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Review: Survey: Architecture Iconographies

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behaviors of members of various races. The normalization of human behavior looms like a cloud over this chapter, as Hall accommodated the biases held by social elites through scientific studies that he considered helpful but present-day readers will find eerie. He collected his recommendations in his 1974 *Handbook for Proxemic Research*, from which Busbea recounts an obnoxious project for the YMCA JOBS program in Chicago.[4] Hall constructed an artificial office to observe and correct working-class African Americans in interview situations. He then studied behavior patterns of the inhabitants at the Pruitt-Igoe housing project in St. Louis and advised corporate management on the layout of the John Deere Headquarters in Moline, Illinois, putting "proxemics" increasingly at the center of an architectural language related to behavior, environment, and feedback. Hall defined the office interior with words like "slots," "fences," and "territory," making it an explicit site for declarations of ownership and assertions of hierarchical power. In this case, the alliance of responsive environments with cultural dominance serves as a cautionary tale.

Some familiar figures in art and architectural history populate the third chapter, which has the same title as the book and is less directly related to the economies of work or social life. Here, Frederick Kiesler's invention of "correalism" and the publications of Gyorgy Kepes through the Center for Advanced Visual Studies at MIT open the door to what Busbea calls the "avant-garde environment." Indeed, MIT served as a hub for artists' and architects' collaborations in this domain, and even hosted the first critique of the movement by Nicholas Negroponte, who, as Busbea quotes, found "responsive environments . . . very, very suspect, because we don't know *how* they should respond. We all feel they *ought* to respond, but the only examples are the most banal, second-rate light shows" (130).[5] Negroponte nevertheless engaged in a 1972 workshop titled "The Responsive House," where the illusory quality of the ambition became central to the group's discussion.

Perhaps the strangest case collected in the book is featured in the fourth chapter, which centers on the Soft Control Material designed by Avery R. Johnson and Warren M. Brodey, who founded the Environmental Ecology Laboratory in 1967. This "material" is quite fascinatingly immaterial in that it was never realized. It was meant to work in synergy with an organism that it would both learn from and teach, thereby altering its behavior as an aggregate body. The proposed substance would breathe and pulse because it was made up of various cell structures stitched together with servomechanisms to produce what the inventors called, after the cybernetician Gordon Pask, a "chemical computer." The material was never applied for commercial purposes, but the various patents reveal the seriousness of the experiment as an application of computers beyond software and into soft tissue. Holding intellectual property on such speculative proposals also indicates an emerging desire to capture potential knowledge products, a sort of analogue to present-day "start-ups." The fifth chapter, titled "Cybertecture," locates another odd set of characters and their products, called man–environment systems, on which Wolf Hilbertz and his students collaborated at the University of Texas at Austin in the early 1970s. Their work was coded in a visual language of fantasy and science fiction layered over with a New Age utopia that Busbea notes would make their project "frankly, impossible" (184).

The final chapter moves from the impossible to the actual, as it ties the preceding research to the architectural production and cultural writings of Paolo Soleri. Soleri, too, appreciated New Age discourse, founding Arcosanti as a refuge for psychological fulfillment. Busbea rightly points to this modern cult as building on well-known tropes in the history of modern architecture and design regarding the improvement of the self by aesthetic means. This is clearly suggested by his stated aim "to create *outsides* that might improve human *insides*" (210). Beginning with an agora-like building in the form of a large barrel vault, made of reinforced concrete and open at both ends, Soleri's constructions often sought to frame views of the Arizona desert. Future constructions were more monumental, such as Crafts III, composed in a Brutalist language of modular frames that housed spaces for workshops and apartments for residents. As a modern cult of New Age environmentalism, with some monuments, Soleri's work represents a fitting conclusion to the book's lineage of responsive environments, and to its particular assemblage of research on the 1970s. Soleri envisioned his cities, as Busbea writes, "as the end point of a teleological sequence of the coevolution of natural systems and consciousness itself" (227).

With mysticism so visibly intertwined with architecture, it might be hard to recognize the legacy of the responsive environment in our daily lives. Such designers sought to produce an interface of interactivity, but they could not anticipate the transformation of the all-encompassing nature of their interests into a worldview. It is something of a relief to see these strange visions embodied in dance, soft materials, and desert utopias as the responsive environment becomes increasingly digitized. Busbea's book is a welcome prehistory of interactivity, one that makes our present no longer feel either inevitable or doomed to repetition. Reading this book today can help us see the present as an unnecessary normalization of a responsive *consumer* environment: on-demand delivery of nearly anything we can imagine and the instant gratification of social media may be only some inheritances of the mystical utopianism of the 1970s.

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Notes

1. Gregory Bateson, *Mind and Nature: A Necessary Unity* (London: Wildwood House, 1979).
2. Marshall McLuhan, "The Invisible Environment: The Future of an Erosion," *Perspecta* 11 (1967), 166.
3. Edward T. Hall, *The Silent Language* (New York: Doubleday, 1959); Edward T. Hall, *The Hidden Dimension* (New York: Doubleday, 1966).
4. Edward T. Hall, *Handbook for Proxemic Research* (Washington, D.C.: Society for the Anthropology of Visual Communication, 1974).
5. Nicholas Negroponte, "Discussion Following Blair Hamilton's Presentation," in *The Responsive House*, ed. Edward Allen (Cambridge, Mass.: MIT Press, 1974), 243.

Matthew Wells
Survey: Architecture Iconographies
Zurich: Park Books, 2021, 176 pp., 102 and 13 b/w illus. $50 (paper), ISBN 9783038602507

If we consider the culture of building, measured drawings are not the norm. Most structures, especially vernacular ones, are

the work of builders—masons, bricklayers, and craftspeople, among others—who construct spaces without recourse to drawings. However, drawing is a multifaceted concept, and one could argue that such builders' use of strings to straighten wooden planks or determine levels and their tracing of ornamental lines onto stones are all forms of drawing. Yet, beginning with the European Renaissance, drawing with pencil and paper was most closely associated with the formation of architecture as distinct from building. In Asia, Africa, and the Americas, the practice of drawing spaces and buildings has a longer history that is not tied to European definitions of architect and architecture. In these cases, drawing and building were often not discrete practices, such that the outlining of a boundary or the paint on an adobe wall could be both simultaneously. This is to say, ultimately, architectural drawing is a geographically and historically contingent practice, and its specific European trajectory is the subject of *Survey: Architecture Iconographies*, a new volume based on the archives of Drawing Matter, an organization based at Shatwell Farm in Somerset, England.

Begun as a personal collection by Niall Hobhouse, this archive of architectural media currently includes some twenty thousand to thirty thousand architectural drawings from the modern period. From this trove, Matthew Wells has curated a catalogue on the measured or surveyed drawing and the particularities of its practice among six notable male architects from the nineteenth century to the 1980s: John Soane, C. R. Cockerell, Henri Labrouste (with Hippolyte Lebas), Eugène-Emmanuel Viollet-le-Duc, Detmar Blow, and Peter Märkli. The book's exquisite large-format reproductions on matte paper mimic the archival materials themselves.

In his opening essay, "Measuring Possibility," Wells reflects on the nature of the measured drawing as not merely a record of the architectural monument but also a trace of subjective perception. As many scholars in architecture and geography have noted, a plan is both projective and descriptive; Denis Wood, for example, describes a map as a "tissue of fictions."[1] Wells intentionally uses this temporal and ontological double status as the basis of a pedagogical exercise at the Swiss Federal

Institute of Technology (ETH) in Zurich, where he teaches. The discovery that all students of architecture make in the execution of a survey drawing is that the representation is never complete; there remains always an insuperable chasm between the object and its representation. The drawing is simultaneously both objective and subjective, fictive and real, universal and local. Gilles Deleuze would say that these very features are what allow diagrams—and, in this case, architectural drawings—to be generative of spatial knowledge and that the performative rendering of the drawing itself is what holds these dichotomies together.[2] As Wells's studio exercise accordingly demonstrates, that manual performance also becomes embedded into a historical practice that defines modern architecture in the European tradition.

With this theoretical understanding of its multivalent representability, especially one meant to dispel the myth of objectivity that the name "measured drawing" elicits, the meaning of accuracy plays out as a central theme in all of the individual chapters. When analyzing Soane's drawings, Wells selects those of construction sites and buildings in ruin or in progress. He uses them to illustrate Soane's sensitivity to the entire ecosystem of architectural production bound together by drawings and assumes their capacity to represent accurately. The selections by Cockerell focus on his drawings of the Parthenon, which evince a level of precision that became the basis for an archaeological reassessment of the Greek monument. Concerning Blow's work, Wells's emphasis is on how the architect captured the details of Tintagel Old Post Office precisely through drawing. The discussions of the camera lucida by Labrouste and Lebas as well as the photogrammetry at the Château de Pierrefonds in Picardy by Viollet-le-Duc are also placed in this trajectory of increasing accuracy. While in his introductory essay Wells questions with sensitivity the drawing's status as stable and accurate representation, in these chapters he seems to reaffirm the very narrative he previously sought to dispute. A break in this telos of exactitude appears in the final chapter on Märkli, who was the chair of architecture at ETH until 2015. Wells's argument regarding Märkli's drawings is that they are less concerned

with rendering exact records of existing structures and more concerned with proposing invisible but perceptual principles of those spaces. These sketches represent a question about what a measured drawing can actually survey, and thus we are returned back to the opening conceit of possibilities.

Fifty-nine plates of various types and kinds of surveys follow the chapters. These excellent reproductions include collages, photographs, plans, sketches, notes, and surveys drawn in panoramic, perspectival, axonometric, and orthographic modes at all scales, from a detail of a column to the urban landscape. The visual diversity offers an expansive definition of a measured drawing that is not necessarily tied to measurement—in the sense of calculating the correspondence between image and building—or drawing, insofar as some of the representations are photographs and digital works. Wells gives no overall explanation for why he chose these images over others or why they appear in this particular order, but the captions provide some insights, suggesting that they were selected based on the architects' own designations of the images as measured drawings and Wells's material interest in the techniques and aesthetics of surveying. This wide range of imagery presents drawing as generative of spatial and architectural knowledge. However, the variety, ranging from the sixteenth century to the present, also makes vague the specific historical context of the measured drawing and the development of its ontological and functional particularities tied to the formation of the architectural profession.

Three plates stand out. Two of them are reproduced from the sketchbook of Thomas Padmanabhan, who traveled to Yemen and kept a log of visited sites before the Yemeni Civil War of 1994. The pictures show urgent lines rendering alleys and architectonic details suggestive of his awareness that he would not be able to return and that the buildings would be lost in the coming war (plates 33 and 34). Another image, by Arata Isozaki, is distinctive as a four-page foldout. From 1968, it is a collage of two gelatin silver prints titled *Re-ruined Hiroshima*, showing the urban ruins of that city after the atomic bomb. Here, the survey is executed by a camera, and the drawing consists of two monumental skeletal structures in ink and gouache that

emerge from nuclear devastation (plate 24). The inclusion of these images suggests surveying linked to technological developments and aesthetic culture as well as, significantly, global politics: one a record before war and another after. Given the current state of the world, these images suggest a politics to the practice of surveying and how architects make sense of a world that is ever changing as a result of global conflicts. They propose that drawing, in its intention to record specific sites, can be a crucial and vital method for imagining new possibilities for those very spaces.

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Notes

1. Denis Wood, "Pleasure in the Idea / The Atlas as Narrative Form," *Cartographica* 24, no. 1 (1987), 27. See also Robin Evans, *Translations from Drawing to Building, and Other Essays* (Cambridge, Mass.: MIT Press, 1999); J. B. Harley, "Deconstructing the Map," *Cartographica* 26, no. 2 (1989), 1–20; Louis Marin, *De la representation* (Paris: Seuil/Gallimard, 1994).
2. Gilles Deleuze, "The Diagram," in *The Deleuze Reader*, ed. Constantin V. Boundas (New York: Columbia University Press, 1993), 193–200.

Anna Sokolina, ed.
The Routledge Companion to Women in Architecture
New York: Routledge, 2021, 436 pp., 143 b/w illus. $221/£190 (cloth), ISBN 9780367232344

To be sure, historiography is "familiar" with the question of the other. . . . But its discipline must create proper places for each, by pigeonholing the past into an area other than the present, or else by supposing a continuity by genealogical filiation. . . . Technically, it endlessly presupposes homogeneous unities (century, country, class, economic or social strata, etc.) and cannot give way to the *vertigo* that critical examination of these fragile boundaries might bring about: historiography does not want to know this. In all its labours, based on these classifications, historiography takes it for granted that the place where it is itself produced has the capacity to provide meaning, since the current institutional demarcations of the discipline uphold the divisions of time and place in the last resort. In this respect, historical discourse, which is political in essence, takes the law of place for granted. It legitimizes a place, that of its production, by "including" others in a relation of filiation or of exteriority.[1]

In her book on gender and the politics of history first published more than thirty years ago, social historian Joan Wallach Scott describes how gender is doubly marginalized, not just by the academy but also by the discipline—that is, by history itself.[2] The problem with distinct spheres of knowledge about women and their deeds in the form of "her-story," Scott puts plainly, is that these can exist as discrete and separate, and consequently become irrelevant to common knowledge.[3] Rather than being applied as a known entity, gender, as Scott notes in a later work, is a means "to get at meanings that are neither literal nor transparent."[4] Turning to psychoanalysis as a theoretical frame for re-reading gender, Scott argues that gender is important analytically and historically because it is impossible to assign gender a fixed and enduring meaning and/or identity, since gender already embeds "fantasies and transgressions that refuse to be regulated or categorized."[5] In other words, the scholar who takes gender as an analytical frame is always looking at, and through, the seams of a subject, where something is fraying. For Scott, a historiography that takes gender as its subject must pay attention to—and expect knowledge to avail in, particularly in areas of ambiguity—"slips of the tongue and pen, in parenthetical remarks aimed at containing some irrepressible, mad thought."[6] The point of such a history is to acknowledge "sexual difference as an unresolvable dilemma" and to trace how this dilemma gets played out in relationships and their outcomes.[7]

The Routledge Companion to Women in Architecture, edited by architect, historian, and curator Anna Sokolina, is a compendium of twenty-nine chapters devoted to the topic of women in architecture. The subjects and their achievements are framed chronologically and thematically into five sections spanning architecture's history in the preindustrial age to the early twentieth century, and concluding, finally, in its contemporary present. Sokolina's historiographical endeavor is ambitious: the book does not just address the omission of women from the discipline's annals, it offers "arguments and full discursive chapters" (4). The subjects are based primarily in North America, the United Kingdom, and Europe, but the book also covers case studies from Russia, Palestine, and Turkey. In her introduction to the volume, Sokolina divulges how this chronological/geographical approach jostles with other equally viable thematic frames, including women's contributions to the fields of history, practice, and education; the dualities of the global and the local evident in their work; and the extra-architectural boundaries forged by the subjects through their manifold roles as educators, authors, critics, collectors, professional partners, friends, wives, and mothers. Significantly, Sokolina states, "We leave out the narratives focused in particular on the feminist movement, or those preoccupied with compare-contrast investigations of male vs. female proficiencies" (4).

The structuring of the book by professional affiliation and chronological development rehearses Michel de Certeau's argument, quoted above, regarding historiography's insistence on demarcation by place and time. The sidestepping of feminist history upholds the "homogeneous unities" and certainties required in the sites of history, the academy, and architecture, where inclusion of the Other is made through "filiation," or else by "exteriority," through tenuous peripheral relations. Gender, even in a book about women in architecture, is marginalized. Is this a strategic move to make the book appeal to a larger audience? Or does gender constitute too much a political boundary that historiography still does not want to know? Nevertheless, to speak about women, whether in architecture or in another field, is to implicitly evoke social relations and hierarchical structures that in themselves constitute gendered professional differences between men and women in architecture. There is no escaping this duality.

What jars—where the seams of this historiographical project begin to unravel—is how the chapters themselves, through the eccentricity of, and depth in, the subjects surveyed, move sometimes vertiginously, away from a conventional historiographical