

Material Postproduction

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INTRODUCTION

Matter is one of architecture's most potent elements. In the form of building materials, it establishes the majority of architecture's qualitative dimension. Materials denote the territory where our bodies engage a building's physicality, a zone of interaction that engenders a broad range of human experiences—some that stimulate the retina, some that prod the skin, and some that set the mood. Materials bring to mind age-old traditions of building and craft and provoke associations that connect architecture to other domains of cultural production. Though few today would deny the importance of materials, contemporary discussions on the topic are hindered by an overwhelming bias towards technological performance.

Current conversations regarding materials revolve around technological advances in architecture and related fields. Numerous conferences and publications have surfaced in recent years seeking to formalize this discourse by bringing together advances in architectural practice, digital fabrication, and material science.¹ Involved participants gauge the status of architectural materiality through questions of environmental, structural, and visual performance. Replete with technical language, these discourses differ substantially from past theories of architectural materiality that sought to describe materials' contribution to architectural experience without recourse to quantifiable performance.

In this essay, I follow past theoretical models by putting forth a comprehensive account of architec-

tural materiality that includes its technical foundations, a description of the experience it creates, and its relationship to disciplinary history. *Material postproduction*, as I call it, is an approach to working with materials based on principles of manipulation, multiplication, and mixing. It is a model that draws from art theory, most notably Nicolas Bourriard's text *Postproduction* and the writings of Simon O'Sullivan. Both writers articulate a model of art practice based on principles of connectivity, where establishing links between disparate objects, people, and practices is more important than creating original or autonomous art. Following these accounts, *material postproduction* advances a design approach that combines diverse materials, varied logics of application, and superficial alterations to create works of architecture that embody a broad range of cultural and disciplinary associations and experiential effects.

Material postproduction is technological in nature but not founded on distinct technologies. Rather, new technology is used to expand architecture's access to diverse types of matter. *Material postproduction* uses digital patterning to organize and interlace disparate materials producing heterogeneous aggregates. Superficial treatments are deployed to amplify visual and tactile depth and/or undercut the typical associations of common materials. In this way, both materials' ability to transfer meaning and its physical status as raw matter are exaggerated and contaminated to produce diverse sets of associations and material qualities, yielding an experience that vacillates between the realms of the haptic, the visual, and the conceptual.

Finally, *material postproduction* is opportunistically positioned in relation to architectural history. Past theories of architectural materiality are mined for latent relevance in contemporary contexts. Through the combination of seemingly oppositional strategies, *material postproduction* sets up relational approaches to design underwritten by a diverse set of concepts and material tactics. In doing so, *material postproduction* reactivates dormant disciplinary attitudes, imbuing vitality through insertion into new speculative domains.

POSTPRODUCTION

Material postproduction draws from Nicolas Bourriard's text *Postproduction*, in which he describes a group of artists that share a willingness to produce new work through a recombination and revision of existing material. These artists do not view their art as autonomous, but rather as an inscription into a vast network of established signs, information, and flows of production (Bourriard 2002a). Extending the arguments of his previous book, *Relational Aesthetics*, which defined a collective sensibility amongst a generation of contemporary artists, Bourriard shifts his attention here to the modes of production that consistently run through them (Bourriard 2002b). Derived in part from models of thinking and working inspired by the internet, these artists treat culture and history as a storehouse of material that can be reworked to produce new content.

Bourriard borrows the term postproduction from the film industry where it refers to a series of processes that take place after initial video and audio are shot and recorded. Postproduction staffs edit and combine raw sound and video with special effects, creating refined, finished films. Bourriard extends this logic into alternative disciplines, putting forth the programmer and the DJ as kindred postproduction artists. Like those working in film, the programmer and the DJ alter and combine existing materials to produce new work. Programmers create a series of links through diverse webs of pre-existing data. The DJ modifies musical bits from past tracks and composes them into new coherent wholes. Taking the vast amounts of existing material available to them as their working palette, both construct scripts that chart new courses through cultural artifacts.

MATERIAL POSTPRODUCTION AND TECHNOLOGY

Material postproduction in architecture closely follows the ethos of the DJ. In essence, DJs manipulate sonic matter. They layer, adjust, speed up, and slow down musical samples (small sections of music taken from other sources and used as repetitive riffs or beats for new tracks). Early days of sampling involved tape looping, a process of cutting and splicing portions of magnetic tape together to produce rhythmic patterns of sound that were played repetitively. This technology was blunt, requiring stiff actions on rigid materials; cut and splice were the only operations. As the technologies surrounding sampling progressed—from tape loops to turntables to digital DJ software—the malleability of music increased. With digital music, for example, all music is translated into bits of memory and fed through software that can easily manipulate all characteristics of sound. New editing software can break music down into infinitesimal bits that are seamlessly blended into new compositions (Hegarty 2008). In such instances, the recognizability of the original track may be completely lost as the sample takes on infinite plasticity. In essence, the DJ's technologies are dynamic filters that sift, stretch, and alter sonic bits; enabling their smooth convergence with other musical fragments.

Taken as an analogue for architectural practice, the DJ reframes the predominant modes of thinking surrounding computational design. Most architectural designers using advanced technology rely on a linear process where form is derived in the computer then translated into codes for digital fabrication. Vital to this process is the efficiency of communication between sequential technologies—from modeling software to component fabrication to construction. Material choices are governed by technical specifications—a limited set of physical characteristics that determine how a material will interface with a specific machine. In this world, tolerance governs everything—and that tolerance leaves no room for the kinds of material heterogeneity embedded in a remix.

In *material postproduction*, technology is more versatile and materials more multivalent than in mainstream digital practice. Making connections between dissimilar methods is more important than the smooth progression of any one process. The ef-

fectiveness of computational techniques, therefore, is determined by the number of different materials they influence, not the complexity of the patterns they create.

Michigan House, a recent project from my firm, SIFT Studio, exemplifies the capacities of *material postproduction* (Figure 1). The project is a modestly sized two bedroom house set on a small riverbank in Michigan. It is comprised of simple prismatic forms clad with a dense façade. The material palette is thick. Standard light-frame construction exterior walls act as a substrate for layers of colored wood shingles, moss, paint, hanging chains, flowering vines, and lighting fixtures. Each layer has a distinct logic of construction and a degree of built-in variability that encourages interaction with the other materials. This interaction is set up by computer scripts, which act as filters, reordering and adjusting multiple materials, much like the musical software of the DJ. The wood shingles, for example, are sized according to a two-layered script. First, their proportions are randomized, producing a field of unique pieces much like the bark of a tree. Second, zones of shingles get progressively thinner near designated moments creating small gaps that provide space for

lush moss to grow. In this case, the conventional logics of shingle application—from construction standards to weather proofing—are abandoned for logics of interference, thus encouraging the invasion of foreign materials. Additional scripts determine the gradient coloring of the shingles and the placement of hanging chains that carry drainage water down from the roof and support tangled networks of flowering vines. All material layers intensify around discrete moments, or hotspots, where the geometry of the façade deflects to cradle dense swaths of color, moss, chains, and vines. In these moments the distinction of individual materials gives way to compressed clusters of coarse, vibrant texture *Material postproduction* relies on technological versatility and dexterity. In *Michigan House*, the typical materials for computational patterning—i.e. cladding and structure—are expanded to include organic matter, paint, light, and metal chains. Computer scripts are used to set up resonances between these diverse materials, similar to the way a DJ's software rhythmically syncs multiple musical samples. In *Michigan House*, materials are digitally woven through one another, simultaneously maintaining their individual identities and melding them into one heterogeneous mixture (Figure 2).



Figure 1. SIFT Studio, *Michigan House*, 2011

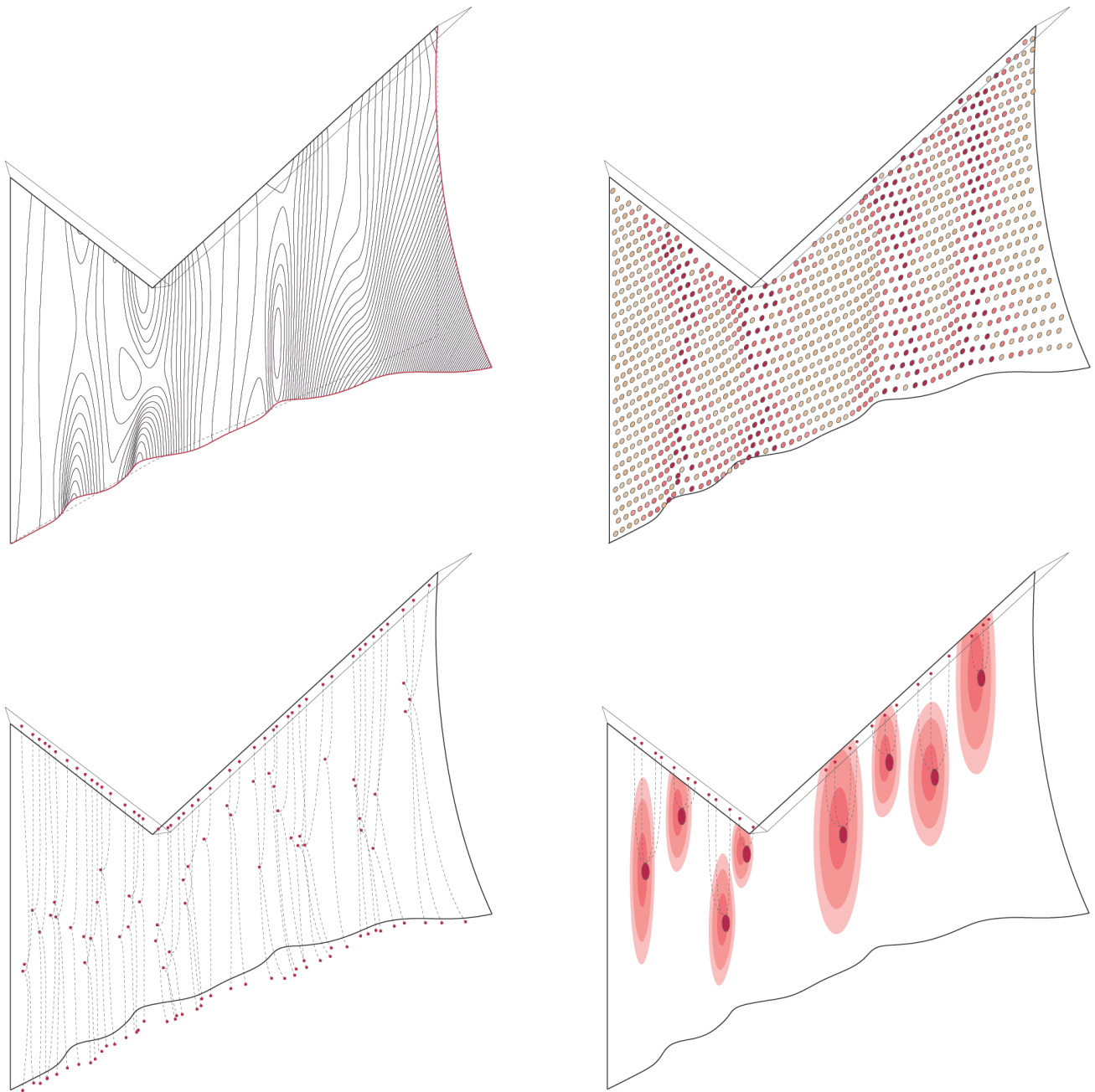


Figure 2. SIFT Studio, Michigan House, Diagram illustrating: (from top left to bottom right) Geometry of shingle substrate, pattern of shingle coloring, placement and connections of hanging chains, placement and extents of colored lanterns

MATERIAL POSTPRODUCTION AND EXPERIENCE

In *material postproduction*, all dimensions of materials—from semantic to phenomenal—are exaggerated and contaminated to produce novel experiences. The associations afforded by familiar materials are maintained yet undercut by the presence

of foreign matter. Intrinsic textures and colors are synthetically altered in order to provoke visceral responses. The layering of diverse materials and treatments obscures an instantaneous or complete “reading” of the project; instead propelling the subject to perceive and sense multiple dimensions that unfold over time as they move around it.

The work of artist Elliot Hundley offers an experience similar to that produced by *material postproduction* and will serve as an analogy. Hundley's art eludes medium classification as his works fuse collage, sculpture and painting. Each piece is three-dimensional, projecting from the wall in shallow relief or hanging from the ceiling as distinct sculptural objects. Through delicate precision, Hundley combines hundreds of found objects—anything from feathers to plastic fruit—with provisional armatures fashioned from pins, wire, wood and string. Present in these chaotic assemblages is a painterly sense of composition often supported by actual painting of the surface. The large number of parts and their relatively small size obscure the possibility of comprehensive reading. From normal viewing distances, individual elements lose their recognizability, appearing instead as bits of color and texture held together by distinct gestural cohesion.

The positioning of the collaged objects is determined by both material qualities—such as color, size, and texture—and relative position within compositional and narrative structures. For example, Hundley's 2003 piece, *Deathless Aphrodite of the Spangled Mind*, is made of thousands of tiny objects pinned to adjacent styrofoam panels (Figure 3). Elements appear to be grouped mainly by size and color. When viewed from a moderate distance, one reads broad, colorful gestures made of tiny parts. Up close, objects seem to have been carefully chosen, perhaps corresponding to a larger narrative that is clearly present yet hard to grasp. One is seduced into constant motion, appreciating the formal and gestural cohesion from a distance and then stepping in to study individual pieces like a forensic detective uncovering evidence at a crime scene. The experience of Hundley's art is multifaceted and multiscale. Both cognition—in the comprehension of the narrative—



Figure 3. Elliot Hundley, *Deathless Aphrodite of the Spangled Mind*, 2003, Plastic, paper, color photographs, pins, and wire, 96 x 192 x 12.5 inches (243.8 x 487.7 x 30.5 cm), courtesy Regen Projects, Los Angeles © Elliott Hundley.

and sensation—in the visceral reaction to pure color and texture—are present in any single work and the subject seamlessly moves in and out of these varied states based on their relative position.

The art theorist, Simon O’Sullivan offers a characterization of art that can be aptly applied to Hundley’s work. Utilizing the nomenclature of Gilles Deleuze and Felix Guattari, O’Sullivan describes artworks as machines that produce both signifying and a-signifying effects (O’Sullivan 2006). Signifying effects are those that utilize common chains of signification to deliver some sort of message. In the case of Hundley, this could be considered the narrative structure and the corresponding positions of individual elements. A-signifying effects are those that elude structures of meaning and instead affect the subject’s body directly through intensive, non-representational registers. Deleuze and Guattari have referred to these effects as blocs of sensation (Deleuze and Guattari 1994). Hundley’s treatment of collaged elements as raw color and texture compressed into vibrant material intensities affect the subject without delivering an explicit message. The virtuosity of Hundley’s work, as a whole, lies in his utilization of both registers. While avoiding overreliance on material abstraction or signification he is able to create works that afford dynamic experiences characterized by the movement of the subject in and out of these different registers—from visual and haptic intensity to cerebral contemplation and back.

Hundley’s work serves as a useful analogy for the type of architectural experience arising from *material postproduction*. The key to this experience is multiplicity. Like that afforded by a Hundley piece, the experience of architecture produced by *material postproduction* fluctuates between multiple states of attention. These modes often derive from past theories of architecture, but none are taken as the default subjectivity of the entire work. Rather, *material postproduction* seeks to multiply possible states of experience and imbed as many triggers into the work as possible.

Michigan House, for example, affords several experiential states. The combination of conventional architectural materials and non-standard applications of organic matter speaks poetically to the relationship of humans to their environment and to architecture’s ability to represent that relationship through its engagement with the ground. Simulta-

neously, the overt aesthetic manipulations and amplified decay alter the clarity of this message and offer the subject other associations and cultural references. The confluence of multiple materials in the hotspots renders the identification of any single layer difficult, appearing instead as vibrant densities of color and texture that stimulate the skin and eyes before registering fully in the brain (Figure 4).



Figure 4. SIFT Studio, *Michigan House*, 2011, façade detail

MATERIAL POSTPRODUCTION AND ARCHITECTURAL HISTORY

As stated above, *material postproduction* mines past theories of architectural materiality for relevance in contemporary contexts. Through principles of appropriation and alteration, known tech-

niques are transformed and combined with others to produce novel design strategies. This approach sets a precedent for working with architectural history where designers utilize past approaches without reinstating them. In doing so, *material postproduction* selectively updates bits of architecture's disciplinary history by inserting familiar strategies into unfamiliar scenarios.

In this way, *material postproduction* shares characteristics with the art practices described by Simon O'Sullivan. In his book *Art Encounters Deleuze and Guattari*, O'Sullivan outlines a type of art practice based on principles of connectivity (O'Sullivan 2006). Following closely the philosophy of Deleuze and Guattari, and specifically their concept of the rhizome, O'Sullivan outlines a mode of creative practice based on the production of novel linkages between disparate objects, people, and practices. Moving away from a representational model for art—one where art points to a beyond where meaning lies—O'Sullivan turns to a paradigm based on the transversal movement of connectivity. Art does not represent these relations; it is the name of the practice itself—the actual act of making connections.

The transversal movement of connectivity is at work in *Michigan House*, visible in the peculiar presence of seemingly incompatible sensibilities. The weathered wood displays an appreciation for vernacular materials and processes of weathering while the cosmetic flourishes express a desire to distort them through superficial alteration. In *Michigan House*, natural material properties are both preserved and perverted. The combination of these two approaches establishes a constructive relationship with architectural history by folding two opposing strains of thought together: the *materially poetic* and the *cosmetic*.

As an approach toward working with materials, the *materially poetic* is defined by an appreciation for lasting physical qualities and principles of construction that allow materials to age in a poetic manner. Juhani Pallasmaa, one of the most outspoken advocates of natural material qualities, believes their expression offers a haptic dimension to architectural experiences that are too often dominated by the visual (Pallasmaa 2000). According to Pallasmaa, materials have stories to tell, and those stories are consistent across location, application, and use. He describes these stories as such:

Stone speaks of its distant geological origins, its durability and inherent symbolism of permanence; brick makes one think of earth and fire, gravity and the ageless traditions of construction; bronze evokes the extreme heat of its manufacture, the ancient processes of casting and the passage of time measured in its patina. Wood speaks of its two existences and time scales; its first life as a growing tree and the second as a human artifact made by the caring hand of a carpenter or cabinetmaker (Pallasmaa 2000: 79).

Materials, therefore, convey specific meanings of natural duration and craft, making them "healing and pleasurable (Pallasmaa 2000: 80)." For Pallasmaa, architects who suppress material qualities in an effort to render architectural form abstract miss the opportunities inherent in working sensitively with materials.

Another hallmark of *materially poetic* architecture is the expression of material decay. Moshen Mostafavi and David Leatherbarrow, in their book *On Weathering: The Life of Buildings in Time*, eloquently redefine the end of a project as the deterioration of finishes that happens after construction culminates (Mostafavi and Leatherbarrow 1993). "Finishing ends construction, weathering constructs finishes" is the provocative opening line of their essay (Mostafavi and Leatherbarrow 1993:4). For them, the material transformation brought about by weather is a connection to age-old paradigms of causality and entropy; paradigms that have persisted for centuries in architecture. Thus, architects who express weathering open up experiential channels to these paradigms.

The *cosmetic* is marked by a more promiscuous attitude toward materials. The ambitions behind *cosmetic* techniques emanate from a desire to push materials into new territory, rather than preserve or express anything essential to the material itself. The canonical essay defining this approach is Jeffrey Kipnis' *The Cunning of Cosmetics* (Kipnis 1996). Writing on the work of Herzog and de Meuron, Kipnis establishes his notion of architectural cosmetics as an alternative model of speculative practice, and provides the basis for a progression away from the conveyance of fundamental essences toward the production of percepts and affects which implicate other cultural domains. Distinguishing Herzog & de Meuron's approach from the majority of avant-garde practices of the time, Kipnis identifies a novel field of cosmetic effects, a form of erotic mate-

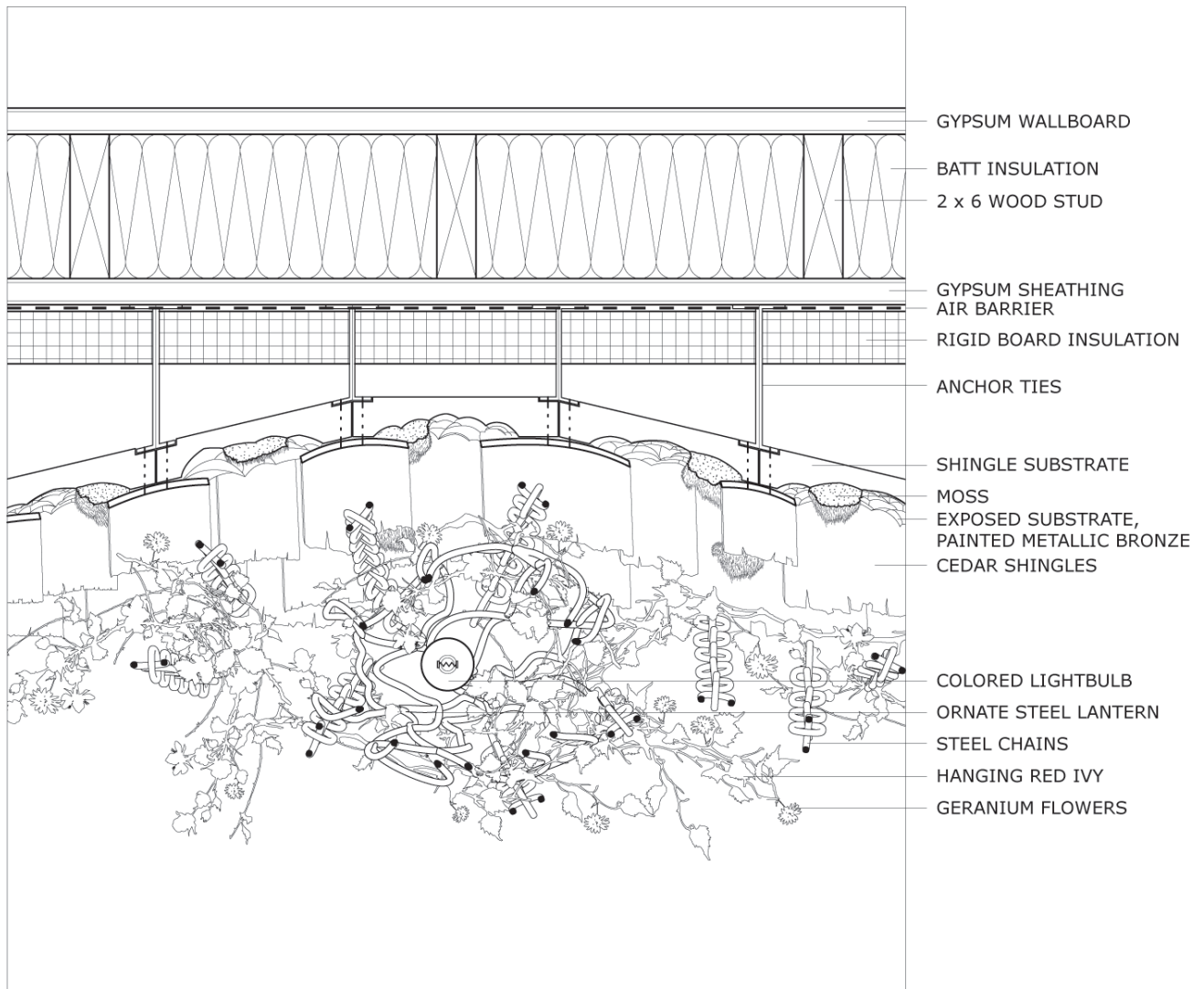


Figure 5. SIFT Studio, *Michigan House*, 2011, façade detail

riality, which relies on the seductive extensions of standard building practice. Through their attentiveness to the efficacy of material qualities, Herzog & de Meuron are able to produce novelty without producing actual new forms, programs, or materials; as Kipnis describes it, "Every experiment is an effort to reanimate and update the canon... (Kipnis 1996: 443)"

The important lesson of Kipnis' essay is that materiality, and in general architecture's qualitative dimension, is not beholden to any mystical authenticity. New techniques and treatments of ordinary architectural conventions can yield sensibilities and affects which are contemporary, nostalgic, happy,

or cynical; and it is the disposition of the architect that most likely determines such a direction. The *cosmetic* as a model of practice undermines architecture's protracted temporality, its assumed permanence, which has always tended toward the authentic and timeless over the frivolity and ephemerality of the superficial.

With descriptions of the *materially poetic* and *cosmetic* at hand, revisiting *Michigan House* yields new insights. In retrospect, the allure of the project does not lie in the preservation of material qualities nor in their superficial alterations, but rather in the odd insistence on both methods of working at once and their simultaneous perversion. In *Michigan House*,

the principles of weatherproofing are intentionally violated to encourage the overgrowth of vegetation and material decay. The shingles, which typically overlap to minimize the intrusion of moisture, are spaced apart allowing room for plants to grow. The gaps also expose the shingle substrate, which is painted a metallic, rosy bronze color and coarsely textured to produce varied reflections. In certain portions of the façade, the shingles are soaked with colored stain that slowly runs when rained on. At the time of construction this amalgam of disparate finishes—the bright, clean metallic, the fresh, budding moss, and the colorful stain soaked shingles—maintains separate material qualities, but over time these qualities fade and mix as entropy sets in and slowly transfers properties from each material to the others.

The weathering of the architectural surface, therefore, is not simply preserved and expressed, it is amplified. Altering the spacing of the shingles allows moisture to penetrate the façade at an accelerated pace, fueling the growth of vegetation and the weathering of the shingles (Figure 5). The façade is not blank scaffolding for vegetation; it is an activated surface breeding new material mixtures through the unpredictable agency of weather. Processes that are poetically preserved, framed, and displayed as inevitable, natural occurrences in the work of more materially poetic architects, are here exploited, perverted, and bent toward new affective and associative terrain.

Similarly, the *cosmetic* operates differently here than in the work of Herzog and de Meuron, as described by Kipnis. Their work relies on a starved architectural body—a mute, minimal form that is subtly embellished with ephemeral swaths of material intensity. The blankness of the underlying volumes assures that the *cosmetic* treatments produce the bulk of the architectural effects. In *Michigan House*, however, the pop color palette, a trademark of *cosmetics*, is not applied over a starved body, but rather stained and dripped over a full, heterogeneous one. At the time construction ends, the *cosmetic* embellishments are discretely colored shingles but over time the color runs and fades, subtly staining the underlying material layers. These colorful moments are highlighted by synthetic accents in the form of lanterns and bright flowers that hang in front of the façade.

Seen through the double lens of the *materially poetic* and the *cosmetic*, *Michigan House* exemplifies the connective capacities of *material postproduction* where materials and methods are pulled from disparate sources and combined into new design strategies. This way of working suggests a promiscuous attitude toward disciplinary precedent that allows designers to mine past theories without endorsing the consistent narratives that underwrite them. Instead, *material postproduction* revisits historical design approaches in an attempt to reframe and redeploy them—to test what new results, new narratives, or new affects spring from a willful combination of established, and sometimes outdated, modes of design.

CONCLUSION

In conclusion, *material postproduction* defines a contemporary approach to working with materials in architectural design. It is influenced by current technologies but not defined by them. Rather, it channels technological tendencies of connectivity and transformation into novel architectural strategies that incorporate techniques of alteration and contamination. Grounded firmly in disciplinary history, *material postproduction* recycles old content into new mixtures; rewriting architecture's present through fresh takes on its past.

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ENDNOTES

1 For a sample of conferences see *Materials Beyond Materials* at the Southern California Institute of Architecture and the Columbia University's Graduate School of Architecture, Preservation, and Planning's series of conferences on architecture, engineering, and materials over the past few years.