HARVARD DESIGN MAGAZINE

Harvard University
Graduate School of Design
Architecture
Landscape architecture
Urban planning and design
2012

35

$23 US/28.95 CDN

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FIGURE, PHENOMENALITY, AND MATERIALITY IN THE HINMAN STUDIO

Paul Malcolm Heffernan (1909–1987) was Director of the School of Architecture at the Georgia Institute of Technology from 1956 to 1976. He planned much of the Georgia Tech campus and designed many of its buildings, including the *Hinman Research Building* and the *Architecture Building* where I did my undergraduate work during the last five years of his directorship. When I was a sophomore, in 1972, I served as his teaching assistant. The fact is I mostly helped him tend his garden, but this gave me a chance to hear rare ruminations on design and education (as well as azaleas) that I have never forgotten. This essay is dedicated to his memory.[1]

The symbolic authority of architecture has been identified variously throughout history as Antiquity, Nature, Reason, epochal Will, Technology, and, most recently, Language itself, with all the attendant connotations of system, grammar, code, and transformation. But since the mid-1990s, many architects and scholars have become skeptical, even cynical, about any symbolic superstructure that might sustain architecture as a distinct medium, practice, and conception, and have focused instead on techniques of design, including new graphic and generative technologies not specific to architecture, data-driven procedures, and, above all, notions of materiality, phenomenality, and the production of mood and atmosphere.

Driven by the sheer pattern- and shape-making power of new media, the correlate issue of the figural arises as a challenge to the notion of a discourse and discipline that together legislate all "proper" architectural acts. The scandal of the figural is that it is both inside and outside the discourse; it is promiscuous. Its language is no longer homogeneous; its architecture is no longer autonomous.

All images, unless otherwise noted: NADAA in collaboration with Lord, Aeck & Sargent, *Hinman Research Building* renovation, Georgia Institute of Technology, Atlanta, Georgia, 2011. Photographs: Jonathan Hillyer

The figural challenges the self-identity and rigidity (never mind the authority) of the external symbolic order. Its iterations are smoother: metonymic series of blobs, corpuscles, draperies, wrappers, shingles, and facets that exist in a continual process of modulation and mutual exchange, an emulsification of parts so complete that surface, shape, and pattern take over entirely.

WHAT RESULTS FROM COMBINATORY CONSTRUCTION IS THE DEFINITE HINT OF A KIND OF PREFIGURAL MATRIX UNDERLYING THE ENTIRE PROJECT—A GENERALIZED MATERIALITY THAT IS ANTERIOR TO THE ACTUAL, PHENOMENAL EXPERIENCE OF THE ARCHITECTURE.

A consideration of the *Hinman Research Building* project, in both its original and its recently rehabilitated form, enables the conceptualization of an alternative materialism beyond both the older symbolic system and the emerging phenomenological models. We will come to see this materiality as a precondition different from an external or absent symbolic authority, yet in a kind of harmonic resonance with it. This is an abstract materiality not entirely dependent on physical and mechanical modifications of matter, but requiring instead an approach to the virtual and hence to alternative manifestations of figure, different from those programmed as either recognizable image or proper form.

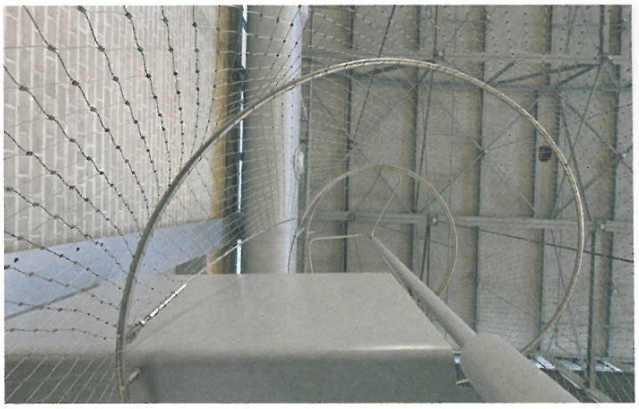
The 1939 *Hinman Research Building,* designed by P.M Heffernan, emerged from a simple diagram of a "high bay"—a fifty-foot-high volume, fitted with a movable crane, used for full-scale mockups and tests of engineering equipment—flanked by low service wings stepping with the site's steep incline. Recent commentators have made much of the building's factory-like functionalism—too much, I think; its parti pris of a large volume surrounded by cellular support structures, preference for symmetries at different scales, and horizontal rows of windows were all common enough at the École des Beaux-Arts among the *concours* of the 1930s.

The compositional elegance of the *Hinman* is moderne more than *sachliche* and certainly not functionalist in a strict sense. Indeed, I want to claim that, notwithstanding the *Hinman*'s accommodation of some extremely intense objects of engineering, the prevailing tendency of the architecture is not functionalist but rather formalist.

But such a claim obliges me, at this point, to engage you directly, and to pass to a more dialogical mode of inquiry, for it will be a story of dialectics and the passage from a manifest to a more abstract and virtual condition of possibility that in the end will make sense of all our investigations—yours, the architects of the new project, and mine.

And now, the issue of the materials. You did have ambitions with regard to materials, didn't you? You used a wide range and multiple modalities of them for the building assembly: structural and nonstructural steel; structural and architectural concrete, both precast and cast-in-place; glazed tile; plaster; discrete bits of wood meant mainly to be touched; two types of brick; and a striking amount of steel-framed reticulated glazing. The effects of the materials in their particularity, however, are only partially apparent—primarily in the exterior "styling," where the brick, glazing, and cast concrete lintels work together in an intricate and layered network of cladding. Inside the high bay, the materials connect at the level of detail, but their ability to be perceived as individual components is lost to a generalized abstraction of volume and light. Network, volume, light: What results from the combinatory construction is the definite hint of a kind of prefigural matrix underlying the entire project—a generalized materiality that is anterior to (which is to say, radically different from) the actual, phenomenal experience of the architecture as well as to any recognizable style, perceptible figure, or mood that the matrix nevertheless produces. Perhaps this is what critics call your functionalism, meaning a way of guaranteeing substance and sense to the exceedingly artificial act of making architecture. But here we encounter it as an alterity and a facticity. We must explore this further.

But first we need to make some distinctions. In current architectural discourse (with its longing for experiential realism and its tendency toward the practical and the literal), the concepts of materiality and phenomenality amount to aspects of the same thing and come into effect at the same time. Materials have certain attributes that produce sensations of light, color, texture, rhythm, touch, even sound and smell, which then combine perceptually in emotions, feelings, affect, and mood, cutting across heterogeneous zones of experience that intellection



alone would hold separate. Materiality, then, is thought to be actual. Beyond a purely practical and reductionist empiricism, however, materiality cannot be so easily treated in terms of a phenomenalism based merely on architecture's physical attributes and limitations. Indeed, I have suggested above that the *Hinman Research Building* demands a different understanding of materiality in which materiality is defined in opposition to phenomenality—a virtual materiality that actualizes itself in architectural forms and figures without resembling these embodiments, a differential with a determinate but nonrepresentational value.

Phenomenality correlates with that which appears as immediately available to the senses for perceptual processing; it primarily concerns images and objects that are actual and intuitive. Think, for example, of the glass curtain wall of Mies van der Rohe's *Seagram Building*. The array of bronzed-steel mullions casts constantly shifting shadows on the bronze glass, atmospheric changes are reflected in the glass and added to the perceptual register, and images of adjacent buildings are refracted. This tissue of visual effects is perceived as a phenomenon, immanent and immediate, aligned by Mies's characteristic architectural devices to the sensory experience and meaning of the architectural surface as such.

Materiality, on the other hand, is external to that phenomenal appearance; it concerns form rather than image, and operates to prevent our comprehension of the surface from ever settling. For Mies, form arises out of the central tension in his work between the desire to desubjectify the aesthetic phenomena—to displace the subject-centered categories of experience, perception, and interiority with the elementary bits and pieces of the material world itself—and the commitment to maintain some fully achieved aesthetic engagement with architecture, which the desubjectifying desire cannot wish to deny. At *Seagram*, therefore, materiality is something of a negative force. Mies famously called it the force of *beinahe nichts,* next to nothing, the formation of substance proximate to absence itself, signaling his effort to produce the transcendent in the immanent: that unrepresentable sublime surface in which there is no separation between the transcendent and the empirical, a single substance persisting from start to finish as if unencumbered by subjective intent.

Antecedent to the phenomenalization of signification in sign, figure, or mood, materiality is a constraint on *too much meaning*. Although it yields a kind of disciplinary mnemonics, its memories and markers come only in the form of regulating traces, differentials, and conditions of possibility, which indeed exist and occur, though not in perceptible space but rather virtually, in the space of architectural performance.

You've known about such things for some time, of course, though you would never use theoretical terminology such as "the virtual" or "the performative" to express your knowledge. For you, the possibility of making architecture is a matter of a certain education and training (you are a pedagogue, after all), requiring not only an intention but also a preparation. And precisely how one begins to do architecture determines one's relation to other works of architecture and to the history of the discipline itself. To make architecture is to produce a deliberately *other* work, which claims this status alongside other works. Which is to say the performative makes a difference, alters its circumstances even as it assimilates the self-reflexivity of the original intention to make architecture. I would just remind you that it is less permissible today than in 1939 to imagine oneself as making the decision to do architecture from within a tradition or a disciplinary problematic. Students and young architects don't seem to accept that they are part of a discourse or a continuity that stretches behind them and in front of them. Technicalization, particularly digitalization, takes over. This is not to say that all architects now think they are revolutionaries, destroying the canon in order to replace it with a new one. It is rather that they are skeptical about the necessity of symbolic authority, an authority associated with what for them is an archaic mode of architecture. Instead, they turn to more manageable issues of materials and fabrication in order to move the discipline forward. So let us now turn to the work of Nader Tehrani and his studio, which represents many of the concerns of the new generation about the phenomenality of materials and fabrication.[2]

Tehrani's 2011 *Hinman Research Building Rehabilitation and Adaptive Use* project emerged from a simple diagram of three primary architectural elements inserted into the renovated volume of the original high bay: one, a stair from the level of the main entrance to the floor below; another, a large structure to support various instructional and research activities; and the third, a system of lighting the large space. From the start, the architects wanted to find the high bay's affective origins: the sensations and experiences that were the source of its existence. They sought a figure that could play a role similar to and would be as intense as the giant engines once suspended from the original overhead crane or the live gyrocopter struggling to escape its floor straps and

levitate as it was being tested. Into the volume of the high bay, the architects imagined inserting various objects—some efficient and straight, some twisted and warped. They drew preliminary sketches of landed dirigibles and colossal chandeliers. They envisioned an architectural shell set on the floor, parametrically accommodating a range of programmatic demands including mechanical systems and circulation, as well as satisfying the rhetorical or tropological ambitions of the architects.

And yet, though any one of these architectural figures may have been able to describe its own conception and autonomous formal development, a separate structure set on the floor of the vast space could not ipso facto account for its own generation in relation to the high bay. Its phenomenal "meaning" may have been framed and nuanced by the original building, but the insertion would not be materially connected to it. This is the moment when the inserted object's tropological systematicity and the arrangement of its signifying features must make a leap from a constative mode of *being there* to a performative one of *doing now*. And this is the moment when a single decision about what the architecture *would do* made the difference in everything: It would hang; the architecture would make its sensory appearance in the material inscription of hanging from the high bay itself.

MATERIALITY IS DEFINED IN OPPOSITION TO PHENOMENALITY —A VIRTUAL MATERIALITY THAT ACTUALIZES ITSELF IN ARCHITECTURE FORMS AND FIGURES WITHOUT RESEMBLING THESE EMBODIMENTS.

You complain again that there is nothing extraordinary in all this, that such performative gestures are just the nature of the architect's métier, the achievement of an always-sought-for adequacy of form to content, the moment of the formalization of an intuition. But in your characteristically taciturn way, you make my case for me. Hanging "the crib" directly from the crane seems to allow the new project to access the same matrix of materiality that was determinate of your 1939 project. But then, the very materiality of this virtual ordering system designates an interruption of the phenomenal proceedings, announcing its arrival from an unreachable exteriority, which is nevertheless what has produced both your and Tehrani's figures in the first place.

The crib is a paragon of a primitive architectural figure that comprises (following Gottfried Semper) the requisite solid masonry base (albeit a very thin one); the woven and tautly stretched steel mesh enclosure; a tectonically complex roof with an array of struts, rods, cables, and connectors; and finally, in place of the hearth, that primal marker of place and community, the architecture studio—zero ground of the creative act itself. But the crib is not without threat to its supporting host. In order to install itself, it has stilled the once-dynamic crane. Its struts and rods are not just structural; they are double-directional vectors, sending affect and image information outward even as they penetrate the dermis of the old *Hinman*, probing to suck out some of its architectural DNA. The stainless steel diagrid that wraps the crib can then be understood to issue from the same materiality indexed by your reticulated glazing and brick cladding. The plywood casing that protectively encloses your original stair, doubling and refolding it, is but an alternative instance of the same virtual archive. Materiality thus threatens to disarticulate the figures; it delivers us beyond the immediate experience of its concrete actualization to mnemonic programs and archives that precede and legislate these effects. In other words, materiality for Tehrani, as for you, goes all the way down, entailing a correlated respect for past architectures and the history of the discipline.

On the other hand, materiality controls the crib, whose other countenance is a wispy but precise marionette dangling in midair, its threads moving through parabolic twists. The supporting tension rods double as tectonic tracers, like dressmaker's darts, to help wrap the steel cloth without sags. Thus besides denoting signifiers of a discourse or contours of a silhouette, they also trace forces and energies that have no regard for the recognizable. Materiality operates in contradiction to figure and affect with the threat to take away phenomenal substance and with it, the very possibility of reference or semiosis, as the suspended puppet figure disaggregates into geometry and geometry into airy inscription. Its rigor is volatile and uncontrollable because it is other and external, a kind of suspension of the transformatory-synthesizing power of aesthetic intention. But it would be the opposite of a phenomenological *epoché* (which leads us to the meaning of our experience), since it is

P. M. Heffernan, *Hinman Research Building*, 1939. Permission of the Georgia Institute of Technology Library and Information Center, Archives and Records Management Department

a bracketing or blotting out of any meaning whatsoever. Take Tehrani's spiral stair. As figure, it is the semitransparent architecture-snake that has swallowed whole the squirming program-rabbit. And yet, as the corrosive force of materiality does its work, that image threatens to disintegrate into mere marks of movement and connection—a pleated ribbon, a spiral vector, and an open mesh sock—which is to say, to disarticulate into what might be thought of as architectural glyphs: not even words, much less figures.

Here, too, I must complicate our understanding of causality. For while I have insisted that architectural materiality is anterior to architectural phenomena, it is not the case that there is a causality running directly from the former to the latter. It is, rather, a causality in which phenomenal effects—like the cocooning of the stair or stringing of the studio—chase back after material causes, constantly refiguring them (which is another way that Tehrani's intervention finds common connection to your *Hinman*). The materiality of architecture does not emerge diachronically. As Claude Lévi-Strauss said about language, materiality appears "all at once."

And finally, the suspended lights. Little more than generic fluorescent tubes hung the wrong way, from the high bay floor they describe a faint, diaphanous ceiling. From the main entrance-level floor, however, they actively, almost aggressively interrupt the view, further fragmenting and flattening out the material inscriptions of the tethered crib and stair sock, as if in a passage from the material toward the immaterial. When they are complete with their mechanism of retraction, they will from time to time disappear altogether.

To insist on the materiality of architecture is not very profound. It is well known that architecture is the art practice most burdened with the stuff of the world—gravity and weather, law and fashion, as well as sensations and experiences. Attention to the manifest sensory properties of materials—the rhythm and connection of the units of assembly, the representational effects of color, texture, sound, and smell—often yields potent and memorable figures, which should be counted among architecture's fundamental achievements. It is the refined and intellectualized materialism of Tehrani's intervention that has given so definite a power to the figures shimmering in the vastness of the *Hinman*'s space. My point here is that architecture's materiality simultaneously operates as latent form (regulating trace or differential of the image-figure) and a disarticulating force. Materiality is a double order, at once a condition that gives rise to new architectures and performances *and* an overdetermined network of historical iterations and inscriptions. Materiality exhibits the *work* of architecture beneath its phenomenal presentation, the transformation of its latent form to its manifest image. It therefore has a dialogical, social character, as well as the power to constrain and interrupt. It is within that dynamic field that our best thinking about materiality and its workings will take place. ◆

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