MATTER

MATERIAL PROCESSES IN ARCHITECTURAL PRODUCTION

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ROUTLEDGE

Chapter 1
Raspberry Fields

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Hirsuta

Kiwa hirsuta

A very strange new animal was discovered in 2005 living on hydrothermal vents 7200 feet deep along the Pacific-Antarctic Ridge 900 miles south of Easter Island. *Kiwa hirsuta* (Figure 1.1), a crustacean that is neither lobster nor crab is nevertheless dubbed "yeti lobster" or "yeti crab" for its resemblance to these animals. In fact, *K. hirsuta* constitutes not only a new species but a new genus and family (*Kiwaidae*) of which it is the sole member. Rarely do scientists find new organisms of such striking peculiarity to warrant this kind of distinction. Given *K. hirsuta*'s strong morphological similarity to other lobster species, it seems surprising that it would require a new family for classification. One characteristic, however, is deemed so unusual as to thrust this creature through established hierarchies of biological order into its own unique taxonomic orbit: its hairiness.

Unlike any other crustacean, *K. hirsuta* has a full coat of silky blonde hair covering its legs and claws. Resembling a fur coat, this material's function is uncertain. It may be used to capture bacteria and other small organisms on which the animal feeds, or the bacteria may detoxify the poisonous minerals emitted from the hydrothermal vents. Or it may simply be a spontaneous, natural expression of material exuberance. Whatever the case, *K. hirsuta* is undeniably the most stylish crustacean currently crawling the ocean floor.

Figure 1.1 *K. hirsuta*

Hirsutism

Hirsutism describes the condition, usually botanical or medical, of hairiness (Figures 1.2–1.3). More ge
hairiness is a ubiquitous material condition that crosses a variety of disciplines and aspects of life.
this, hairiness has rarely been considered a subject of relevance for architecture. This seems odd given
with which one might begin to theorize the use value of hairy morphologies, mechanisms, and materia
architectural context,[1] especially within current design discourses interested in moving from surface to
from geometry to atmosphere, and from mass to ornament.

Figure 1.2 Botanical hirsutism
Figure 1.3 Medical hirsutism

This text explores the undervalued material and organizational potentials of hair, or masses of flexible strands, for architectural application. We will approach what might otherwise be an unruly subject through two focusing lenses, one internal to our discipline, the thatched roof, and one external, the hairstylist's art. While different in history, scale, technique, material, and application, thatching and haircutting each constitute a relatively lowly material practice developed within guilds meant to satisfy pragmatic ends. While the prosaic humility of these crafts may at first seem limiting and not worthy of academic attention, it is this very quality that allows each the freedom to thrive in unusual, even irresponsible ways.[2]

Thatching

Thatching is one of the oldest building arts practiced in the world. Pre-dating even clay, stone, and wood, the massing of natural fibers formed humankind's earliest dwellings. Only caves are more primordial living structures and these, of course, come readymade. Over the course of centuries in various locales thatching evolved into a variety of tendencies and forms, some more complex than others, all linked by a basic reliance upon stranded, bundled, and woven morphologies. Unlike other building techniques such as masonry and post and beam construction, thatching has rarely sought to rise above its humble station, that of utilitarian material practice. Despite the evolution of a limited variety of ornamental flourishes that add a certain decorative flair to the thatched roof, this building method has sought neither metaphysical legitimacy nor ideological membership in the loftier strata of the architectural discipline. The most we can say for any higher aspirations of the craft involves its latter-day contribution to an agrarian picturesque, though this has been mostly accidental and after the fact. Thatching has always been about getting the job done, the job being nothing more than keeping the house warm and dry, using local materials and labor. More recent pastoral associations are largely a function of its durability, as a well-made thatched roof may last over 100 years when carefully tended. In villages where thatch still exists, it is often the sole physical evidence of a time gone by. Of course, the visual resemblance

Figure 1.4 Common representation of a thatched cottage

between sloped, thatched courses and the furrowed fields of the surrounding countryside also lends a degree of pastoral resonance to the form but this, too, is accidental, arising from our general nostalgia over the move from an agrarian to an industrial/information economy. Thus, when we associate thatched roof cottages with former times and ways of life (that were not nearly as idyllic as we might imagine), we place undue burden on a material practice and morphological potential otherwise free of such responsibility (Figure 1.4).

While acknowledging the presence of this post-rationalized, picturesque affect, this author rejects its usefulness for the continued evolution of thatching and, by extension, more contemporary hairy architectures. Hobbits, trolls, and wizened English hermits are not our target audience. Instead, the arguments presented here advocate for combing through the physical properties and technical procedures that constitute the thatcher's craft to find novel ways forward. Exploring new styles, shapes, and textures in thatch reinvigorates this most ancient of material practices in ways that are truly contemporary. Indeed, if viewed in purely morphological terms this practice may be seen as primed for exploitation within a certain strand of current architectural discourse. Not only do the bundled, flexible lines of a thatched mat appeal to recent developments in architectural geometry[3] but, more importantly, move this idiom further toward materialization, quality, texture, and affect through their undeniable physicality. The lines and mats are, after all, made of something, specifically water reed or wheat straw, and with this something comes all the richness of specific material characteristics. Malleability, turgidity, brittleness, roughness, color, and optics, to name a few, lend a certain yet variable feel to the geometry of woven linework. Oddly enough, thatch may be the ideal test case for the polemical move from geometry to affect, form to atmosphere.[4]

Apex case: thatching technique in the United Kingdom

For those truly interested in actually learning this craft, the highest concentration of advanced thatched projects and expert thatchers is found in the central, southern, and south-western United Kingdom (Figure 1.5). While

Figure 1.5 The Cott Inn, Dartington, Devon, one of the oldest thatched inns in the UK

various forms of thatching are found in other locales, that of the British Isles stands unrivaled.[5] Desp decline elsewhere, the United Kingdom maintains impeccable standards through guilds, the memb which pass technique on through successive generations. This centuries-old expertise as well as state-of-th methods from the region have been compiled in a single, large text entitled *The Thatcher's Craft*, publish England's Rural Development Commission.[6] Roughly analogous to a combination of our *Architectural Graphic Standards* (Ramsey/Sleeper) and *Building Construction Illustrated* (Ching/Adams) but a far more pleasurable read than either, *The Thatcher's Craft* clearly describes every aspect of thatching, from start to finish, according to proper English standards and is used as an on-site manual by all guilded thatchers in the United Kingdom. A second book, *How to Thatch a Small Roof*[7] is aimed specifically at those new to the craft, clearly illustrating the peculiar ingenuity of thatching. These two references are excellent resources on the disciplinary and material protocols of this strange, enduring practice.

Hairstyling

Upon recontextualizing thatch toward contemporary architectural applications we might then appeal to the outside discipline of hairstyling (cosmetology) for stylistic inspiration and technical knowledge. The mechanico-physical similarities between hair and thatch, and thus hairstyling and thatching, are obvious (Figures 1.6–1.8). So striking are these commonalities, in fact, that the tools involved in each practice are virtually identical – shears, combs, parting and tying devices, and the like are used in each. Their only significant difference lies in their necessarily different scales.[8] Beyond this, referencing a material practice and "lower art" extrinsic to architecture promotes a deeply materialist, empiricist polemic. It is not a question of "what does thatch wish to be?" but rather "how does thatch behave when worked?" And while the disciplinary incorporation of hairstyling may be unusual, it is not without precedent, however tenuous. Rococo painters mastered techniques for representing hair and soon thereafter their counterparts in architecture set about applying delicate tendrils of plaster across wall surfaces. Similarly, Art Nouveau architects and other organically inclined designers found fascination with botanical hairiness, expressed in the whimsical dynamism of excessive linework. Later still, Verner Panton styled his interiors with an even more literal furriness in the form of lush shag carpet and dangling, filamentous chandeliered ceilings. Perhaps the most direct example of an architect's desire to work with hair, however, is Leonardo da Vinci's *Study for the Head of Leda* (Figure 1.9) in which it is believed that da Vinci created the hairstyle himself.

With the possible exception of da Vinci (of which little is known of his reasons for creating a new hairstyle for his model), each of these examples is linked not only through fascination with hairy motifs and effects but also through a conscious move away from higher metaphysical aspirations toward what Georges Bataille would later describe as "bring[ing] things down in the world."[9] Though few and obscure relative to larger canonical movements in architecture's history, these divergent moments provide some degree of precedent for arguments toward the contemporary use value of the cosmetological arts for architecture.

For an introduction to the remarkable (and, perhaps, surprising) expertise achieved in cosmetology there is likely just one best source: the Vidal Sassoon Academy. The methods and concepts developed by Sassoon (or simply "Vidal" to those within the discipline) and his school have elevated hairstyling to levels of virtuoso geometrical-material performance rivaling any found in the so-called "higher arts." Known in the world of cosmetology as the "Harvard of Hairstyling," Vidal Sassoon Academy has developed a rigorous methodology for the analysis and description of the morphological and material characteristics of hair and its compositional relationship to the shape of the skull. These principles are formalized in a comprehensive set of evolving manuals for hairstylists that are not unlike our own *Architectural Graphic Standards*. Much information of interest to contemporary architects of advanced form may be found in these volumes, perhaps the most compelling being an extensive collection of finely-drawn geometrical diagrams describing the mechanics of hair, head, and hairstyling technique.[10]

Figures 1.6–1.7 Separating bunches during thatching

Figure 1.8 Separating bunches during hairstyling

Figure 1.9 Leonardo da Vinci, *Study for the Head of Leda*, 1503–1507

Thatch cosmetology

Given the striking parallels between these two disciplines it really should have occurred to architects before now that a marriage of thatching (architecture) and hairstyling (cosmetology) is a match made in empirical-practice heaven. As it happens, it did occur to at least one person already: Vidal Sassoon. His 1972 collection included a cut named simply "The Thatch" (Christopher Brooker, stylist) in which the model's strawberry blond hair is treated and styled in a manner reminiscent of a classic UK thatched roof (Figure 1.10). Coming off as a witty take on superficial similarities between the model's hair texture and color and that of its reedy architectural equivalent, this particular moment of intersection was more insightful than it first appears. For Vidal Sassoon was formally trained in Bauhaus compositional principles and was especially fond of their application in building design. From this came a body of research, experimentation, and ultimately practice now known within cosmetology's academe as Vidal's "architecture of hair." No mere sloganeering, Sassoon's architectural prowess is expressed not only in the evolving set of principles and techniques taught in his Academy but is ultimately most evident in the work itself. Decades of hairstyle collections[11] show sustained compositional, material, and stylistic refinement through cuts of formal complexity rivaling our own best works in architecture.

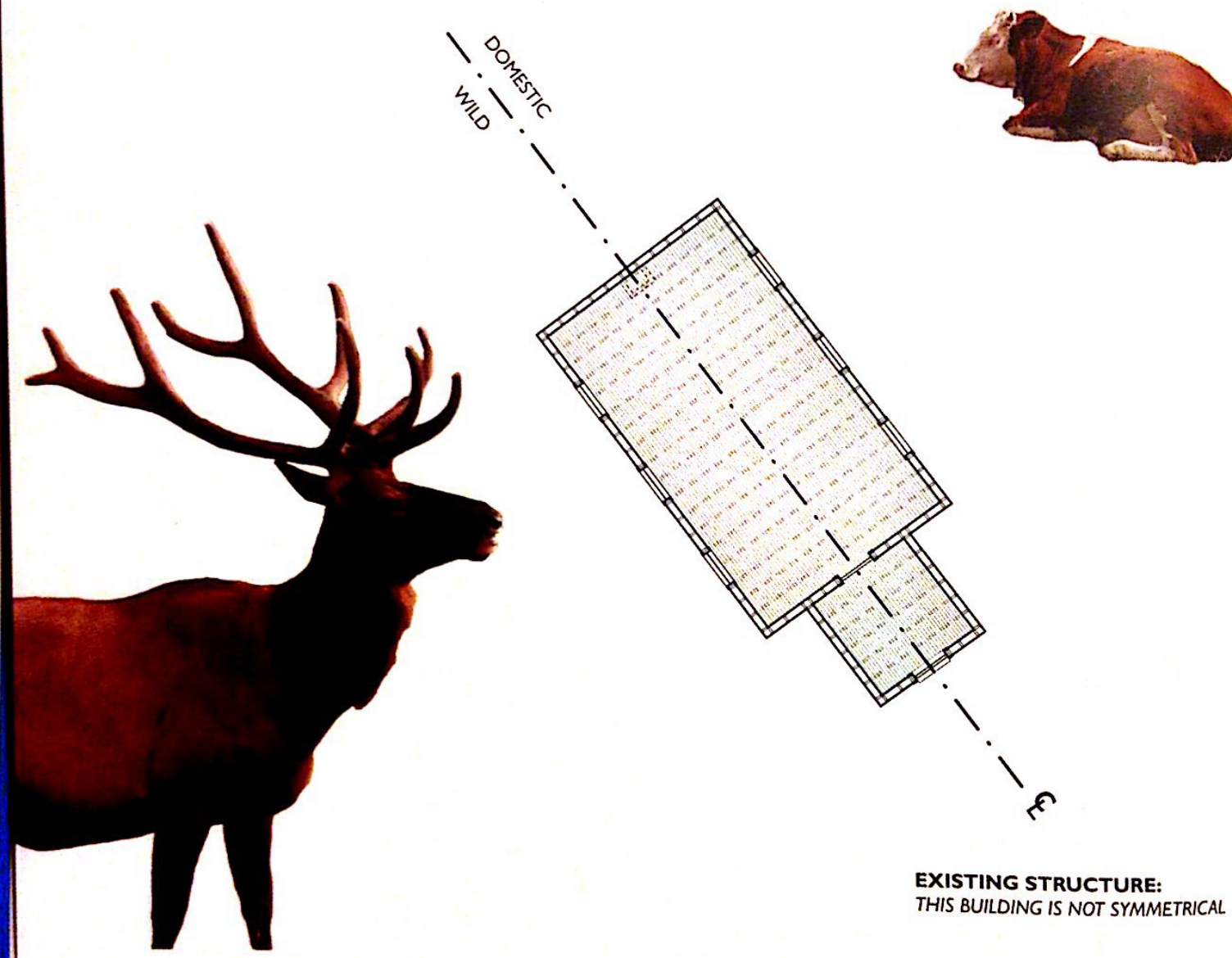
The above arguments for a re-discovery of thatching through hairstyling notwithstanding,[12] it is this more generalized cross-pollination of practical and compositional principles so evident in advanced cosmetology that holds most promise for architecture. Vidal Sassoon and generations of subsequent hair designers under his influence have worked decades to advance the cause of an oft-overlooked material category – that of the humble hair. Volumes of built precedent now exist for inclusion within our own discourse – hairstyles so very close in character and concept to works of architecture ... each one a little building, really! For this effort we ought to return the favor with a nod to Vidal (and a wink to Semper) and move forward toward a hirsute architecture.

Raspberry Fields

The project that follows is included here to indicate a particular architectural expression of some of the potentials outlined above. While not thatched *per se*,[13] it is hairy (or furry, really), and does rely on certain construction methods and conceptual principles found in cosmetology. For example, shingles in certain key locations are heat-curled using a device similar to a curling iron (the shingles in the scale model were, in fact, curled with curling irons) and styled according to compositional principles outlined in Sassoon Academy's cut manuals.[14] This project began shortly after its principal designer completed a series of training seminars at the Vidal Sassoon Academy in Santa Monica, California, and thus represents the kind of disciplinary cross-pollination advocated above.

> Funk is not what is scripted
> Or what is expected ...
> It is what is felt.
>
> (Al Sharpton, on James Brown, 2007)

Figure 1.11 *Raspberry Fields,*
schoolhouse symmetry and bipolarity



EXISTING STRUCTURE:
THIS BUILDING IS NOT SYMMETRICAL

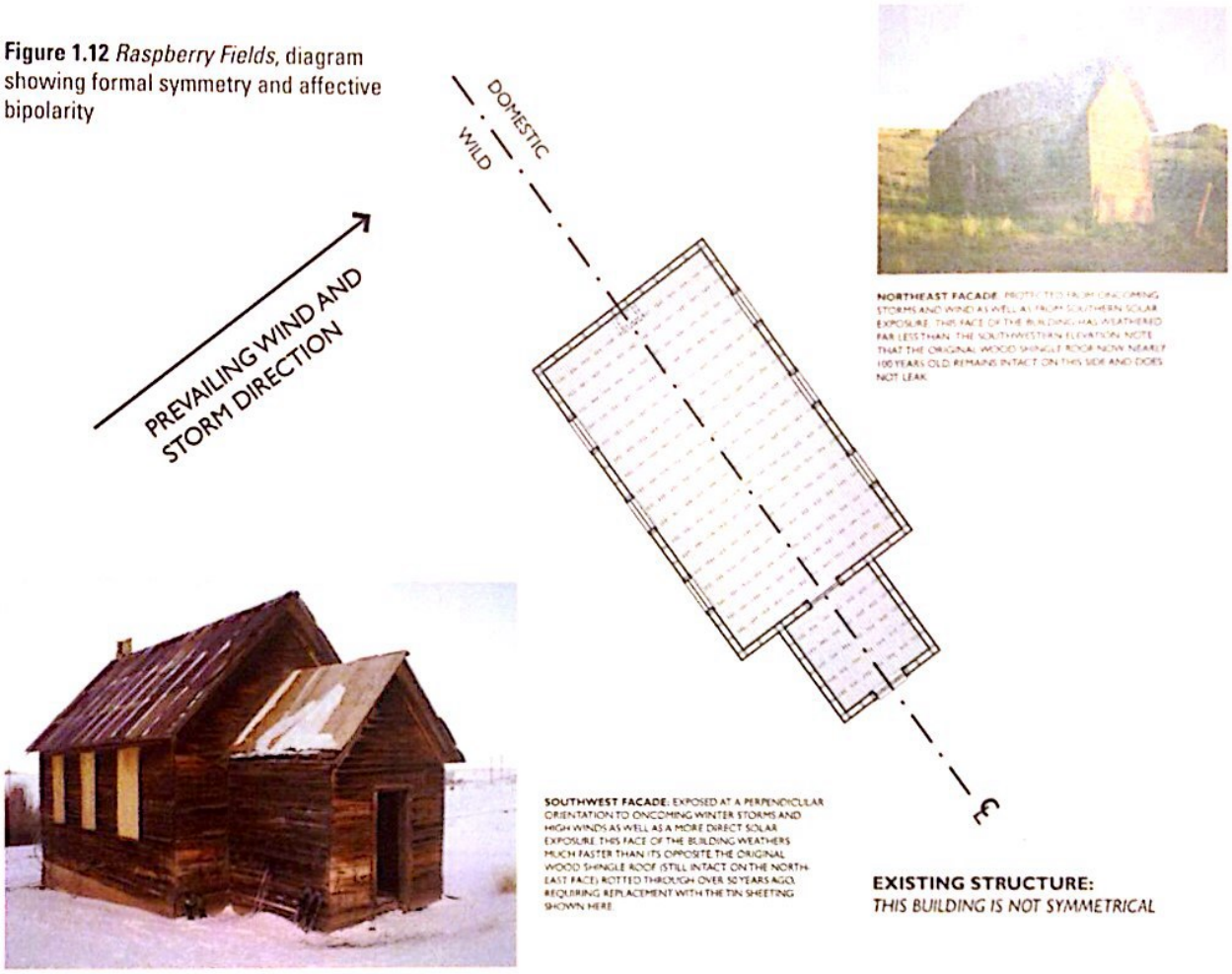


Figure 1.12 *Raspberry Fields*, diagram showing formal symmetry and affective bipolarity

Historical context

This project is a full renovation and restoration of an existing, one-room schoolhouse built in northern Utah in the early 1900s. Used as a school into the 1920s, the structure was then used sporadically to store grain through the 1950s and birth lambs in the 1960s, after which time it was abandoned for any formal use. Despite this decades-long lack of utility, the building has stood as a reminder to the local ranching community of their origins in this difficult, remote part of the country. Over the years, through seasons of hard winters and hot summers, the structure has remained straight, unbroken, and – true to its original design – absolutely bilaterally symmetrical. Or so it would seem.

Existing conditions

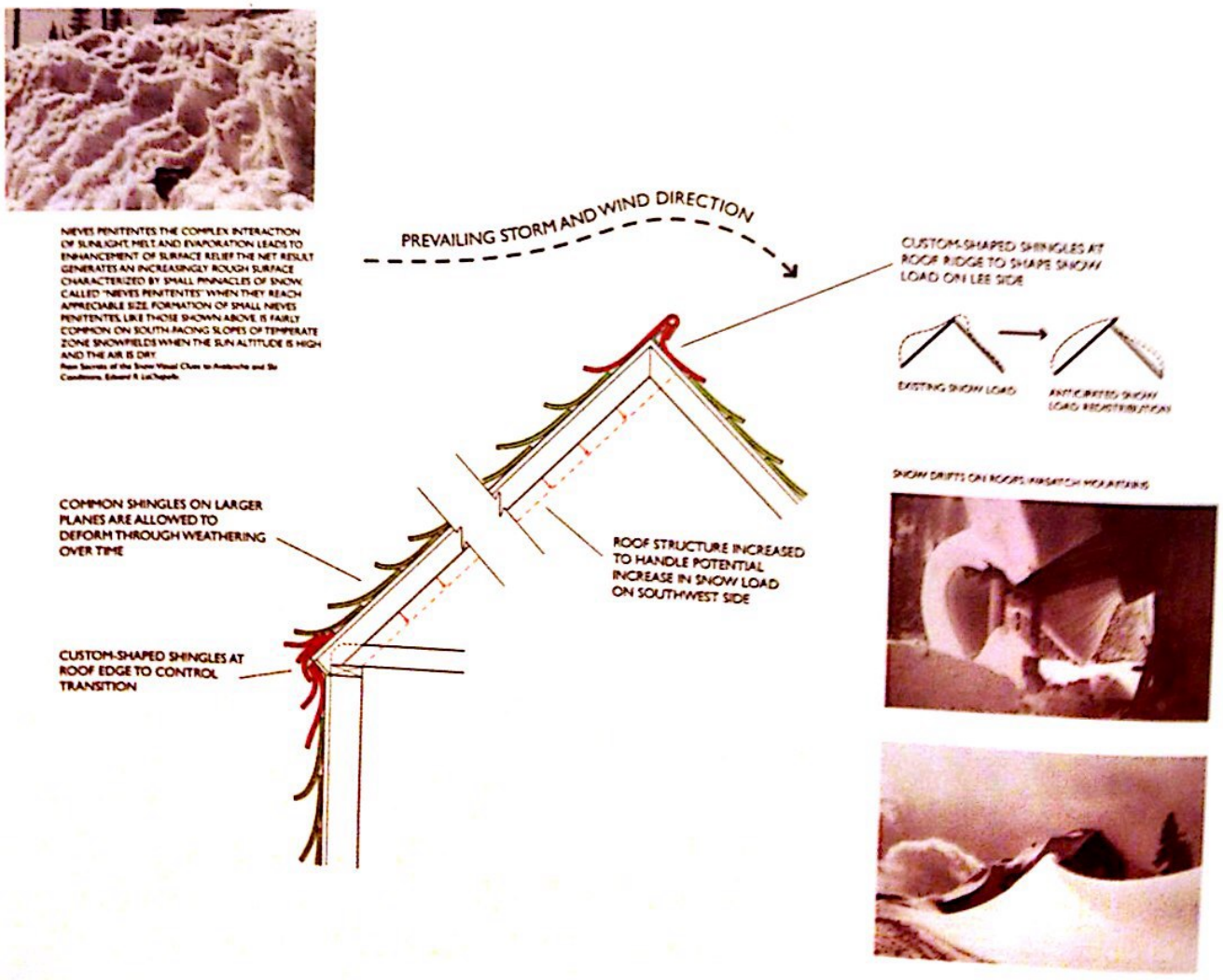
The long axis of the building is oriented at approximately 30° off of the east–west direction such that its south-west façade faces directly into prevailing winter storms as well as the southerly solar exposure. For this reason, the south-west side of the building has weathered significantly, having seen over a century of freeze-thaw dynamics (Figures 1.11–1.12). The north-east side, however, has remained nearly perfectly preserved. The effects of weathering (or lack thereof) are captured in the shape, texture, and color of the original wood cladding and shingles (Figure 1.13). On the north-east side all is in order, while on the south-west side the wood planks have curled with such force as to pry the nails from the studs and the shingles have long since blown away (Figures 1.14–1.16). Similarly, the protected side remains a deep, even brown, while the weathered side has become wildly striped with all manner of browns, blacks, grays, and even moments of bright greens and oranges where lichen have found purchase in the tortured surface. All of this is to say that this structure, while formally an exercise in perfect symmetry is phenomenally something quite different. In terms of both material dynamics and affective disposition, the two faces could not be more different.

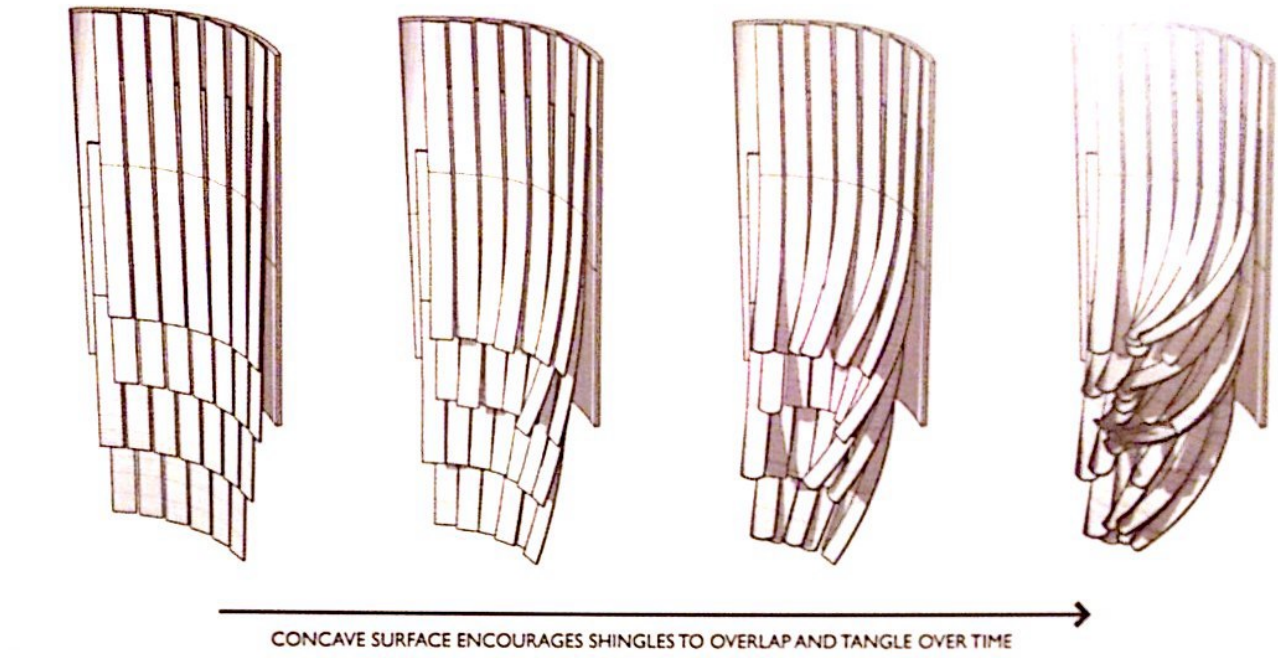
Figure 1.13 *Raspberry Fields*, rendering of south-west façade showing stained and styled shingles

Design response: symmetry and bipolarity

The design for the renovation and restoration of this building stems from this synthesis of strong [illegible] symmetry and radical affective bipolarity (Figure 1.17). The work seeks to reinforce and amplify this pre-[illegible] dichotomy from both directions. The design of the interior becomes a nuanced play of symmetry-making [illegible] breaking, with certain elements aligning along the central axis or aligning against the two flanking edges, while others move off-axis in the age-old compositional play that pits idiosyncrasy against balance. In contrast to the formal-geometrical project of the interior, the design of the exterior addresses the affective material qualities of wood subjected to various degrees of weathering (Figure 1.18). The entire building is re-clad in wood shingles that, in the beginning, are all the same: 4" by 24" (with 12" exposed face) by 1/2" thick cedar stained a deep, almost black purple. On the day construction is complete, the building's massing and cladding will appear to be relatively flat, monolithic, self-similar, and more optically absorptive than reflective. Over time, however, the object's material and contextual bipolarity will be revealed, not only through the expression of natural weathering on the two different sides, but through an accelerated process brought about by unusual detailing. The long, slender shingles are attached intentionally improperly, with the bottom ends unfixed and the grain oriented more horizontally than vertically. This encourages premature curling of the kind already seen in the

Figure 1.14 *Raspberry Fields*, diagram showing asymmetrical weathering of existing structure





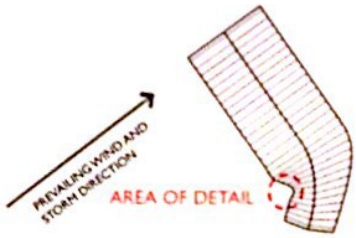


Figure 1.15 *Raspberry Fields*, common and custom shingle profiles

Figure 1.16 *Raspberry Fields*, detail of physical model showing curled roof shingles

existing south-western façade, only much worse due to the "impropriety" of the shingles. Adding to the drama, the undersides of the shingles on this side are stained much more brightly than the dark topsides, ranging in color from orange to purple to match the four colors of raspberry species indigenous to the site. Thus, when the shingles begin to curl, their undersides reveal a flamboyance that is in marked contrast to the darkened reserve of the initial skin. Over many years it is hoped that the shingles on the exposed side take on the character of fur, growing slightly fuller with each season. Meanwhile, the northeast side – the only façade subjected to local scrutiny due to the orientation of the building on the site – will remain reasonably straight and composed.

Figure 1.17 *Raspberry Fields*, transverse building section

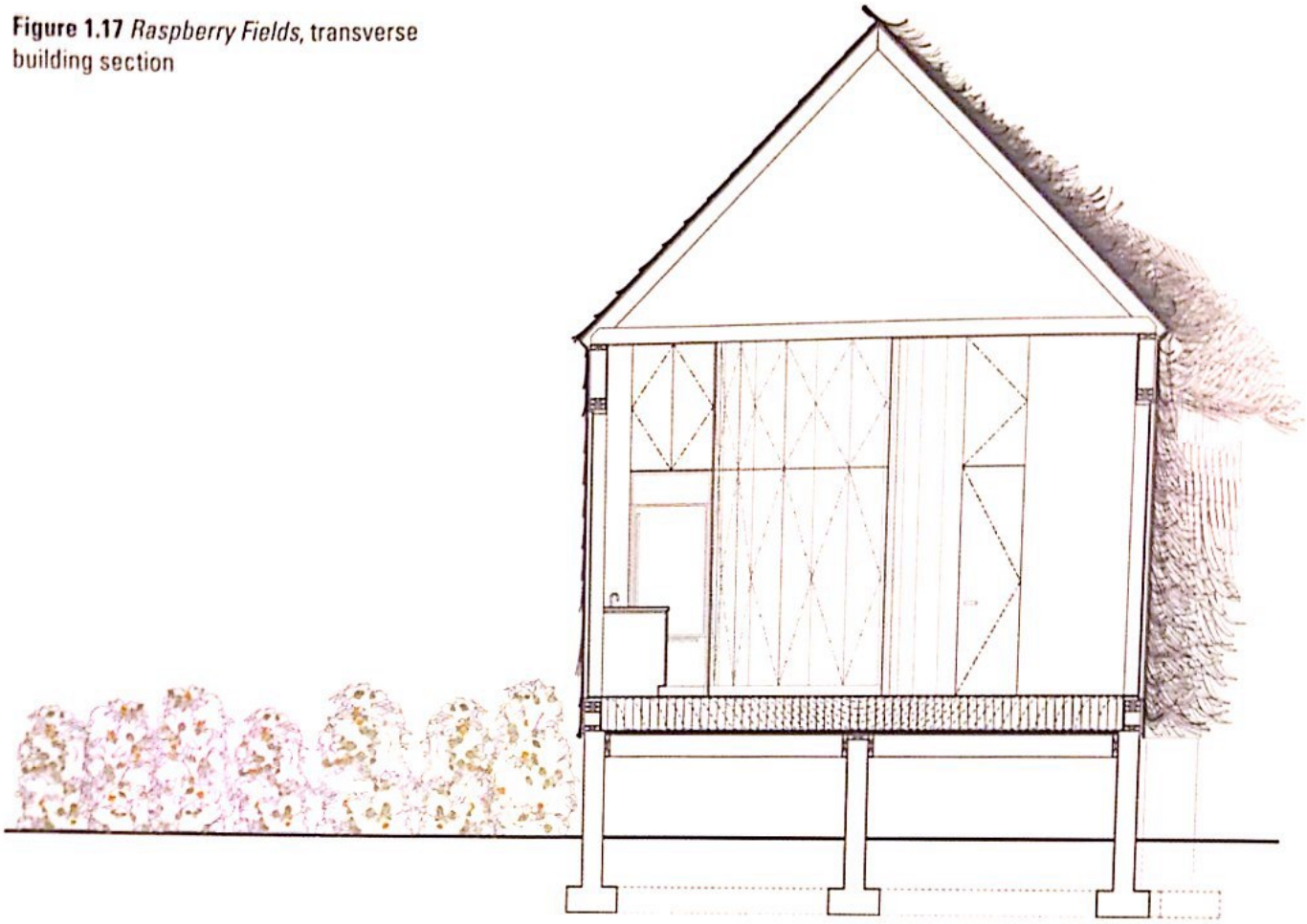
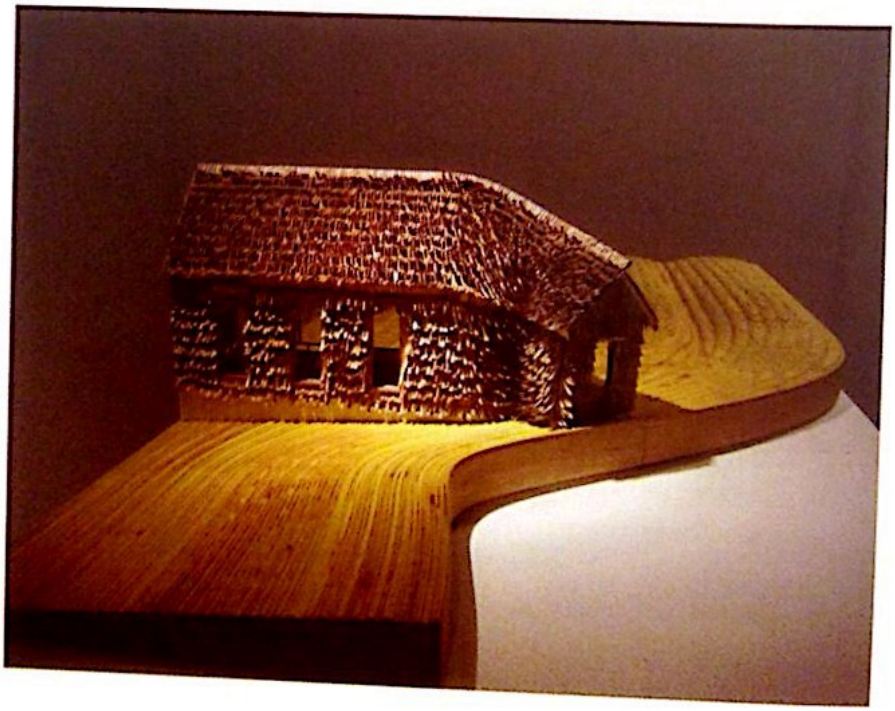


Figure 1.18 *Raspberry Fields*, physical model from north showing cultivated fields in foreground



Notes

1 For an example of just how easy (and fun!) hair and fur theory can be, see Gottfried Semper's *Style in the Technical and Tectonic Arts; or, Practical Aesthetics*, Vol. 1, Chapter 4, Section 28: "Furriery: A Recently Neglected Technique" (Los Angeles: Getty Publications, 2004, pp. 173–175).

2 Irresponsible, that is, to loftier ideological and disciplinary protocols.

3 Such as the recent idiomatic movement dubbed "intricacy" by Greg Lynn and other, more general tendencies toward compositions made of very large arrays of geometrical components.

4 Thatch also intersects current discourse in another, entirely unrelated way: thatch is green. It happens that a thatched roof has a significantly higher insulation value than any modern roofing technology. Further, thatch is an entirely natural, renewable material and is often locally-grown, eliminating the environmental impact of material transportation. While certain plant types perform better than others, most any long-stemmed species may be used. This material requires little in the way of processing and thatchers are usually local craftspeople. So compelling is the environmental argument for thatch that growing numbers of environmentalists are calling for renewed consideration of this nearly forgotten cladding technology. Thatch's green-ness, however, is of little relevance to the arguments presented here.

5 On this point, thatch should not be confused with the woven and braided structures found in certain African cultures which, while equally ingenious, are not technically thatched.

6 *The Thatcher's Craft* (London: Rural Development Commission, 1960).

7 Leo Wood, *How to Thatch a Small Roof: A Step-by-Step Illustrated Guide on Thatching Your Own Small Roof by a Master Thatcher of 40 Years* (www.thatch.org, 2006).

8 An almost comical example of this technical parallelism can be seen in the thatcher's comb, a giant version of that used in cosmetology.

9 Georges Bataille, "Formless," *Documents* 7 (December 1929): 382.

10 Mark Hayes, *ABC: Cutting Hair the Sassoon Way* (London: Vidal Sassoon Academy, 2000).

11 Analogous to those found in fashion design, a "collection" is defined as a series of hairstyles conceived and executed as a coherent family of cuts and styles. Vidal Sassoon typically produces three collections per year and each contains somewhere between three and twelve individual hairstyles.

12 And for the record: on the question of the natural affinity between thatch and hairstyle, Vidal got there first.

13 Nor should it be. Any good hairstylist will tell you that head shape and hair type largely govern what one can and cannot do with your hairstyle. In this case, the existing structure and material palette resist a thatched response.

14 Hayes, *ABC: Cutting Hair the Sassoon Way*.