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FS21

MATERIAL GESTURE:

TEXTILE

READER

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**THE FOUR ELEMENTS OF ARCHITECTURE
AND OTHER WRITINGS
Gottfried Semper
Cambridge University Press, 2010**

**Chapter. The Four Elements of
Architecture, A Contribution to the
Comparative Study of Architecture,
1851. Excerpt. The Four Elements**

In this excerpt, Semper details his theory on the origin of the wall through the agency of anthropology. He divides architecture into four distinct essential elements: the moral, the roof, the enclosure, and the mound. Semper writes of early settlement routines; the social order developed around the hearth and the technical abilities that were coordinated from this, including skills that lead to the weaving of walls. Semper goes on to list the reasons why solid walls were constructed, such as for security, whilst maintaining that ‘carpets remained the original means of separating space’. He notes that

in later years, as textile walls were being supplemented with modern plaster, stone, and cladding techniques, they often still included unconscious imitations of woven cloth, journeying back to humans' first carpet walls.

V The Four Elements

Hellenic culture could only have arisen on the humus of many past traditions long since dead and decayed and from alien motives brought over from without and no longer intelligible in their original meaning.

Mythology, which in an orderly form we first meet with Homer and Hesiod, was the independent poetic creation of Hellenism, one that flourished* within a philosophical system of a natural symbolism no longer intelligible and once again becoming myth, which in its turn had been planted on a dead tradition of facts, on alien and indigenous articles of faith and poetry. Such was the bountiful soil from which the free Hellenic poetry about the gods arose. Like mythology and almost as an illustration of it, the fine arts burst forth from the remnants of older, indigenous, and imported motives divested of their roots.

However this came about – whether the splendid lands of Asia Minor and Greece still had to grapple with those terrestrial forces (whose powerful traces there give evidence of their activity continuing well into later times) while the Assyrians and the Egyptians in the plains had already organized dense populations into states, or whether the layer of humus composed of the remains of so many cultural conditions unknown to us will provide the evidence to prove that this area was one of the earliest seats of mankind† and the successive prize coveted by invaders – one fact stands firm: that the most varied constituent parts of older civilizations were deposited here and intermingled and in a great metamorphosis of people shot together (like Parian marble) from sedimentary conditions into a crystal clear independence.

* [Gottfried] Hermann, *Mythologia Graecorum antiquissima opusc.*, vol. II.

† According to Herodotus, this was believed even by the Egyptians, proud of their antiquity.

Yet the original constituent parts can still be distinguished, and it is essential to trace them in order to understand certain manifestations of Greek art that seem, unfortunately, inexplicable and contradictory when viewed out of context.

In ancient and modern times the store of architectural forms has often been portrayed as mainly conditioned by and arising from the material, yet by regarding construction as the essence of architecture we, while believing to liberate it from false accessories, have thus placed it in fetters. Architecture, like its great teacher, nature, should choose and apply its material according to the laws conditioned by nature, yet should it not also make the form and character of its creations dependent on the ideas embodied in them, and not on the material?

If the most suitable material is selected for their embodiment, the ideal expression of a building will of course gain in beauty and meaning by the material's appearance as a natural symbol. Yet when allied with antiquarianism, this materialistic way of thinking has led to strange and fruitless speculations and overlooked the most important influences on the development of art. *

At the risk of falling into the same error that I criticize, I see myself forced to go back to the primitive conditions (*Urzustände*) of human society in order to come to that which I actually propose to set forth. I shall do it as succinctly as possible.

The first sign of human settlement and rest after the hunt, the battle, and wandering in the desert is today, as when the first men lost paradise, the setting up of the fireplace and the lighting of the reviving, warming, and food-preparing flame. Around the hearth the first groups assembled; around it the first alliances formed; around it the first rude religious concepts were put into the customs of a cult. Throughout all phases of society the hearth formed that sacred focus around which the whole took order and shape.

It is the first and most important, the *moral* element of architecture. Around it were grouped the three other elements: the *roof*, the *enclosure*, and the *mound*,[†] the protecting negations or defenders of the hearth's flame against the three hostile elements of nature.

* One might only remember the tomes that have been written since Vitruvius on how the Greek temple descended from a wood structure, or the shrewd hypotheses on the tent roofs of the Chinese. *Vide* [Thomas] Hope's history of architecture.

† At first glance the mound or the terrace appears as secondary and as necessary only in the lowlands, where solid dwellings had already been erected; yet the mound joined at once with the hearth and was soon needed to raise it off the ground. Allied with the building of a pit, it may have also served as support for the earliest roofs. Moreover, it is probable that man, not as an individual but certainly as a social being, arose from the plains as the last mud-creation, so to speak. The legends from times immemorial of all nations, which often conceal an idea of natural philosophy, agree on this point.

According to how different human societies developed under the varied influences of climate, natural surroundings, social relations, and different racial dispositions, the combinations in which the four elements of architecture were arranged also had to change, with some elements becoming more developed while others receded into the background. At the same time the different technical skills of man became organized according to these elements: *ceramics* and afterwards metal works around the *hearth*, *water* and *masonry works* around the *mound*, *carpentry* around the *roof* and its accessories.

But what primitive technique evolved from the *enclosure*? None other than the art of the *wall fitter* (*Wandbereiter*), that is, the weaver of mats and carpets. This statement may appear strange and requires an explanation.

It was mentioned previously that there are writers who devote much time to searching for the origin of art and who believe they can deduce from it all the different ways of building. The nomadic tent plays a rather important role in their arguments. Yet while with great acumen they detect in the catenary curve of the tent the norm of the Tartar-Chinese way of building (although the same shapes occur in the caps and shoes of these people), they overlook the more general and less dubious influence that the carpet in its capacity as a *wall*, as a vertical means of protection, had on the evolution of certain architectural forms. Thus I seem to stand without the support of a single authority when I assert that the carpet wall plays a most important role in the general history of art.

It is well known that even now tribes in an early stage of their development apply their budding artistic instinct to the braiding and weaving of mats and covers (even when they still go around completely naked). The wildest tribes are familiar with the hedge-fence – the crudest wickerwork and the most primitive pen or spatial enclosure made from tree branches. Only the potter's art can with some justification *perhaps* claim to be as ancient as the craft of carpet weaving.

The weaving of branches led easily to weaving bast into mats and covers and then to weaving with plant fiber and so forth. The oldest ornaments either derived from entwining or knotting materials or were easily produced on the potter's wheel with the finger on the soft clay. The use of wickerwork for setting apart one's property, the use of mats and carpets for floor coverings and protection against heat and cold and for subdividing the spaces within a dwelling in most cases preceded by far the masonry wall, and particularly in areas favored by climate. The masonry wall was an intrusion into the domain of the wall fitter by the mason's art, which had evolved from building terraces according to very different conditions of style.

Wickerwork, the original space divider, retained the full importance of its earlier meaning, actually or ideally, when later the light mat walls

were transformed into clay tile, brick, or stone walls. Wickerwork was the *essence of the wall*.*

Hanging carpets remained the true walls, the visible boundaries of space. The often solid walls behind them were necessary for reasons that had nothing to do with the creation of space; they were needed for security, for supporting a load, for their permanence, and so on. Wherever the need for these secondary functions did not arise, the carpets remained the original means of separating space. Even where building solid walls became necessary, the latter were only the inner, invisible structure hidden behind the true and legitimate representatives of the wall, the colorful woven carpets.

The wall retained this meaning when materials other than the original were used, either for reason of greater durability, better preservation of the inner wall, economy, the display of greater magnificence, or for any other reason. The inventive mind of man produced many such substitutes, and all branches of the technical arts were successively enlisted.

The most widely used and perhaps the oldest substitute was offered by the mason's art, the stucco covering or bitumen plaster in other countries. The woodworkers made panels (*πίνακες*) with which to fit the walls, especially the lower parts. Workers handling fire supplied glazed terra cotta† and metal plates. As the last substitute perhaps can be counted the panels of sandstone, granite, alabaster, and marble that we find in widespread use in Assyria, Persia, Egypt, and even in Greece.

For a long time the character of the copy followed that of the prototype. The artists who created the painted and sculptured decorations on wood, stucco, fired clay, metal, or stone traditionally though not consciously imitated the colorful embroideries and trellis works of the age-old carpet walls.

* The German word *Wand* [wall], *paries*, acknowledges its origin. The terms *Wand* and *Gewand* [dress] derive from a single root. They indicate the woven material that formed the wall.

† It is highly probable that the wish to give tiles a colored glazing first led to the discovery of burnt bricks. The glazed tiles from Nineveh that I had the opportunity to examine closely in Paris are in an almost unburnt state. Their glaze must have been extraordinarily fusible. Terra cotta dressings are the forerunners to brick walls, and stone plaques the forerunners to ashlar. See further below. [In August 1849 Semper examined the Khorsabad findings in the Louvre, including some not put on public display, after having befriended the museum curator, Charles Blanc. See W. Herrmann, *Gottfried Semper*, 24 and 268n.91. – HFM]

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**Chapter. Style in the Technical and
Tectonic Arts or Practical Aesthetics,
A Handbook for Technicians,
Artists and Patrons of Art, 1860.
Excerpt. The Textile Art, Considered in
Itself and in Relation to Architecture**

**In this excerpt, Semper outlines
a range of technical skills in textile
arts, suggesting what he feels ‘merits
primary consideration’. The text
divides into subtopics that investigate:
Bands and Threads, Spun Yarn, Twisted
Yarn, The Knot, The Loop Stitch,
Plaiting, Felt, Weaving, The Stitch,
and, Dyeing and Printing. The excerpt
finishes with a section of writing that
draws a line between architecture and
dressing, stating ‘that the beginning
of building coincides with the
beginning of textiles’. Semper reviews
his theory on the principle of dressing**

**and adornment, referencing monumental
architecture and festive acts,
introducing examples of monuments,
temples, and tombs.**

The Textile Art

Considered in Itself and in Relation to Architecture

(excerpt)

B. On the Manner in Which Style is Conditioned by the Treatment of the Material⁶

§46.

Preliminary Remarks

This is a subject that offers a wide range of benefits to a manufacturer who combines a thorough technical knowledge with scientific and artistic education, and for whom the growing receptiveness of the people for beauty, especially among the producers, is inseparable from true progress and the growth of industry – both generally as well as materially.

For my part, I have already declared my incompetence in taking up such a difficult task and *wish only to stimulate* discussion by making some suggestions on what in my opinion merits primary consideration in a future treatment of such a rich subject matter. Besides, the subject gives rise to questions that more directly relate to my own field and for which I believe I am better prepared.

All operations in the textile arts seek to transform raw materials with the appropriate properties into products, whose common features are great pliancy and considerable absolute strength, sometimes serving in threaded and banded forms as bindings and fastenings, sometimes used as pliant surfaces to cover, to hold, to dress, to enclose, and so forth.

§47.

Bands and Threads. Primitive Products of This Kind

The most primitive products of this kind were borrowed, as it were, directly from the simplest operations of nature. Classed among them are stalks and raw stems, tree branches, animal sinews and entrails, for whose preparation a process already becomes necessary, namely, *twisting*, by which the product receives a form circular in section and fulfills better its purpose of strength and elasticity. In the next class are animal hides cut up for straps and, among other, less noteworthy products, threads made from resinous plant materials, long known to

a few savage tribes and becoming important to us only in most recent times.

The style of these objects, insofar as it is dependent of the processes and tools used in their production, is simple to explain: some of these objects have or receive a circular sectional plane; others, like straps, may first be fashioned bandlike but then are twisted, giving them a *spiral shape*.

The rubber thread imitates the leather strap but can also be shaped as a smooth circular thread or assume a spiral form. Following the well-known properties of rubber, it has no specific style but is totally flexible.

The technical means and tools used in working these products have remained the same since time immemorial. Wall paintings at Thebes show that Egyptian saddlers had the same crescent-shaped knife that still serves our leather workers for cutting long spiral straps from a single hide. With such a strap cut from a cowhide, Dido won the piece of land in Carthage.

The decoration of the strap is partly dependent on its bandlike form and should be consistent with this form. Above all, it should remain surface decoration and not disrupt the intent of the strap; it should imitate its function as a band.

§48.

Spun Yarn

Spun yarn is an artificial thread consisting of many natural threads. After natural threads have been properly prepared, the means of combing, plucking, squeezing, seizing, and twisting are used in its production. By combing, the threads are set as parallel as possible. With entangled and short raw materials, this operation is often replaced by carding, whereby the thread receives a somewhat feltlike appearance.

Since time immemorial the operations of plucking, squeezing, seizing, and twisting have been accomplished with the help of the clammy hand and the rotating spindle. In this, the new spinning machines have changed nothing in principle; they only duplicate and simplify production by replacing the hand, and by using machinery to bring in motion at one time many spindles and their parts substituting for the hand. The finest and strongest threads are still being produced in India, where the old methods of spinning have continued.

Every material requires its own method of processing. This influences the style of the spun yarn, which is, of course, particularly conditioned by the use for which it is made. Much can still be said on this important subject, about which only a specialist is able to speak in greater detail.

§49.
Twisted Yarn

Twisted yarn is a product related to spun yarn, a strong artificial thread made up of two or more artificial threads. The necessary operations are fewer than those of spinning. Plucking, pressing, and seizing are unnecessary, and it needs only to be twisted, which is done more easily on a flywheel or a similar apparatus. Before the individual threads are to be twisted they are wound onto cylindrical spindles or rollers, then run through a ring, after which the twisting takes place. Following the same operation, several twisted threads can be bound into a thicker rope. Threads of different materials, of unequal diameter, and different color can be twisted together, and even this process can vary, depending on the intention. One can, for instance, make a loose and strong yarn or manage double twists that run either with or against each other, and so on. For realizing the useful in the beautiful, this simple technique offers the richest material for stylistic consideration, a task that is reserved for an artistic-philosophical haberdasher. For this operation, too, we possess illustrations that are older than our written history. *

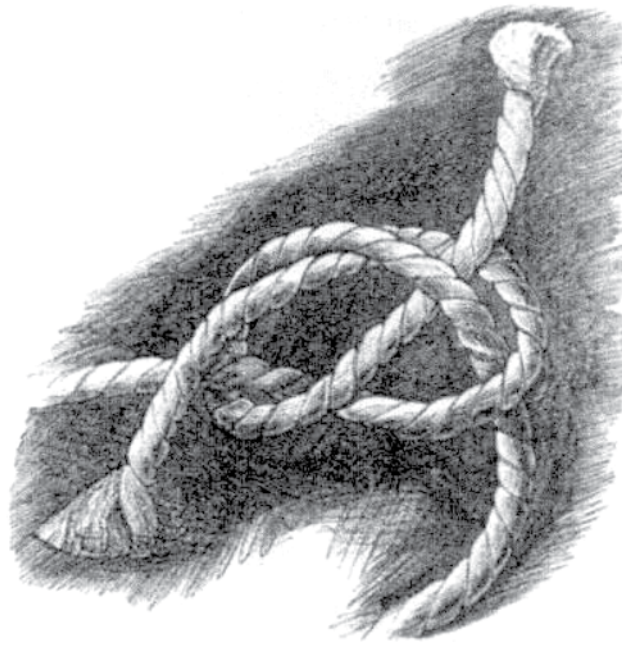
§50.
The Knot

The knot is perhaps the oldest technical symbol and, as I have shown, the expression for the earliest cosmogonic ideas that arose among nations.

The knot serves, first of all, as a means of tying together two ends of cord, and its strength is chiefly based on the resistance of friction. The system that best promotes friction by lateral pressure when the two cords are pulled in opposite directions along their length is the strongest. Another condition occurs when pressure is exerted on the cords not in the direction of length but perpendicular to their extension, although even in this case the resultant of the tension is best considered as moving in the longitudinal direction of the chords. The weaver's knot is the strongest and most useful of all knots, perhaps also the oldest or at least the first that figured in the technical arts. The rope maker and sailor know a great number of knot systems, on which, unfortunately, I can only speak as a layman. Related to the description of these systems are other things that would be of interest to our interpretation, but these also must be left to more expert hands.

A very ingenious and ancient application of the knot led to the invention of the network, which even the most savage tribes know how to

* See [J. Gardner] Wilkinson's often cited work on the Egyptians [*The Manners and Customs of the Ancient Egyptians* (1837)], vol. III, p. 144.



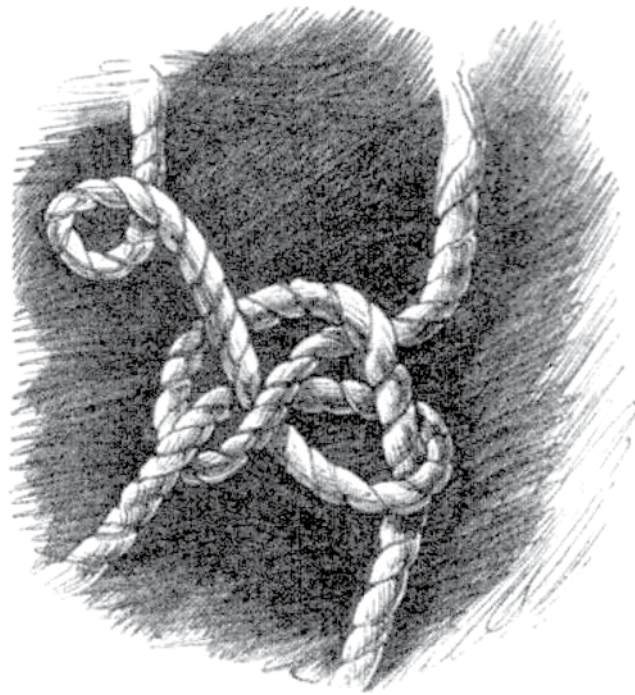
make and use for fishing and hunting. The mesh of the net, whose knot is illustrated here, * has the advantage that a damaged mesh does not affect the whole system and is easily mended. This is, at the same time, the criterion for the network, which in other respects permits the most diverse variations but in this particular point remains the same under all conditions. Spanish hemp was considered the best for nets in antiquity. Cumean hemp was also famed in this regard. The ancients made nets in which wild boars were caught, but of such great fineness that a single man could carry enough of them on his back to surround an entire forest. Yet the same netting in a thicker mesh also served as a corselet, in which each thread, although fine in itself, was sewn together from three hundred to four hundred individual fibers. This industry appears to have prospered especially in Egypt. † The Egyptians also made decorative nets from glass-bead necklaces, of which several charming examples have survived. This ornament was also prevalent among Greek women, as well as among Etruscan and Roman women. In India the net serves as a rich motive for head coverings and necklaces that are admirable in the alteration of the mesh and in the distribution of the decorations and pendants. The Middle Ages ‡ loved the network, and the

* Closer examination shows that it is identical with the weaver's knot.

† Compare Pliny [*Natural History*] 19, 1 and Herodotus.

‡ In Ebener's *Trachten* and in the work, *Moyen-âge et Renaissance*, in the article "Costûmes," there are charming illustrations of medieval nets. The Museum for Practical Art and Science in Kensington contains Indian nets and adornments in the form of a net.

Spanish have retained the time-honored value of delicate networks as adornments for the hair and as a very light wrap.



In architecture, in ceramics, and generally in all the arts, the net is used for the decoration of surfaces, and is often applied in a structural-symbolic way as an adornment on projecting and bulging parts, for example, on the paunch of vases. For the archaeology of nets, compare the numerous writings and essays of Böttiger on the adornment of the ancients. ★

§51.
The Loop Stitch

The loop stitch is a *noeud coulant*, a knot whose loosening leads to the unraveling of the whole system to which it belongs. It is the element of stocking making, knitting, and crocheting, and its particular principle of formation depends on the instruments used and the purpose of the weaving one wishes to make. I confess my incompetence prevents me from penetrating deeper into the essence of this art and note only that it is extremely refined and produces articles whose attributes can be attained in no other way and that, in addition, carry *in their construction* the elements of their richest ornaments. Elasticity and ductility are the specific advantages of these products, for which reason they are especially suited to close-fitting dresses, embracing and rendering the form

★ [C.A. Böttiger, *Die aldobrandinische Hochzeit*, p. 150.

without folds. The *gusset* and the *seam* lend to these products of the knitting and crochet needles a special type of adornment – in this case, fortunately, *unavoidable* decorative motives that have thus retained their genuine meaning and proper application in almost every age.

I do not know how far the ancients progressed in this art; however, I do not doubt it was used for quilting the linen corselets discussed earlier. Assyrian warriors of later periods wore tricot trousers that might well have been knitted. The Egyptians used a kind of knitted work for their periwigs. In recent times this art enjoys its highest artistic development in Spain. Out of traditional, age-old affection, the Scandinavian people of northern Germany cherish this art of making warm, close-fitting garments (*Hosen* or the modern, Low-German *Hasen*), for whose manufacture the elastic, long-hair wool of the north is especially suited.* The machine in this case has also brought about a revolution that has destroyed in part the aesthetic-ornamental character of weaving, or reduced it to a meaningless monotony.

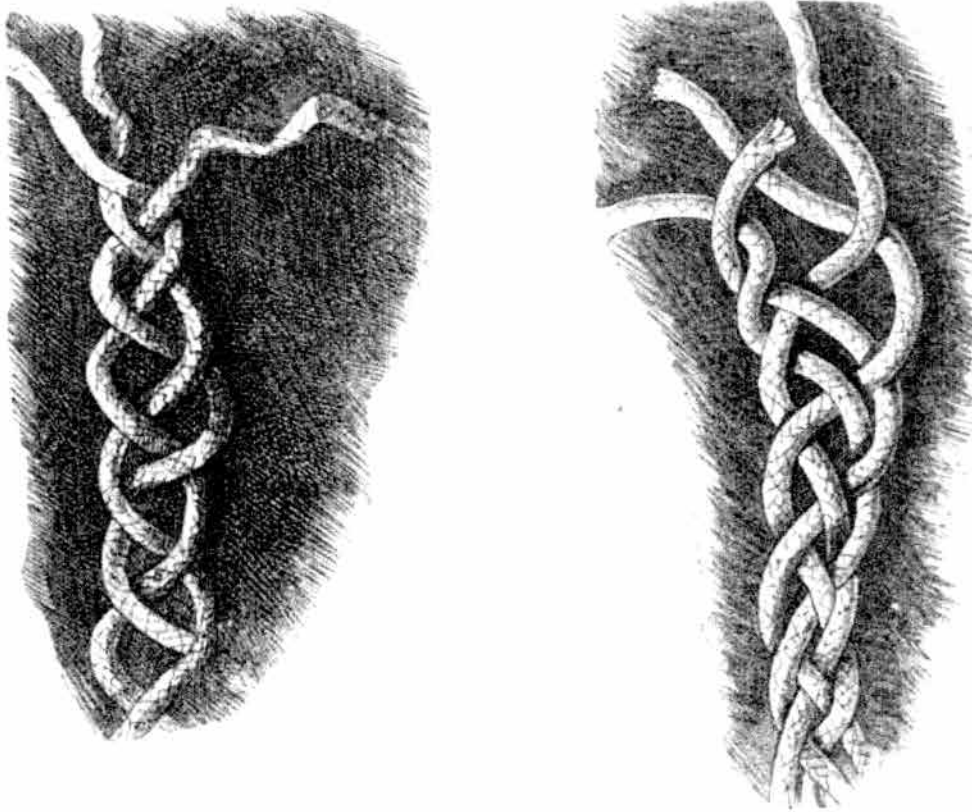
§52.

Plaiting (the Plait, Braid, Seam, Canework, Mat)

Plaiting should perhaps have been mentioned before knitting among the textile arts. Next to twisted yarn, it is the product used in making yarn, yet it also serves for making integuments. Plaiting provides a stronger system of cords than twisted yarn, since the individual cords that compose it act more in their natural direction, that is, in the direction of absolute strength when they are in tension. It also has the advantage that it is not so easily “unraveled,” that is, to loosen its elementary threads. For a plaiting at least three cords are needed, alternately interwoven (see figure). Yet the cords can be increased by any number, although in making a plaiting never more than three primary and repeating cords are active at any one time, following definite laws by which the cords that had been active are dropped and successively picked up by others. The round plaiting produces the torus and is very useful in saddlery. It also serves as a braid in the haberdasher’s art and is generally used, as already noted, as a very handy cord for the strongest yarns, for instance, in making anchor cables. With rigid materials, like metal wire, it is the best way to bind many wires into one. This system of cords is capable of the richest ornamental development and almost absolute elegance. Therefore, it was with good reason that the mother of the human race probably chose it as a hair adornment, and it is likely that

* It is curious that the technical expressions in this line of textiles are of Nordic origin in all languages: *stricken*, Low-German *knütten*, English “to knit,” French *tricoter*; *Masche*, from which comes *maglia*, “mail,” *far lavori di maglia*, and so on.

through this agency the plait became one of the earliest and most useful symbols of the technical arts that architecture borrowed. The plait lends itself equally well to cylindrical and circular surfaces, while the idea of binding is always present by an association of ideas. This is decisive for the use and proper application of the plait. The modality and intensity of the band also becomes expressed to some extent by the type and strength of the applied ornamental plaiting. The maximum strength, for instance, is expressed by that rich strap network found on the bases of Attic-Ionic columns and in other places.

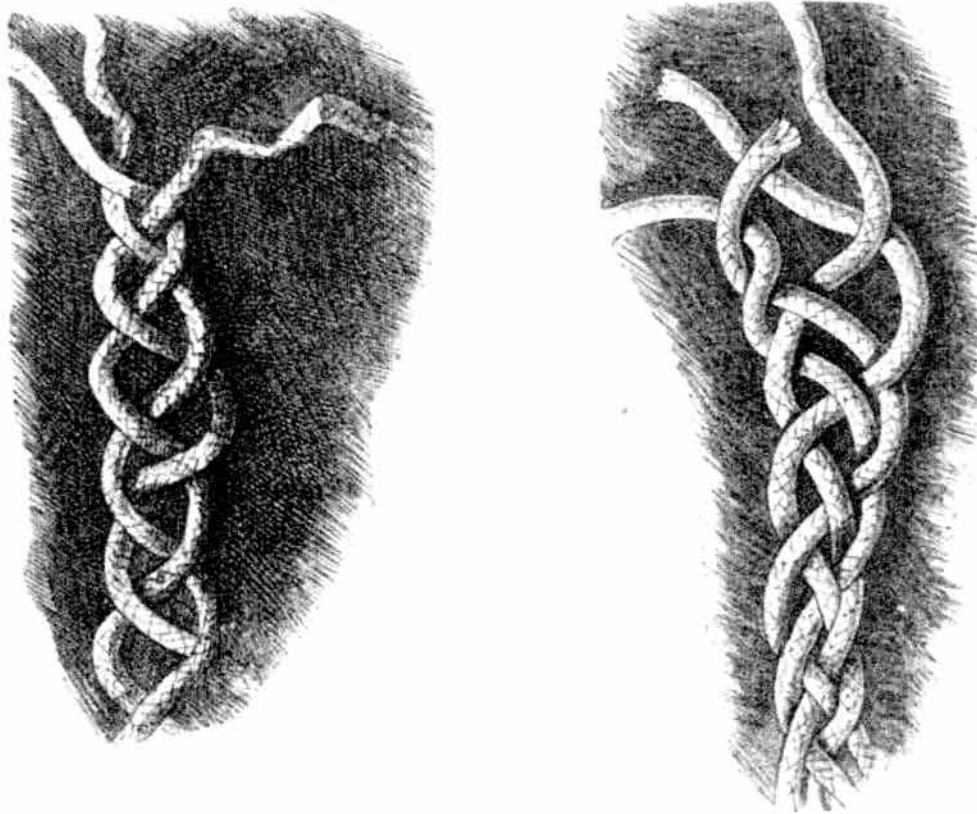


I must leave further details concerning the aesthetics of these interesting products of the textile art to educated haberdashers, saddlers, and above all to hair stylists, the last of whom, in fact, have attained everything possible in the technical perfection of the plait and have thereby controlled the taste of whole centuries.

Plaiting, by virtue of its absolute strength, is not only suited to be effective when stretched lengthwise; it can also serve as a *seam* to connect two sections of a dress and as such becomes active across the direction of extension.* As a seam, plaiting forms a wonderfully rich motive for ornamental play in all the handicrafts and even in architecture, as was already shown above.

* The relation of the seam to the hem was discussed above; in this regard the hem is also the basic motive for lace manufacture.

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Fig. 4.

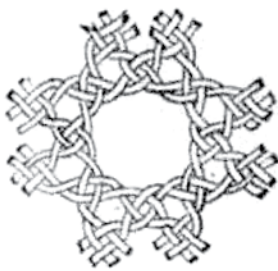


Fig. 5.

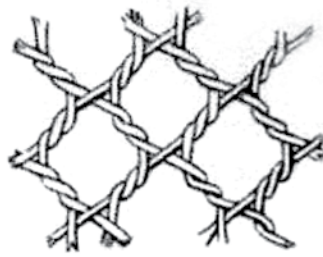


Fig. 6.



Linen threads were spun over with the stitch (Figure 2). This method always produces a geometric pattern. We see it applied to the seams and borders of the oldest altar covers and other ecclesiastical paraments.

The oldest points were executed on a parchment sheet on which the pattern was drawn and the guiding threads sewn; when the work was finished the parchment sheet was detached from the lace.

These oldest points are mostly Italian and Portuguese. Venice was the most famous manufacturing center. Only under Colbert (around 1660) was lace fabrication introduced into France.

The French Points (Alençon Points) are identical in principle with the old-Portuguese and modern Brussels Point. Figure 6 shows the stitch for the ground; Figure 7, the stitch for the pattern or the infilling.

The Brussels Point (*points à l'aiguille*) display a wide variety of basic stitches (Figure 8). In later times the ground or net was laced, and still later it was made with a machine.

Fig. 7.



Fig. 8.

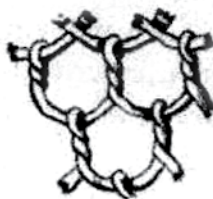
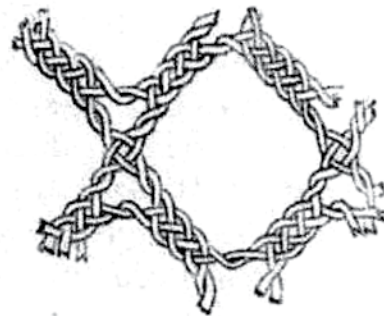


Fig. 9.



Plaited lace is often difficult to distinguish from those laces executed on linen grounds. The oldest bobbin laces are of this type.

The Spanish, large-flowered laces are often executed on a net or ground that consists of a twisted yarn made from two threads joined into a plaiting (see Figure 9).

Valencienne laces are flat; the pattern lacks those threaded outlines that appear on Brussels and Mechlin lace, and is executed on a ground consisting of a plaiting. The pattern is executed on this ground or net with the clothing stitch (Figure 9).

Mechlin lace is distinguished by the outlines surrounding the patterns; these are executed in a weaver's stitch and the ground is plaited.

The Brussels bobbin laces are distinguished by the relieflike treatment of the patterns.

A product with special characteristics are the Irish laces consisting of an irregular network interspersed with nodal points, imitating the networks of plant fibers as they appear when one views a thin slice of a dried branch under a magnifying glass or microscope.

Rich patterns are also executed on a similar ground. This characterizes the exceptional effects of the Honiton laces. One can also imitate Irish laces with the crochet hook.

Silk points and bobbin laces are called Blonde. The best are the French; the next best, to my knowledge, are those from the Erzgebirge.

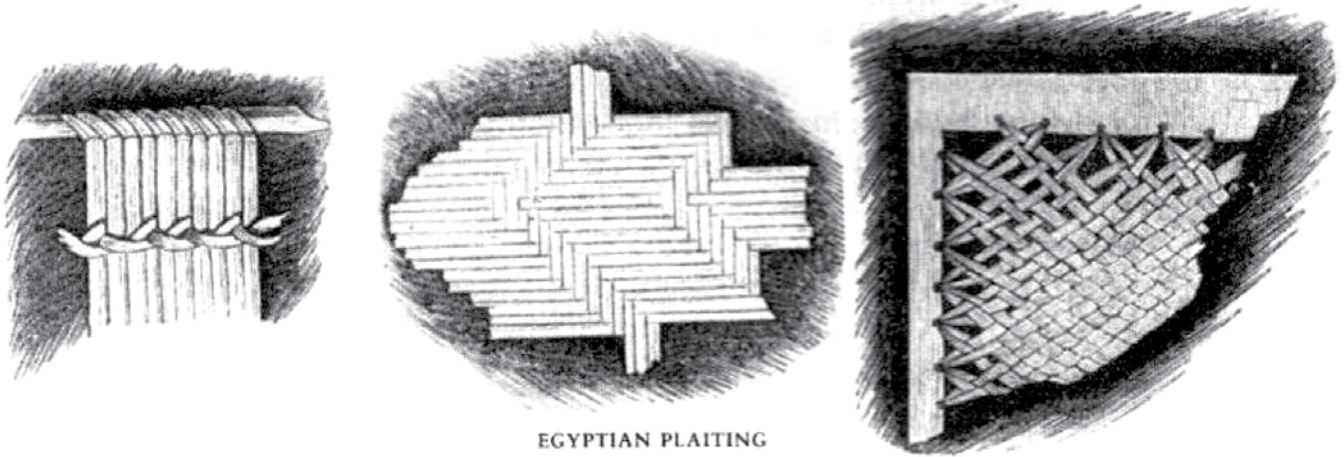
Yet enough of these delicate and skillful products of the *hyphantik*. The basic principle of their style, insofar as it is conditioned by the function and the ideal service that the products render, seems to be the easiest in the world and is completely defined in that these products should be *ornamentally treated hems and seams*. Their style, therefore, should be determined first by the materials they surround or trim, then by the person who wears them, the occasion for choosing them as finery, and so on, and so forth. Any theory of style for them is made all the more difficult and complicated if it takes into account the operations that have been already or could still be devised for their fabrication.

Plaiting already appears in the last-named products as *surface-creating*; it fulfills this purpose still more emphatically in the actual *mat* (the plaited cover).

One advantage plaited covers have over woven ones is that the cord elements out of which they are fashioned do not necessarily have to intersect at right angles, as is imposed by weaving, but cords running diagonally and in any direction can be interwoven into the texture. *This advantage of plaiting should be maintained in every way, made apparent, and be stressed as a characteristic feature.*

The art of making covers from cane is very old and has made no essential technical advances since the Old Kingdom of the Pharaohs. Nevertheless, in their aesthetic understanding of the motive, the Egyptians of that time were, as are now the North American Iroquois and many other savage and half-savage tribes, more spontaneous, more fortunate, and more ingenious than we modern Europeans with our admired mechanical omnipotence.

The wicker mat produces the richest variety of geometrical patterns, especially when the elements are varied by color changes and in size. It was always a prolific motive for surface decoration in Egypt and Assyria, the last of whose glazed brick walls were often patterned on models of wicker mats, especially around the time of the later dynasties



EGYPTIAN PLAITING

of the Assyrian Empire (Khorsabad and Kuyunjik). Following the time-honored tradition, the same motive was used to excess in the Asiatic-Byzantine style and in the various branches of the Arabian style. It received its highest development in Spain under the Moorish caliphs. All lower wall surfaces were paneled with such a patterned, glazed tile.*

The Renaissance, especially in the handicrafts (pottery, tarsia, metalworks) but also in painted decorations, returned to this Arabian motive, which incidentally had been introduced into Europe once before in the Romantic period of the eleventh and twelfth centuries (Norman churches in Sicily and Normandy, in several motives of the Saxon-Romantic style, the Doge's Palace in Venice). Presently, we shall discuss the predilection of the Chinese and the Indians for wickerwork and its importance for the primordial history (*Urgeschichte*) of architecture and style.

§53.
Felt

All *felts* are natural integuments, for example, the animal hide and the inner bark of a tree. Mankind early hit upon the idea of imitating these and of making a tangled mass of hair that has exceptional flexibility and compactness, protects well against cold, dampness, and even against wounds, and is very light as well. Great luxury was practiced in this regard in late Alexandrian times, when they made felt from a purple wool. The wool togas of the Romans and even the lighter chlamys of

* Compare the *Alhambra* of Owen Jones, who treats with great care the various principles in the composition of these patterns; they were constructed from either the square or the regular hexagon. The system of color that was used on them contrasted with the polychrome system of the walls above this paneling. The former inclined toward cool secondary and tertiary color tones; the latter consisted of warm and primary colors.

the Greeks were woven from a woolen material that became feltlike through the hands and feet of fullers. In early times felts were used for caps, sandals, and socks. I must leave further work on the technical-stylistic aspect of this interesting section to others and only note that in general the *stiff* felt of our men's hats is quite in bad taste.

§54.
Weaving

Could I do justice to this paragraph it would compose an entire book by itself! So much could be discussed here! Every salon, every new fashion show, every fair, every industrial exhibition attests to the perplexity of our artistic weaver's trade, forsaken by the Graces and drowning, as it were, in its own excessive resources. How inferior it is with regard to taste and invention when compared to what was and still is being produced today on the looms of the Hindus and the Kurds with far simpler and more limited means, and in centuries less industrial but with a greater understanding of art. We have sufficient professorships to teach the sciences in their application to the industrial arts; what is lacking altogether is a practical aesthetic for the manufacturer and especially for the weaver, who are ill-prepared for the artistic part of their industry and are therefore forced to turn to artists and draftsmen. These artists, however, have limited technical knowledge and, furthermore, are not up to date with artistic and general education. Only an industrialist familiar with all aspects of weaving, with mechanics, with dyeing, as well as with the business aspect of the trade, an industrialist who is at the same time a humanist, scholar, philosopher, and artist in the true sense, and who has at his disposal a textile collection well furnished and arranged according to the history of style as a teaching aid for his instruction – only he is competent to assume such a position. With all of these things, he will still have a hard time coping with the spirit of the time and his industrial colleagues.

For my part I would rather not express my views on this subject in a partial, disconnected way, which would only betray the lack of a most basic technical knowledge! Perhaps the best discussion of this is contained in Redgrave's already much cited "Supplementary Report on Design,"⁷ although this discussion lacks coherence, is too incomplete and too rigidly schematic in its details. Style, as far as it is dependent on the purpose of a thing, can be more easily formulated into principles than can the speculative theory of form be deduced in those areas where the form must be considered as a function of the technical means that come into play.

One should have to deal systematically with all weavings from the simplest cross weave to the most elaborate polymite, the brocaded and high-warp weavings, outline their history, show for what materials and

purposes they are suited, define their *means* and *limits* in an artistic and formal sense, indicate the course along which improvement is possible, identify the influence of machine fabrication on the style of the products, examine critically the taste of the time, and investigate how this taste influences artistic technique or is influenced by it. One should have to emphasize that what is better could but does not exist and prepare the ground for bringing it about, and not hold up the excellence passed down by history as the absolute model, thereby arrogantly disregarding the present and its inventions, but use it as an example of how the task had been solved correctly in times of true artistic understanding from the given facts of *those times*, so that we, in following *this* model, must enlist the *present* facts to bring about the solution to an analogous task. Finally, one should have to show that all technical, mechanical and economic means that we have invented and that give us an advantage over the past will lead to barbarity rather than indicate the progress of true industrial art or civilization, as long as we are generally unsuccessful in mastering these means artistically! All this, among many other things not touched upon, are the principles that a professor of weaving has to set out in theoretical and practical instruction.



ROMAN SILK FABRIC FROM SITTEN (SWITZERLAND)

§55.

The Stitch, Embroidery, acu pingere, pinsere, pugere, γράφειν.

Embroidery is an arrangement of threads that one affixes to a natural or artificially produced, soft and supple surface with the aid of a

pointed instrument. The elements of the designs produced in this way are called *stitches*, and are comparable with the units (*tesserae*, *crustae*) out of which the mosaic is assembled; embroidery is, in fact, a *kind of mosaic in threads*, by which its general character and its relation to *painting* and *sculpture* is determined. Just as with the mosaic both surface presentations and relief presentations are brought about (and it is unclear on which of the two is conferred the right of seniority),* so there are *relief embroideries* and *surface embroideries* that arise from different and totally unrelated principles.

This contrast is revealed in the form and organization of the stitches that are the generating elements in both kinds of embroidery. Two types of stitches are possible: (1) the flat stitch, (2) the cross stitch.

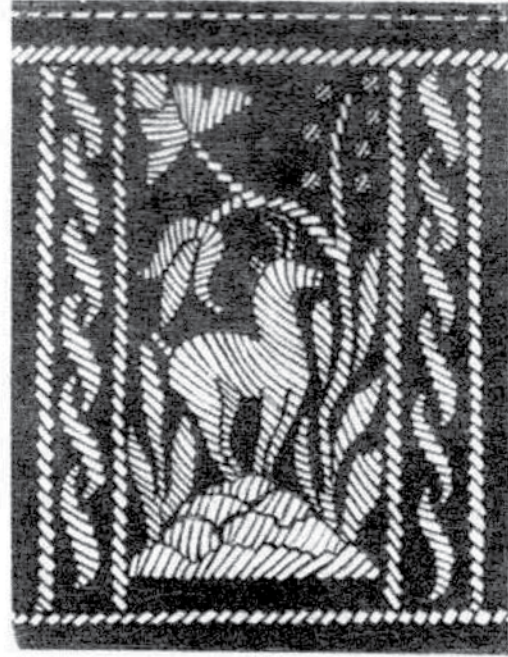
The limit or, if you wish, the abstract concept of the flat stitch is the *line*; the limit of the cross stitch is the *point*.

The flat stitch appears to be the older of the two, since it is already familiar to most savage tribes, who use it on animal hides and tree barks to create all sorts of colorful, mostly tasteful patterns, at times using fish bones, at times with the split quills of bird feathers or other natural, brightly colored threads. These patterns are raised above the surface and contain, in reality, the basic rudiments of the polychrome relief. The hunting implements, mocassins, and other clothing items of the North American Indians are richly and in style correctly decorated with these patterns, especially on the seams and joints. That the flat stitch as an element of needlework was the original one is clear from its use in *sewing*. The stitches of the seam produced the flat stitch, which at the same time was used ornamentally.

Figures arise through a series of flat stitches with and without borders. The series is formed in the first place by the ends of the stitches meeting; second, by the stitches making contact partially or continuously along the length. By the projection of the ends of a thread over the ends of a neighboring thread, a stepped boundary of the surfaces covered with parallel stitches develops, and thus the possibility arises of portraying any figure, whether it be bound by a straight or a curved line or a mixture of the two (see the accompanying figure taken from a Tyrolean feather embroidery).

* The oldest mosaics are perhaps the wall decorations found at Warka, which also form relieflike projections. Among the Greek-Roman mosaics, it is the relief mosaic that exhibits the unmistakable, older Greek style. With the exception of the mosaic floor in the pronaos of the Temple of Zeus at Olympia and a few broken pieces of uncertain date, all the actual mosaic paintings are from the later Roman period. Compare [Désiré Raoul] Rochette, *Peintures antiques inédites [précédées de Recherches sur l'emploi de la peinture dans la décoration des édifices sacrés et publics, chez les Grecs et chez les Romains]*, pp. 393ff.

By closely placing doubled threads side by side and by using underlays woven all over with threads, one can attain a more or less relieflike design, a practice introduced very early and whose influence on the art of reliefs in general will be discussed later. The style of this practice is *linear*, so to speak, in contrast to the point-style of the second procedure yet to be discussed. It is at the same time a *free* style, in the sense that the texture of the ground does not have a direct, controlling influence on the style that has to be observed, as is the case with the cross-stitch manner.



TYROLEAN FEATHER EMBROIDERY

I will come back to this distinction and to the fact that special consideration must still be given to the ground of flat embroideries, after I have discussed the most important things on the cross-stitch manner. Probably because feathers were originally used for the flat embroidery, it was called *opus plumarium* in Latin, *rekhameh* in Arabic, and *ricami* in Italian.*

The cross stitch is an infilling of small squares that are marked out on the surface (in most cases by the texture of a fabric), forming what one calls the net or canvas. It first appeared, therefore, after or with the invention of the simplest woven fabrics and could not have been used with the hides, barks, and other integuments that nature supplied, because they lack the network, or rather, because they are a very thick and irregular network.

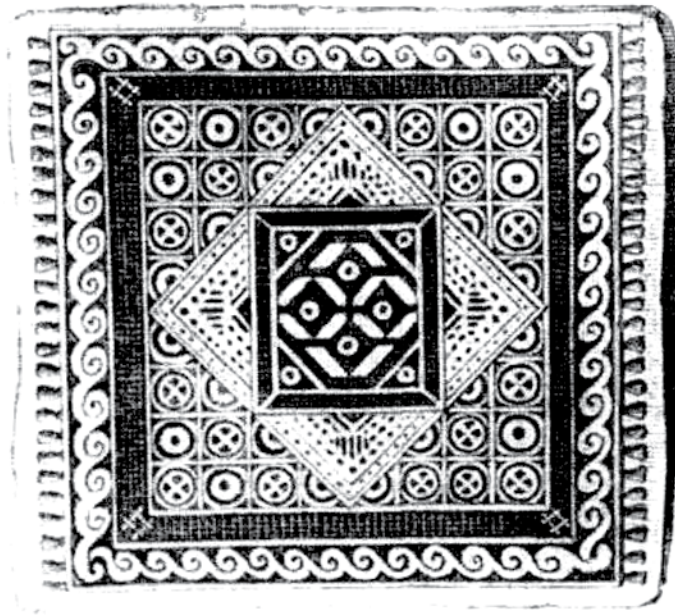
Compared to the flat stitch, cross stitchwork is more constrained and from its inception was confined to geometric forms that, in addition, could only arise from square elements. Therefore, they all have a common contrapuntal key that forces one to observe a definite canon of composition. The cross stitch is not suited in its function to a relieflike treatment.

From this condition, a stylistic opposition automatically arises between the *ornamental* character of cross stitchwork and the inseparability of the method of the flat stitch from executing *illustrative* themes. These themes, it is true, can also to some extent be produced on a canvas by

* Seneca, *Epis.*, *Avium plumae in usum vestis conseruntur.*

cross stitching, but always in a strictly conventional and constrained way, a limitation imposed by the quadrature of the net. *

It is remarkable that the cross stitch was the method of embroidery used by the Egyptians† (many remnants in this manner have yet survived), while the Assyrians, on the contrary, executed their embroideries in the flat stitch that is still to this day dominant in India and China. Might one not already see in this distinction a demonstration of the important and early influence that the arts of the needle and the loom had on the style and the course of development of all the fine arts?



From the surviving network of pictures left incomplete we know the ancient Egyptian method of making grids on wall surfaces and transposing designs into the squares. Egyptian sculpture and painting was an embroidery in cross stitch executed on the walls with all the attributes of the latter's style; the technique of painting and sculpture commonly practiced in Asia since primitive times, on the contrary, is entirely consistent with those styles that belong to flat embroidery.

* On the tapestries executed exclusively *au petit point* from the Louis XV period a certain style appropriate to the process can be dimly discerned amid the free and licentious artistic taste of that time.

† Since the *opus phrygionium* (or *opus phrygium*) of antiquity was surely nothing other than cross embroidery, we can conclude that this technique, in contrast to the *opus plumarium*, was also the most common embroidery in Asia Minor. Petronius speaks of a *plumatum Babylonicum*. The accompanying woodcut (one of many no less elaborate patterns of the same kind) is of a linen embroidery sewn on a tunic that was found inside a grave at Saqqara in Egypt. The grave is even from the Old Kingdom; thus the needlework is perhaps over 6,000 years old.

One can find several references to the types of embroidery used in antiquity in the reports of Salmasius in Flavis Vopiscus passim.

The numerous passages of the oldest sacred and profane books that allude to materials with figurative representations and whose execution are repeatedly described or at least briefly mentioned have been taken by archaeologists to refer *only* to artificial weavings and not to embroideries, and they have deduced from this that the latter, *opus Phrygionium*, was a relatively late invention. * I do not accept this and suspect the reason for it to be a one-sided interpretation of such ambiguous expressions as ἐμπάσσειν, ἐμποικίλλειν, γράφειν, ὑφαίνειν, and so forth, which can refer to weaving, embroidery, even to painting and all other possible means of representation. The art of embroidery is surely older than the art of weaving, † if one understands by it figurative and illustrative compositions sewn onto fabrics with threads. But *variegated* weaving may possibly have arisen earlier than the *variegated* embroidery, that is, earlier than the simple embroidered pattern that can be looked upon as an imitation of the woven pattern and that followed the constraints of the woven net. Assyrian reliefs are also of great importance to us in *this* question, since the older ones appear to be nothing other than vividly embroidered dresses produced in *opus plumarium*. Yet in later reliefs we see only squared dresses (to be sure rich but regularly patterned) made of colorfully woven materials. We know that the oldest products of the Chinese were made from smooth (plain, unpatterned) materials that were colorfully embroidered initially with feathers.

Yet we scarcely need such historical documentation for conditions that are to some extent self-explanatory. I repeat my belief that sewing is older than weaving and that the former led to the idea of embroidery, which was carried out much earlier on leather and barks than on actual fabrics. The fabrics themselves and, for this reason, all the more their later, figurative designs are therefore of a later origin than embroidered integuments.

This question might seem insignificant to practice, yet to someone who realizes the close interrelation of every branch of art and who considers the artistic conception as the epitome of practice, it is not unimportant. Yet let us turn to other considerations that relate directly to practice and are more obvious.

* [C.A.] Böttiger, [*Griechische*] *Vasengemälde*, III, Sect. 39; [Anton Theodor] Hartmann, *Die Hebräerin am Putztische [und als Braut]*, III, p. 141; [Antoine-Yves] Goguet, *De l'Origine des loix [des arts et des sciences, et de leurs progrès chez les anciens peuples]*, II, p. 108; Salmas, H.A. pp. 511, 126, 127, 224, 311, 394, 894, 858; [Johann Gottlob] Schneider, *Scriptorium Rei Rusticae [Veterum Latinorum]*, in index, pp. 360–61.

† Martial XIV, *Epigrams*, 150:

*Haec tibi Memphis tellus dat munera; victa est
pectine Niliaco jam Babylonis acus.*

[(This present the land of Memphis makes you; now has the needle of Babylon been surpassed by the sley of the Nile.) Loeb trans.]

I do not wish simply to reiterate the fact that the style of embroidery has to conform to the material on which and by which it is embroidered, that embroidery on red deerskin trousers or on a tobacco pouch made from yellow maple bark, for instance, must be different from embroidery on cashmere or on a white transparent muslin (although modern articles of this last class, of which the Swiss are especially proud, and numerous other examples of the unspeakable, tasteless acupiction of the most recent times fail altogether to recognize the limits of these distinctions), because the laws that prevail here belong more to the domain of style insofar as it is dependent on material and purpose and therefore were mentioned in the preceding discussion, which treated style in these two respects. I only wish to add with regard to these distinctions, which are also somewhat conditioned by the procedures used, that strong and coarse materials demand to be embroidered with relatively large stitches and with threads whose strength is consistent with the ground, and therefore for these a thick and full embroidery is appropriate, whereas for veillike, spun fabrics a loose tendril-work, fine stripes (*viae*), sprigs, or something similar is befitting. * If only we had a few fabrics from Cos to study the true veil style!

* It may be appropriate here to give a short excerpt from Redgrave's often cited report, in which he says the following about muslin curtains:

These fabrics should, of course, have a perfectly flat treatment, whether purely ornamental forms or flowers are used for their decoration. The best effect for borders is obtained by a symmetrical arrangement of flowing lines, which may be large in pattern, from the lightness of the material; while a diaper treatment, or small sprigs arranged with large and regular spaces over the central field, are the simple rules for their decoration. It would seem hardly possible to err much in designing for a fabric which admits of such small variation, the contrast of the thick work with the more filmy ground being the source of the ornamental form, and colour being rarely used; yet perhaps, in the whole Exhibition, there are not more glaring mistakes than are made in the decoration of these goods. In the Swiss muslins, the effort seems to have been directed rather to curious skill in workmanship than to taste in design, and some of the most costly goods are in the worst conceivable taste – immense cornucopias, pouring out fruits and flowers, palm-trees, and even buildings and landscapes being used as ornaments. Even when this only consists of flowers they are used imitatively and perspectively, foldings of the leaves, and in some cases the actual relief of fruits, being attempted. Although the same faults occur in the English manufacturers, these, on the whole, slightly incline to better taste . . . but [in general] there is a sad want of good design in this class.

Therefore worse than the English – that is strong! Certainly I agree in general with these final judgments on the achievements of the modern art of embroidery, in part but not in full with the author's view of the simplicity of the stylistic rules that are possible with them. I find, for example, that the size and use of a curtain as a finishing influences the character of the pattern, which should correspond both to this condition and to the seemingly opposing conditions that dictate the delicate, sheer material. The fine sprigs, therefore, are hardly appropriate in this place, just as the regular diaper decoration may be undesirable here, since it is completely out of character with freehand embroidery in the flat-stitch manner. It is more consistent with woven and printed materials, probably also with embroideries in the cross-stitch manner. Yet we will give further details on

Yet let us leave this (and set aside the other mixed factors of style that are almost as numerous within the vast field of embroidery as the individual materials and means of application that exist and multiply daily), and let us focus, rather, on the *factor of free treatment*, which is a characteristic common to all hand embroidery in the flat-stitch manner and which almost elevates it to the standing of a free art. The strength of this style is the hand embroidery, subservient neither to strict symmetry nor to geometrical pattern – indeed, it should manifest its style in the *disregard of both within certain limits, manifest it in the free painterly arrangement insofar as the latter remains compatible with the other conditions of style*.

The freer the design of ornamental motives, the more a distribution of masses and of the balance of forms and colors arranged according to certain higher laws of taste becomes necessary; in this connection the material, spatial, and practical demands that each task entails are decisive for the *how* of the conception. Freedom within these limitations of style is the secret of high art that, although still very bound, sets its wings in motion for the first time in embroidery. One can argue that free art in the Orient never went beyond this point of unfolding, that it permanently adhered to the limits of the embroidery style. Yet if this is true, it is also equally correct to say that nowhere has the spirit of the embroidery style as such been grasped so perfectly as there, and that for this reason the free ornamentation of the Orient, in particular Indian and Chinese embroidery, remains a model for us and our art industry, on which we should practice our taste and our feeling for style with regard to both their forms and the principle of coloring observed in them.

For the purpose of free ornamental embroidery, the tendril designs and, generally speaking, the vegetable motifs that are always capable of repetition without tiring are the happiest – an unexhausted and inexhaustible source of the most graceful and freshest inventions. Where, however, art goes beyond these motifs and introduces figurative, symbolic, or even tendentious themes, it should above all guard against provoking disgust through symmetrical and periodic repetitions of similar motifs, through a monotonous significance that is an unailing way to turn one's stomach. Medieval embroidery and knitted materials, especially those that were made in the fourteenth and fifteenth centuries in Italy and in other European mills, are frequently afflicted with this

this in the text. [Quotation from R. Redgrave, "Supplementary Report on Design," *Reports by the Juries*, 730. The phrase "especially in some of the woven curtains from Nottingham, and in the fabrics exhibited by the *Utrecht Company* (Class, XIX., 265, p. 570)" is deleted from the next to last line of Semper's translated quotation, and "in general" is added by Semper.]

error of style. We see groups of angels holding a chalice, Madonnas, and all the saints, as well as other mystical symbols scattered over the surface in regular intervals and constantly repeated and – instead of the old fabled beasts of Asia whose ornamental repetition we can put up with more easily. A small but powerful party would have us take up this Gothic nonsense again today, but we are not deceived by its in no way purely aesthetic tendencies and would stay with our Malakoff towers, sun temples, and other tapestry motifs that, even if not tasteful, are at least harmless. This tendentious monotony is absolutely reprehensible on hand embroidery, where it can be avoided, and on woven materials and tapestries, where it is unavoidable as soon as one wants to be tendentious.

The easier art of canvas embroidery is the most common and preferred with our ladies (particularly for wool embroidery). What is characteristic for the first-named embroidery is *without style* for wool embroidery, and just for that reason our eccentric taste chances upon depicting the most adventurous imitations of nature in the freest arrangement – the wildest, most naturalistic conceptions with a technique that wants, above all, to do just the opposite. It would be futile to become worked up over this; the design of embroidery patterns is in bad hands and it would be difficult for a real artist to succeed today, like that old, honest engraver Siebmacher,⁸ who published a *true* pattern book for canvas embroidery.* Yet this master and his colleagues Altdorfer, Aldegrever, Pens, Beham, Virgilius Solis, Theodor de Bry, Jean Collaert, Etienne de Laulne, called Stephanus, Peter Woeriot, and the other *petits maîtres* already belonged to a time in which the practicing technician no longer designed his own compositions, as before. The art already had begun to separate itself from handicraft. Before this separation our grandmothers were indeed not members of the academy of fine arts or album collectors or an audience for aesthetic lecturers, but they knew what to do when it came to designing an embroidery. There's the rub!

§56.

Dyeing and Printing

The tanning and dyeing of hides belongs to the remarkable group of inventions whose mother was not need but pure desire, and it ranks among the earliest of all inventions because the instinct for pleasure, as it were, inspired man. Delight in color was developed earlier than delight in form; even the simply organized insect takes delight in the

* Siebmacher's compositions were republished in part in Reynard's reproductions of the *petits maîtres*. A fashion journalist should use or, better still, even copy them for his subscribers, instead of the bad things that are now presented to them.

radiance of the sun, in the flame, and in the offspring of light, the brilliant flowers of the field.

The simplest dyeing materials, that is, those that lie closest at hand, are the saps of plants; primitive man nowhere saw coatings of color in nature, but everywhere color was inseparable from form, penetrating it. *Dyeing is more natural and easier than coating and painting, therefore also more primitive.* This thesis embodies a very important factor for the theory of style, which I will come back to often in developing my conception of polychromy in the fine arts of antiquity.

The practice of tanning became at an early stage associated with dyeing, *for the striving toward a lasting pleasure is as old as the pleasure.*

Our chemists are outstanding in explaining, in demonstrating experimentally how certain salts and lyes react with materials being dyed, as they alter their color and increase their absorbability and color fastness at the same time. Recently established firms engaged in dyeing have derived great advantages from these advances of science, but in this respect (I mean in the purely technical aspects of dyeing) it remains uncertain whether the men of earliest antiquity, the dyer of the Old Kingdom in Egypt and of ancient Chaldea, did not know far more of the mysteries of tinting and the fastness of the dyed materials than our most renowned manufacturers and steam-vat dyers. It is also unclear whether all the mysteries of nature that we have unveiled and applied to this end were not known to antiquity and put to good use, even if the ancients gave (what seem to us) the most ludicrous explanations for the reactions they controlled. Pliny tells us in explicit terms that the Egyptians knew that by applying various stains to the woven material in such a way that invisible patterns could be formed; materials, thus prepared, had various, bright colors when lifted out of the dyeing vat into which they had been dipped only for a moment: "*mirumque, cum sit unus in cortina colos, ex illo alius atque alius fit in veste accipientis medicamenti qualitate mutatus, nec postea ablui potest. ita cortina, non dubie confusura colores, si pictos acciperet. . .*"*⁹

Something similar, a combination of printing and dyeing with the most varied and at the same time most natural and closely related colors, has yet to be devised by our color artists.

Yet the ancients' mastery in dyeing their fabrics and other materials (for which they, in my view, deserve our greatest admiration) resides not in the refinements of practice; rather, it is in the clear execution of certain simple principles of style on which they based a music of color that was entirely in harmony with the music of their forms, and whose chords had the most marvelous and complementary influence on the latter.

* Pliny, *H.N.*, 35, xlii, 150.

Our modern art of dyeing appears at its best in the preparation of colored yarns of wool, linen, cotton, or silk, which leaves to the weaver or manufacturer the selection and use of any number of prepared fibers. Moreover, the dyer seeks to come as close as possible to abstract colors in their absolute purity and to achieve a selection comprising every gradation of intensity and every transitional shade and tint. The absolute nature of this system is that it knows nothing of the influence that the material, even less the use of the article, could exert on the same. At best, it can acknowledge that for one material, for example, cotton or linen, certain colors are less favorable than for another material, such as wool and silk.

Thereupon, the dye manufacturers, despite the difficulties, seek through every cunning and trick of chemistry to render the dyed cotton or dyed linen in shades of scarlet or orange as pure and radiant as can be done in wool or silk. Style, in short, insofar as it is dependent on the raw material and on the use of the article, is not even considered. But style, insofar as it relates to the processes that are applied and to the exuberant richness of means and material that chemistry and physics have showered on us, is without limit, boundless, and therefore no style at all.

For all that, and notwithstanding the great exertion of our knowledge and efforts, we are unable to reproduce certain colors that the housewives of India, China, and Kurdistan produce with the simplest means and without any knowledge of chemistry, and whose deepness, splendor, and indefinable natural tones delight and embarrass us. The reason for this is that those colors are truly natural tones that do not fit into our abstract color scale, and that the raw material to be dyed is just as instrumental as the dyeing agent used. Most important, however, is the dyer's natural and spontaneous feeling for style.

Those deep harmonic colors of nature that a common atmospheric tone unifies, that neither are nor strive to be pure abstractions of color, and that are still produced today only in the Orient with its ancient tradition – these colors are an echo of what we must imagine to have been the *ars tingendi* of antiquity. The color system of the ancients was unified by a breath of nature that (as such, indefinable) gains expression only when signified by a natural simile and that vanishes at once if too much violence is done to nature or if nature is replaced by a chemical process. Perhaps we will later succeed in this, but for now science has not penetrated far enough into the workshop of nature in order to be able to replace it with its products.

The ancients dyed their raw materials before they were spun or otherwise treated. Where this was not done the finished fabric was put into a dyeing vat, for instance, in treating a finished chiton or peplos.

In Egypt it was even customary to dye the wool of a living sheep

with a costly purple, although it is unclear whether they applied the dye only externally or assisted the process by the fodder they gave the sheep. In any case, we see from this that they dyed the raw, unbleached wool, which must have imparted to the material a special "hue," a breath of nature otherwise inimitable, and that they thought it necessary to tone down even richest and purest pigments in this rather cunning and natural way. The same was done with cotton and silk; even white was considered a special coloring and was probably never pursued to the extreme, but received, like black, a touch of color towards one side or the other. They believed white was the unattainable extreme of all colors at the pole of dilution, black the extreme at the pole of condensation or concentration. At both poles all the tones run together, but they did not wish to attain this. Therefore, white as well as black were classed among the purple tones.

Pliny lists several species of sheep that were famed for the natural color of their wool. The Spanish sheep were black; those from the Alps, white; the Erythraean and Baetican, red; the Canusian, yellow; the Tarentian, yellow. They used their wool for costly fabrics, and only the black wool was left undyed.

The dyeing agents also retained their characteristics. The dyers did not take the trouble to extract the pure color, but used the agents with their tinge, their *goût de pierre à fusil* that nature gave them. At the same time, the simplest method of dyeing was employed, although, as the example given above has shown, the chemical reactions of acids, salts, and potash were known and used.

Two principal tonal or color keys dominated all antique chromaticism, in fact, from early prehistoric times. One of these major groups of dyes was probably based on iodine, that splendid dye that in the most varied but natural way was tinted by various organisms of the sea. It was in part transformed into the most contrasting colors, such as red, yellow, and blue, which, however, were grouped into one family by virtue of sharing the same wonderfully mild, but also deep and austere characteristic features. In going through a conchylia exhibition room we can compare hundreds of tones from pure red through violet to blue, from blue through sea-green to sea-grass yellow, from yellow through all the shades to white (which also can be reached by passing from blue and red), the last always preserving its sea-white "hue" and celebrating its glory in the pearl, which catches and mirrors all three basic colors and everything in between. When someone has seen for himself the wonderful color harmony of all these sea products or has seen the even greater, ever-changing, colorful splendor of the sea bottom that made all these products, it becomes clear at once what the ancients understood by purple, and how black, violet, red, blue-green, yellow, even certain shades of white, in cases, were classed together with it.

In preparing these colors,* the ancients principally employed three dyeing agents: assorted types of *sea plants* and two species of sea mussels. The first was called *buccinum*, Greek *keryx*, and was found along reefs and rocks; the other was called *purpura* or *pelogia* and was caught at sea with bait. Both were found in large numbers throughout the Mediterranean and even in the Atlantic Ocean, as well as in the Persian Gulf. The dyes varied in quality and even in color, depending on the place where they were found. The mussels of the Atlantic Ocean produced the darkest color; those along the Italian and Sicilian coasts produced a violet color; the Phoenician and Southern seas, a deep, reddish purple.

The Phoenicians were said to be the inventors of this dye, thanks to which the taste and great fondness for purple was spread over Europe, Africa, and Asia. They remained by no means the sole practitioners of this industry, but happened to be in a position favored by circumstances to bring it to a high level of perfection and to maintain this prominence. Wool was the material best suited to purple dyeing, although the ancients were also successful in dyeing linen, cotton, and silk. First, they prepared the wool with the *buccinum* juice, and then dipped it into the *purpura* juice, giving it the famous amethyst-purple color, or they reversed the process and then achieved the splendid color of strong blood, the fame and pride of the Tyrian dyers! A material thus dyed was called *purpurae dibaphae*. The *conchylium* in general, which included all lighter blue and yellow tones, contrasted with these regal and sanctified types of purple and with the false *buccinum* (unmixed, almost exclusively used for counterfeits). The procedure of dyeing was rather simple, from what can be inferred from Pliny's main passage discussing it.^{†10} Yet there were a number of additional operations, especially those for determining the temperature at which the dye had to be boiled.

* Pliny, *H.N.*, 9, ix, 127. *Sed unde conchyliis pretia, quis virus grave in fucis, color austerus in glauco et irascenti similis mari?* [. . . but what is the cause of the prices paid for purple-shells, which have an unhealthy odour when used for dye and a gloomy tinge in their radiance resembling an angry sea? (Loeb. trans.)] W.A. Schmidt assumes Pliny refers here to the *stench* of the colors – with what right it remains for the reader to decide.

† On the purple of the ancients compare: [Pasquale] Amati, *De restitutione purpurarum liber* (3rd ed., Cesena, 1784) with the attached treatise of Capelli, *de antiqua et nuperâ purpura*, and Don Michele Rose, *Delle propore e delle materie vestiarie presso gli antichi. dissertazione epistolare* (1786); [Arnold Hermann Ludwig] Heeren, *Ideen [über die Politik. den Verkehr und den Handel der vornehmsten Völker der alten Welt]*, Part 1, Sect. 2, p. 88. Anton Theodor Hartmann, *Die Herbräerin am Putztische*, etc. Part 1, p. 367; [Wilhelm Adolf] Schmidt, *Die griechischen Papyrusurkunden der könlichen Bibliothek zur Berlin* (Berlin, 1842). With regard to the reading and understanding of the rather corrupt text of Pliny on the kinds of purple dyes and their preparation, I do not agree on all issues with Mr. W.A. Schmidt. Yet these questions have no connection with the aesthetic principles advanced by me in the text, whose explanation was my sole concern; therefore, I do not refer to these operations here but will come back to them in the closing remarks of this section.

To produce the colors of yellow, blue, and green *conchylium* they combined the assorted sea grasses and other products of the sea with the *purpura* juice, as confirmed by Pliny's remarks cited above.

The second major group of dyes distinct from purple was the *vegetable* group (*colores herbaceae*), which perhaps is better named by another expression of Pliny's – "terrene," because here animals (such as kermes worms) were also used as dye, and because in this way the difference with the earlier-named group of dyes made from sea products is more evident. The terrene dyes also preserved their natural tones; the ancients guarded against distilling the pure dyeing agent out of the natural product and depriving it of all its individuality.

The ancients also tried mixing and wedding the two types of dyes; for instance, they prepared Tyrian purple with *coccus*, from which emerged the color *hysginum*.^{*} Yet Pliny criticized this as an overrefinement.

Thus, the artificially dyed materials were related in two ways: to each other and to nature. The latter retained its characteristic features in both material and color. Disharmonies were avoided in this way without difficulty, and the most marvelous effects of color balance as well as contrast were facilitated and prepared.

This classical principle of dyeing was clearly reflected in the naming of the color shades that were most popular in clothing, carpets, and in other things. Abstract names for colors, such as red, black, yellow, blue, green, and so on were rare; the color always had a concrete natural phenomenon as a model. Typical in this respect is the following description that Ovid gives of the Roman Longchamps along the banks of the Tiber:

In the most beautiful springtime under the gentle Lusitanian skies the fields could not be dressed with more numerous and beautiful colors than those that now adorn the fields along the Tiber, when spring entices our ladies to a walk. We lack the names to distinguish among all these colors. The myrtle of Paphos or the darker oak leaf, the almond tree, wax give their names and colors to wool. The white rose must see itself outdone. Here the color of atmosphere becomes visible when no cloud darkens it; then the glance floats from this color across to that of the water. There breaks forth, surely to obscure everything like the goddess of the dewy morning, the lighter red; in its wake is the color of the golden fleece and the deeply saturated amethyst. This multitudinous shimmer exceeds that of the nymphs' dance in their manifold robes, joined by all the goddesses and colors assembled from the sea, brooks, forests, and mountains that they and nature offer.[†]

^{*} Turkish red or something similar.

[†] [Johann Heinrich Ludwig] Meierotto, *Ueber Sitten und Lebensart der Römer*, II, p. 213. Graev. Thes. A.R., Vol. VIII, pp. 131off. Ovid, *de arte am.*, 3, 173. [Semper's German translation of this passage of Ovid departs in many respects from the Latin text.]

Much could still be added on the Oriental dyeing processes of today, which in general are not very much removed from the antique tradition. In contrast, much, very much more could be said about our modern European color harmony in the technical arts and its principles (if any can be described by this term). Yet for the reasons already cited, I leave it to more qualified people and note only that the influence of dyed works on polychromy in the fine arts and on the ancient monuments will be considered without fail in the following pages.*

Very useful remarks on the ornamental and polychrome adornment of various materials and on the confusion of taste prevalent in this connection are contained in Redgrave's "Supplementary Report," Div. 4, which deals with "Garment Fabrics."

*The Most Primitive Formal Principle in Architecture
Based on the Concept of Space and Independent of Construction.
The Masking of Reality in the Arts.*

The art of dressing the body's nakedness (if we do not count the ornamental painting of one's own skin discussed above) is probably a later invention than the use of coverings for encampments and spatial enclosures.

There are tribes whose savagery appears to be the most primitive, who do not know clothing, yet to whom the use of skins and even a more or less developed industry of spinning, plaiting, and weaving for the furnishing and security of their encampments is not unknown.

It may be that climatic influences and other circumstances are sufficient to explain this cultural-historical phenomenon, and that the normal, universally valid process of civilization cannot absolutely be deduced from it; nevertheless, it remains certain *that the beginning of building coincides with the beginning of textiles.*

The wall is that architectural element that formally represents and makes visible the *enclosed space as such*, absolutely, as it were, without reference to secondary concepts.

We might recognize the *pen*, bound together from sticks and branches, and the interwoven *fence* as the earliest vertical spatial enclosure that man *invented*, whose construction required a technique that nature, as it were, put into the hand of man.

The transition from the plaiting of branches to the plaiting of basts for similar domestic purposes was easy and natural.

That led to the invention of *weaving*, first with blades of grass or natural plant fibers, later with spun threads from vegetable or animal matter. The variations in the natural colors of the blades soon made people use them in alternating arrangements, and thus arose the *pattern*. Soon man surpassed these natural resources of art through the artificial preparation of materials; the *dyeing* and *knitting* of colorful carpets were invented for wall dressings, floor coverings, and canopies.

Whether these inventions gradually developed in this order or another matters little to us here, for it remains certain that the use of the crude weaving that started with the *pen* – as a means to make the “home,” the *inner life* separated from the *outer life*, and as the formal creation of the idea of space – undoubtedly preceded the wall, even the most primitive one constructed out of stone or any other material.

The structure that served to support, to secure, to carry this spatial enclosure was a requirement that had nothing directly to do with *space* and the *division of space*. It was foreign to primitive architectural thinking and was in the beginning not a form-determining element.

The same is true for walls constructed out of unburnt bricks, stone,

or any other building materials, all of which in their nature and use have absolutely no relation to the spatial concept. They were used for protection and defense, to secure permanence in the enclosure, or to serve as foundations and supports for the spatial enclosure above, for carrying stocks and other loads, in short, for reasons foreign to the original idea of spatial enclosure.

In this connection, it is of the greatest importance to note that wherever these secondary motives are not present, woven fabrics almost everywhere and especially in the southern and warm countries carry out their ancient, original function as conspicuous spatial dividers; even where solid walls become necessary they remain only the inner and unseen structure for the true and legitimate representatives of the spatial idea: namely, the more or less artificially woven and seamed-together, textile walls.

Here again the remarkable situation arises in that the earliest history of art is assisted by *phonetic* language, which clarifies the symbols of the language of *forms* in their primitiveness and confirms the authenticity of the interpretation given them. In all Germanic languages the word *Wand* (of the same root and same basic meaning as *Gewand*) directly recalls the old origin and type of the *visible* spatial enclosure.¹⁸

Likewise, *Decke*, *Bekleidung*, *Schranke*, *Zaun* (similar to *Saum*), and many other technical expressions are not somewhat late linguistic symbols applied to the building trade, but reliable indications of the textile origin of these building parts.¹⁹

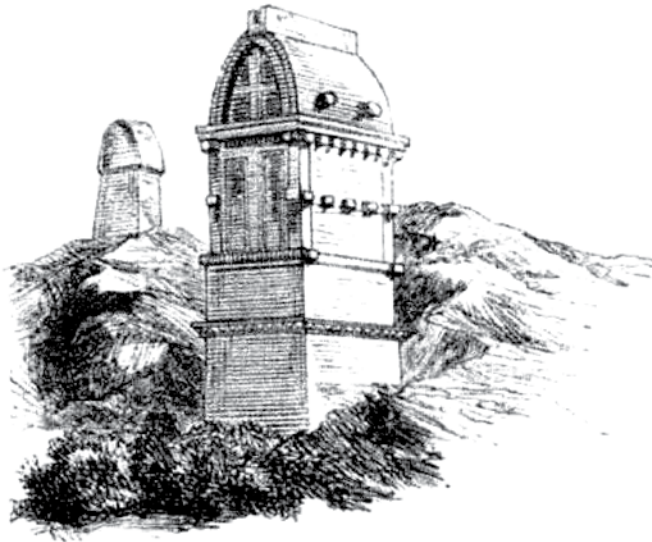
All that has been said so far relates to prearchitectural conditions, whose practical interest to the history of art may be doubtful; the question now is what became of our principle of dressing after the mystery of transfiguration: as the completely material, structural, and technical prototype that was the dwelling was carried forward into monumental form, out of which arose true *architecture*.

This is not the place to go deeper into the most important question of *how* monumental architecture originated; however, several events of the earliest history of monumental works that I will come to immediately make it more readily understandable. For the time being, I point out that the wish to perpetuate commemoratively a festive or religious act, a world-historical event, or a great governmental issue still provides the external occasion for monumental undertakings, and there is nothing to keep us from assuming, even of being certain beyond doubt, that the idea for monumental art (which always presumes an already existing, relatively high culture and even luxury) was in an analogous manner suggested to its founders by similar *festive celebrations*.

The festival apparatus, the improvised scaffolding with all the special splendor and frills that indicate more precisely the occasion for the festivity and enhance the glorification of the day – covered with decora-

tions, draped with carpets, dressed with boughs and flowers, adorned with festoons and garlands, fluttering banners and trophies – this is the *motive* of the *permanent* monument, which is intended to recount for coming generations the festive act and the event celebrated. Thus, the Egyptian temple arose from the motive of the improvised pilgrims' market, which certainly even in later times was often hammered together in a very similar way from posts and tent coverings, wherever a local god to whom no solid temple had yet been built had become famed for special miracle-working, and had attracted the pilgrimaging fallahen of Egypt to his festivity in unexpectedly high numbers (see volume three: Egypt).

Another example to illustrate this are those well-known Lycian tombs, of which two are now exhibited in the British Museum. These peculiar wooden scaffolds executed in stone, decorated between the rafters with painted relief panels and carrying as an upper story or superstructure a likewise richly sculptured sarcophaguslike monument with protruding knobs and a pointed arched roof with a sort of crest – these alleged imitations of an unique Lycian style of wooden architecture are, I say, nothing other than *funeral pyres*; as was the custom also in Rome, they were artificially constructed of wood and draped with rich carpets, and on the top, under the enfolding cover of the richly gilded capsule (*καλυπτήρ*), was the bier (*φέρετρον*).[★]



Another striking example is the monumental glorification of the old covenant in Solomon's Temple, which was carried out in unheard of

[★] Diodor., xviii.26, where he describes the sarcophagus of Alexander. In a grave in Pauticaepa a similar wooden catafalque with paintings was found. *Journal des Savants* (June 1835), pp. 338–9.

splendor in conforming to an imagined or actual prototype of the tabernacle. This will be discussed later.

In this way the highly characteristic, architectural style of the theater arose as late as in historical times from the boarded, richly decorated, and dressed performance stage.*

My main interest in introducing these examples is to draw attention to the principle of *exterior adornment* and *dressing* of the structural scaffolding that becomes necessary with improvised festive structures, and that always and everywhere conveys by itself the nature of the thing. From this I deduce that the same principle of veiling structural parts, in addition to the monumental presentation of tent coverings and carpets stretched between the structural members of the prototypical scaffolding, must also seem to be equally natural where it is manifested on early monuments of architecture.†

* Rob. Walpole, *Itiner.*, Vol. I, p. 524, mentions an inscription from Patara in Asia Minor: τὴν τοῦ λογείου κατασκευτὴν καὶ πλακῶσιν. The richly encrusted proscenium of the provisional theaters in Rome are well known from Pliny and Vitruvius.

† I think that the *dressing* and the *mask* are as old as human civilization, and the joy in both is identical with the joy in those things that drove men to be sculptors, painters, architects, poets, musicians, dramatists, in short, artists. Every artistic creation, every artistic pleasure presupposes a certain carnival spirit, or to express myself in a modern way – the haze of carnival candles is the true atmosphere of art. The denial of reality, of the material, is necessary if form is to emerge as a meaningful symbol, as an autonomous creation of man. Let us make forgotten the means that need be used for the desired artistic effect and not proclaim them loudly, thus missing our part miserably. The untainted feeling led primitive man to the denial of reality in all early artistic endeavors; the great, true masters of art in every field returned to it – only these men in times of high artistic development also *masked the material of the mask*. This led Phidias to his conception of the two tympana on the Parthenon. Evidently he considered his task, the representation of the double myth and its actors, the deities, *as the subject matter to be treated* (as was the stone in which he formed them), which he veiled as much as possible – thus freeing them of any material and outwardly demonstrative expression of their nonpictorial and religious-symbolic nature. Therefore, his gods confront us, inspire us, individually and collectively, first and above all as expressions of true human beauty and grandeur. “What’s Hecuba to him?”

For similar reasons the drama could also be meaningful only in the beginning and at the height of the progressive education of a people. The oldest vase paintings give us an idea of the early, material masques of the Hellenes – in a spiritual way, like those stone dramas of Phidias, the ancient masque is again taken up by Aeschylus, Sophocles, Euripides, also by Aristophanes and the other comic dramatists. The proscenium is used for framing a noble piece of human history that does not occur at some time somewhere but that happens everywhere as long as the hearts of men beat. “What’s Hecuba to him?” The spirit of masks breathes in Shakespeare’s dramas; we meet the humor of masks and the haze of candles, the carnival sentiment (which truly is not always joyous) in Mozart’s *Don Juan*. For even music needs a means to deny reality. Hecuba also means nothing to the musician – or should mean nothing.

Masking does not help, however, when *behind* the mask the thing is false or the mask is no good. In order that the material, the indispensable (in the usual sense of the

TENTS, ARCHITECTURE OF THE NOMADS
Torvald Faegre, 1979

Excerpt. The Tent and the Nomad

In this excerpt, Faegre outlines nomadic tribal perceptions of lifestyle and shelter, explaining that ‘the tent does not erect a clear boundary between inside and outside’. He goes on to detail the careful organisation and layout of the nomadic tent, writing of the strict positioning of each valued possession and tool, reflecting the tent’s social organisation and rules.

THE TENT AND THE NOMAD

The versatility of Kobuk Eskimos in constructing a temporary shelter is to be seen at present in the manipulation of a single piece of canvas to provide day-to-day changes in protection with each change of wind, precipitation and temperature. We have seen such a canvas converted in the course of a single day from a simple lean-to to a wall tent, to a hemispherical hut. It is well to remember that just at the time of Europeans, Kobuk people had no conception of a dwelling as a thing of permanence. Their houses and camps must have seemed less objects of property and sentiment than their canoes and their clothing. A dwelling was a temporary exploitation of natural resources and an expression of personality in a time of particular need.

—J. L. GIDDINGS, *Kobuk River People*

The nomad lives not so much in his tent as in the desert, the steppe, or the tundra. The tent is important as shelter, but not in the same way as our homes and workplaces are important to us. The nomad spends a great deal of time living and working under the open sky, for herding is by nature an outside activity. Clothing is often more vital to survival than shelter. Among some desert dwellers the young boys are sent off with the herds with nothing but the clothes on their backs. They sleep and live all year in the open with no shelter at all. Even the women do most of their work outside the tent if the weather permits. Looms, churns, and querns are more often seen outside the tent than in it.

The tent does not erect a clear boundary between inside and outside such as we are used to in our own housing. In bad weather the wind blows through the gaps of the tent cloth, rain leaks through the roof, or snow falls through the open smoke hole. But the nomad feels at home with these conditions and prefers this contact with the outdoors. Black-tent nomads are so accustomed to the feel of a flexible cloth roof over their heads that a solid roof constitutes a threat: There are many stories of how these nomads cannot at first sleep in a solid house for fear that the roof will fall and crush them. For the nomad, psychological protection—the feeling of security—is not tied to any absolute protection from the physical elements.

The space within the ordinary nomad tent is not large and so must be carefully organized. This organization is always a reflection of social organization and determines where people are seated and where possessions are kept. There is always a division between the men's and women's sides of the tent. The line between the sides may be quite strict, as in Arab cultures where there is a dividing curtain and where no adult male but the husband ever enters the women's side, or the line may be loose and people of both sexes may move about freely as with the Inuit. This division of the tent also constitutes a separation of the type of work for which each sex is responsible, so the looms, churns, and utensils are kept and used on the women's side while the saddles, harnesses, and weapons are kept on the men's side. In many tribes the women have a larger space for their half since they do more work under the tent roof than the men do. One of the most important things the women do in the tent is to make more tents. It is

important to remember that it is the women who are the architects in nomad societies. The men may make the wooden parts, but since wood figures so little in most tent designs, it is the women as weavers, and as leather and bark workers who make and design the tent.

There is a definite order in the seating of residents and guests of the tent, always in accordance with a person's position in the social hierarchy. In tents fire and the back wall—while those of lesser prestige sit close to the drafty doorway. Among the Bedouin, the honored guest is seated close to the host. The dwelling places for the nomad's gods—the sacred areas—are always set in the warmest or most protected spot, close to the hearth or against the back wall.

The nomad's possessions are necessarily few since everything must be moved frequently, so each object has its exact place where it can be found the moment it is needed. Our own haphazard method of moving—with waylaid articles and mass confusion—would surely amuse the nomad. The nomad always knows where everything is, whether when on the move or when camped. All loose articles are stowed in boxes and bags. These containers are much like the tent itself—tough yet flexible. The woven bags or bent-wood boxes are as important as the tent itself: the tent shelters the nomad, the containers shelter his possessions. These bags and chests, along with mats, rugs, and cushions are all the furniture that the nomad needs—although a few nomad tribes use portable beds, and the tipi dwellers have their lazy-backs to lounge against.

Because the nomads must limit the quantity of possessions, each object is designed to fulfill as many functions as possible. This is especially true of the tent. The Netsilik Inuit turn their summer tent into a winter sled by rolling it up and pouring water on it which freezes solid. The Siberian Koryaks use their sleds to hold down the tent cover in the fierce winter winds. The Qashqai and the Plains Indians turn their tent poles into rafts to ferry themselves across the rivers they encounter on migration.

We have much to learn from the nomads about *living*. Our society is highly mobile, but we have adopted few of the tools that make nomadic life a pleasure. Even if we never live in a tent, there is much to be said for the nomad's way of life under the tent roof. What follows is an attempt to understand the tents of the nomad and the part it plays in their lives.

ON WEAVING
Anni Albers, 1965

**Excerpt. Designing as Visual
Organization**

In this excerpt, Albers explores the process of design, believing that ‘designing is or should be methodical planning, whether of simple or intricately organized forms’. She takes us through the considerations that a designer might confront, referencing a specific task in hand, to design a wall covering for a museum. Albers details the factors that may influence decisions, suggesting the need for limitations and an order of priorities. These factors, such as material and colour choices, are listed before Albers reaches the point of structural design. At this stage, she writes that the designer must be aware of contemporary moods whilst maintaining a certain timelessness to the work; the designer must consider the element of, as Albers writes, ‘calculated obsolescence’.

Designing as Visual Organization

It is safe, I suppose, to assume that today most if not all of us have had the experience of looking down from an airplane onto this earth. What we see is a free flow of forms intersected here and there by straight lines, rectangles, circles, and evenly drawn curves; that is, by shapes of great regularity. Here we have, then, natural and man-made forms in contradistinction. And here before us we can recognize the essence of designing, a visually comprehensible, simplified organization of forms that is distinct from nature's secretive and complex working.

Plate 39

Or on a beach, we may find a button, a bottle, a plank of wood, immediately recognizable as "our" doing, belonging to our world of forms and not to that which made the shells, the seaweed, and the undulated tracings of waves on sand. Also we can observe the counterplay of the forming forces: the sea slowly grinding an evenly walled piece of glass, foreign to it in shape and substance, into a multiform body suitable for adoption into its own orbit of figuration. On the other hand, we see the waves controlled, where dams and dikes draw a rigid line between land and water.

To turn from "looking at" to action: we grow cabbages in straight rows and are not tempted by nature's fanciful way of planting to scatter them freely about. We may argue that sometimes we follow her method and plant a bush here and another there, but even then we "clear" the ground. Always, though sometimes in a way that is roundabout and apparent only as an underlying scheme of composition, it is clarity that we seek. But when the matter of usefulness is involved, we plainly and without qualification use our characteristics: forms that, however far they may deviate in their final development, are intrinsically geometric.

If, then, it appears that our stamp is or should be an immediate or implicit lucidity, a considered position, a reduction to the comprehensible by reason or intuition in whatever we touch (confusion always gets a negative rating), we have established a basis for designing — designing in any field. From city-planning to the planning of a house or a road, from the composing of music to the formulation of a law, the weaving of a fabric, or the painting of a picture — behind the endless list of things shaped is a work of clarification, of controlled formulation.

By using the term “designing” for all these varied ways of pre-establishing form, we are, of course, doing some violence to the word. “Designing” usually means “giving shape to a useful object.” We do not speak of designing a picture or a concerto, but of designing a house, a city, a bowl, a fabric. But surely these can all be, like a painting or music, works of art. Usefulness does not prevent a thing, anything, from being art. We must conclude, then, that it is the thoughtfulness and care and sensitivity in regard to form that makes a house turn into art, and that it is this degree of thoughtfulness, care, and sensitivity that we should try to attain. Culture, surely, is measured by art, which sets the standard of quality toward which broad production slowly moves or should move. For we certainly realize that there are no exclusive materials reserved for art, though we are often told otherwise. Neither preciousness nor durability of material are prerequisites. A work of art, we know, can be made of sand or sound, of feathers or flowers, as much as of marble or gold. Any material, any working procedure, and any method of production, manual or industrial, can serve an end that may be art. It is interesting to see how today’s artists, for example our sculptors, are exploring new media and are thereby fundamentally changing the sculptural process from the traditional method of cutting away to one of joining. They are giving us, instead of massive contour, exposed structure; instead of opaqueness, transmission of light. Obviously, then, regardless of the material and the method of working it, designing is or should be methodical planning, whether of simple or intricately organized forms; and if done imaginatively and sensitively, designing can become art.

Let us pursue this matter of designing a little further, now that we have established in our mind where its beginning lies and where its ultimate goal.

Since our concern here is to explore the process of designing and not to analyze the design done, we should try to put ourselves in the position of the “doer,” the one who is making a thing new in form. It may appear as

though I am addressing myself now only to professionals. But though I know that designing takes practical knowledge of the work involved, still I am much aware that the dividing line between the trained and the untrained becomes blurred when both are facing the new. For anyone who is making something that previously did not exist in this form is, at that point, of necessity an amateur. How can he know how this thing is done that never has been done before? Every designer, every artist, every inventor or discoverer of something new is in that sense an amateur. And to explore the untried, he must be an adventurer. For he finds himself alone on new ground. He is left to his own devices and must have imagination and daring. All decisions here are his own, and only he is responsible. But though it is he who is in charge, he feels himself to be only an intermediary who is trying to help the not-yet-existent turn into reality. Standing between the actual and that which may be, the conscientious designer, as I see it, seeks to forego his own identity in order to be able more impartially to interpret the potential. For the less he himself, his subjectivity, stands in the way of the object that is to take form, the more it will have "objective" qualities and thereby will also take on a more lasting character than it otherwise could. And just as concern with material and method of treatment engages his conscious mind and frees the formative energies that we recognize when crystallized as ideas, so also, and to the same end, does the tête-à-tête with the still-amorphous absorb his self-awareness.

Let me illustrate my point with a specific design project, a textile problem in our case. To be more easily understood, it will be one of modest scope. Nevertheless, I hope it will be possible to trace the various steps involved in its realization and thereby to have a look at some of the facets of this phenomenon that is designing.

Let us assume that the task is to design a wall-covering material, quite specifically one suited for museum walls; that is, a material for a specific practical use. As conscientious designers in our passive role, we will let the fabric-to-be specify its own future characteristics, such as perhaps being dust-repellent, non-fading, woven sufficiently closely to cover up any irregularities of the wall, and, for the same purpose, having a certain amount of bulk. Furthermore, it should neither stretch nor sag, and it should be possible to clean it by brushing or wiping. Also, any small nail holes driven into it should close easily after removal of the nail. It should, in all probability, be light in color, perhaps even light-reflecting, possibly flame-retarding, and certainly

mothproof if not mildewproof. In regard to general complexion: it should be quiet enough so as not to compete with any art work put on it or placed before it; that is, it should be subservient, not dominating.

Taking these suggestions, we will be led to a definite choice of raw material, of weave construction, and of color, all interactive, as will be apparent. Also, these suggestions will be decisive in the question of formal treatment — whether to choose checks or stripes, elaborate patterns or a uniform surface. An extension into the field of pictorial invention is ruled out here because of the supporting and not independent character the fabric is to have.

To go into further detail: what in particular are the proposals that have come to us from the object-to-be since its inception? It has circumscribed the range of the raw material that might be suitable. Wool, for instance, will have to be excluded as neither dust-repellent nor mothproof without special chemical treatment, while any fiber with a somewhat coated surface, such as linen or raffia or a strawlike synthetic fiber, might fit the requirements. Such a raw material also would have a certain stiffness and bulk that would prevent sagging and would help the fabric keep its shape. However, without additional processing it would not be flame-retarding, should that be required, as it sometimes is in public buildings. As to weave construction: all specifications point to a plain weave, the simplest construction existent, which makes a somewhat stiff material, in contrast to a satin or a twill weave, which would result in a more pliable fabric not desired here. The plain weave also produces, in a balanced relationship of warp and weft, a more or less porous material specifically suited to take care of the nail-hole problem. In addition, its use is a safeguard against the fabric's sagging or stretching out of shape, aided in this by the suggested raw materials, which also are inelastic in character. It also is an economical weave using less yarn than most others, a consideration that is often vital.

Continuing in our attitude of attentive passiveness, we will also be guided in our choice of color, though here only in part. For our response to color is spontaneous, passionate, and personal, and only in some respects subject to reasoning. We may choose a color hue — that is, its character as red or blue, for instance — quite autocratically. However, in regard to color value — that is, its degree of lightness or darkness — and also in regard to color intensity — that is, its vividness — we can be led by considerations other than exclusively by our feeling. As an example: our museum walls will demand

light and have a color attitude that is non-aggressive, no matter what the color hue and whether there is an over-all color or a play of colors.

However, one factor may influence even our impulsive choice of color, and that is the practical question of color-fastness to light and, where this is necessary, to washing. Different colors vary of course in this respect. The coloring matter in textiles is a dye that penetrates the fibers of the material, unlike color pigment or paint, which is applied to the surface only. The action, therefore, of the dye on different fibers has to be taken into account and will affect, in turn, the choice of the raw material. Also, the dye process itself has to be considered. In piece dyeing, for instance, the whole finished fabric is immersed in the dye bath to give it a uniform color, while in yarn dyeing, as the name suggests, the yarn is dyed before it is woven, thereby allowing a fabric to be built of different color units. Only the latter, as we should be aware, allows for the full realization of the means within the weaver's sphere.

We have again reached a point where we can think in general terms, for the issue of the specific formal domain within which a craft operates has wide implications. Architecture, for instance, is concerned with space: with enclosing space, with extending into space, and with gravity and tension. Though sculptural elements (arrangement of masses), painterly elements (light, shadow, color), and textural elements (inherent structure of material and marks of working it) are also present, these should speak only quietly, not dominantly. Similarly, we can delineate the weaver's province. The meaning of the word "textural" covers that quality which is the essence of weaving. It is the result, apparent on the surface, of the manner in which interdependent thread units are connected to form a cohesive and flexible whole. This surface play, of structural origin, can be accentuated or subdued through the choice of yarn and its characteristics—glossiness, dullness, knobiness, etc. — and of color. It becomes obvious now, I believe, why the above-mentioned piece-dyeing process diminishes rather than enhances the quintessence of weaving, for it bridges over and thereby obscures with one color the separate functions of the structural elements.

If, in regard to visual articulation, texture, produced through the interlocking of threads, is the focal point in weaving, those peripheral components that can variegate it come only second in the order of importance. Properties such as warmth — of paramount importance in textiles used for clothing — do not belong to the vocabulary of form. There, then, is the quality of the yarn

that is to make the fabric, whether it is rough or smooth, lustrous, shaggy, downy, uneven, etc. — qualities that are able to underline the structural appearance of the fabric or to restrain it. Today, with the rediscovery of textural interest, this secondary element of composition, yarn character, is often used as a substitute for the primary one, which is structural in nature. As a result, we find an exaggerated emphasis on fancy yarns to make up for a thread construction that is dull. In fact, this shift from structural effects to predominantly yarn effects today holds back a textile development that should center on construction as the original focal point.

Color comes only third in importance among the elements of composition within the weaver's dimensions. By giving different colors to the differently functioning threads, the structural character of the weaving will be intensified. In addition, color, more acutely than texture, conveys emotional values; but, if it is introduced as too-independent an agent, it may carry the weaving outside of its own territory into the painterly province. When color in weaving moves into a first place, suppressing the main textile ingredients, we find a regression of the art of weaving. Examples, historical and contemporary, may be found in some of the pictorial tapestries woven from painters' designs — Raphael's, Picasso's, Rouault's, etc. Many of these works, lacking in textural and structural interest, have moved to the very edge of the weaver's realm; and, though perhaps impressive as pictorial compositions, they are often of little consequence as pictures or as weavings.

We are ready, I believe, to resume work on our particular task. We have found ourselves limited to a definite range of raw material and of color and have been led to a suitable thread construction, the plain weave. Now that we have become aware of the interplay of fiber, color, and weave, let us see where another step in the act of condensation will take us.

In regard to fiber, we found linen, raffia, and a strawlike synthetic fiber acceptable. Of these, linen is best suited as warp material here. It recommends itself for the purpose at hand by its relatively inelastic character, which lessens the chance that the fabric may stretch out of shape or sag. In addition, linen has a natural color that is a grayish tan. It has this to say for itself: it will not fade even when exposed to light for a long period; it has an easy color-relationship to any woodwork — floors, for instance — and its color will show dust less readily than most; it is mothproof though not mildewproof. The slight stiffness of the linen fiber will increase that of the plain weave construction and also will add to the porousness that has been found desirable. When

intersected by a weft of strawlike synthetic yarn, white and glossy in its original state, the dull natural linen will take on life by contrast, and a subtle play in natural-to-white tones could be developed, as well as a play on the scale from dull to sparkling, even light-reflecting. Again, this original white will stay white under exposure to light, and the hard surface of the fiber will retain only a small amount of dust. Since, where large areas are involved, the problem of fading is unavoidable, a solution that circumvents dyeing altogether can only be welcomed. The synthetic fiber is mothproof and mildewproof and, intersecting the linen, it will reduce by the percentage of its use the mildew problem, unsolved in the case of linen. Here, now, we have a fabric that largely answers the outlined requirements. It formed itself, actually, and what remains to be determined is mainly the formal organization of the elements.

We now have arrived at that stage of designing which demands our finest "ear," for we must try to discern the formal currents of our period in history that are on the verge of crystallizing and that may become part of our language of form, or may again become part of it. Texture — the word I tried to use only in its exact meaning and avoided in its fashionable, loose sense — is, for instance, one of the formal elements that has been of little or no interest for a long time but has again become one of today's stylistic components. We must learn to sense those elements of form that respond to our formal needs. We like things today that are light — light as the opposite of heavy and light as the opposite of dark. We must learn to detect, in particular occasions, manifestations of general developments; that is, we must learn to foresee. And to foresee we need a contemplative state of mind.

To return to our wall-covering project: with the matter of formal composition, the general air that the fabric is to have becomes the center of our concern. We have in our hands powerful means of articulation — directional elements such as verticals, horizontals, diagonals, squares, as basic examples, or, in the weaver's terms, warp or weft stripes, twills, checks, etc. We are able to convey impressions of height, of width, of boldness, of reticence, of gaiety or somberness, of monumentality or caprice, all within, though modified by, the thus-far established framework. For the subservient character we have sought for the fabric from the start directs our decisions and precludes loud instrumentation.

Again, we are here led away from pronounced lineation and contours toward a surface active only through the slight optical vibration of intersect-

ing raised and lowered threads — shiny and dull, lighter and darker, tan and white. This material will be quiet yet alive, responsive to lighting, compliant in its relationship to objects more demonstrative than itself in color and shape; a background for a flower, a face, a painting, a sculpture.

From here we can move on to a wider point of view. We may contend that the world around us puts us under great strain and that we need calm and quietness wherever we can get them. Today, we should try to counteract habits that only rarely leave us time to collect ourselves. Every hour on the hour we seem to need the latest and, as it turns out, usually the most unsettling and gloomy report, often, when seen in retrospect, of non-essentials. Yesterday's paper is waste paper. Wisdom and insight hardly make headlines. Nevertheless, we are seldom found — on train or plane, on bus or boat, or in any given moment of imposed restraint of action — without a bundle of distractions in our hand in the form of papers or magazines.

And though it may appear that we are straying from our line of thought, it is on the contrary here on the ground of philosophy and morals that attitudes and convictions, the starting points of our actions, are formed. Two matters may here be of special concern to the conscientious designer and may make him stop and think or, perhaps, think and stop. The first is that with his help another object will be added to the many that are already taking our attention and our care, another object to distract us. (Our households contain hundreds of objects.) The second is that by trying to give this object its best possible shape, by trying to make it as timeless as possible — that is, not dictated by short-lived fashion — and by finding for it a form as anonymous as possible — that is, a form unburdened by dominantly individual traits of the planner — the designer finds himself in direct conflict with the economic pattern of our time. For the economy of today is built largely upon change, and the “successful” designer, a term I have not used before, will have to consider the matter of “calculated obsolescence.” We are urged today to want more and more things, and we are subjected to a vigorous campaigning for always newer things, things that are not necessarily newer in performance. We are asked to shift from red to blue or from this bit of trimming to that for the questionable reason or unreason of fashion. It is evident, I think, that the designer who takes the longer view is by no means identical with the “successful” designer.

We have watched the coming into being of our object and have seen how medium and method of work present *themselves* to us and thereby limit

our range of choice. Among other components to be considered, contributing to such limitation, is that of price. This, above others, is often felt as a restriction on the freedom of the designer. I have shown, I think, that I do not believe in the sovereignty of the designer, and I cannot concur with the view that such a limitation must mean frustration. Rather, to my mind, limitation may act as directives and may be as suggestive as were both the material itself and anticipated performance. Great freedom can be a hindrance because of the bewildering choices it leaves to us, while limitations, when approached open-mindedly, can spur the imagination to make the best use of them and possibly even to overcome them.

As much a limiting factor as price, for instance, is the matter of production. Whether production is by craft or by industrial method, this many-sided problem can be as stimulating as the others discussed earlier. Any one of them can serve as starting point in the process of crystallization that we have followed. It is interesting to note here that mechanized production, however advanced, always means a reduction in the range of possibilities, though usually it also means an increase in exactitude, speed, and quantity of output, when compared to anything done with the ancient instrument that is our hand. As to our immediate concern, the material for the wall: it constitutes no problem for machine or hand. The construction is of the simplest kind, demanding nothing but the simplest type of loom, and the choice between industrial or manual production is dependent solely on the quantity of material involved.

Today such matters as, for instance, that the finished object be photogenic can influence designing. In a time that depends greatly for success upon photographic reproduction, a consideration of this sort — in itself surely beside the point — can become a factor that may have to be taken into account. So, too, may the powerful figure of the client and, in textiles, the buyer, who often bring to the project preconceived viewpoints that may be right but, alas, can be wrong.

As you will have noticed, I have made no distinction between the craftsman designer, the industrial designer, and the artist — because the fundamental, if not the specific, considerations are the same, I believe, for those who work with the conscience and apperception of the artist. With surprise and reassurance I recently came across a statement by the painter Lionel Feininger, who speaks of one of his pictures as having “*Painted itself.*”

At the beginning we spoke here of the comprehensible orderliness which

underlies all our doing and whose ultimate form is also that of art. Material form becomes meaningful form through design, that is, through considered relationships. And this meaningful form can become the carrier of a meaning that takes us beyond what we think of as immediate reality. But an orderliness that is too obvious cannot become meaningful in this superior sense that is art. The organization of forms, their relatedness, their proportions, must have that quality of mystery that we know in nature. Nature, however, shows herself to us only in part. The whole of nature, though we always seek it, remains hidden from us. To reassure us, art tries, I believe, to show us a wholeness that we can comprehend.

**PRIVACY AND PUBLICITY, MODERN
ARCHITECTURE AS MASS MEDIA
Beatriz Colomina, 1994**

Excerpt. Interior

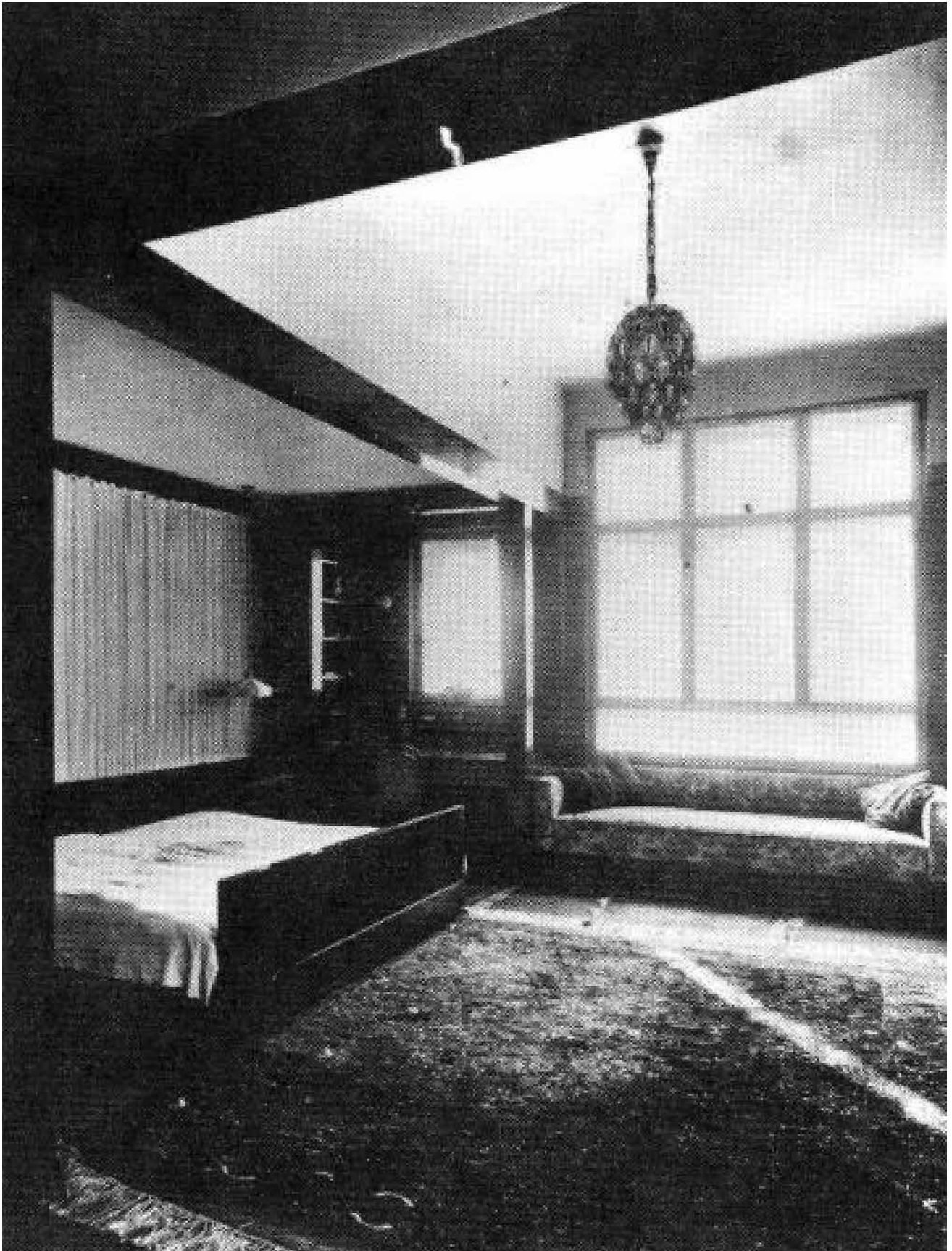
In this excerpt, Colomina writes about the story of the interior, focusing on the work of Adolf Loos. She details his speculation on the use of windows, his interior layouts, and how the user of the space is guided by his design decisions. Colomina goes on to study his reasonings, practices and contemplations, at one point associating these methods with how a fashion designer might work: ‘the spaces of Loos’s interiors cover the occupants as clothes cover the body’. Colomina makes it clear that Loos primarily designs interiors for comfort, and observes his almost contradictory approach to designing exteriors, quoting Loos, ‘The house does not have to tell anything to the exterior; instead, all its richness must be manifest in the interior’.

“To live is to leave traces,” writes Walter Benjamin, discussing the birth of the interior. “In the interior these are emphasized. An abundance of covers and protectors, liners and cases is devised, on which the traces of objects of everyday use are imprinted. The traces of the occupant also leave their impression on the interior. The detective story that follows these traces comes into being. . . . The criminals of the first detective novels are neither gentlemen nor apaches, but private members of the bourgeoisie.”¹

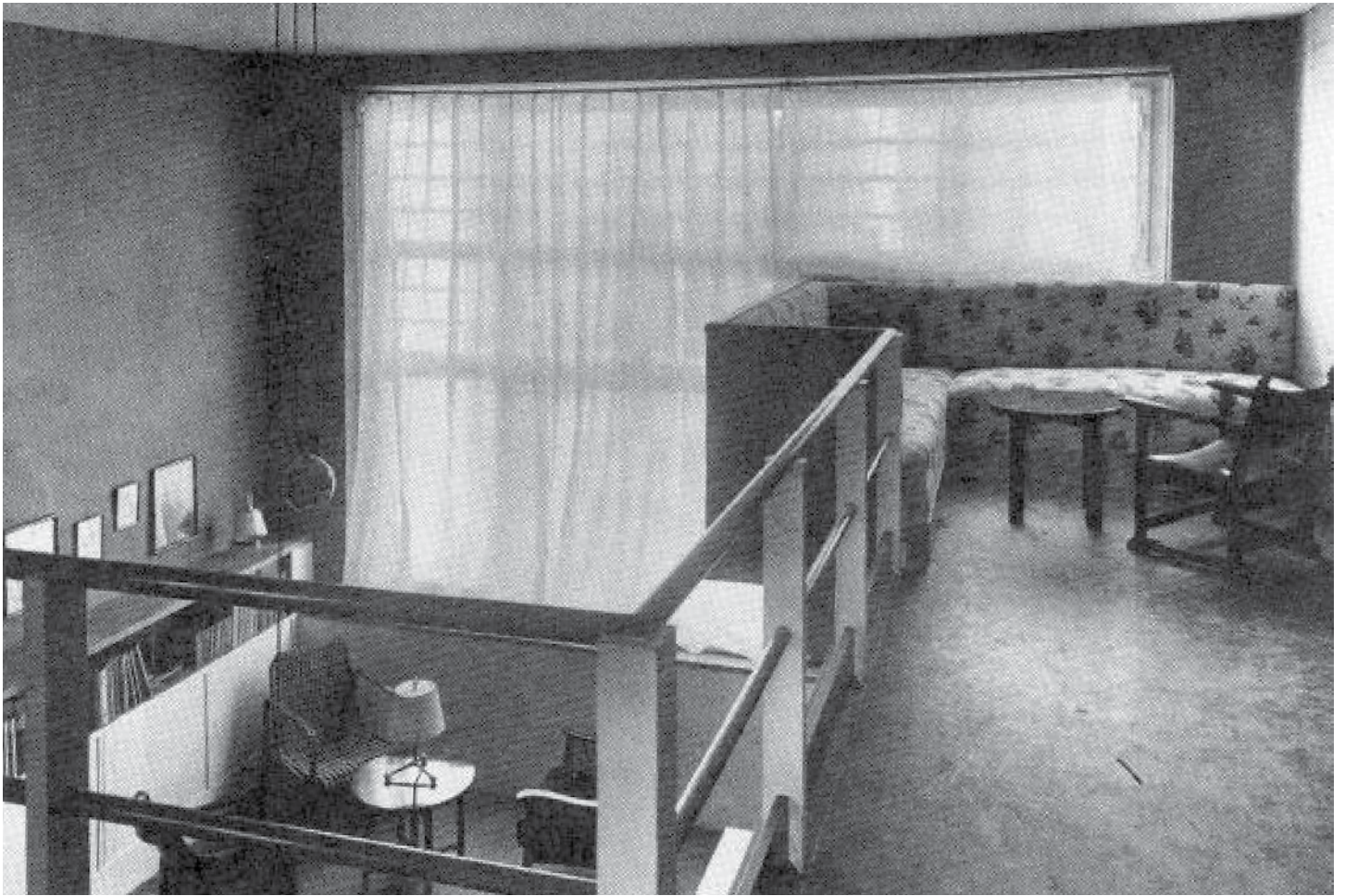
There is an interior in the detective novel. But can there be a detective story of the interior itself, of the hidden mechanisms by which space is constructed as interior? Which may be to say, a detective story of detection itself, of the controlling look, the look of control, the controlled look. But where would the traces of the look be imprinted? What do we have to go on? What clues?

There is an unknown passage of a well-known book, Le Corbusier’s *Urbanisme* (1925), that reads: “Loos told me one day: ‘A cultivated man does not look out of the window; his window is a ground glass; it is there only to let the light in, not to let the gaze pass through.’”² It points to a conspicuous yet conspicuously ignored feature of Loos’s houses: not only are the windows either opaque or covered with sheer curtains, but the organization of the spaces and the disposition of the built-in furniture (the *immeuble*) seem to hinder access to them. A sofa is often placed at the foot of a window so as to position the occupants with their back to it, facing the room, as in the bedroom of the Hans Brummel apartment (Pilsen, 1929). This even happens with the windows that look into other interior spaces—as in the sitting area of the ladies’ lounge of the Müller house (Prague, 1930). Or, more dramatically, in the houses for the Vienna Werkbundsiedlung (Vienna, 1930–1932), a late project where Loos has finally brought himself to make a thoroughly modern, double-height window; not only is this opening still veiled with a curtain, but a couch in the sitting nook of the upper-level gallery places the occupants with their back to the window, hovering dangerously over the space. (Symptomatically, and we must return to this point, when the sitting nook in an identical house is used as a man’s study, the seat faces the window.) Moreover, upon entering a Loos interior one’s body is continually turned around to face the space one has just moved through, rather than the upcoming space or the space outside. With each turn, each return look, the body is arrested. Looking at the photographs, it is easy to imagine oneself in these precise, static positions, usually indicated by the unoccupied furniture. The photographs suggest that it is intended that these spaces be comprehended by occupation, by using this furniture, by “entering” the photograph, by inhabiting it.³

In the Moller house (Vienna, 1928) there is a raised sitting area off the living room with a sofa set against the window. Although one cannot see out the window, its presence is strongly felt. The bookshelves surround-

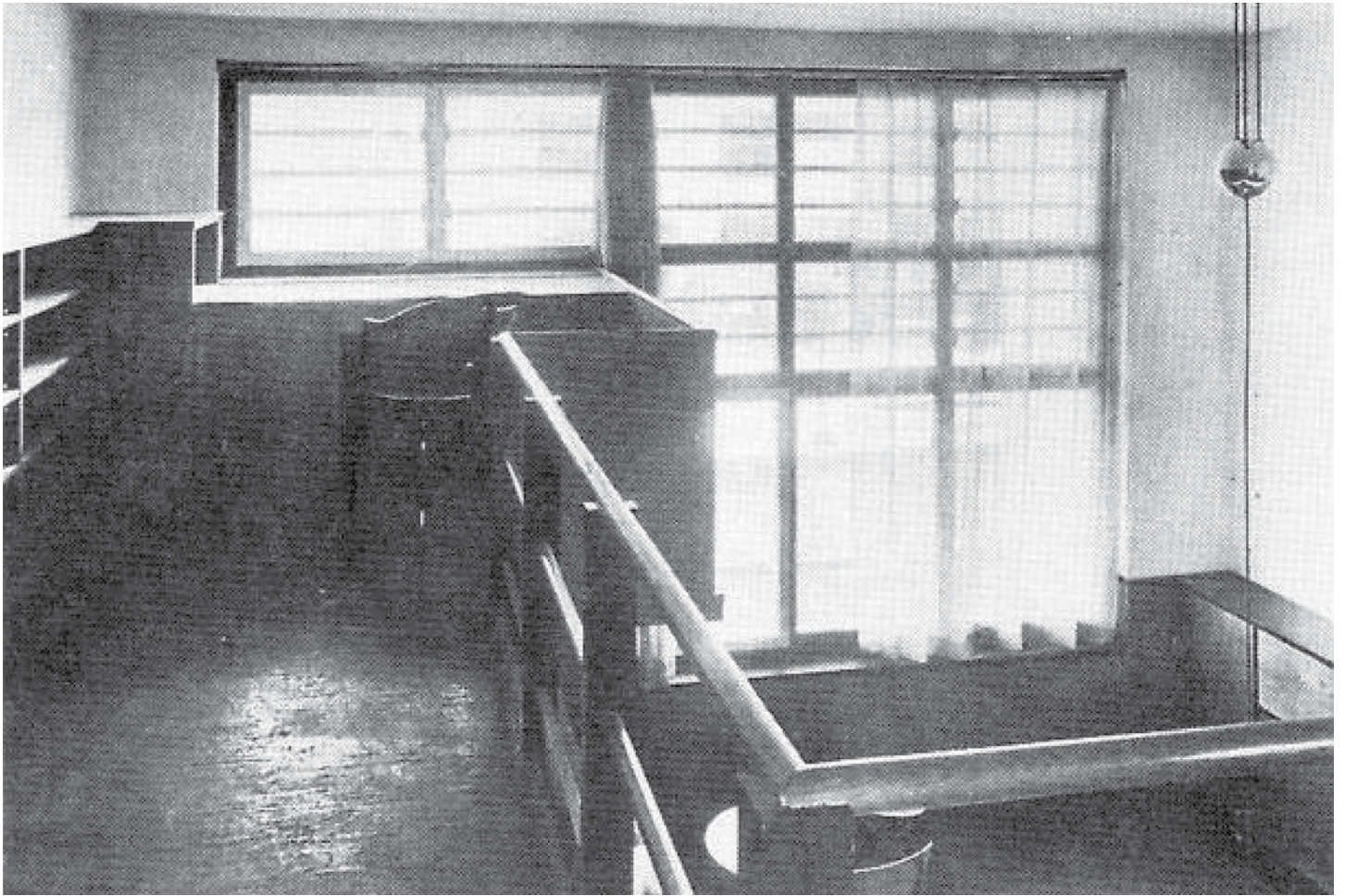


Adolf Loos, FLAT FOR HANS BRUMMEL, Pilsen, 1929. Bedroom with a sofa set against the window.



Adolf Loos, HOUSE FOR THE VIENNA WERKBUNDSIEDLUNG, Vienna, 1930–1932.

Living room on two levels with a sofa “against” the window and suspended in space.



HOUSE FOR THE VIENNA WERKBUNDSIEDLUNG. Corner Study in the gallery,

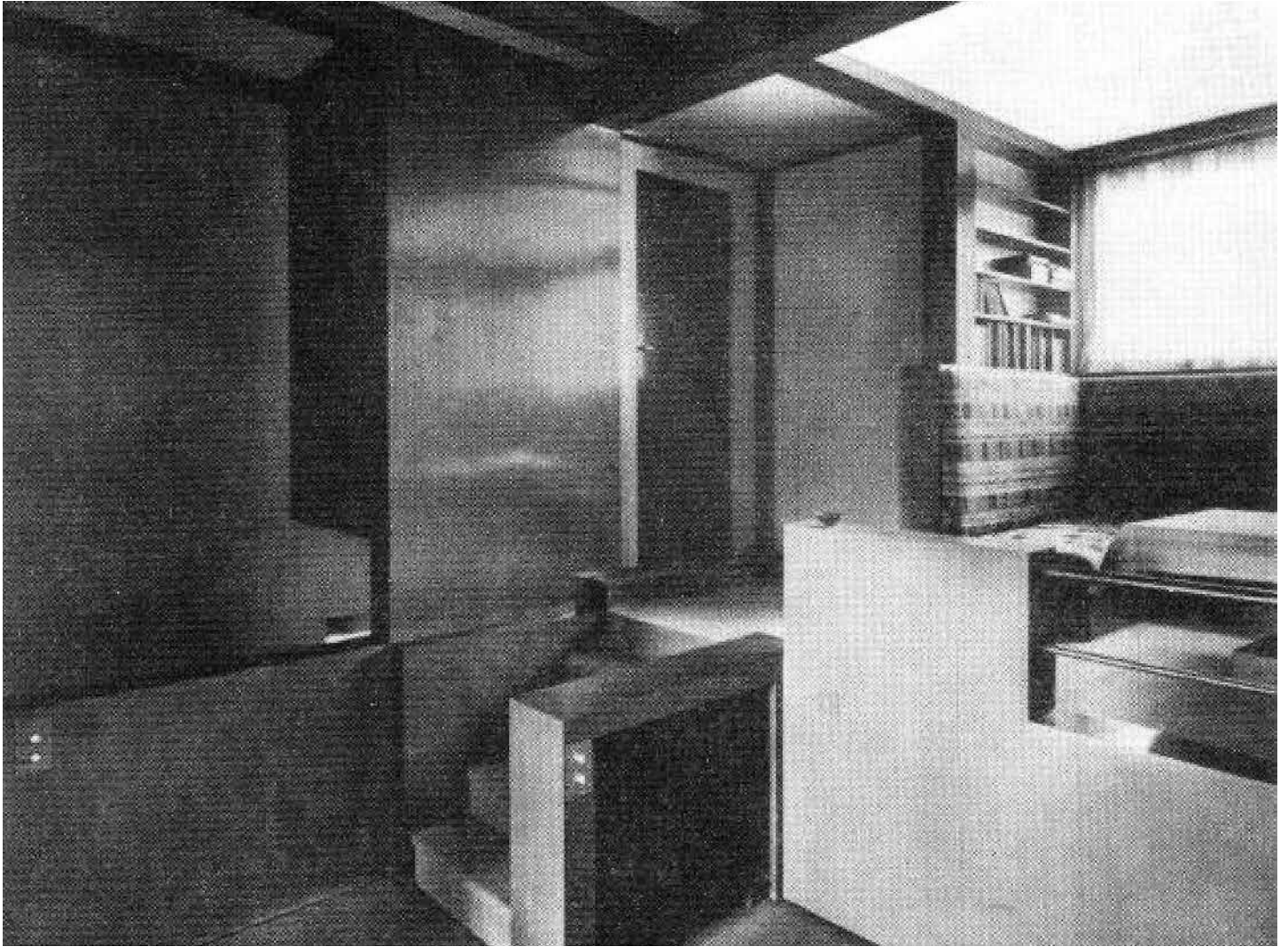
**photo 1932
62**

ing the sofa and the light coming from behind it suggest a comfortable nook for reading. But comfort in this space is more than just sensual, for there is also a psychological dimension. A sense of security is produced by the position of the couch, the placement of its occupants against the light. Anyone who, ascending the stairs from the entrance (itself a rather dark passage), enters the living room, would take a few moments to recognize a person sitting on the couch. Conversely, any intrusion would soon be detected by a person occupying this area, just as an actor entering the stage is immediately seen by a spectator in a theater box.

Loos refers to this idea in noting that "the smallness of a theater box would be unbearable if one could not look out into the large space beyond."⁴ While Kulka, and later Münz, read this comment in terms of the economy of space provided by the *Raumplan*, they overlook its psychological dimension. For Loos, the theater box exists at the intersection between claustrophobia and agoraphobia.⁵ This spatial-psychological device could also be read in terms of power, regimes of control inside the house. The raised sitting area of the Moller house provides the occupant with a vantage point overlooking the interior. Comfort in this space is related to both intimacy and control.

This area is the most intimate of the sequence of living spaces, yet, paradoxically, rather than being at the heart of the house, it is placed at the periphery, pushing a volume out of the street facade, just above the front entrance. Moreover, it corresponds with the largest window on this elevation (almost a horizontal window). The occupant of this space can both detect anyone crossing-trespassing the threshold of the house (while screened by the curtain) and monitor any movement in the interior (while "screened" by the backlighting).

In this space, the window is only a source of light, not a frame for a view. The eye is turned toward the interior. The only exterior view that The split between sight and the other physical senses that is found in Loos interiors is explicit in his definition of architecture. In "The Principle of Cladding," Loos's most Semperian text, he writes: "The artist, the architect, first senses the *effect* that he intends to realize and [then] sees the rooms he wants to create in his mind's eye. He senses the effect that he wishes to exert upon the *spectator* . . . homeyness if a residence."²² For Loos, the interior is pre-Oedipal space, space before the analytical distancing that language entails, space as we feel it, as clothing; that is, as clothing before the existence of readymade clothes, when one had first to choose the fabric (and this act required, or I seem to remember as much, a distinct gesture of looking away from the cloth while feeling its texture, as if the sight of it would be an obstacle to the sensation).



**Adolf Loos, MOLLER HOUSE, Vienna, 1928. The raised sitting area
off the living room
64**

Loos seems to have reversed the Cartesian schism between the perceptual and conceptual. Whereas Descartes, as Franco Rella has written, deprived the body of its status as “the seat of valid and transmissible knowledge” (“In sensation, in the experience that derives from it, harbors error”),²³ Loos privileges the bodily experience of space over its mental construction: the architect first senses the space, then he visualizes it.

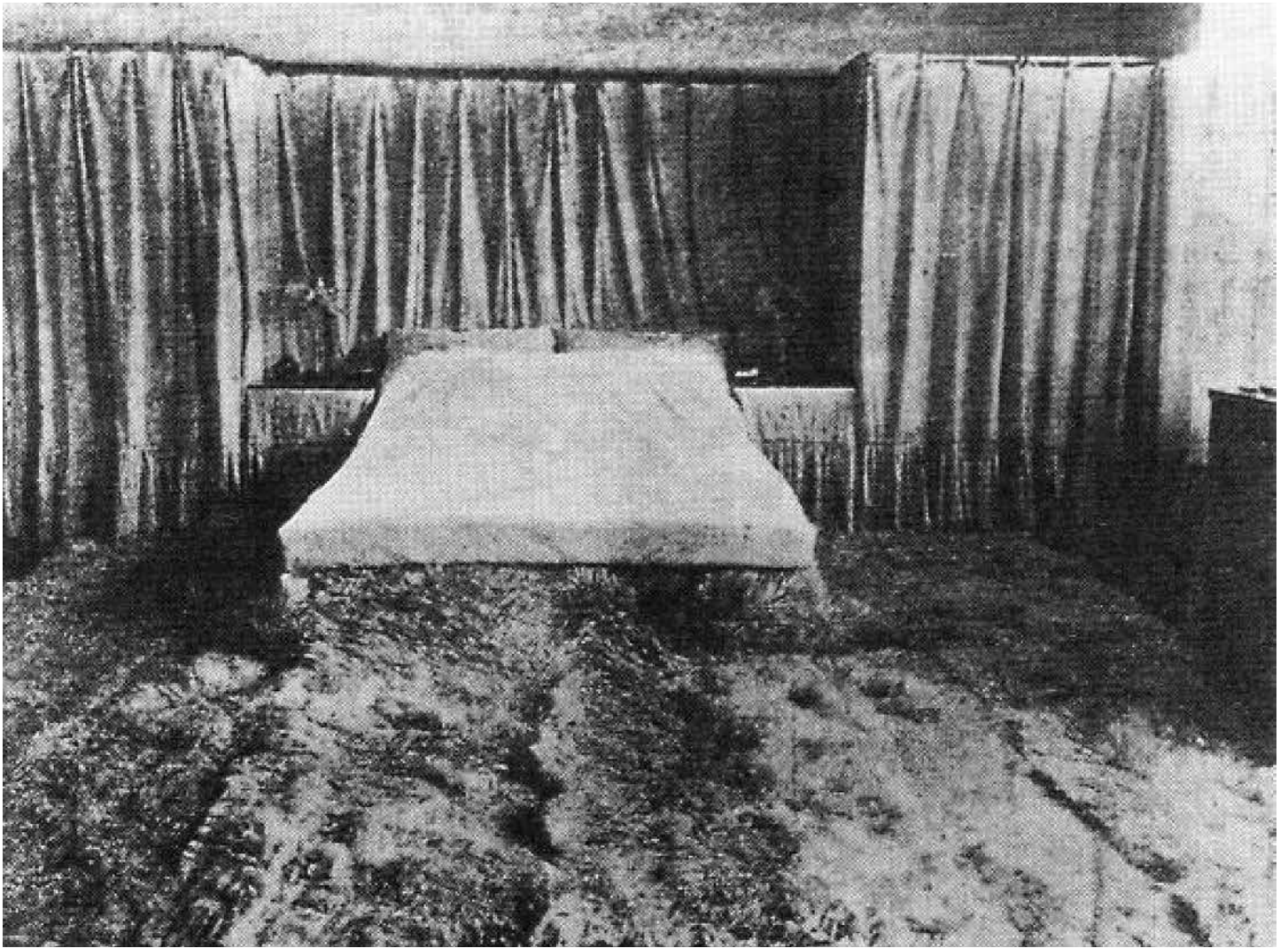
For Loos, architecture is a form of covering. But it is not simply the walls that are covered. Structure plays a secondary role, and its primary function is to hold the covering in place. Following Semper almost literally, Loos writes:

The architect's general task is to provide a warm and livable space. Carpets are warm and livable. He decides for this reason to spread one carpet on the floor and to hang up four to form the four walls. But you cannot build a house out of carpets. Both the carpet on the floor and the tapestry on the wall require a structural frame to hold them in the correct place. To invent this frame is the architect's second task.²⁴

The spaces of Loos's interiors cover the occupants as clothes cover the body (each occasion has its appropriate “fit”). José Quetglas has written: “Would the same pressure on the body be acceptable in a raincoat as in a gown, in jodhpurs or in pyjama pants? . . . All the architecture of Loos can be explained as the envelope of a body.” From Lina Loos's bedroom (this “bag of fur and cloth”) to Josephine Baker's swimming pool (“this transparent bowl of water”), the interiors always contain a “warm bag in which to wrap oneself.” It is an “architecture of pleasure,” an “architecture of the womb.”²⁵

But space in Loos's architecture is not just felt. It is significant, in the quotation above, that Loos refers to the inhabitant as a “spectator,” for his definition of architecture is really a definition of theatrical architecture. The “clothes” have become so removed from the body that they require structural support independent of it. They become a “stage set.” The inhabitant is both “covered” by the space and “detached” from it. The tension between sensation of comfort and comfort as control disrupts the role of the house as a traditional form of representation.

It also disrupts any representation of the house. The status of the architectural drawing, for example, is radically transformed. In “Architecture” Loos writes: “The mark of a building which is truly established is that it remains *ineffective* in two dimensions.”²⁶ By “ineffective” he means that the drawing cannot convey the “sensation” of space, as this involves not only sight but also the other physical senses.²⁷ Loos devised the *Raumplan* as a means of conceptualizing space as it is felt, but, revealingly, he left no theoretical definition of it. As Kulka has noted, he “will make many changes during construction. He will walk through



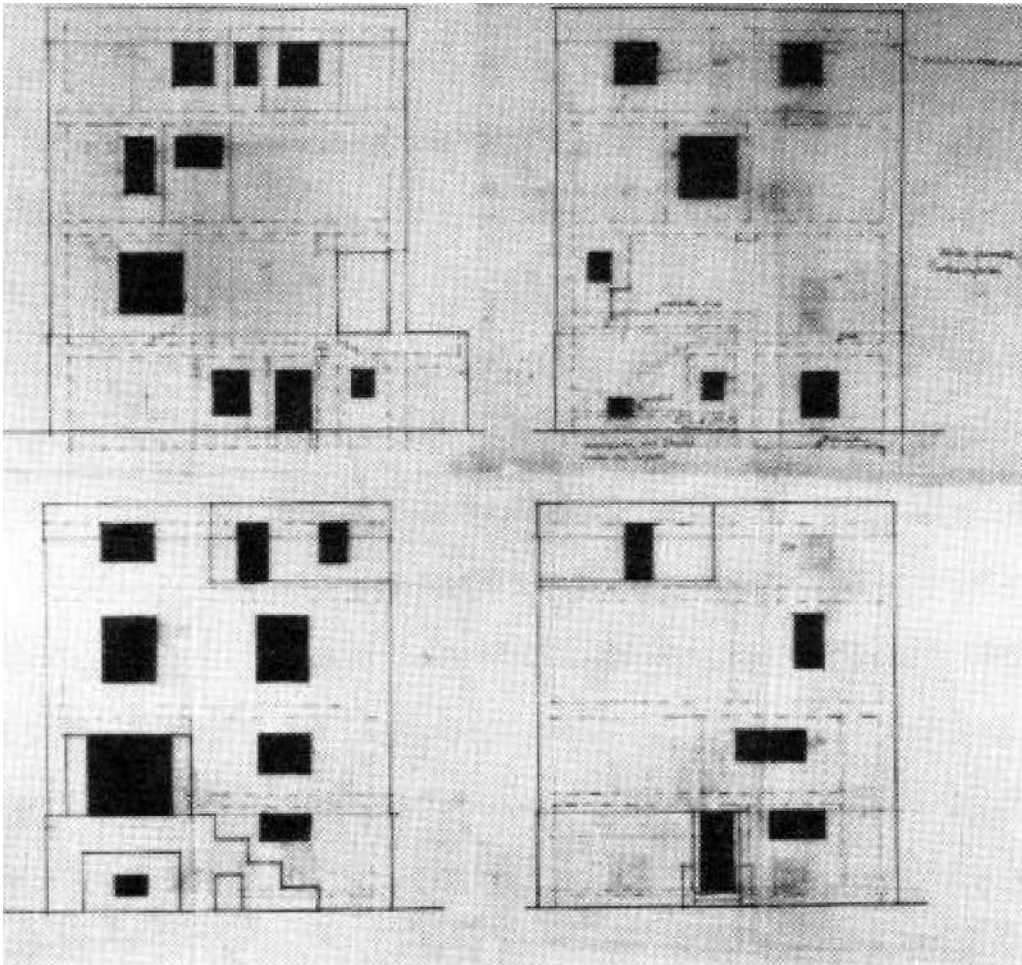
ADOLF LOOS'S FLAT, Lina Loos's bedroom
66

the space and say: 'I do not like the height of this ceiling, change it!' The idea of the *Raumplan* made it difficult to finish a scheme before construction allowed the visualization of the space as it was." Or as Neutra recalls, Loos "prided himself on being an architect without a pencil":

In the year 1900, Adolf Loos started a revolt against the practice of indicating dimensions in figures or measured drawings. He felt, as he often told me, that such a procedure dehumanizes design. "If I want a wood paneling or wainscot to be of a certain height, I stand there, hold my hand at that certain height, and the carpenter makes his pencil mark. Then I step back and look at it from one point and from another, visualizing the finished result with all my powers. This is the only human way to decide on the height of a wainscot, or on the width of a window." Loos was inclined to use a minimum of paper plans; he carried in his head all the details of even his most complex designs.²⁶

He recognized social institutions as systems of representation, and his attacks on the family, Viennese society, professional organizations, and the state, launched in *Das Andere*, were implicit in his buildings. Architecture in all its possible manifestations—drawing, photograph, text, or building—is, after all, only a practice of representation. The subject of Loos's architecture is the citizen of the metropolis, immersed in its abstract relationships and striving to assert the independence and individuality of its existence in the face of the leveling power of society. This battle, according to George Simmel, is the modern equivalent of primitive man's struggle with nature; clothing is one of the battlefields, and fashion is one of its strategies.³³ He writes: "The commonplace is good form in society. . . . It is bad taste to make oneself conspicuous through some individual, singular expression. . . . Obedience to the standards of the general public in all externals [is] the conscious and desired means of reserving their personal feelings and their taste."³⁴ In other words, fashion is a mask that protects the intimacy of the metropolitan being.

Loos writes about fashion in precisely such terms: "We have become more refined, more subtle. Primitive men had to differentiate themselves by various colors, modern man needs his clothes as a mask. His individuality is so strong that it can no longer be expressed in terms of items of clothing. . . . His own inventions are concentrated on other things."³⁵ Fashion and etiquette, in Western culture, constitute the language of behavior, a language that does not convey feelings but acts as a form of protection—a mask. As Loos writes, "How should one dress? Modern. One is modernly dressed when one stands out the least."



RUFER HOUSE, elevations
68

Significantly, Loos writes about the exterior of the house in the same terms as he writes about fashion:

When I was finally given the task of building a house, I said to myself: in its external appearance, a house can only have changed as much as a dinner jacket. Not a lot therefore. . . . I had to become significantly simpler. I had to substitute the golden buttons with black ones. The house has to look inconspicuous.³⁶

The house does not have to tell anything to the exterior; instead, all its richness must be manifest in the interior.³⁷

Loos seems to establish a radical difference between interior and exterior, which reflects the split between the intimate and the social life of the metropolitan being: "outside," the realm of exchange, money, and masks; "inside," the realm of the inalienable, the nonexchangeable, and the unspeakable. Moreover, this split between inside and outside, between the other senses and sight, is gender-loaded. The exterior of the house, Loos writes, should resemble a dinner jacket, a male mask, as the unified self, protected by a seamless facade, is masculine. The interior is the scene of sexuality and of reproduction, all the things that would divide the subject in the outside world. However, this dogmatic division in Loos's writings between inside and outside is undermined by his architecture.

The suggestion that the exterior is merely a mask that clads some preexisting interior is misleading, for the interior and exterior are constructed simultaneously. When he was designing the Rufer house, for example, Loos used a dismountable model that would allow the internal and external distributions to be worked out simultaneously. The interior is not simply the space that is enclosed by the facades. A multiplicity of boundaries is established, and the tension between inside and outside resides in the walls that divide them, its status disturbed by Loos's displacement of traditional forms of representation. To address the interior of Loos is to address the splitting of the wall.

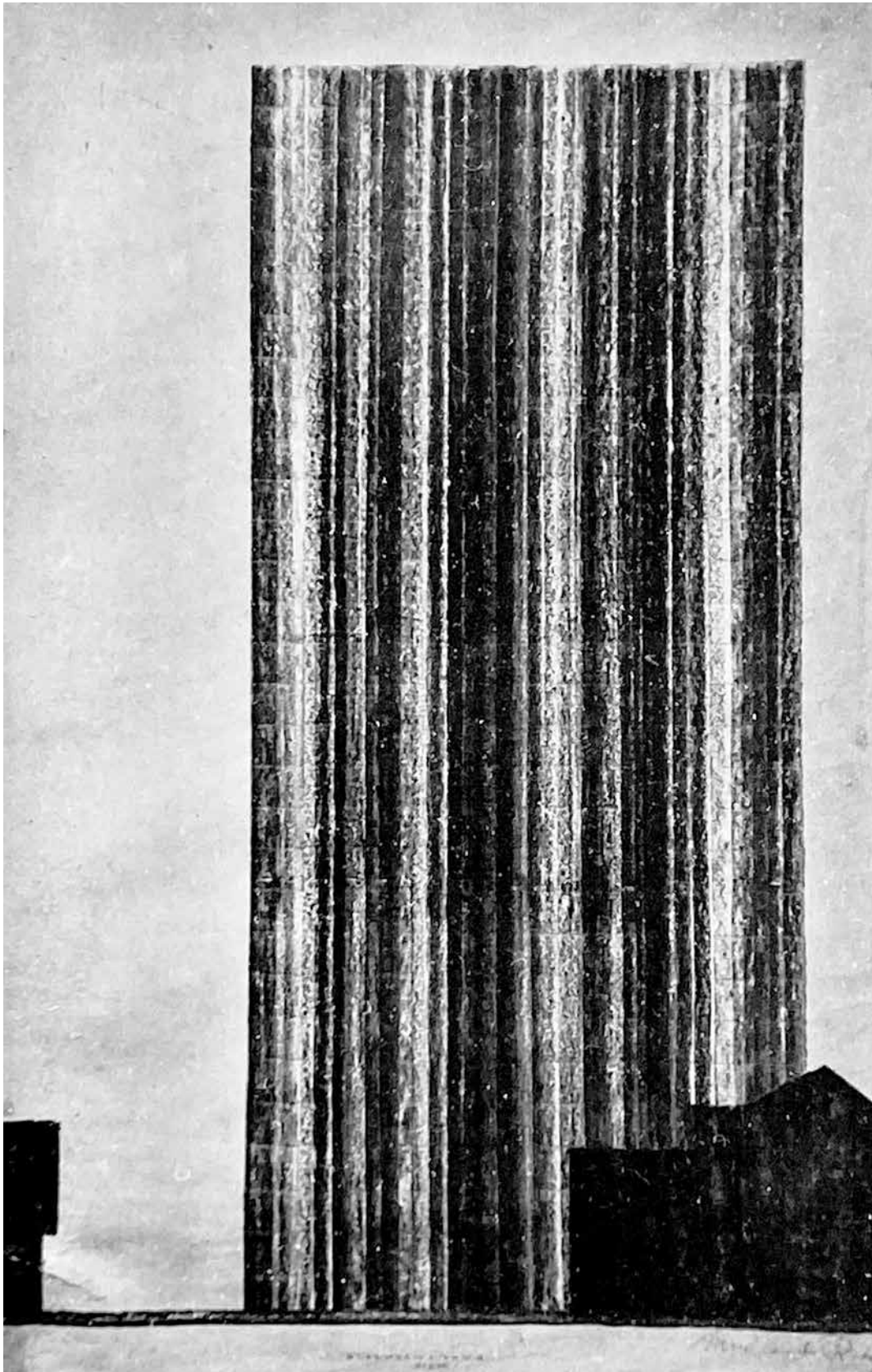
Take, for instance, the shift of drawing conventions in Loos's four pencil drawings of the elevation of the Rufer house. Each one shows not only the outlines of the facade but also, in dotted lines, the horizontal and vertical divisions of the interior, the position of the rooms, and the thickness of the floors and the walls, while the windows are represented as black squares, with no frame. These are drawings of neither the inside nor the outside but the membrane between them: between the representation of habitation and the mask is the wall. Loos's subject inhabits this wall. This inhabitation creates a tension on that limit, tampers with it.

**MIES VAN DER ROHE, THE MUSEUM OF
MODERN ART, NEW YORK
Philip C. Johnson, 1947**

**Excerpt. 1922: Two Glass Skyscrapers,
Mies van der Rohe**

In this short excerpt, Rohe outlines the nature of skyscrapers in architecture. The text briefly lists their structural qualities and presence on a city, writing that ‘the use of glass imposes new solutions’. Rohe then details the decisions taken for his Friedrichstrasse skyscraper project in Berlin, and notes the results of his experiments carried out using real glass models.

MIES VAN DER ROHE



Project: GLASS SKYSCRAPER, 1920-21
74

1922: TWO GLASS SKYSCRAPERS

Illustrations, pages 23-29; text, page 21.

Skyscrapers reveal their bold structural pattern during construction. Only then does the gigantic steel web seem impressive. When the outer walls are put in place, the structural system which is the basis of all artistic design, is hidden by a chaos of meaningless and trivial forms. When finished, these buildings are impressive only because of their size; yet they could surely be more than mere examples of our technical ability. Instead of trying to solve the new problems with old forms, we should develop the new forms from the very nature of the new problems.

We can see the new structural principles most clearly when we use glass in place of the outer walls, which is feasible today since in a skeleton building these outer walls do not actually carry weight. The use of glass imposes new solutions.

In my project for a skyscraper at the Friedrichstrasse Station in Berlin [page 24] I used a prismatic form which seemed to me to fit best the triangular site of the building. I placed the glass walls at slight angles to each other to avoid the monotony of over-large glass surfaces.

I discovered by working with actual glass models that the important thing is the play of reflections and not the effect of light and shadow as in ordinary buildings.

The results of these experiments can be seen in the second scheme published here [page 28]. At first glance the curved outline of the plan seems arbitrary. These curves, however, were determined by three factors: sufficient illumination of the interior, the massing of the building viewed from the street, and lastly the play of reflections. I proved in the glass model that calculations of light and shadow do not help in designing an all-glass building.

The only fixed points of the plan are the stair and elevator shafts. All the other elements of the plan fit the needs of the building and are designed to be carried out in glass.

From Frühlicht, (bibl. 1)

ARCHITECTURE / BODY / FASHION
Taro Igarashi

Excerpt. The membranes of Frank Gehry

In this excerpt, Igarashi writes on the work and practice of architect Frank Gehry, drawing lines of similarity between his way of forming paper to model architecture, and the way of forming fabric to model clothes. Igarashi goes on to recount his experience of visiting one of Gehry's buildings and recounts his thoughts at noticing its papier-mâché resemblance, describing how the building's covering relates to clothing.

Taro Igarashi

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The Membranes of Frank Gehry

There is a particularly impressive scene in Sidney Pollack's documentary *Sketches of Frank Gehry* (2005). As Gehry is giving instructions to the staff in his office, he is working on a model for one of his projects. But rather than using a material with a substantial amount of volume like styrofoam, the architect is bending, peeling, folding, cutting, and pasting pieces of silver paper. Finally, Gehry grabs some paper, crumples it up and sticks it together. The scene is quite different from what one usually associates with an architectural firm. And as he continues with the design, Gehry seems to be shaping a piece of clothing. His production process makes for a very picturesque example of architecture.

After seeing the film, I had the opportunity to visit the Experience Music Project (2000; figures 1, 2), a rock music museum that Gehry designed in Seattle. Like Gehry's Guggenheim Museum in Bilbao (1997), the building is covered with a crooked, metallic membrane. It looks as if one of Gehry's models, created by altering the shape of some paper and slapping the pieces together, had simply been blown up to a massive size. Yet, that isn't to say that the volume of the space has also been reproduced. To put it bluntly, the building has an air of papier-mache about it. But in looking at the actual structure, I thought, It may well be papier-mache, but it's amazing that he was able to take it to such an extreme. The building is the ultimate in membrane architecture. It has nothing to do with white modernist works assembled out of abstract volumes. Gehry's choices of material and color are exercises in individuality. Rather than eliminating what the modernists called ornament, Gehry believes that the material holds rich expressive possibilities.

The Experience Music Project seems to flap around in the wind, but in the gaps in the hard membrane, one discovers the building's openings – its windows and entrance. Referring once again to fashion, it has been said that eroticism emanates along the borderline between the body and clothing, and the effect here is very similar. It was a particular shock to be able to pass directly through the structure like a monorail penetrating the building. From the opening in this large article of clothing, one suddenly juts out horizontally while following the curves of the building. It should also be remembered that the museum stands on the former site of the Seattle Expo, and the elevated monorail was in operation long before Gehry's building was erected.

From the extreme design of this building to Gehry's work in a contemporary architecture exhibition at MoMA, he has been presented as a deconstructivist architect. In fact, one finds similarities between Gehry's work and that of Comme des Garçons' Kawakubo Rei, who evolved a deconstructivist brand of fashion in the 1980s.¹ Both have worked to dismantle their respective fields, and destroy accepted standards of beauty. They have cut holes in things and slashed them apart. They have made use of asymmetrical forms. They have created works that appear to be incomplete. Just as Gehry has introduced materials such as cardboard and wire mesh that aren't normally used by architects, Kawakubo has taken a quirky approach to her materials. Her designs don't follow function or the physical body. Her humped dresses even include a feature that the human body lacks. Gehry too has rebelled against architectural traditions that idealize human beings with a straight and immobile bearing, choosing instead images of the dancing body and more importantly, fish motifs, as in his *Fish Dance* (1987; figure 3).

THE STRUCTURE OF SENSATION

Yayoi Motohashi-Maki-Mantila

Excerpt. Introduction, “A Piece of Cloth” & Conclusion: The Last House

In this excerpt, Mantila draws on the similarities between fashion and architecture, as visual enjoyments, as expressions of culture and identity, and how they are both ‘only complete with the presence of a user’. Mantila heavily focuses on the work of Japanese fashion designer Issey Miyake, listing noteworthy concepts, using the latest technology to build innovative fabrics, for which he is famed. Mantila presents concise examples from Japanese designers of works that blur the line between architecture and fashion, and more specifically to clothing as shelter. Mantila writes that the works ‘encompass our primordial desires related to skin and sensation’.

The Structure of Sensation

Yayoi Motohashi-Mäki-Mantila

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Introduction

Fashion and architecture – is there anything in our daily lives that captures our heart and arouses our desires as much as these two things? Not only are we filled with pure visual enjoyment at the sight of their artistic beauty, but both types of creation are only complete with the presence of a user. And though they delight us with their colors, forms, and textures, the reason we treat them with such reverence is that both become a part of our selves, are gradually assimilated within us, and eventually come to symbolize us.

As expressions of social, personal, and cultural identity, fashion and architecture function as protective mechanisms for our bodies, and present us with urgent and unavoidable questions.

Current trends in both fields make it clear that Japanese fashion designers and architects have exerted an immeasurable and worldwide influence. Of particular note is the work that emerged in the 1970s and 80s, which went far beyond mere exoticism and eventually succeeded in overturning the perspectives and values of the Western styles that preceded it. Japanese fashion designers should also be given special recognition for bringing creative clothing to a wider audience.

By wearing clothing we like, we are donning another layer of skin that reflects what we aspire to be. The style we choose is inevitably filled with meaning according to our age, sex, and occupation. In other words, it is impossible to escape some sort of social context. Further, along with the development of the prêt-à-porter market after the war, it has become impossible to fully express our self or individuality through fashion, as we are only able to select clothes that are produced for a large number of people.

Nevertheless, as long as the desire to actively pursue a relationship with fashion continues, the industry is spurred to make significant leaps forward. And one advance that cannot be overlooked is the creative innovations of Japanese designers. In part, these works were made possible by the distinctly Japanese view of the human body, and Japan's culture of clothing, with its weaving and textile traditions and the techniques that shaped them. At the same time, through collaborations with textile makers, Japanese designers have been able to develop materials to express their ideas – a situation that is rare in other countries.

In this essay, while focusing on internationally active Japanese fashion designers who got their start in the 70s and 80s, I would like to offer a brief survey of each artist's attitudes, concepts, and special characteristics.

"A Piece of Cloth"

"The concept is based on allowing air to come between the body and the clothing. By doing this, the expression of the clothing changes according to a person's movements, and the wearer experiences a pleasant or comfortable sensation. Ideally, clothing should be a combination of beauty and surprise. The idea is to avoid sealing off the body. In European clothes-making, they begin with the shape, and then the wearer slips into the clothing. This results in a firm, armor-like form. I wanted to move away from this and make clothes that allow the body to create the form." –Issey Miyake (*Geijutsu shincha*, August 2000, p. 35)

Who could have imagined that a single piece of cloth would be introduced as a style and turn into a genuine fashion? It is often said that Issey Miyake first proposed his "one-piece-of-cloth" concept around the time of his "One Piece of Cloth Knit" (1976) and the "Issey Miyake and a Piece of Cloth" exhibition held at the Seibu Museum in 1977. But the seed of the concept was already present in his early work "Constructible Clothes" (1969; figure 1), which was shown at the Toray-sponsored Knit Exhibition in 1969. The work was based on the idea that clothes could be made out of detachable fragments. Structurally, it consisted of a large piece of cloth with snap buttons which, according to the way it was fastened, could be

either a skirt or pants. A similar concept was used in "Colombe" (1991 spring/summer collection; figure 2), a work which Miyake developed some 20 years later. By simply fastening the attached snaps, a single square of heat-trimmed polyester was transformed into an article of clothing without the use of cutting and sewing.

Though comprising more than a single piece of cloth, "Handkerchief Dress" (figure 3), first shown in 1970, was a square, handkerchief-shaped, polyester jersey that was minimal and clung modestly to the body while moving about in the air. The handkerchief and scarf motif was in turn the source of Miyake's pleat concept, which has enjoyed enormous popularity since it was introduced in 1988. The latter evolved after Miyake took a scarf, folded it, and turned it into a blouse by using two to three seams to create pleats.

Wearing a single piece of cloth is not a particularly unusual concept; not only was there the chiton in ancient Greece and Rome, but in Japan, for example, there is the kimono, and in India, the sari. But in an era when Western-style clothing was growing increasingly predominant and replacing ethnic costumes around the world, Miyake challenged accepted standards of beauty with the concept and thrust the concept onto the stage of international fashion.

People took pleasure in the work's simplicity and Miyake's emphasis on the special qualities of the material. They were not only attracted by its volume, which allowed air inside, form, and expression, but also its texture. The work was reminiscent of the indigo, cotton cloth that had been used for quilting, padding, and lining kimono, as well as textiles like *shijira-ori*, which women from the Awa region wove out of scraps of cotton, *oni-yanagi*, which was used to remove wrinkles in underwear by feeding cotton cloth into a bamboo tube and placing it in cold water, *washi* (Japanese paper) garments, and other natural materials like oil paper, which was rough yet imbued with a sense of warmth. Miyake's work reawakened our desire to be wrapped in a generous piece of cloth and enjoy its texture as it created sounds that corresponded to our movements.

Miyake has continued to take an active part in research and development to create new material through the application of contemporary technology. His traditional-style Japanese fabrics, for example, are produced using machines. This allows Miyake to increase the width of a cloth. He has also evolved new materials which, due to their quantity, quality, and cost, make them ideal for prêt-à-porter clothing.

Miyake took the single cloth, which could be folded into a flat surface, even further in 1988 with a new method that reduced three-dimensional clothes to two dimensions. Instead of folding the "Pleats" series, the clothing could be stored by crumpling it up along its creases.

Dating to the ancient Greeks, the pleat is by no means new. But the pleats of someone like Mariano Fortuny (1871-1949), whose name lives on in fashion history for the artisanal beauty of his work, and those of Miyake are vastly different in terms of how they are made, and their significance and function. While Fortuny's pleats were used for luxury clothes designed for specific individuals, Miyake's were made for the enjoyment of everyone. "Pleats Please" 1993 spring/summer collection (figure 4) thermally processed pleats, help the approximately two times larger clothing retain its shape semi-permanently, are practical, can be easily carried by rolling them up into a small ball, and because of their resilience, require no maintenance. They are also washable. Designed to provide stylish clothing for everyone, the pleat concept, along with the technique used to create it, is one of the 20th century's most revolutionary innovations.

Ten years after the first appearance of Miyake's pleats, as part of his 1998 spring/summer collection, he presented "A-POC (A Piece Of Cloth)" (figure 5), a series of Western-style clothes that could be created from a tubular knit. With Fujiwara Dai, Miyake used a computer to develop a technique to machine-knit a garment out of a single piece of thread. By simply cutting it with scissors, the long knit was transformed into an item of clothing. After this spectacular development, in 2000, Miyake also figured out a way to make cloth. Moreover, the process he adopted was different from traditional garment-making. After determining the design, pattern, and structure, and programming the information into a computer, a machine was used to knit the fabric. In this way, the job and

the relationship between the people doing it also became more practical.

Since the beginning of his career, Miyake has pursued the concept of "clothing as an extension of the body"¹ or "second skin" by developing comfortable materials that stretch with the movements of the wearer.

Rather than placing the emphasis on what "appears" beautiful to others, Issey Miyake has focused on the functional movement and enjoyable lifestyle of the wearer to make wide-ranging advances in fashion.

Conclusion – The Last House

In the late 20th century, textiles were developed with the aim of being assimilated more closely with the skin. As mentioned above, elastic materials have only been with us for some 30 years, but in recent years, the gap between cloth and skin has narrowed with the invention of fibers that seem to actually become a woman's skin. Several years ago, T-shirts and other garments that reduced UV rays began to appear. The latest thing is textiles that function as cosmetics. Recently, clothes that include components such as swaran, vitamins C and E, and negative ions to help maintain the skin's moisture have also been introduced.

Those working in the fields of fashion, architecture, design, and art have also been taking inspiration from the clothed body and highlighting the relationship between fashion and society.

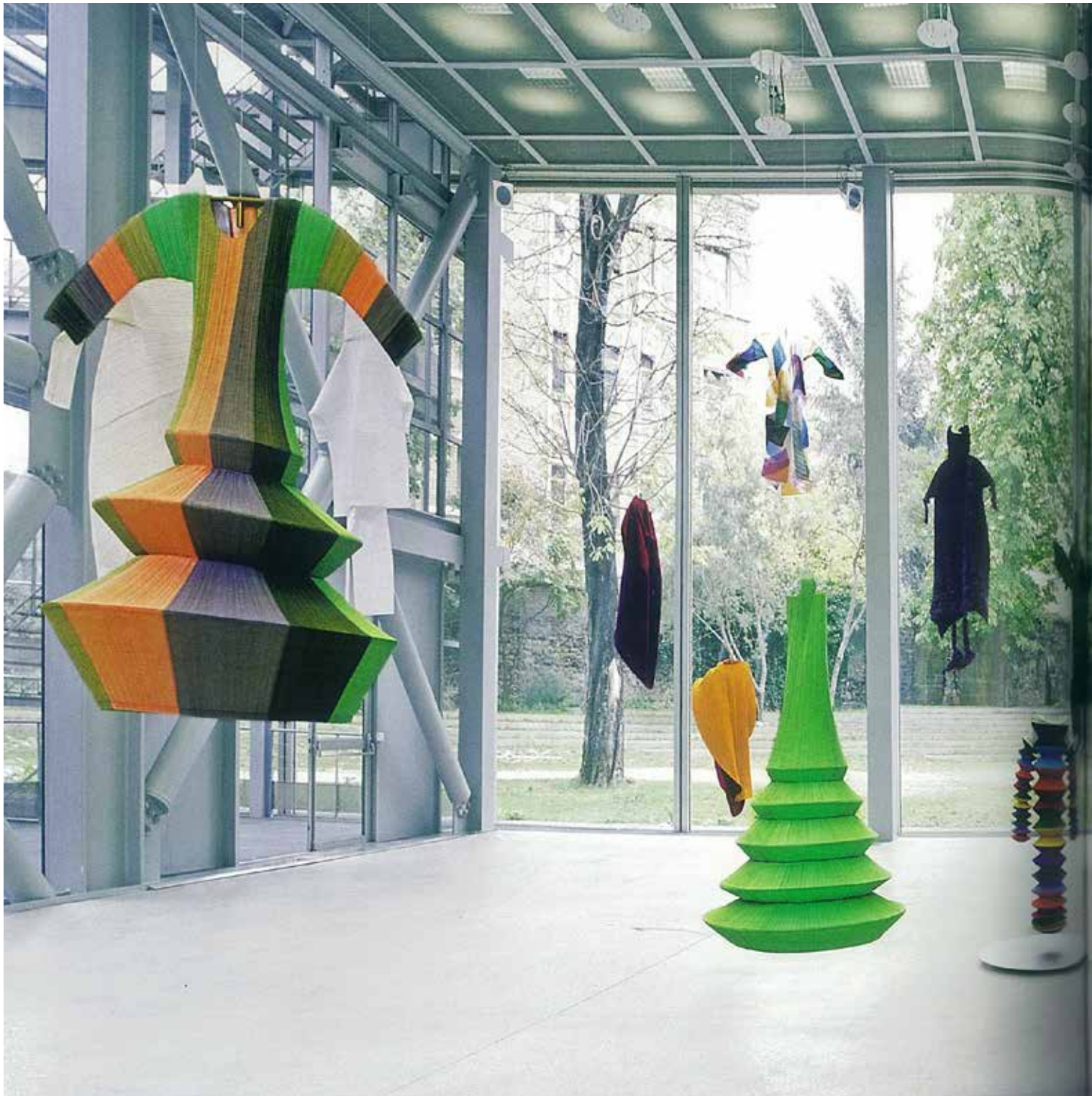
Takehiko Sanada's (1962-)³ "Hand in Hand" (1998; figure 16), a large work measuring 330cm x 660cm x 90cm makes use of horse, goat, and camel hair, and sheep fleeces, and occupies a place somewhere between fashion and architecture. With the hair designed to protect the skin, the work is structured like a large tent with sleeves and holes in it, giving it both the character of clothing and a building. Another Sanada's work is called "Prefab Coat" (2000; figure 17). When the work is set up with ropes and poles, it becomes a tent. But after it is dismantled, it can function as a coat. Several coats can also be fastened together to create something approaching a house.

Our final suit of clothes is our body, in the same way that our final house is our body. Kosuke Tsumura's (1959-)⁴ nylon coat, "Final Home" (1994, figure 18), is both the ultimate item of clothing and a work of architecture. By stuffing the pockets, the work becomes a parka; with food rations and a first-aid kit inside, it becomes evacuation wear for use in an emergency.

Another Tsumura work, "Mother" (2000; figure 19), is a coat designed for a mother holding a baby to her breast. This work is a predecessor to the child's dress (figure 7) that Rei Kawakubo showed as part of the previously mentioned fall/winter 2007 Comme de Garçons collection, but the intention of the two works is entirely different. While Kawakubo's emphasis is on the amusing and original nature of the form, "Mother" attempts to encourage communication and foster a relationship between an actual mother and child. As it resembles a womb, the clothing/shelter is also similar to the very first sheltering structure we ever experienced.

The creative achievement of these designers cannot be overemphasized. All over the world, they have changed our values regarding clothing, our ideas of beauty, and by extension our lifestyles. While the obvious motivation behind these innovations is the pursuit of a unique visual beauty, on an even deeper level, they encompass our primordial desires related to skin and sensation.

(Translated by Christopher Stephens)



Issey Miyake, JUMPING, view of the exhibition ISSEY MIYAKE MAKING

THINGS, Fondation Cartier pour l'art contemporain, Paris, 1998



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