Reviews

Windsor Forum
STEPHANIE BOTHWELL, ANDRES DUANY, PETER HETZEL, STEVEN HURTT and DHIRU THADANI, editors
Urban Press, 2004
437 pages, illustrated
$29.00 (paper)

Michigan Debates on Urbanism
DOUGLAS KELBAUGH, series editor
Volume 1: Everyday Urbanism:
Margaret Crawford vs. Michael Speaks
RAHUL MEHROTRA, editor
74 pages, illustrated

Volume 2: New Urbanism:
Peter Calthorpe vs. Lars Lerup
ROBERT FISHMAN, editor
74 pages, illustrated

Volume 3: Post Urbanism and ReUrbanism:
Peter Eisenman vs. Barbara Littenberg and Steven Peterson
ROY STRICKLAND, editor
90 pages, illustrated
The University of Michigan Press, 2005
$17.95 each volume (paper)

There come moments when man reflects on the status of the city. These reviews might be driven by crisis, optimism, or both. When planning Philadelphia, William Penn responded with both reaction and confidence, both stimulated by the same city: London. Its problems were to be avoided, its innovations embraced. Penn’s motivation was therapeutic, an impulse that would characterize much American interest in urban form. In contrast, when Camillo Sitte developed a critique of the city based on Vienna, he was less concerned with issues of health and welfare and more concerned with the artfulness of urban structure.

What connected both was a confidence in nature. For Penn, it was the proposition of living in nature, authentically, sequestered from artifice. For Sitte, it was a matter of finding authenticity in art by embracing the idea of nature in the form of the “organic.” For Penn, the model was static and modular; for Sitte, it was dynamic and adopted the gestalt of growth.

With modernity, the problem of the city became synonymous with the problem of architecture. Based on function and efficiency, the planning of buildings segued into the planning of urban districts. Since most schools of architecture still conform to modernist patterns of curriculum and instruction, it is surprising that the city has not been a continuous focus of attention, possibly a result of the fracturing of approach in reaction to Congrès Internationaux d’Architecture Moderne (CIAM). But the city is back and it is interesting to contemplate the variety and nature of its revival.

The centennial of Sitte’s death in 1903 was more or less coincident with two events. The first was the Windsor Forum on Design Education, which took place in Windsor, Florida, in April 2002. The second was the inauguration of the Michigan Debates on Urbanism, held between January and April of 2004 in Ann Arbor. Both events were stimulated by a shared concern that would have resonated with Penn or Sitte: a desire to rethink the opportunities of urbanism after a period of great growth but lowered expectations. Although motivated by a similar critique, the events took different approaches. The Windsor Forum cast an optimistic look at historical urban forms as a means of finding present-day opportunities, while the Michigan Debates attempted to provide a closer look at the various strands of contemporary critical thinking regarding urbanism. Both were stimulated, like Penn and Sitte, to seek corrective action.

The Windsor Forum will be closely associated with New Urbanism (its organizers: Bothwell, Duany,
Hetzel, Hurtt, and Thadani), the slightest mention of which solicits an excess of pained eye rolling among the faculty of many architecture programs. This is not so much the case with schools of planning or landscape. Whatever else New Urbanism has done, it has rekindled an interest in urban design in general and, in particular, has restaked a claim on housing. The irony is that this claim has found fertile ground in landscape and planning programs but not schools of architecture. Planning is further reflected in the unexpected twist developed at the Windsor Forum, the argument that New Urbanism is basically concerned with issues of public health. The strategy here is to create a firmer beachhead in architecture programs by means of licensing and accreditation. The model is sustainability, which is establishing itself firmly, if somewhat uncomfortably, in schools which had no interest in it just a few years ago.

Specifically, the argument is that America’s headlong rush toward obesity is partially caused by our cities and their failure to promote walkable communities and thereby the integration of significant casual exercise into our daily lives. On the surface, the argument seems logical (were the residents of Windsor weighed?), although the burghers of those magnificently walkable towns of Old Europe are also experiencing epidemic increases in obesity. At least the argument encourages a look at the unintended consequences of recent practices regarding sprawl, zoning, transportation, etc. Whatever the faults of New Urbanism, the failure of the architectural academy to fully come to grips with the various deficiencies of recent interventions in the urban fabric cannot bode well in the search for alternatives.

Certainly, there are alternatives. The three volumes of the *Michigan Debates on Urbanism* offer a more encyclopedic range, although a small encyclopedia: Everyday Urbanism, New Urbanism, and Post Urbanism/ReUrbanism. The obvious missing debate here is the Laissez-Faire Let-it-Rollistas (Koolhaas) versus the Sustainability Eco-warriors. The closest representative of the Eco-school turns out to be someone who might be presumed to be a Rollista, Lars Lerup. For example, Lerup claims to have fled Europe for American autopia but laments the environmental degradation caused by the banality of the suburb and, in Houston, its devastating response to rainfall. His desire to live more sensibly with nature would resonate with Penn. Peter Calthorpe, in the role of Lerup’s opponent, argues that New Urbanism is not so much about configuration but an opportunity to increase density and therefore efficiencies in transport, amenity, diversity, and investment, an argument that could easily be voiced by Koolhaas.

Everyday Urbanism promises firmer territory, with Margaret Crawford pro and Michael Speaks con. The basic premise is that small interventions can be orchestrated to make the city more useful for its inhabitants. This sort of success involves top-down planning decisions, and Everyday Urbanism is more bottom-up, a cross between liberation theology and Thatcherism. Certainly, it can betray a confidence in market economics as a major driver of urban design.

Post Urbanism/ReUrbanism pits Eisenman against Barbara Littenberg and Steve Peterson. ReUrbanism seems very similar to the sort of proposal Peter Calthorpe might make: improvement of pedestrian connections, promotion of commercial amenities, and development of green urban squares. Rather than specifically discuss his project, Eisenman offers an exegesis of the relationship of urban theory to the history of ideas. New Urbanism is rejected as looking backward; modernism is rejected as failed Utopianism. Junk-Space proponents are criticized as nihilistic.

Eisenman argues that the singularity of natural man has been displaced by diversity and the confidence in static origins has been replaced by digital technology that has no need of a beginning or wholeness. He argues that there has been a loss of a relationship between signs and stable language. Sitte would be thrilled by Eisenman’s proposal for indeterminant urban forms, and he would be equally reluctant to dwell on their source: the medieval. Eisenman’s Lower Manhattan project would perhaps be familiar to Penn, reinscribing his urban plan in the elevation of a series of interlocking towers organized around a space that might be comfortably compared to Rittenhouse Square. The buildings themselves might be compared comfortably with those schemes produced for the Regional Plan Association in the 1920s. In the end, one of the things that seems so odd about contemporary urban theory is that all of it seems so historicist.

All the proposals for the city tend to fall into three categories: the city is a mess and can only be fixed by a return to earlier configurations or principles derived from such (e.g., Seaside versus “Hideaway Hills Estates”); the city is sort of a mess that can be a bit improved by some tinkering based on a bit of rational planning and catering to market forces (e.g., Toronto yes, Detroit no); and cities are pretty much OK, especially if there is not much planning because lack of planning results in freedom and the proliferation of chance encounters, and besides free-market development is a force of nature and therefore good. (Evidently, a choice between where you live and Detroit, although proponents of this argument live in neither. They live in Hampstead or some similarly charming environments.)

Perhaps, the most remarkable thing about the last category is its homage to another version of nature, the idea of the organic that began to be articulated at the end of the nineteenth century by people like Schelling, pulled by the rise of biology and pushed by the waning picturesque. As unrestrained capitalism, the contemporary city is compatible with the organic model as a self-regulating archigenetic organism. Thus, it is admirable because it is an exemplar of the basic forces of nature. Like the Rollistas, this Sim City quality—setting things in motion and then watching what happened—was part of the appeal to Penn, but Sitte was more enamored of the possibilities within the formal language of the organic. Oddly enough, this also seems to be the appeal to Eisenman, whose project for the City of the Arts of Galicia formally evokes this organism by lifting the medieval street pattern from Santiago de Compostella as whole cloth.
Perhaps, the Windsor Forum would be thrilled. One of the most memorable essays produced at Windsor was that of Ellen Dunham-Jones, who recapitulated the history of the pedagogy of modern design, tracing it to the debate between the ancients and the moderns. At least in the eighteenth century, these were clearly opposing sets. Today’s urban arguments cannot be cast as oppositional. Their concerns are blurry; they are contradicted by projects that are proposed to support them. As a result, there seem to be only two strategies of adding urbanism to the curriculum, one based on projects and the other on pronouncements.

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Some Assembly Required: Contemporary Prefabricated Houses
ANDREW BLAUVELT, curator

Walker Art Center, December 8, 2005, to March 26, 2006
Vancouver Art Gallery through September 4, 2006
http://design.walkerart.org/prefab/

According to Andrew Blauvelt, prefab houses are commonly considered “cheap, cookie cutter structures of last resort.” To refute these misconceptions and promote architect-designed prefab housing, he curated Some Assembly Required: Contemporary Prefabricated Houses, which celebrates architects who are reemerging at the housing design table, as essential players in a field where architects have relinquished almost all control (ninety-eight percent of all new housing construction does not involve an architect—Cameron Sinclair, PUSH Conference, June 11–13, 2006, Walker Art Center).

Some Assembly Required is framed as an exhibition of “affordable modernism.” In contrast to “modernist” housing, which is often custom built and expensive, prefab modernism brings modern design into the cost strata of conventional developer-driven housing. In contrast to “affordable” housing, which typically has a low-income client base and aims for a substantially lower cost benchmark, the projects in this exhibition target a middle- to upper middle-class client base.

Some Assembly Required highlights some of the most compelling prefabricated housing currently in production. Its projects fall into three primary categories: the kit home, the panelized system, and the volumetric module. The kit home provides the major structural elements and a few of the preassembled parts required to complete a house. It involves the most on-site labor. The panelized system delivers a series of factory-assembled roof, floor, and wall panels that are then assembled on-site. The volumetric module involves the least site work, delivering the house to the site as a finished unit or series of units.

Projects like Lazor Office’s “FlatPak” house (Figure 1), Alchemy Architect’s “Wee House,” Resolution 4 Architecture’s “Mountain Retreat,” and Michelle Kaufman Design’s “Sunset Breeze House” display the advantages of rigorously adhering to the principles of prefabricated design. Those advantages, according to the exhibition, include:

1. Time savings: overall project schedule is compressed, all major trades operate at one facility, and so coordination is tightly controlled.
2. Money savings (compared to custom-built modern design): materials are purchased in bulk (many of the projects are one example among many of similar or identical houses under contract by the designers), the houses are built in factories where labor is cheaper than on-site labor, factories are a controlled environment, and so cost can be carefully monitored.
3. Reduction of construction waste: most of the houses are very simple and efficient geometrically, so components are produced in multiples, based on standard construction dimensions.
4. Sturdier house structures: components are built to withstand transportation and the stresses of being lifted by a crane.

FlatPak and Mountain Retreat are produced by a company called Empyrean International, LLC. Each house is manufactured in a controlled setting at a plant in Acton, Massachusetts. Then, Empyrean trains local builders on methods of assembly, establishing a portfolio of construction teams throughout the country who know how to quickly and efficiently erect their projects. To create this infrastructure, Lazor Office and Resolution 4 Architecture had to relinquish some of the control they would normally enjoy over a conventional custom-built house. They conducted (and are still conducting) numerous rounds of redesign through exhaustive meetings with Empyrean. The benefits of this time-consuming scrutiny, however, are realized in cost savings and budgets competitive with conventional developer-driven housing.

If Some Assembly Required has one misstep, it is in the inclusion of Steven Holl’s “Turbulence House.” According to “The Architect, His Client, Her Husband and a House Named Turbulence” by Michael Kimmelman (New York Times Magazine, The New York
Times, May 21, 2006, section 6), owners Richard Tuttle and Mei-mei Berssenbrugge expected Holl to deliver a modern, affordable, well-built, and sustainable prefab house. Instead, they got “a creative architect’s iteration on prefab,” a house that is “not green” and “not solar,” a house for which $300,000 was budgeted, but instead cost over $600,000, and a house that is “uninhabitable half the time.” Remarkably, the clients view the house as a “work of art” and so seem at least somewhat satisfied with the end result.

When the term “prefab” is haphazardly attached to projects like Holl’s Turbulence House, it does the effort of architect-designed prefab housing a disservice. While Holl’s project is compelling and important on many levels, it is most certainly not a glimmering example of the advantages of prefabricated architecture.

Despite this hiccup, Some Assembly Required casts architecture in a positive light and repositions architects as relevant to housing once again. Rather than making unrealistic claims about hypothetical solutions to the world’s need for truly affordable housing, the architects in the exhibit tackle the manageable problem of producing “affordable modern” housing. With each new commission, they better understand the nuances of prefabrication. Perhaps, our profession can build on this knowledge to further amplify prefab’s potential benefits. Akin to MIT Media Lab’s “One Laptop Per Child” program, where the goal is to produce a $100 laptop computer for children in third-world countries, maybe architects can relinquish the control necessary, and partner with the right people, to mount a truly substantive affordable housing effort. Some Assembly Required is a strong foundation upon which we can build. The work is beautiful and the results inspiring, but there is still much more to be accomplished.

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Sense of the City: An Alternative Approach to Urbanism
Canadian Centre for Architecture, Exhibition October 26, 2005, to September 10, 2006
MIRKO ZARDINI, catalog editor

Canadian Centre for Architecture and Lars Müller, 2005
352 pages, illustrated
$75 (paper)

A dark tunnel animated by ambient city sounds greets visitors to the exhibition Sense of the City at Montreal’s Canadian Centre for Architecture. The passageway prepares their eyes for the show’s low light levels. But more importantly, it rouses other sense organs, dramatizing the exhibition’s ambition to “challenge the dominance of vision.” Once inside, oversized wall graphics of rats and flies prompt visitors to compare their sensorial capacities to those of animals. Suitably sensitized, they then explore five galleries elegantly organized around themes corresponding to four senses: nocturnal city (sight), sound of the city (hearing), surface of the city (touch), air of the city (smell), and seasonal city (a combination of all four, focused on winter conditions).

Curated by the Canadian Centre for Architecture Director Mirko Zardini, the exhibition and accompanying catalog set out to influence practicing architects and urbanists. He wants to change the way cities get designed, studied, and even lived in. An architect himself, Zardini’s evangelical zeal to connect with practice partially springs from his work as editor and writer at professional journals. His attitude seems especially provocative at the Canadian Centre for Architecture, whose international reputation was built with scholarly exhibitions that use historical research to capitalize on its incomparable archival and library collections.

The show argues that urbanism should be fully phenomenological, perception-based, and open to the experiences of all bodily sensations. Still, Sense of the City never quite overcomes the difficulty of how to explore senses other than sight through visual material. The dramatic exhibition design by Montreal architects Atelier in Situ, who collaborated with graphic designers Orange Tango, seduces through its visual sophistication, but at the expense of other perceptual modes. Visitors can experience touch by sticking their hands in asphalt or smell through synthetic reproductions of garbage and grass presented in glass vials. They are asked, however, to appreciate the difference sound makes in cities by looking at photographs: ducks in Hanoi and street musicians in Prague. Visitors can use headphones to listen to Canadian composer R. Murray Schafer’s “Vancouver Soundscape,”
but other sensations, such as decibel readings in Minneapolis–St. Paul, are presented solely through charts and diagrams. Likewise, the third gallery attempts to communicate winter’s chill solely through images, including festive photographs of contemporary ice hotels and of Montreal’s beloved nineteenth-century ice palaces.

Conversely, this dependence on visual information is also the show’s strength, for the exhibition exploits an unusually diverse collection of urban imagery: magazine covers, contemporary and archival photographs, maps, and paintings. Strangely, there are few design drawings, despite the focus on how the physical environment gets built. Competition panels from Cedric Price’s 2000 urban design scheme “A Lung for Manhattan” come closest to exposing designers’ working methods.

The accompanying catalog has a similar flaw. The beautiful, kinetic graphic layout, designed in house by publisher Integral Lars Müller, is a feast for the eyes but has less to offer the other senses. The book’s subtitle, An Alternative Approach to Urbanism, heralds Zardini’s ambition to forge something new, but it is lawyer-turned-anthropologist David Howes who lays out the theoretical framework. He offers a bibliography of the main contributors to a “multisensory approach to the study of the human condition” (p. 333) and a history of how interest in the senses has crossed over from disciplines like human geography into architecture and urbanism.

More propitious is the way the book’s five commissioned essays multiply rather than merely unite the project’s themes. Historian Emily Thompson’s discussion of noise in 1900–1930 Manhattan, Zardini’s essay on the legacy of asphalt, and Wolfgang Schivelbusch’s intriguing critique of the history of public lighting proliferate possibilities rather than prescribe solutions. The book does not attempt to make sense of the modern city’s vast complexity and heterogeneity but rather endorses them. It works more like a buffet than a formal dinner.

There is a lot to digest here. The name index alone boasts 460 entries, referencing people with a cornucopia of viewpoints on how to shape, study, and enjoy the city, ranging from familiar urban commentators like Jane Jacobs, Kevin Lynch, Guy Debord, Juhani Pallasmaa, Peter Eisenman, and Charles Moore, to inventor and engineer Buckminster Fuller and artist and musician Yoko Ono. There are another 118 names in the city index. Citations cluster around the big Western cities: New York (Manhattan is indexed separately), London, Montreal, and Paris. Smaller cities are mentioned more than studied. Eastern cities crop up as primordial places inhabited by happy citizens who celebrate, rather than sanitize, noise and smell. For instance, Howes discusses the way Filipino domestic workers take over Hong Kong’s central business district on Sundays to illustrate his point that smells and noises can change the meaning of urban space, but his prose simultaneously—perhaps unavoidably—falls into orientalizing discourse.

Celebration may be the key benefit of this paradoxical wide-ranging project. Sense of the City expresses joy in the grittiness of urban space, in opposition to our ingrained tendencies to clean it up. At first glance, this enthusiasm can seem senseless or ironic—the show itself, after all, is hygienic enough to be installed in a museum. But despite some slogan-eering and sanitizing, Sense of the City makes a compelling case to broaden our understanding and concern for the qualitative, sensorial characteristics of urban space. The challenge is clear: architecture must return to its senses—smell, touch, sound, and reinvigorated sight.

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Memory and Architecture
ELENI BASTÉA, editor

University of New Mexico Press, 2004
352 pages, illustrated
$49.95 (cloth)
narratives, and pedagogical approaches. Contributors include urban historians, architectural historians, journalists, poets, architectural practitioners, and educators.

The role of memory in mediating identity has been the center of current scholarship in the humanities. In recent years, globalization and transnational processes have destabilized conventional ways of reading culture, locality, and place. The contributors explore two related issues that complicate contemporary historiography: authorship and context. Whose voice and whose memory is central to a historical discourse? Is it the collective memory of an imagined community (as theorized by Benedict Anderson), the official versions of state apparatus (Gramscian hegemony), or the perspectival construct of individuals? How do place and architecture affect identity and memory? Architectural historians concentrating on the building (and its style) as the object of analysis and the architect genius as the author of this artifact fail to address the above issues. Contributors in this volume turn the focus of analysis from the intention of the architect to the experience of the everyday user, from the evaluation of individual buildings to the analysis of vernacular and cultural landscapes, and from the narrow context of national cultures to transnational identities.

In part 1, authors interrogate national memories that are (re)produced by the state and social institutions. Jarzombek and Sandweiss expose top-down historiography’s inability to capture the fluidity of the urban experience and propose that the deficiency can be ameliorated by uncovering contradictions and ambiguities within the historical narrative. Fernando Lara examines the local articulations of a global movement; he shows how a Brazilian elite appropriated local traditions to negotiate a unique Brazilian modernism. These authors problematize powerful and official discourses, yet fail to incorporate alternative voices in their narratives. Readers will appreciate the piece by Luz and Santos that sets a counterpoint to the above essays by examining the voice of the subaltern. These authors show how the African slaves’ and the European immigrants’ memory of building practices, social and family traditions, and territorial practices influenced the unique hybrid built landscape of the Brazilian coffee plantations in Paraíba Valley.

The authors of the essays in parts 2 and 3 posit a methodological counterpoint to part 1. They show how top-down narratives are often challenged and transformed when the past is read and written by individuals and groups. In part 2, authors study how poets and fiction writers influence national identity. Part 3 continues documenting voices, but these are personal narratives of memories of places. Unlike the state or its institutions, the point of view of an individual changes and his/her history is constantly negotiated and interpreted through his/her social and spatial experiences. Sabir Khan’s analysis of two autobiographical novels powerfully shows how place memories mediate the identity of immigrants. Khan’s study of diasporic consciousness and a comparative study of representations of urban space in Greece and Turkey by Eleni Bastêa challenge the centrality of the nation-state and national identity in the discussion of memory and architecture. While these essays emerge from a well-established tradition of critical theory, V.B. Price’s diatribe against growth and consumer culture rests on shaking foundations and reads like a polemic against “outsiders.” Yet Price—maybe unintentionally—problematizes the notion of the authentic and real in the contemporary world where the global and the generic are constantly articulated within the local.

A drawback of this section is its overemphasis on analysis of literary texts—a methodological strategy that narrows the range of the representative voices. For instance, Carel Bertram argues that the trope of the wooden “Turkish house” in Turkish literature represented a collective memory of spiritual values for Turks in Ataturk’s new republic. In reality, however, the language of architecture is complicated by its geographic contexts and multiple subjectivities of people who populate these spaces. Christine Gorby’s analysis of the geography of the sacred within the everyday profane landscape of Belfast provides a methodological counterpoint to textual analysis. Gorby analyzes cartographic and cognitive maps and examines walls (constructed to separate Catholic and Protestant communities), centers, edges, and paths of parades and daily rituals to read how individuals reproduce social and spatial landscapes.

The last section, “Voices from the studio,” is perhaps oddly juxtaposed with the rest, but it is this section that makes this book unique and extremely relevant to those interested in architectural education. Formal architectural education rarely gives students opportunities to use their lived experiences (and memories) in the classroom, a shortcoming that Thomas Fisher attributes to the Socratic method of teaching architecture. Yet, by critically examining how past experiences become the springboard for creative acts, authors Hurst, Lawrence, and Thomson are able to produce higher orders of learning in their studios. Their students find their own voices, transfer everyday knowledge into design solutions, and become better learners. They propose employing the idea of “memory palaces,” exploring everyday environments and interrogating familiar practices as ways to impart architectural knowledge.

Memory and Architecture serves the interests of a large readership circle—from historians, cultural geographers, and cultural studies scholars to the studio instructor and the architectural historian.

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Material ConneXion: The Global Resource of New and Innovative Materials for Architects, Artists and Designers
GEORGE M. BEYLERIAN and ANDREW DENT, authors; ANITA MORYADAS, editor
John Wiley & Sons, 2005
288 pages, illustrated
$80.00 (cloth)

Transmaterial: A Catalogue of Materials That Redefine Our Physical Environment
BLAINE BROWNELL
Princeton Architectural Press, 2006
237 pages, illustrated
$24.95 (paper)

Material Architecture: Emergent Materials for Innovative Buildings and Ecological Construction
JOHN FERNANDEZ
Elsevier—Architectural Press, 2006
332 pages, illustrated
$49.95 (paper)

This review addresses the ubiquitous yet contentious relationship that designers and building professionals continue to have with architectural matter. A working knowledge of materials is essential for architects, interior designers, and industrial designers who seek to impart objects, buildings, and landscapes with form. Noted art historian Henri Focillon reminded his readers in *The Life of Forms in Art* that “unless and until it actually exists in matter, form is little better than a vista of the mind, a mere speculation on a space that has been reduced to geometrical intelligibility” (Zone Books, New York, 1992, p. 19). Yet, it is precisely the acquisition of information regarding the behavior of materials that has been most troubled by far-reaching changes in technology and global politics and by a vast increase of interest in ecological principles.

At no other time in the history of the building arts have economic markets and the culture of consumerism played a more influential role in the availability of materials. “Innovative” materials are promoted by corporations that heavily invest in their development, and their highly manufactured compositions engender a surplus of technical data whose knowledge architects must acquire. Research laboratories, both academic and industry based, continue to be instrumental in transforming building technologies. Material science departments are now common in many engineering faculties, and research in
nanotechnologies, capable of altering the intrinsic properties of materials, promises to yield innovative architectural products with vastly increased performance.

Such factors have significantly altered the mechanisms by which architects gain access to building materials. The “information” base of modern materials is different than the context of “knowledge” that surrounded traditional construction. At present, industry research and material scientists are the privileged sources of performance data for a wide range of emerging materials, similar to the commercial development of polymers and composites initiated by engineers and thereafter promoted by market forces. Contrary to craft-based operations of wood and stone, communicated through time from architect to architect, information about available materials is currently mediated by patterns of supply and demand, by interest in their behaviors at the molecular level, and by the use of legal patents to protect the ever increasing number of material inventions.

These conditions have been addressed in part by Smart Materials and Technologies for the Architecture and Design Professions, by Michelle Addington and Daniel Schodek (reviewed in JAE, November 2005), which introduced designers to the dynamic behavior of matter, the development of smart materials, and the use of sensors and controls in the registration of material performance. The three publications reviewed herein, Material ConneXion, Transmaterial, and Material Architecture, are equally significant in expanding the frame of reference within which designers can understand the origins and use of available materials.

Material ConneXion: The Global Resource of New and Innovative Materials for Architects, Artists and Designers is the most commercially inspired of the publications. Beylerian, Dent, and Moryadas openly acknowledge the role designers play in the selection of materials, be it for the construction of details never to be seen or for the surfacing of spaces that define the building’s character. Conceived as a sales catalog, the book’s structure is aligned with the innovative global business to which it is associated. With offices in New York, Milan, Bangkok, and Cologne, Material ConneXion is a repository of innovative product data of interest to design professionals. Both a physical library and a virtual database (www.materialconnexion.com), it is dedicated to the dissemination of material information connecting design consumers to suppliers and manufacturers. Educational institutions and design practices are invited to subscribe to the physical and/or digital library for an annual fee, and, by cataloging hundreds of products ready for purchase, the book further contributes to distributing material information to as large a design audience as possible.

Materials are organized in chapters allied with accepted industry nomenclature including carbon-based products, cements, ceramics, glass products, metals, natural materials, and polymers. The final two are the most extensively covered. The book is mainly composed of large close-up photos of each product, accompanied by brief descriptions of its main components, and performance characteristics. No detailed product data are offered as this information is only accessible to paying subscribers of either the digital database or the physical library.

Material ConneXion is primarily of use to design professionals who specify product information for material purchases. It contributes to the diffusion of data on marketable materials, albeit contributing little to our understanding of how these materials are shaped by and in turn shape the culture that consumes them. The speed with which new materials are introduced into the consumer market may render much of the book’s content obsolete within a couple of years. And notwithstanding the jury of experienced designers enlisted to this end, the process that selects the featured products in the book, library, or digital database may be construed as uncritical.

The second book, Transmaterial: A Catalogue of Materials That Redefine Our Physical Environment, was authored by the practicing architect Blaine Brownell, who independently organized the hundreds of innovative materials, products, and processes contained therein. The work is a disciplined study of provocative materials deemed of most value to contemporary architects and most likely to transform the nature of architectural practice. Initially, Transmaterial appears similar in structure to Material ConneXion, as it too offers the designer a visual and textual catalog from which to make informed material selections and is organized into chapters aligned with material type designations such as concrete, mineral, metal, wood, glass, and paint + paper. Yet, it is different in a number of important ways.

The information is not associated with a proprietary database. Each product is clearly identified with the manufacturer’s name and with a physical and Internet address. There is a breakdown of material components for each product including the industry tests to which it was subjected. The book also lists available sizes and offers possible building applications for the products. Most importantly, for certain materials, there is a discussion of environmental considerations. The book’s layout is well designed with each page dedicated to a single product. The immediate acquisition of information is facilitated by a matrix of subheadings that identifies the material’s trade name, family designation, and numerical connection to the MasterFormat Specification. Included for each product are photographs and a textual description detailing its history, typical uses, and the design characteristics that make it truly innovative.

Additionally, Brownell introduces a series of inventive entries. Alongside traditional family types such as concrete and metal are included types seemingly antithetical to the substance of matter. Chapters on the phenomena of “light” and the “digital” are timely and necessary. Solid state lighting and surfaces composed of interactive light sources are now commonplace in architectural applications. The pervasiveness of simulation software and thin-film technologies embedded with electronic registers are but two of the many contemporary products that argue for a digital dimension within material studies. With the introduction of these two chapters,
Brownell has expanded the normative classification of materials. Moreover, his inclusion of innovative products such as the “give-back curtain” designed by Sheila Kennedy, the “in-out” curtain conceived by IwamotoScott, and the Aegis Hyposurface built by Mark Goulthorpe (dECOi Architects) is an excellent demonstration of the commitment to the integration of research innovation in everyday activities that some design professionals hold. Transmaterial will be of interest to all involved in the design arts who seek a greater understanding of emerging materials and to all who are committed to expanding the traditional classifications of materials within the building industry.

Material Architecture: Emergent Materials for Innovative Buildings and Ecological Considerations is an entirely different work, more scholarly in its structure and more rhetorically engaged in its demeanor. Its author, John Fernandez, architect and associate professor of architecture at MIT, delivers a structured argument that posits the acquisition of material knowledge occurs most effectively within an expanded field of relationships. Design professionals should not only be conversant in marketable material options but also equally engaged in research activities that expand accepted material typologies and assemblies. Architects have the capacity and responsibility to engage the material dimension of buildings in a manner that exceeds the mere “selection” of materials, and to this end, Fernandez argues for the importance of design centered research, precisely the kind of activity he has undertaken at MIT.

In chapter 5, “Material Assemblies,” Fernandez demonstrates his success in inventing new construction details by way of materials research. The first of his three examples involves the design of a fabric-based building envelope designed to perform at the same level as a traditional exterior wall. The second is the prototyping and testing of a glass laminate sandwich reinforced with structural fabrics. The final research-based invention is a composite whose natural fibers, introduced within a sample of reinforced concrete, substitutes for the traditional use of steel reinforcement. Notwithstanding the fact that architects are rarely privileged with access to research laboratories of the kind used by the author, the final section of Material Architecture, dedicated to “design,” convincingly addresses the role of inventive research in the teaching of material assemblies.

The book’s second section offers an extensive description of five material families and their various properties. It argues for familiarity with both the technical parameters of materials and the cultural, historical, and ethical horizons from which they originate. In these chapters, Fernandez introduces analytical and measurable dimensions such as ductility, toughness, shear modulus, and hardness. He then expands the scope of material thinking with the addition of dozens of graphs and tables, all of which are highly inventive and elegant. The book contains forms of data delivery with which engineering professionals are most familiar and their easy legibility is a testament to their success. These accompanying diagrams and graphs are a welcome addition to his otherwise text-based argument; they impart a visual yet quantifiable dimension to our understanding of materials, an interpretation that architects would do well to engage.

Worthy of further discussion is the publication’s insistence on the introduction of ecological thinking within the field of material studies. Diminishing natural resources, mounting levels of dangerous carbon emissions from the transformation of raw materials into products, and the excessive demand for consumable materials in developing countries are factors that demand the introduction of an ethical dimension in the selection and consumption of architectural materials. In the opening section of Material Architecture, Fernandez’s interest in the “industrial ecology of buildings” gives rise to the identification of “time” as an important constituent of the material dimension of buildings; a truer accounting of building costs is only possible when the entire life cycle of its materials is considered.

In general, the book is organized in a manner conducive to its use as a textbook; it is easily adapted to courses in materials and methods, to core courses in construction technology, and to advanced seminars in building technology. Most of the book’s content is easily assimilated, albeit numerous chapter subheadings are difficult to ascertain, making the book’s structure at times incoherent. Material Architecture should be of interest to the practicing architect, the student of architecture, the material scientist, and all who are curious about the invention of material assemblies. Apart from a desire to have read and been introduced to more case studies descriptive of emerging assemblies, this publication represents an important addition to the field of material studies.

Central to Fernandez’s argument in Material Architecture is the following observation: design professionals are most commonly identified with the role of “selecting” materials for products and buildings. They comb through endless catalogs and seek advice from sales representatives; in their role as consumer, they navigate the plethora of choices available to them in defining a building’s material palette. Engineers, on the other hand, are credited with the gains of “research” and with their ability to increase the quantity of objective data knowable for a given tested material. In differing degrees, all three publications refer to this longstanding assumption, prevalent even today in contemporary practice. Yet, in encouraging a greater integration of the skills of selection with those of research, each publication is successful in discrediting this false and outdated dialectic.

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