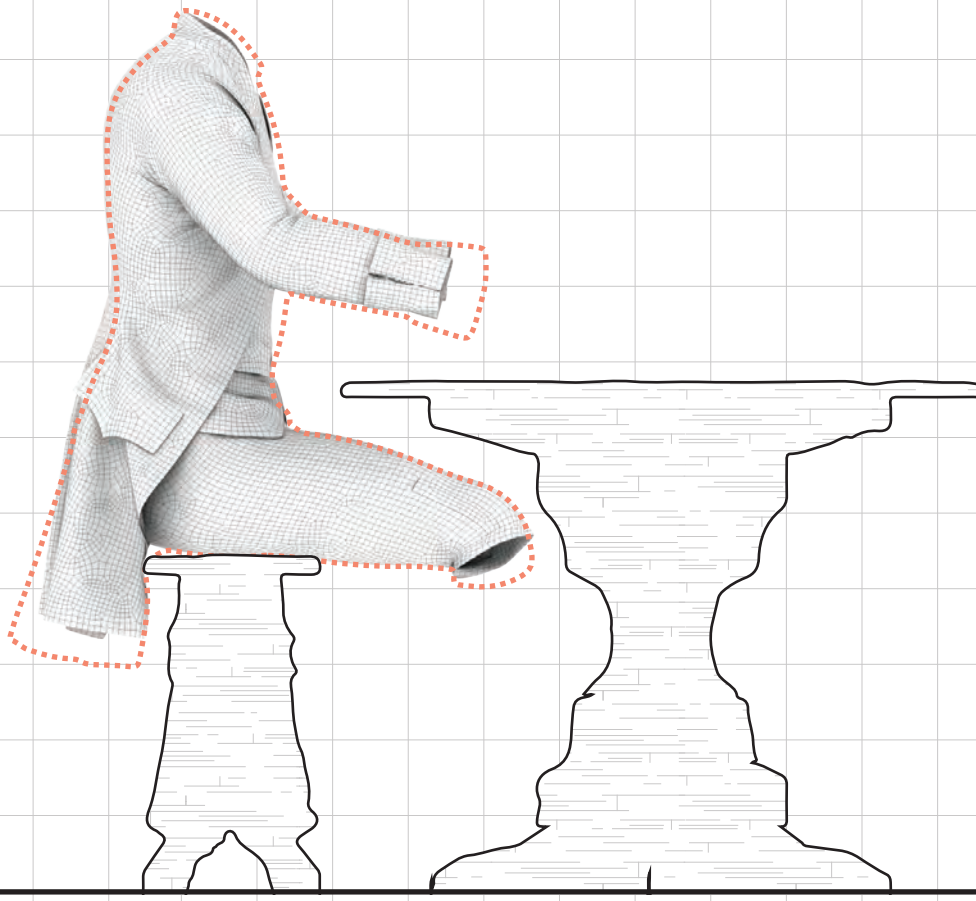
silhouette of successive fashion



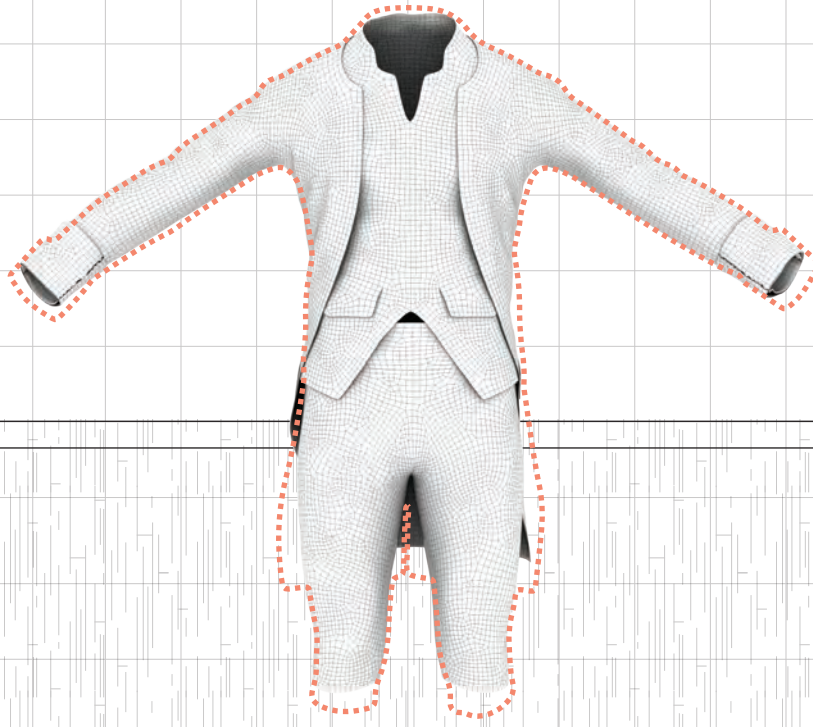
silhouette of successive fashion



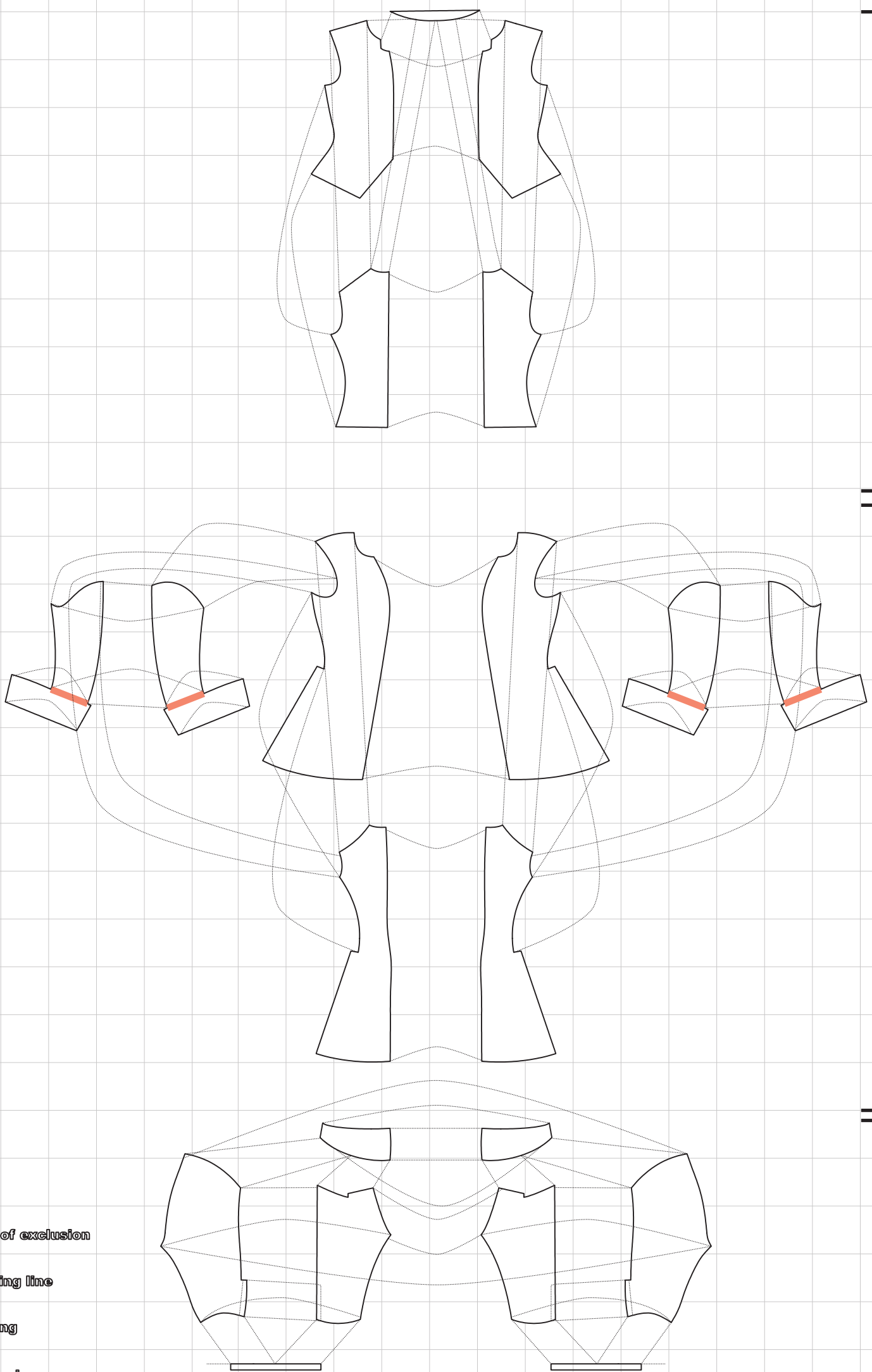
- 1:20
- line of exclusion
- sewing line
- boning
- stiffening



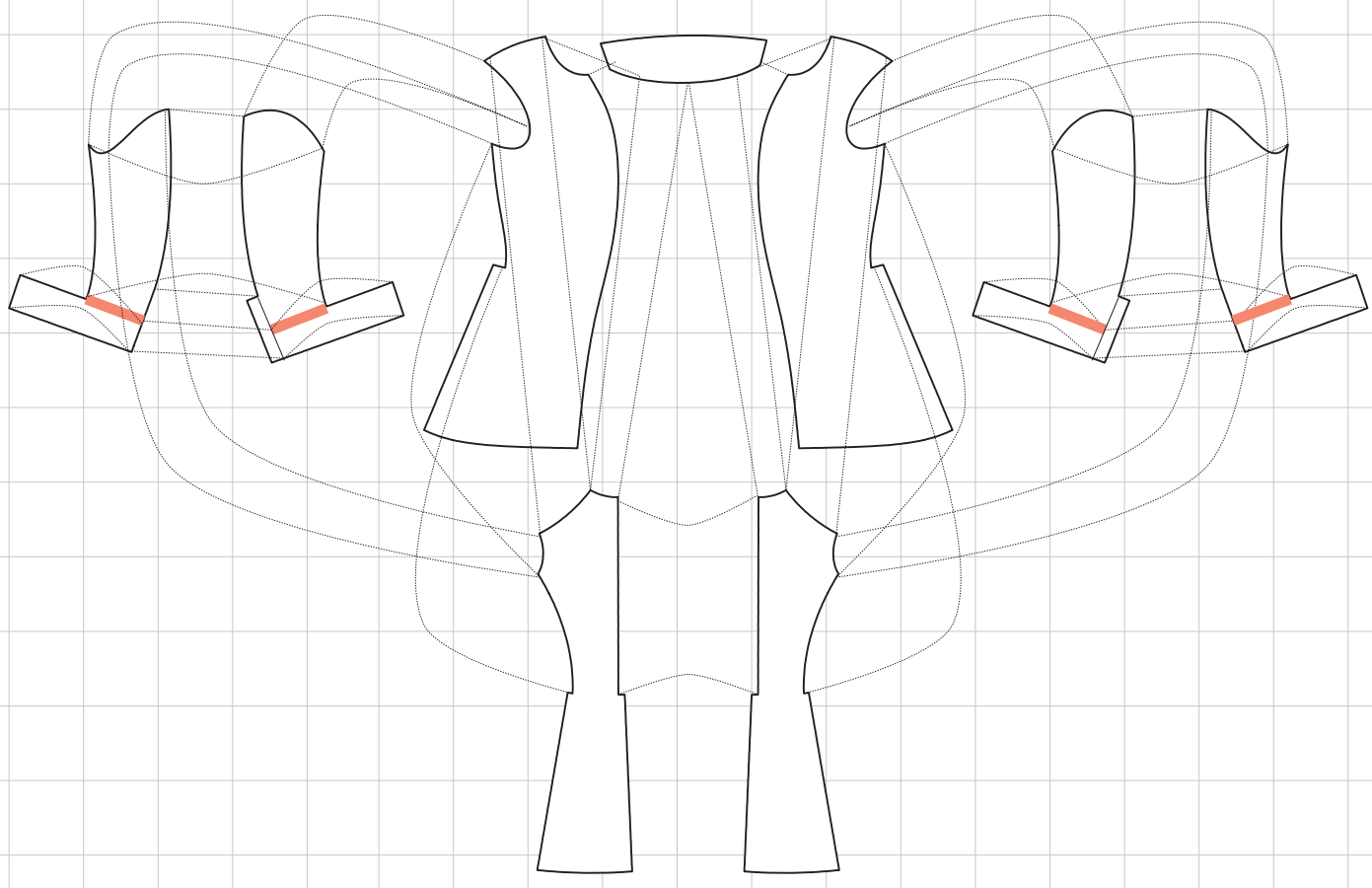
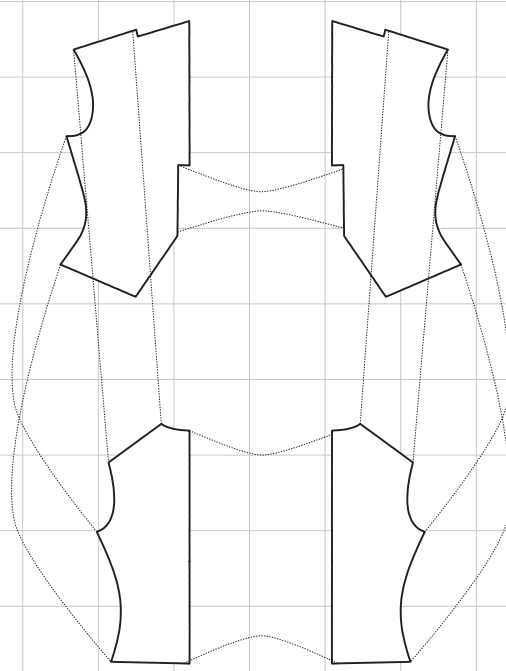
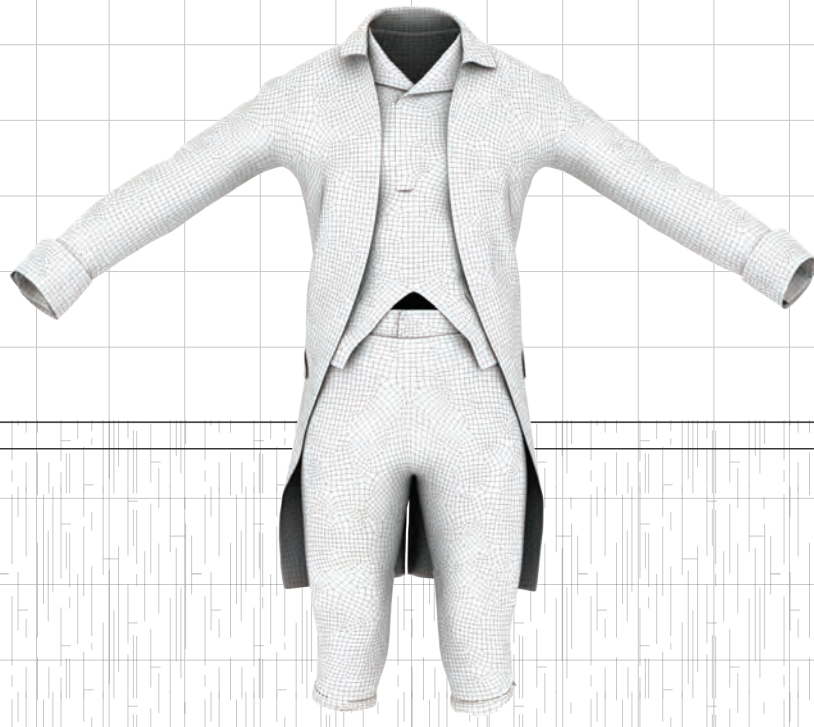
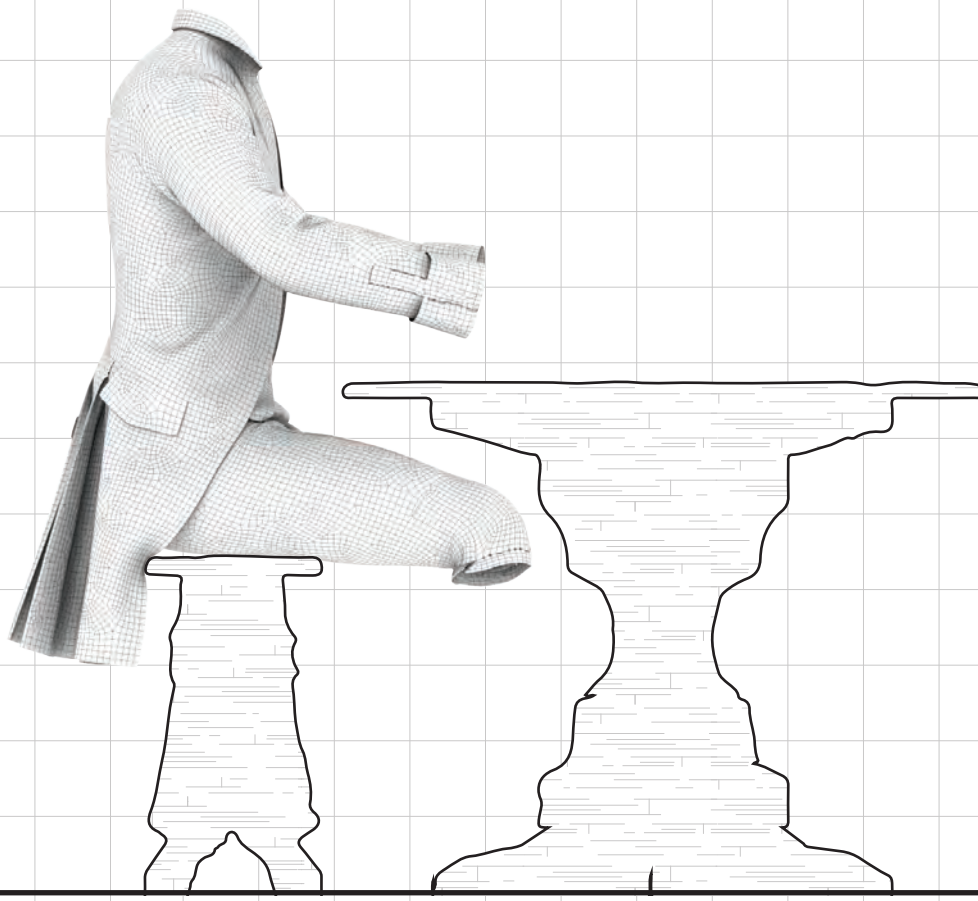
silhouette of successive fashion



silhouette of successive fashion







- 1:20
- line of exclusion
- sewing line
- ▨ boning
- ▤ stiffening

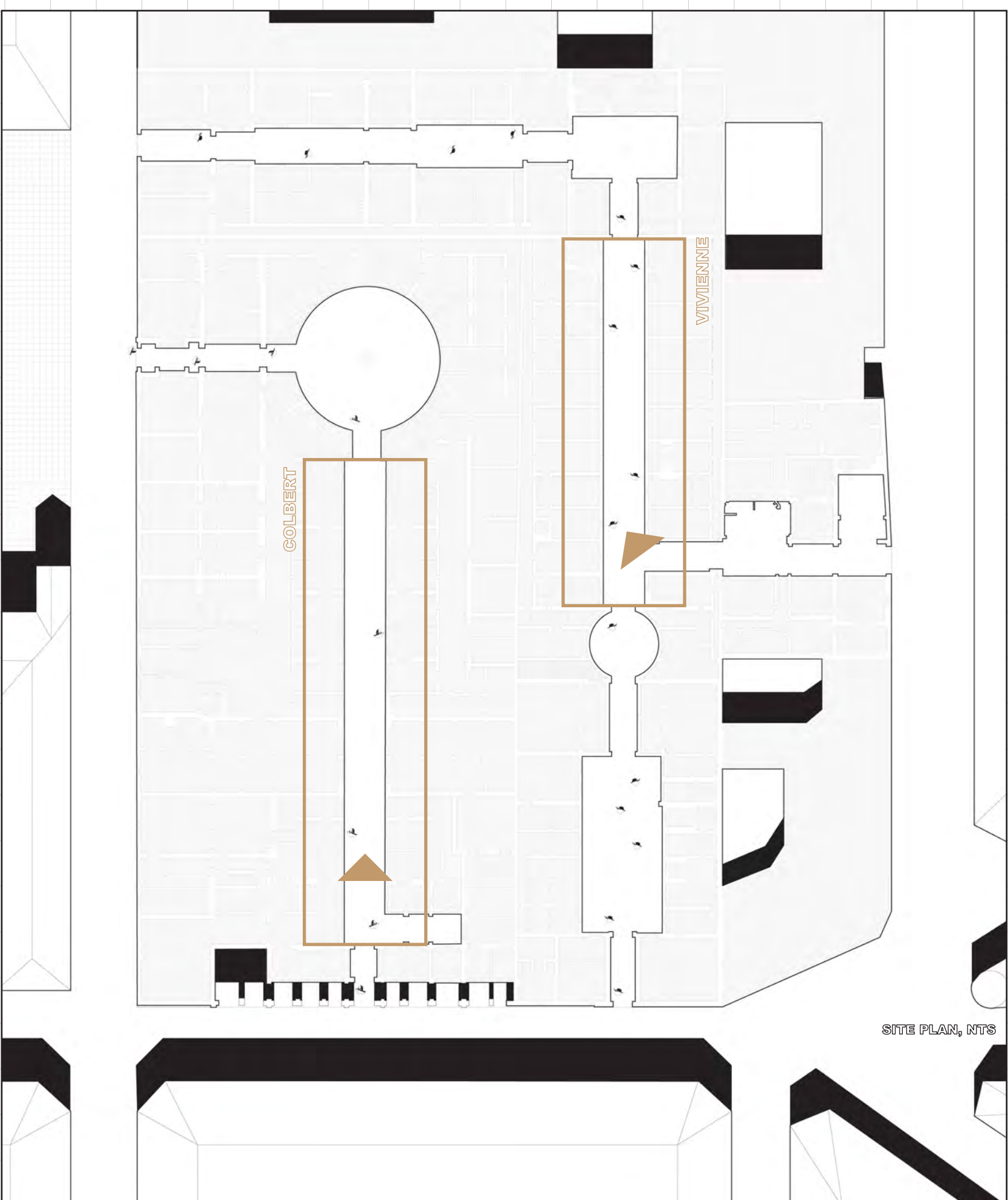
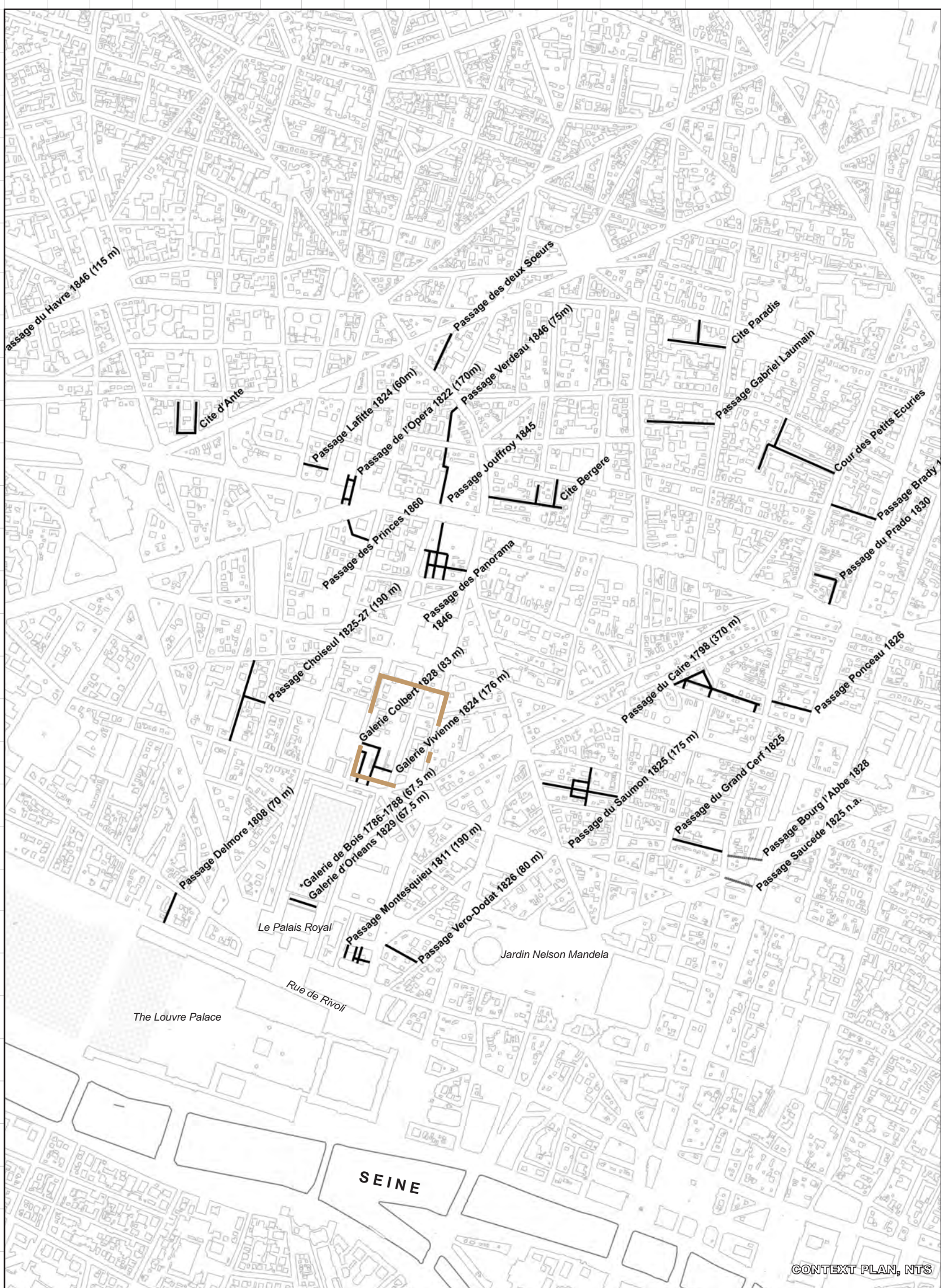


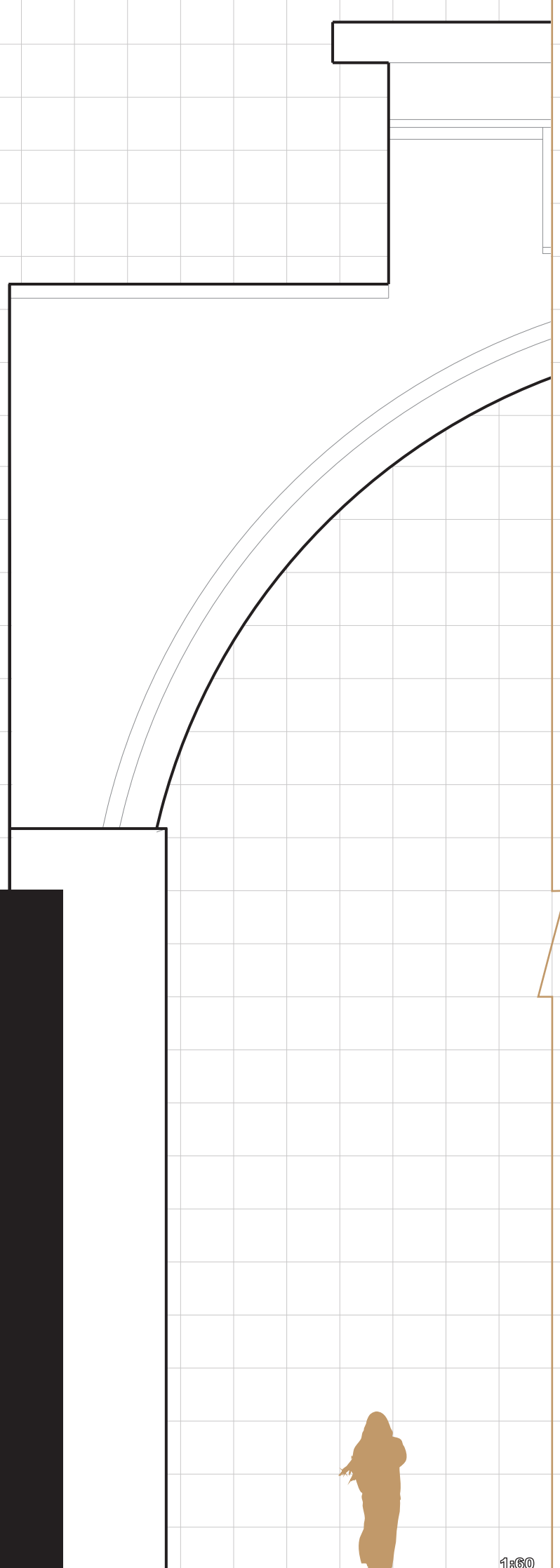
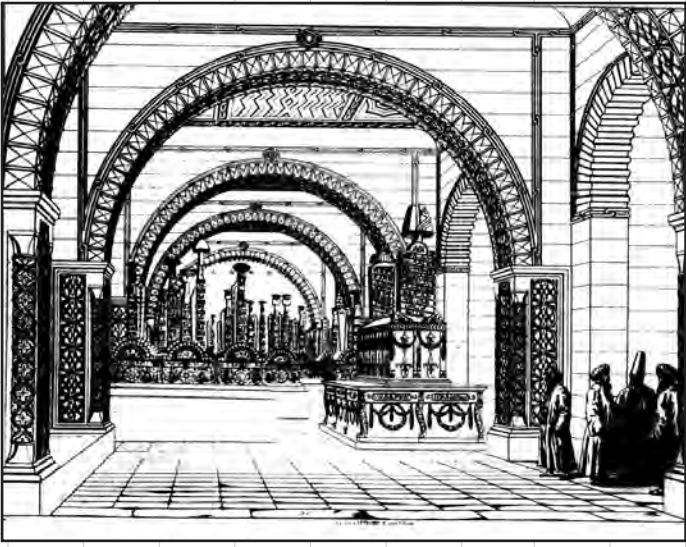
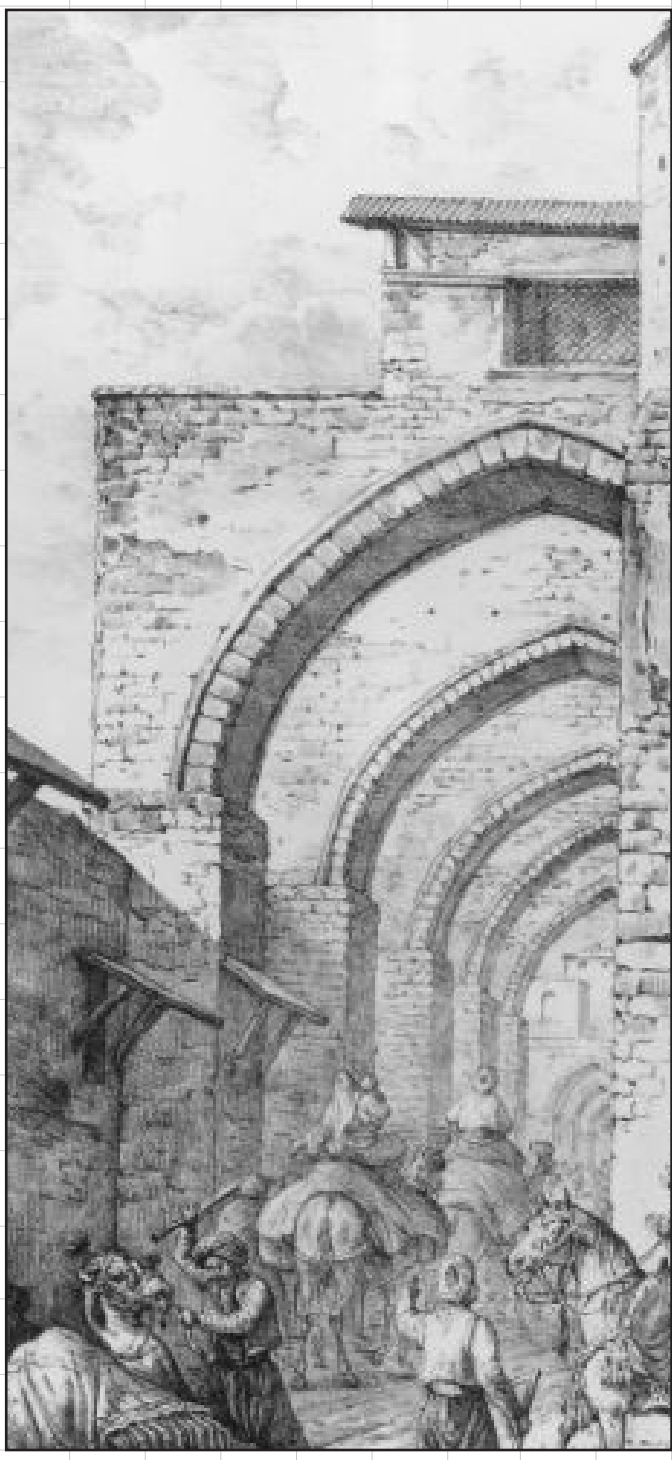
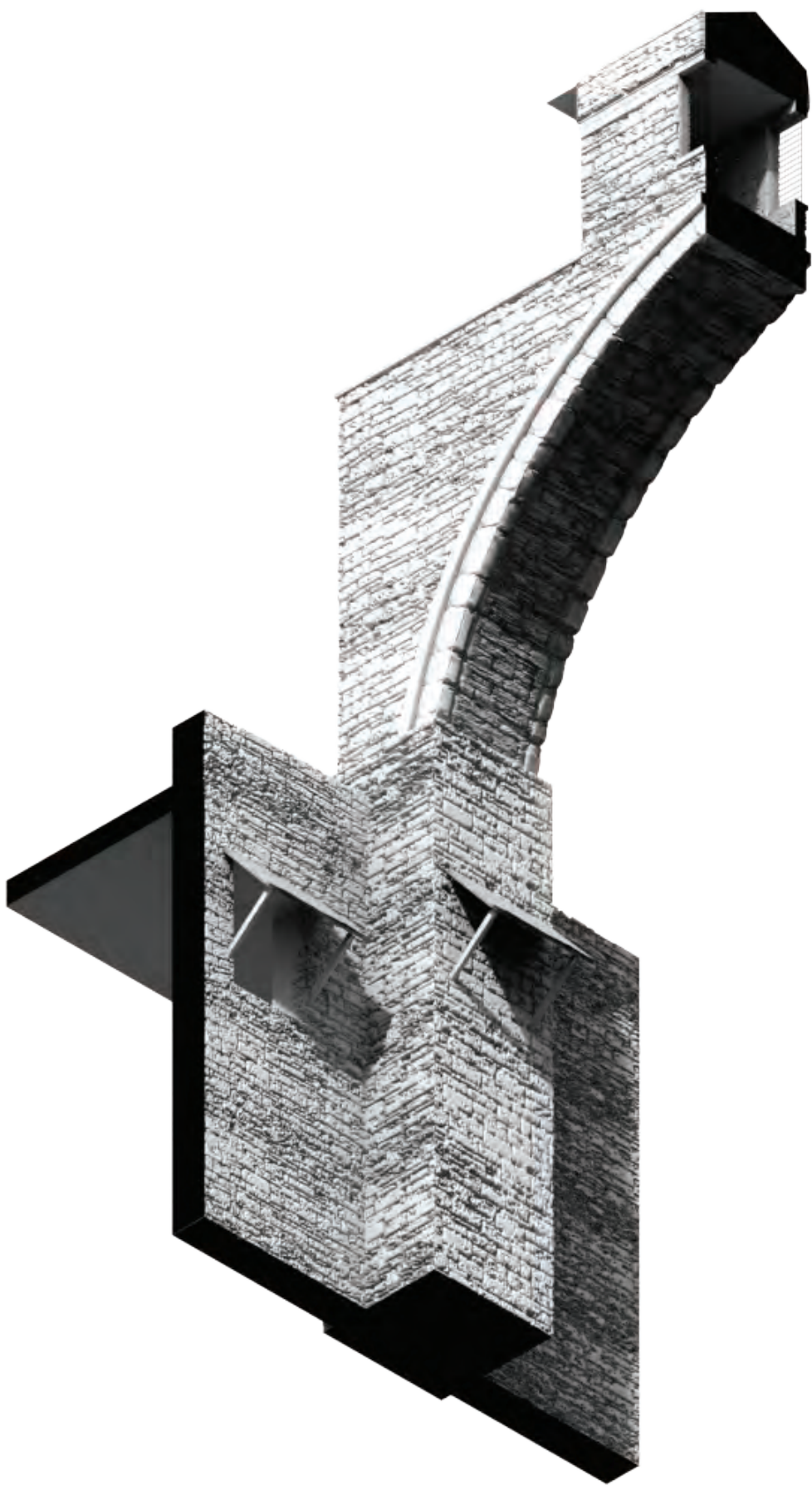
Waistcoat

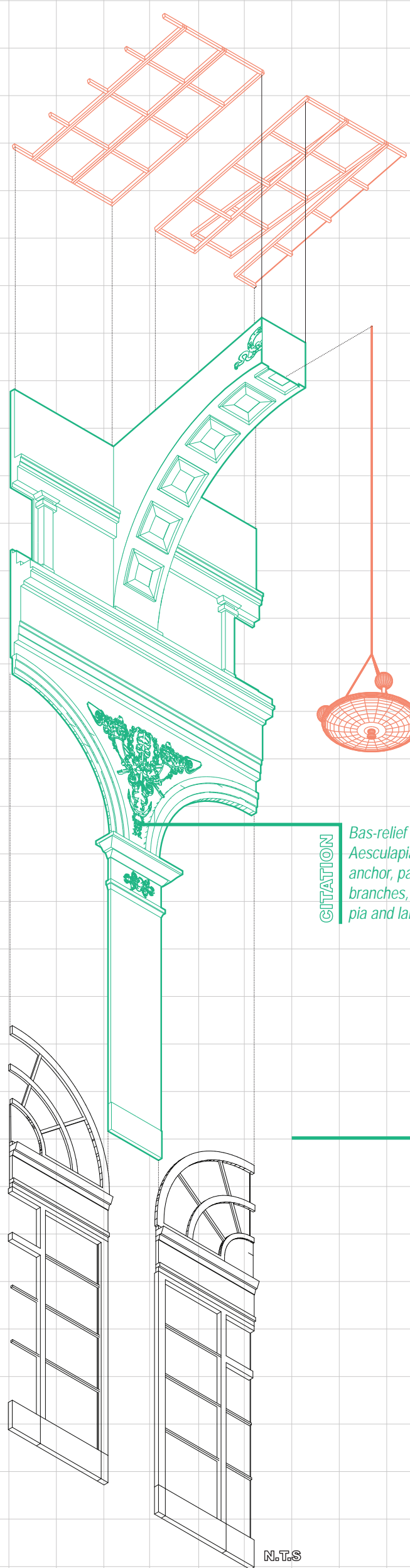
Coat

Breeches

- 1:20
-  line of exclusion
 -  sewing line
 -  boning
 -  stiffening





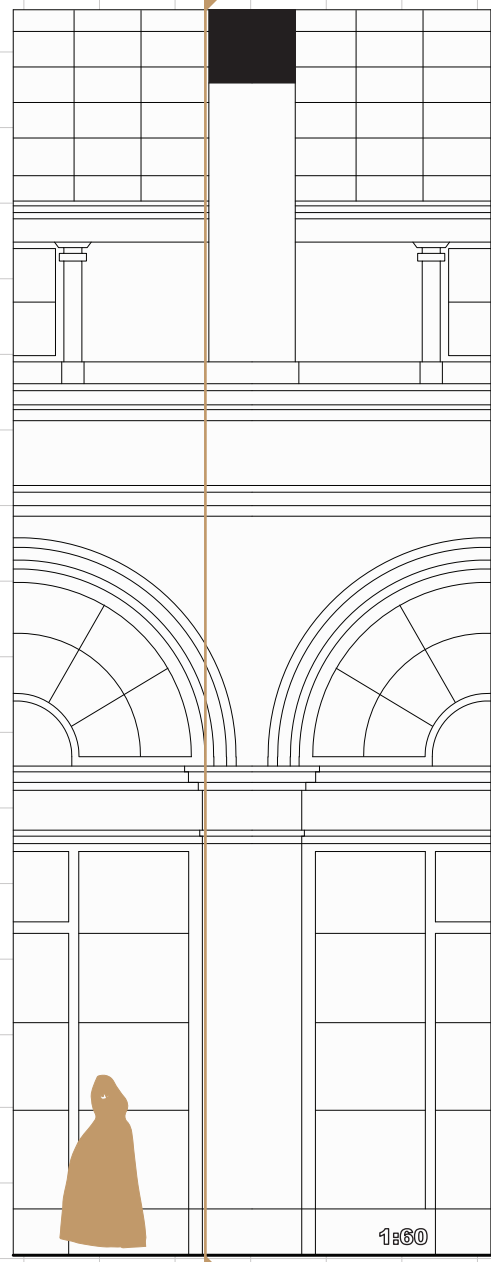


CITATION Bas-relief frieze of Aesculapian staff, anchor, palm branches, cornucopia and lance

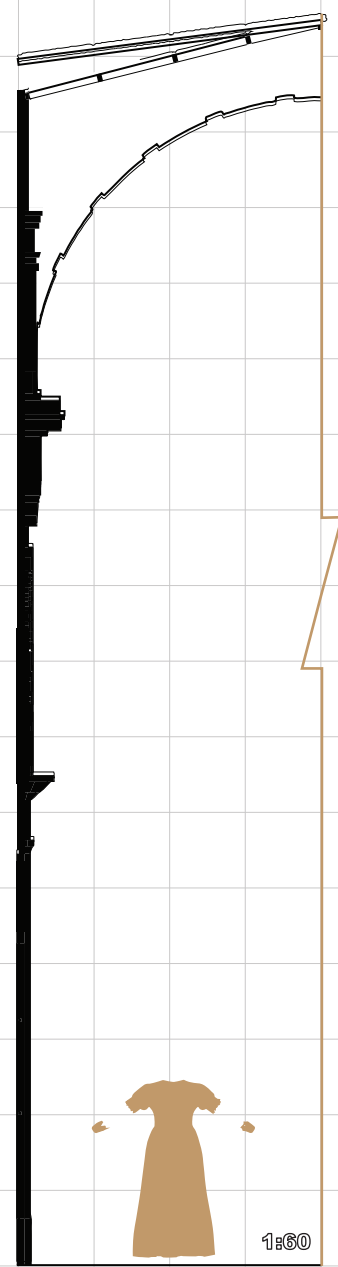
INNOVATION gas lighting

INNOVATION iron and glass roof structure

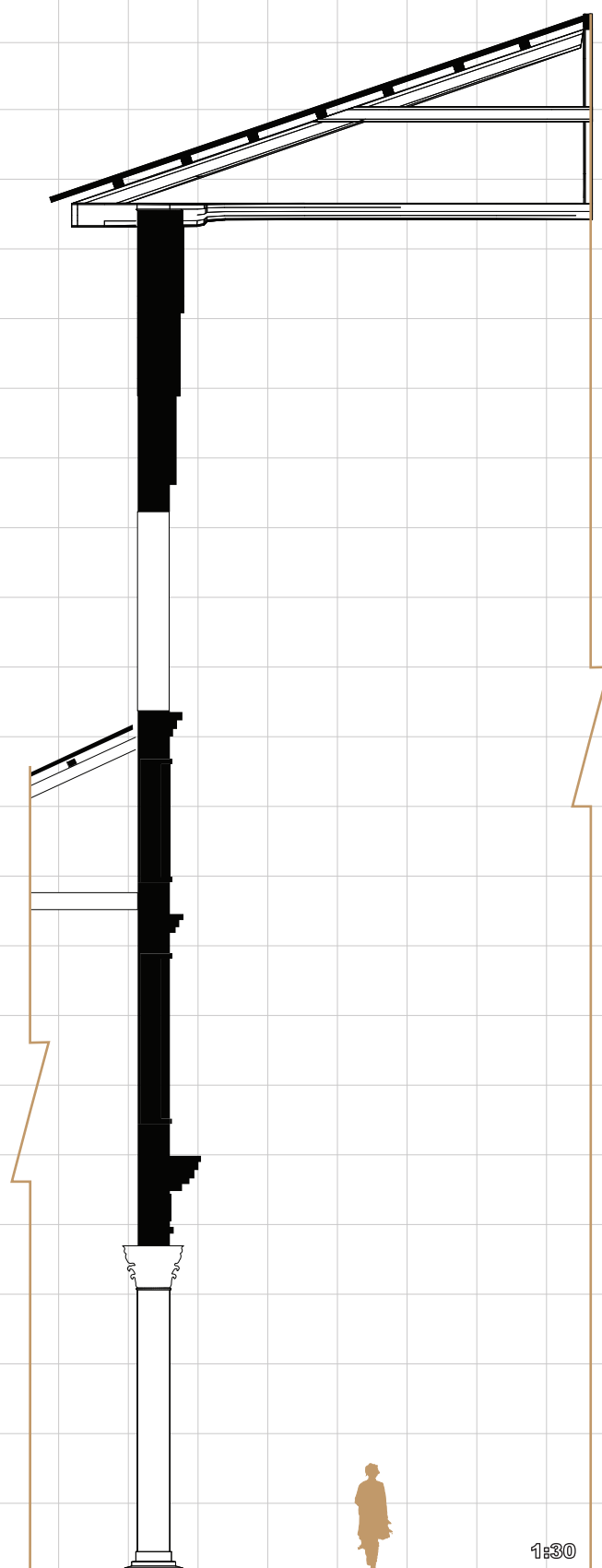
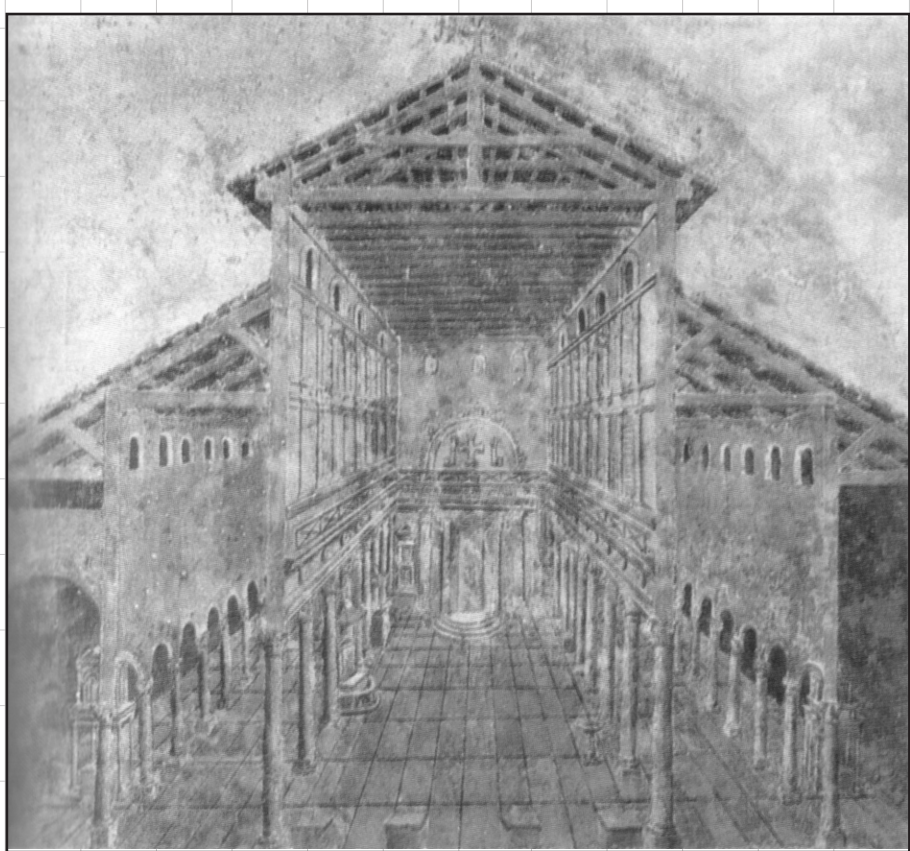
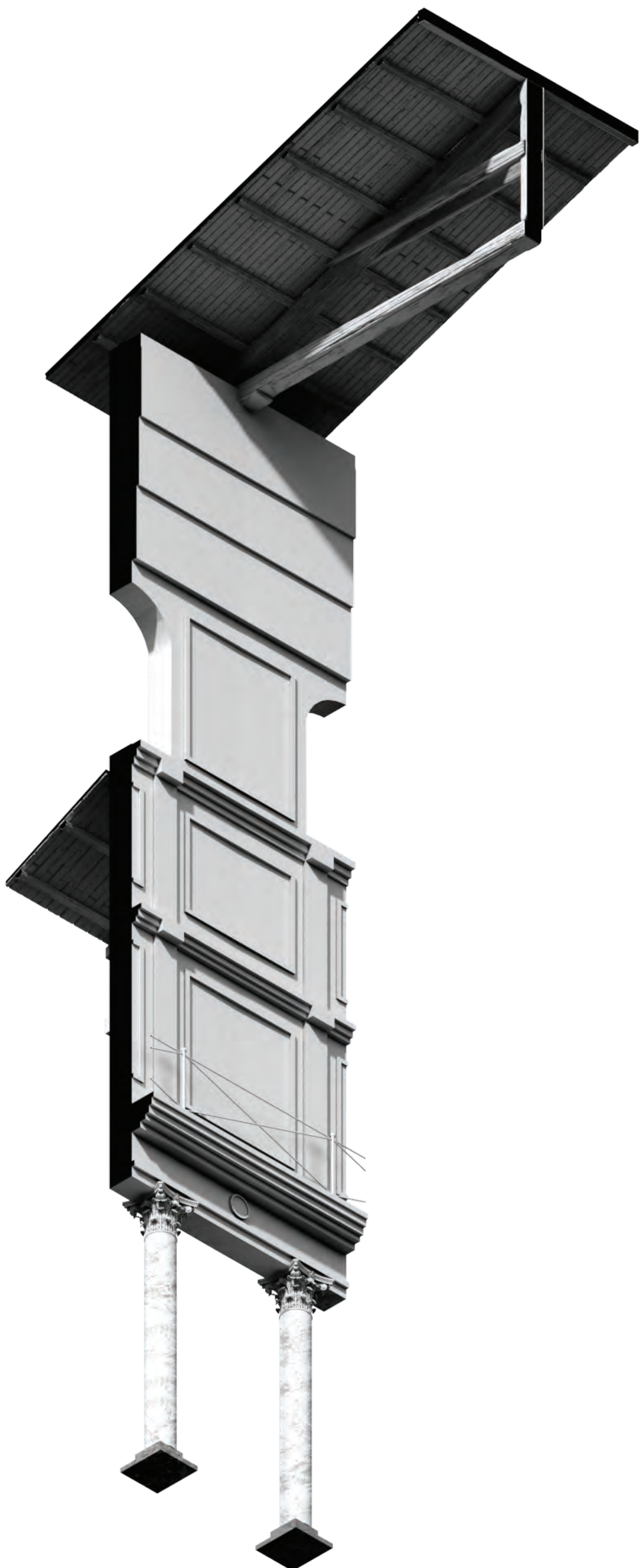
CITATION Form imitates traditional bazaar

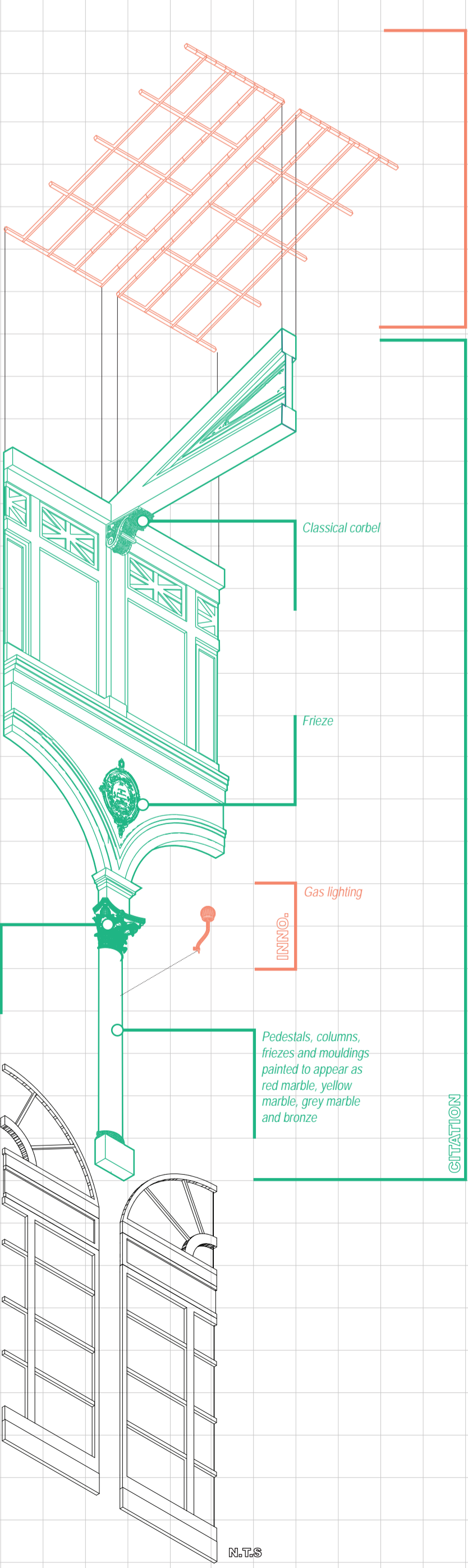


1:60



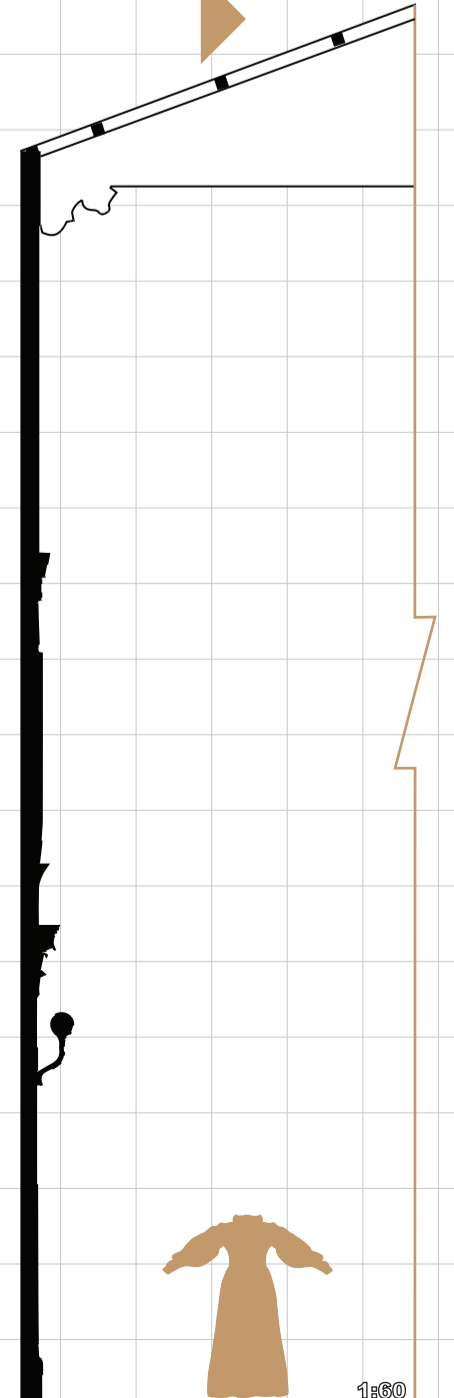
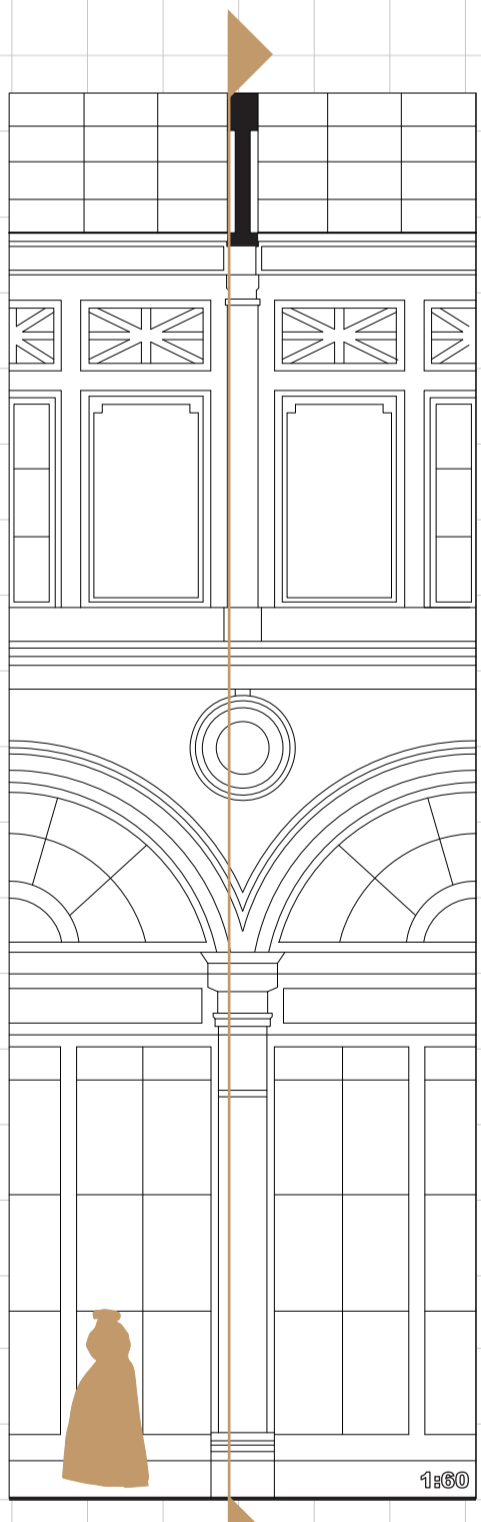
1:60

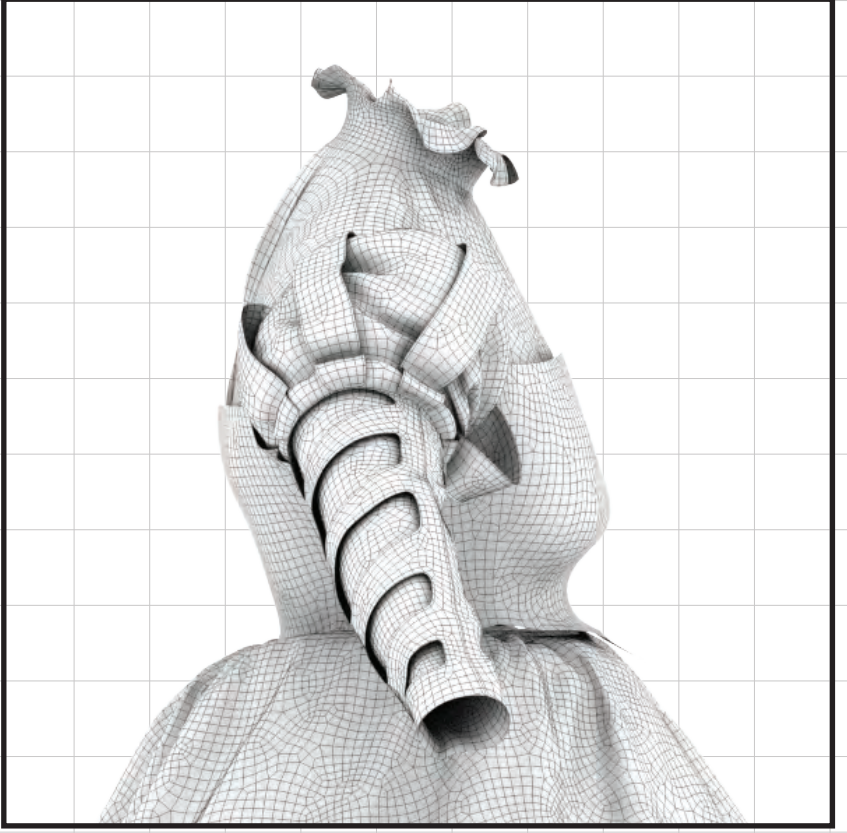
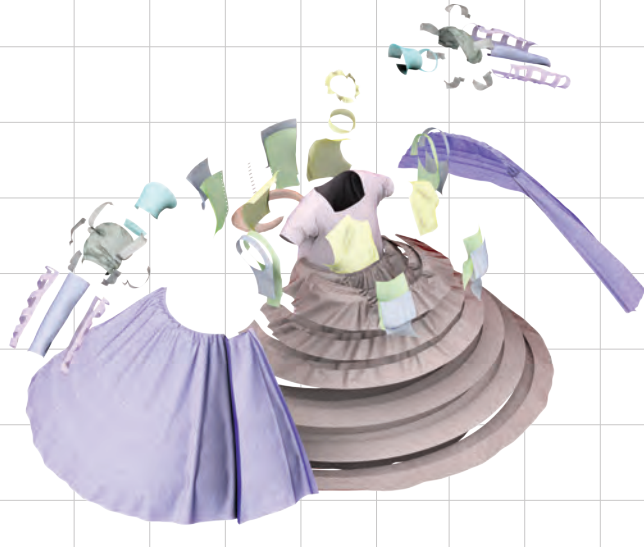




Iron and glass roof INNOVATION

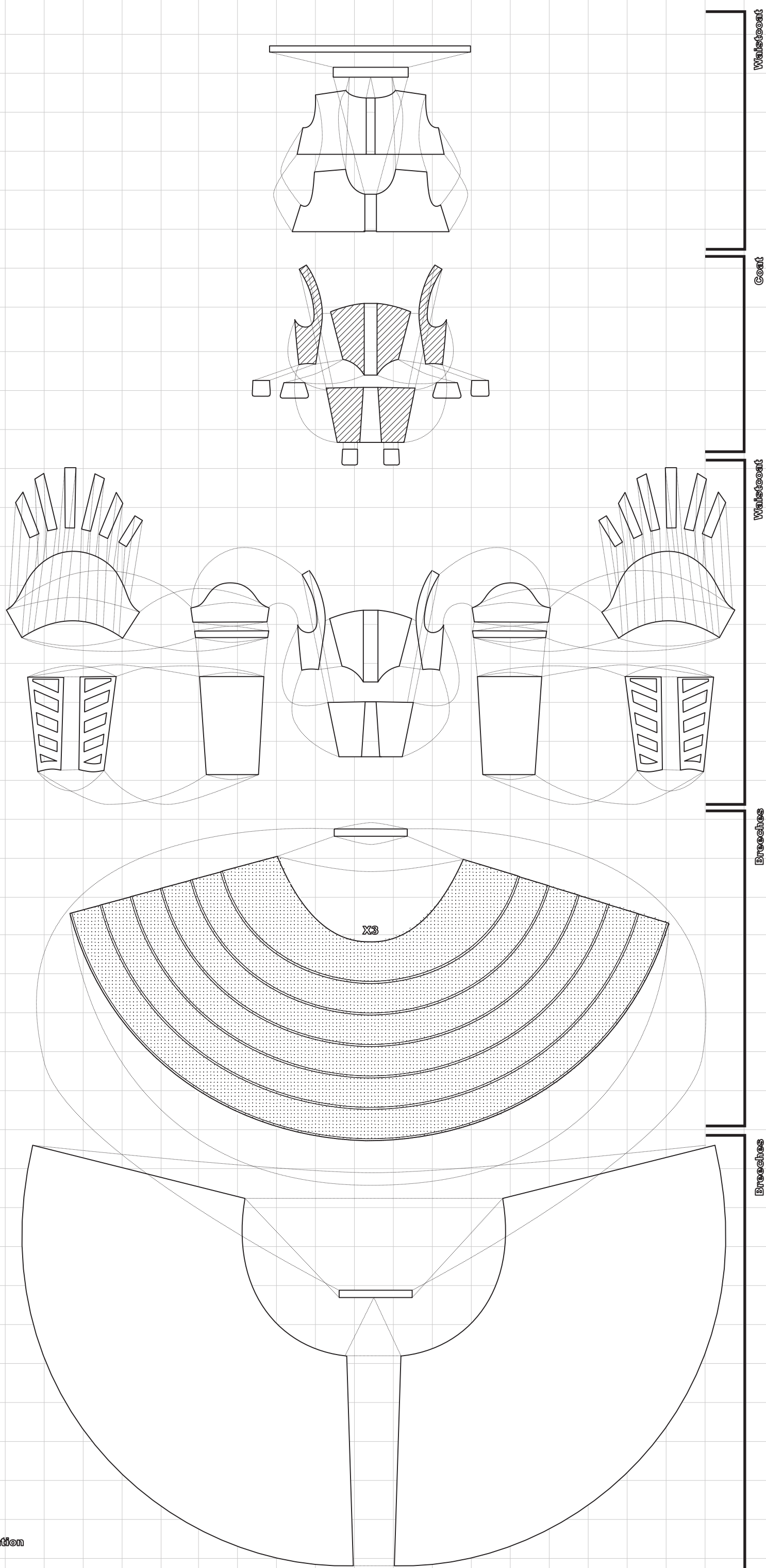
CITATION
Form imitates the Early Christian Church



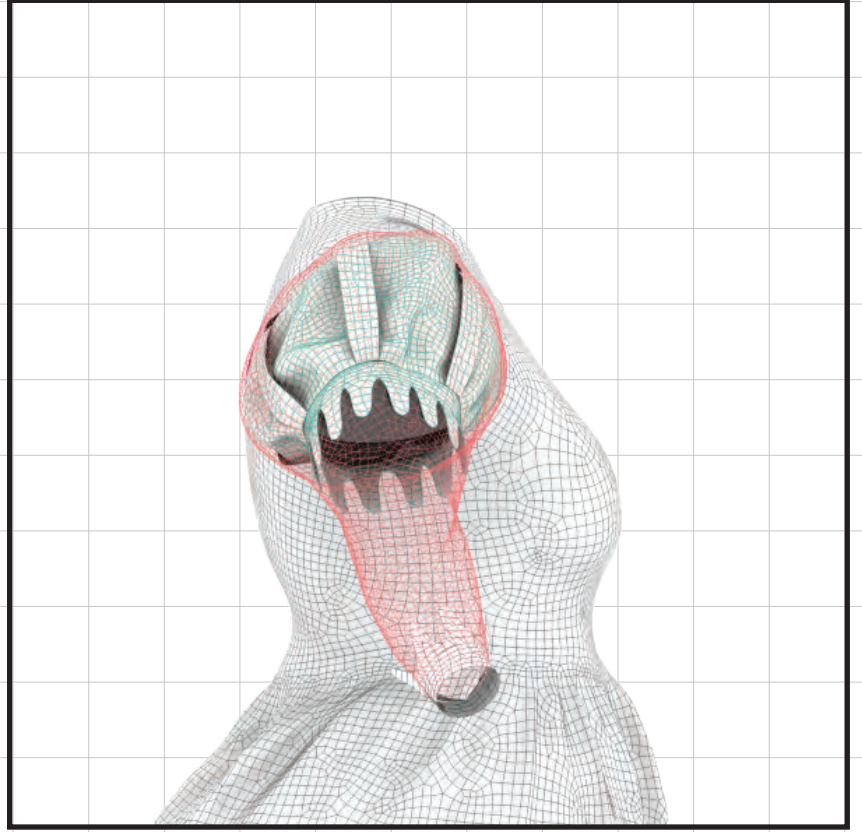


Puffed Slashed Sleeve

- 1 chemise
- 2 corset
- 3 shirt
- 4 petticoat
- 5 bodice
- 6 sleeve foundation
- 7 sleeve puff
- 9 slashes
- 10 sleeve inner
- 11 sleeve outer
- 12 skirt

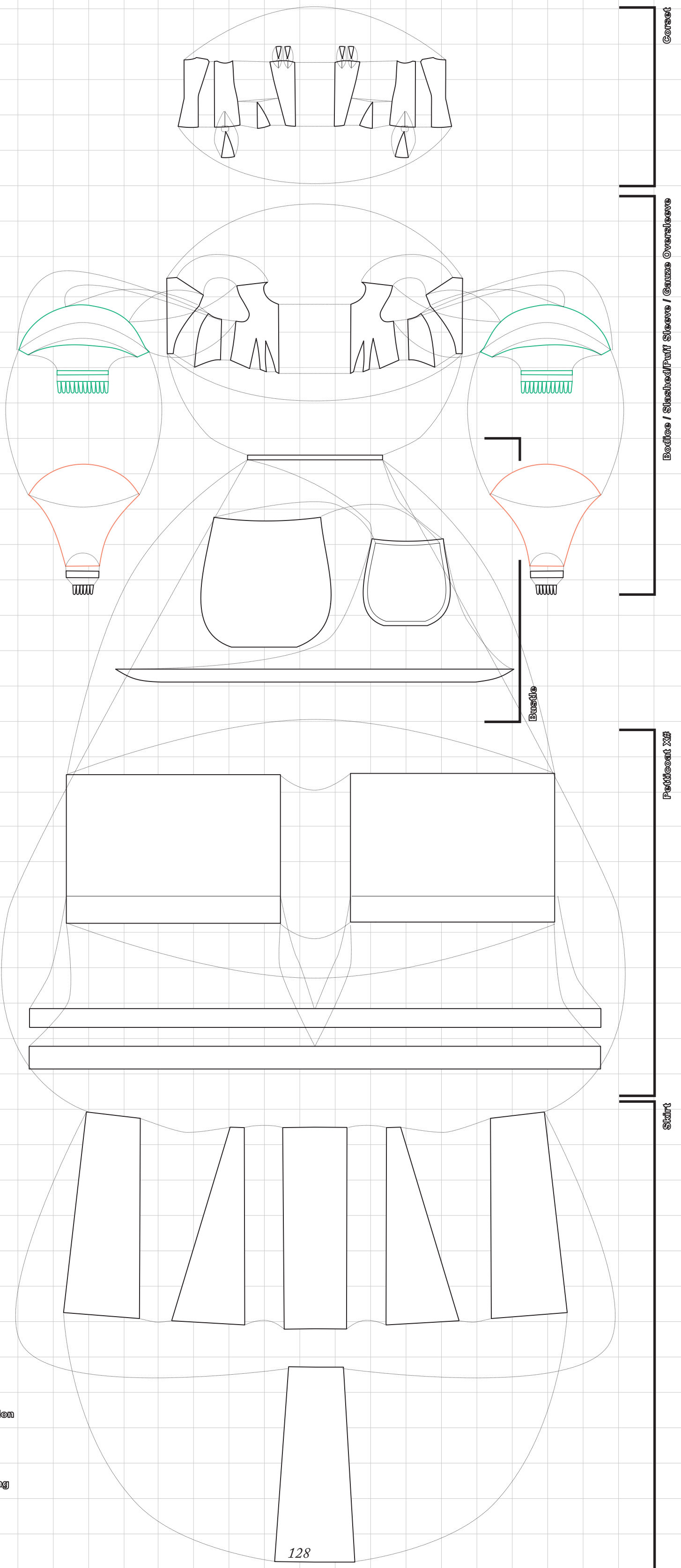


- 1:20
- citation
- innovation
- boning
- stiffening

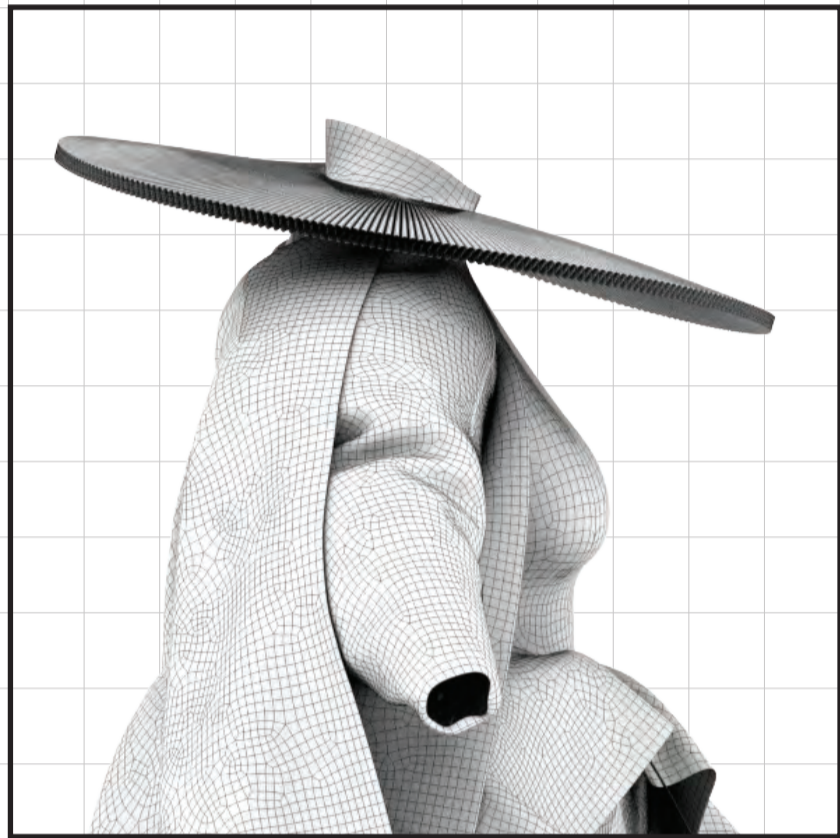
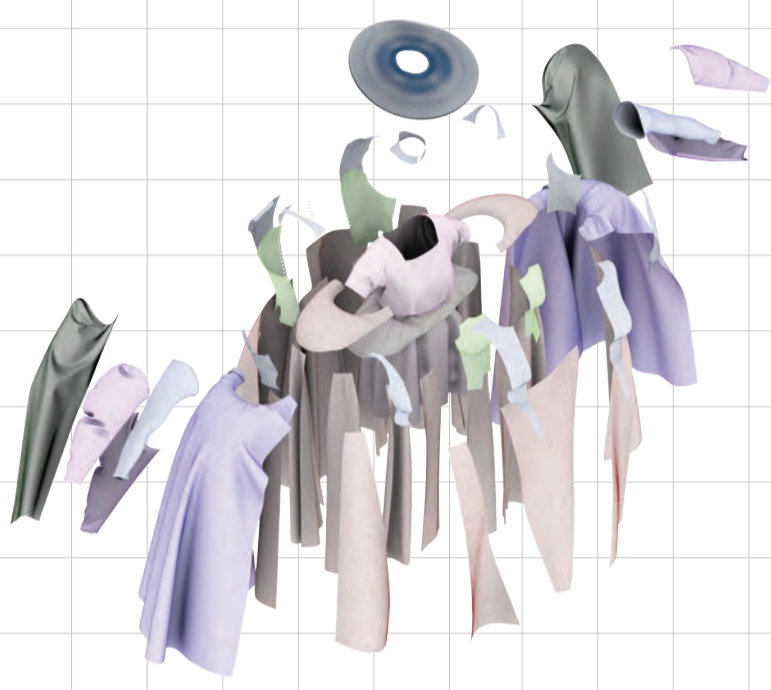


Puffed Slashed Sleeve with Gaze Oversleeve

- 1 chemise
- 2 corset
- 3 shirt
- 4 petticoat
- 5 bodice
- 6 sleeve trim
- 7 sleeve puff
- 9 slashes
- 11 sleeve outer
- 12 skirt

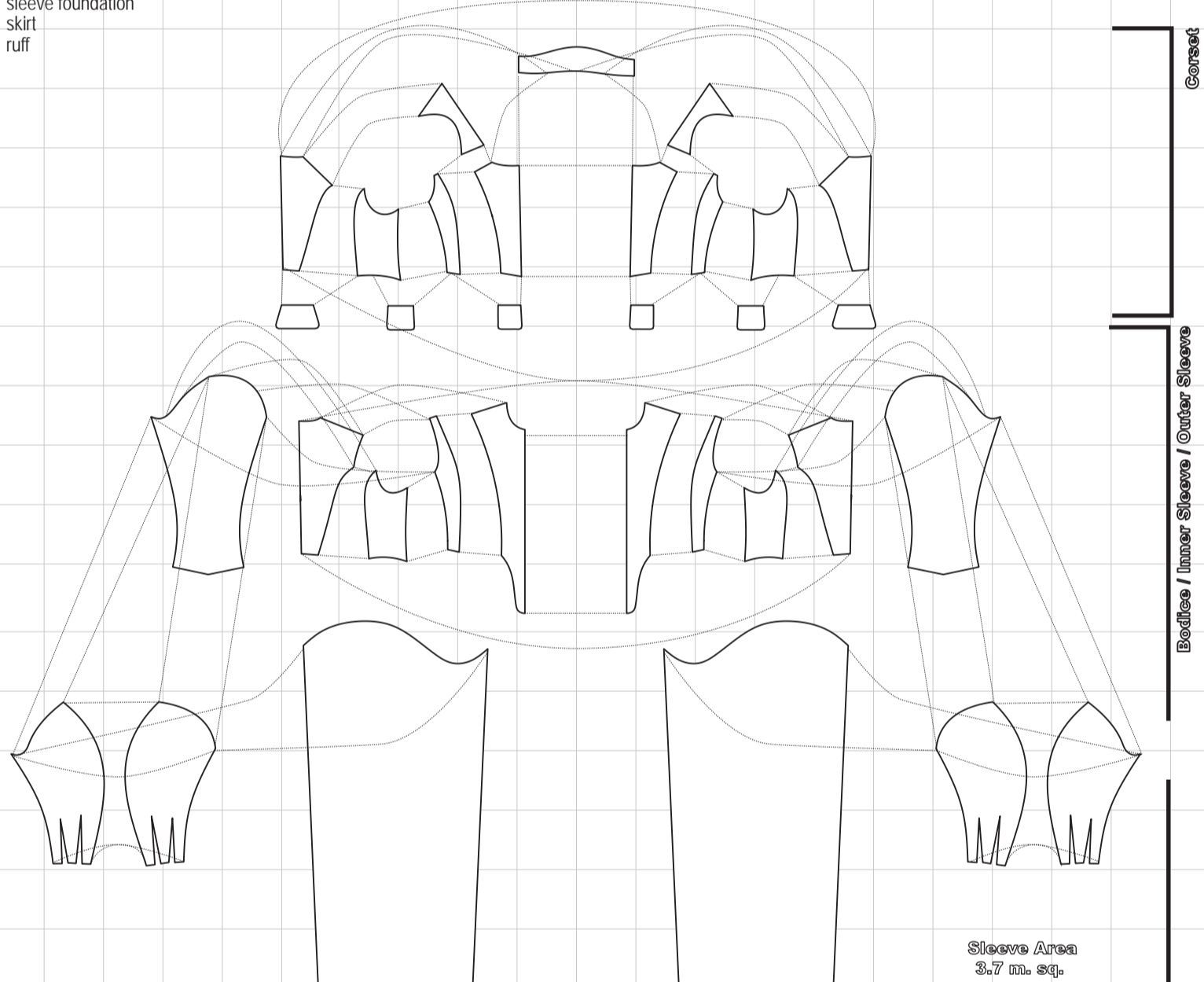


- 1:20
- citation
- innovation
- boning
- stiffening



Large Sleeve and Ruff

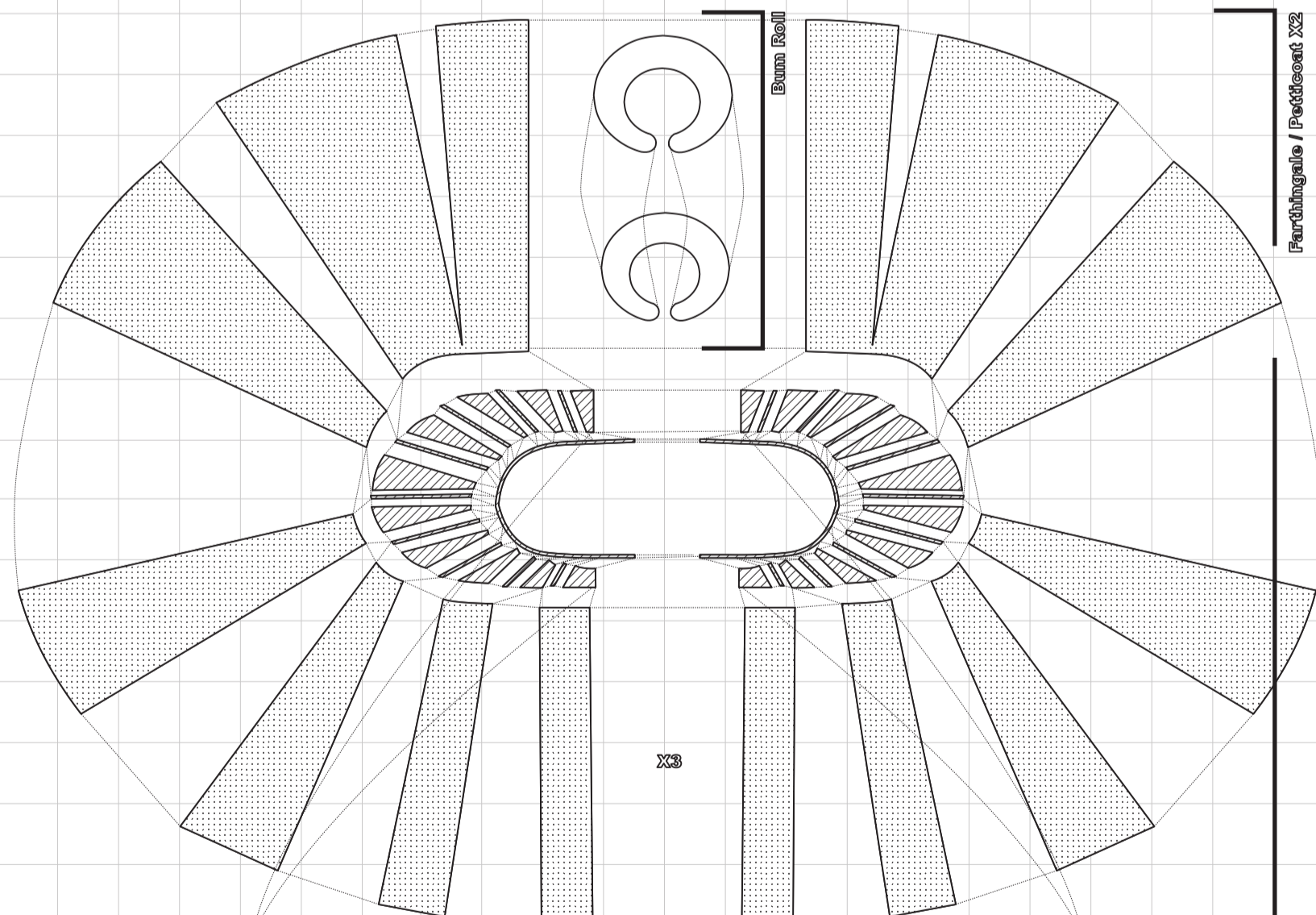
- 1 chemise
- 2 corset
- 3 farthingale
- 4 petticoat
- 5 bodice
- 7 outer sleeve
- 11 sleeve outer
- 11 sleeve foundation
- 12 skirt
- 13 ruff



Corset

Bodice / Inner Sleeve / Outer Sleeve

Sleeve Area
3.7 m. sq.



Farthingale / Petticoat X2

Bum Roll

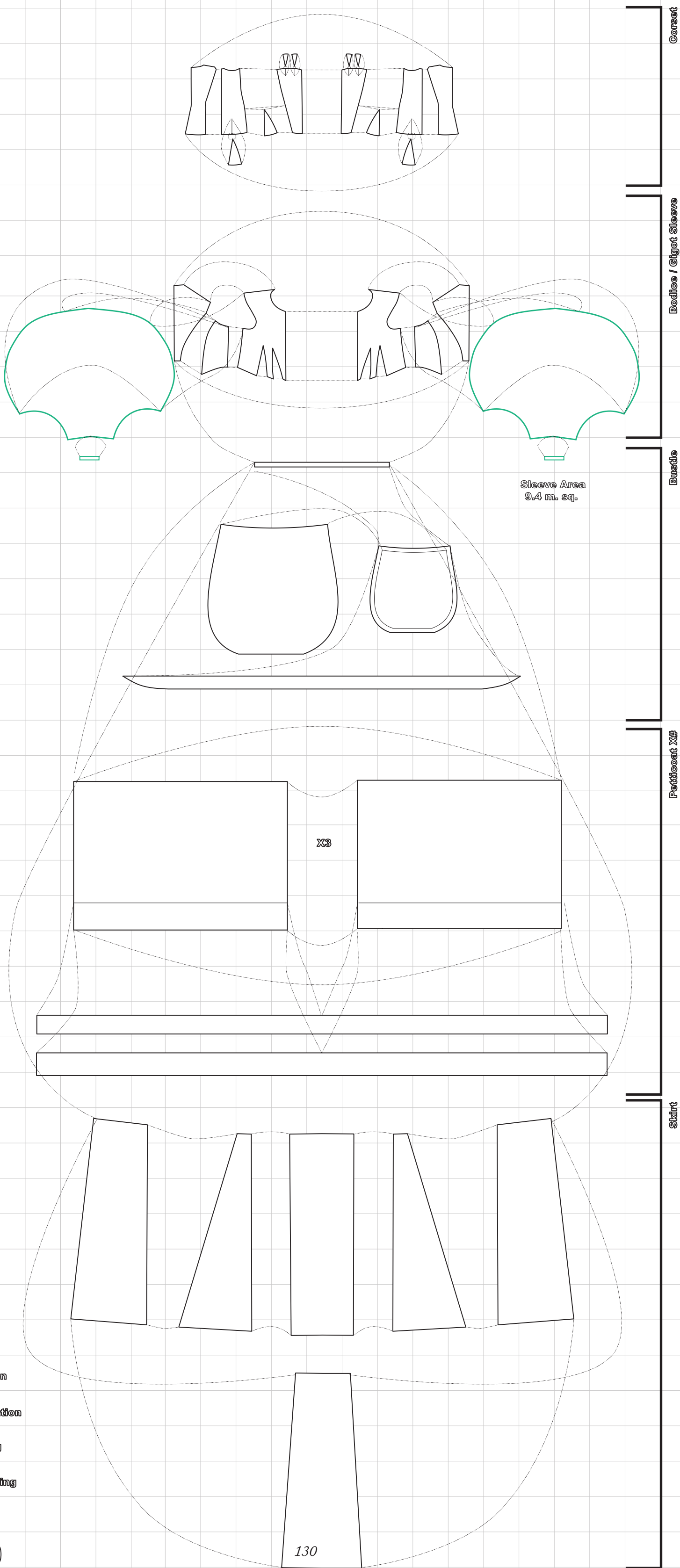
X3

Skirt



Gigot Sleeve and Small Ruff

- 1 chemise
- 2 corset
- 3 shirt
- 4 petticoat
- 5 bodice
- 11 gigot sleeve
- 12 skirt
- 13 ruff



- 1:20
- citation
- innovation
- ▨ boning
- ▨ stiffening