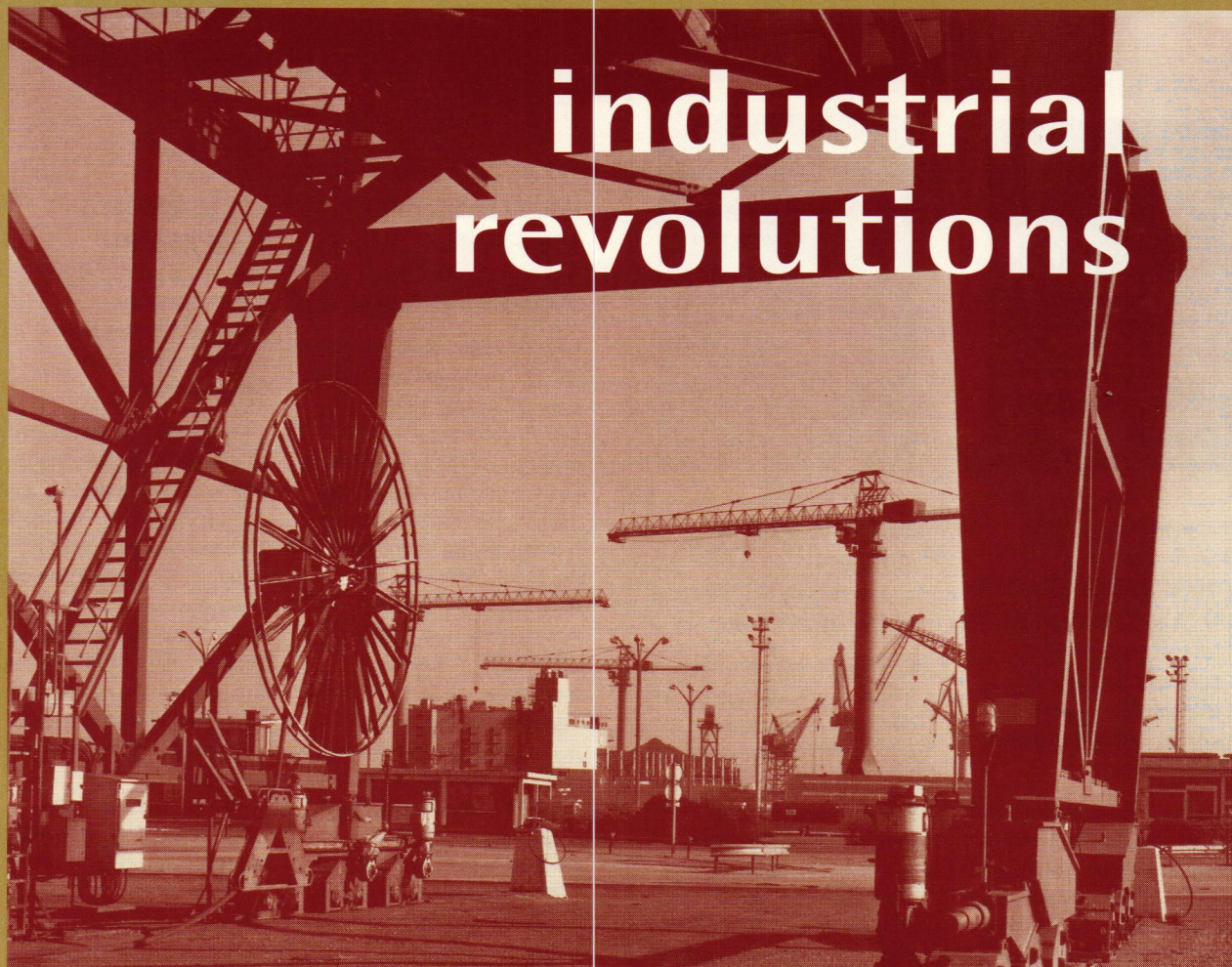


# DESIGN BOOK REVIEW

Issue 35/36  
WINTER/SPRING 1995



## industrial revolutions

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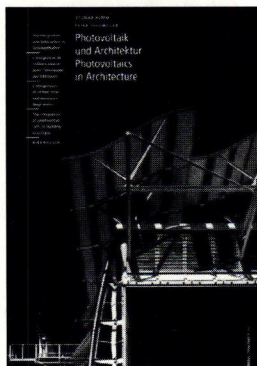
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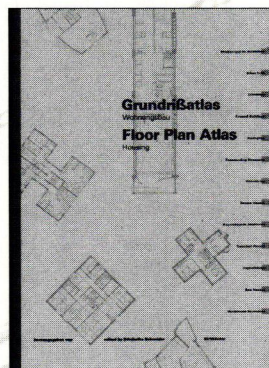
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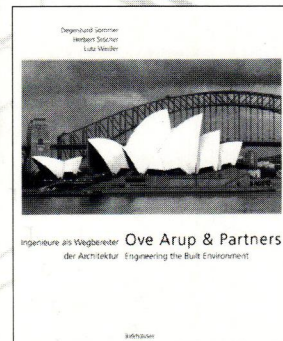
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# industrial revolutions

## FROM THE EDITOR

The so-called Industrial Revolution, which insinuated itself through the use of James Watts' steam engine and the spread of the factory system in Manchester, established a new narrative for human history in which the struggle with nature was interrupted by the possibility of machines going out of control. The Golem and Sorcerer's Apprentice were released from folklore into daily life as the dynamo and the treadmill. Wild capitalism, with the unparalleled riches it produced, was accompanied by the ruthless exploitation of human beings in industry and the unrepentant degradation of the natural environment as machines, the guarantors of material progress, were invited to take over.

Design was born at this precise moment, after a millennial gestation in the crafts, a birth welcomed by both necessity and longing—the need to eliminate scarcity through the mass production of items of everyday use, coupled with the desire to have more than is necessary. Design is nothing less than the imagining of what can be produced through technological means, but nothing more than what can be marketed for a profit. And once the market has been saturated, it is the peculiar destiny of design to internalize a kind of product death-wish, better known as planned obsolescence. Nigel Whiteley's analysis of design from a social, ecological, and feminist perspective, *Design for Society* (Seattle: University of Washington Press, 1994), leads to an almost nostalgic encyclical that everything is political, because if one cannot influence the demands of the market, then the market will determine the demands of the profession, which are so frequently contrary to conscience.

As the design machine grows, modifies, and adapts to historical conditions, it assumes almost organic characteristics. The warmth of its entropic heaving induces what Marx identified as a "melting point" and inspires historical cycles of technological paranoia. The Luddites felt the first Oedipal twitchings of technophobia and tried to reclaim their domain of labor by destroying the machines, ultimately falling victim to the cruel

irony that labor-saving technology inevitably displaces labor. Microchips are only the latest technological imperative to raise the temperature and destabilize patterns of employment through design. But it is just as futile to attack the agents of industrial displacement today as it was in the early 19th century, because such mechanisms are only expendable components of some larger, socially determined force.

A recent collection of essays dedicated to the psycho-social dimensions of current technology, *Culture on the Brink: Ideologies of Technology* (Seattle: Bay Press, 1994) edited by Gretchen Bender and Timothy Druckrey, intimates a teetering dialectic between the Whiggish interpretation of the conspiratorial nature of the deployment of design and the Futurist acquiescence to the lubricious machine work that aspires to breed an autonomous synthesis of human and machine. If professionals in advanced service economies feel comfortable with the term "postindustrial," they are more than likely participating in the necessary fiction that promises that the machine is entirely under control—when in effect, the machine is in almost every field competing for their jobs, including, of course, the design professions. In his contribution to *Culture on the Brink*, Stanley Aronowitz gets to the key ideological issue regarding current technology when he concludes: "The *main* use of computers and other cybernetic technologies is to *destroy paid work*." It seems to be no small coincidence that just as the possibility of eliminating large sectors of employment is becoming a reality, all of the most advanced economies in the world are reducing their welfare institutions. By comparison, the Luddites had little to worry about. Such a paradox is corroborated on other levels by Langdon Winner, who hypothesizes that as technology is becoming "smarter," its users are not; as machines are saving more time, people feel they have less of it; and through the electronic diffusion of democracy, democracy is steadily declining. In one of the few remedial methods attempted in *Culture on the Brink*, Win-

ner suggests, "As a person encounters a device or system, whether one in use or one on the drawing board, it is crucial that he or she ask what the form of this thing presupposes about the people who will use it."

Industrial revolutions occur when the social order is substantially "cooked" by new modes of production and consumption, and is reconfigured into a different chemical balance. Each new cycle of industrial revolutions—and their sequence might be compared to the radiating rings on a tree, one building on the other, from mass-produced clothing and industrial harvesting, to the railroad system, to the electrification grid, to telephone networks, to automobiles, radio, cinema, and TV, to nuclear power and space programs, to computers (with, of course, the major digressions of chemical engineering and biotechnology)—has forced both producers and consumers of new technologies into continually revised understandings of geography and of the body's relation to it. Space is increasingly dilating and losing all constraints, while the body, freed from spatio-temporal limits, is progressively etherealizing.

The majority of the contributors to *Culture on the Brink* write as if virtual reality is already a part of everyday life, as if they are already convening with cyborgs, that projected species of human beings with cybernetically enhanced body functions. Perhaps one of the contributors, Laurie Anderson, who has made an art of altering her form and even her gender through electronic devices, has already made the transition. The advent of the cyborg will fulfill the liberational dream of an autonomous machine, the ultimate mimetic acquisition of design, infused with human conscience. In "What Do Cyborgs Eat?" Margaret Morse investigates the literary and artistic reaction to the question of nutrition and bodily processes in her forecasts of "virtualism," ending with the question, "How can cyborgs become meat?" As virtualism becomes reality, both the body and design lose their relation to materiality. Andrew Ross, in his essay, notices that "if things are getting smarter, then it's also true that they look a lot dumber." The dumb box of cybernetic culture is "a haughty show of neutrality in an object world whose

physical laws barely impinge any longer on the transcendent processes concealed within the box." Meanwhile, "globalism" is habitually unveiled by many of the book's essayists as the trenchant obsession of the late 20th-century power elite, whose technologies long to defy territorialism. "The main miscreant in this deepening global crisis," writes contributor Herbert I. Shiller, "is the model of acquisitive behavior and consumerist attitude constructed and circulated worldwide by the powerful and deadly combination of media, technology, and the market." The old expression *caveat emptor* could take on a whole new vitality if it was considered not in terms of *what* the consumer is buying, but *how*.

If any ethical sense can survive in the design fields, it will depend on social forces such as culture, community, society—forces whose site and form, however, are no longer clear. Protocypborg Laurie Anderson delivers, perhaps inadvertently, the ontological analogue for the emerging human condition in her "Stories from the Nerve Bible": "You know the reason why some nights you don't have a dream? When there's just blackness? And total silence? Well this is the reason: It's because on that night you are in somebody else's dream. And this is the reason you can't be in your own dream because you're already busy in somebody else's dream." Technological displacements are the stuff that somebody else's dreams are made of.

Richard Ingersoll

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# to our loyal readers

## FROM THE EDITORS AND PUBLISHERS

*Design Book Review* was founded twelve years ago by the intrepid publishers John Parman and Elizabeth Snowden, and during most of its existence succeeded in making more friends than money. Three years ago, *DBR* began to copublish with MIT Press, a positive alliance for many reasons, not the least of which included guaranteeing the publication a certain stability in advertising, subscriptions, and schedule.

It is my unhappy task to inform you now that this partnership has been terminated, amicably but definitively. Just when you had gotten used to the issues coming out on schedule, I'm afraid that we will have to declare a brief hiatus, a period of six months, in order to regroup.

We shall return, and we will honor your subscriptions, in 1996. The issues planned for next year include: "The Architecture of Peace," "The Home and Housing," and "Design and the Pacific Rim." In the meantime, please excuse this interruption.

*Richard Ingersoll*

We have enjoyed and benefited from our relationship with MIT Press, and are particularly grateful to Janet Fisher and her staff for their help and consistent support. Although *Design Book Review* will retain its current subscribers' list, we ask that you also send us a postcard (to 1418 Spring Way, Berkeley, CA 94708) or E-mail (to [DBReview@aol.com](mailto:DBReview@aol.com)) with your name and address. This will enable us to keep you posted on our progress toward the next issue. If you are not a subscriber, please let us know where you usually buy *DBR* so we can make sure that your local outlet remains one of our distributors.

We are in the process of organizing a support group—the Friends of *Design Book Review*—which we hope will allow readers to have a more direct role in the magazine. If you would be interested in joining or learning more about it, please indicate so when you write.

We also invite you to fill out the brief survey below. We haven't done a readers' survey since the mid-1980s, and are curious to know how your profile has changed since then.

Thank you, as always. You are the audience for which we work and write, and we are grateful to have you. We look forward to hearing from you, and rejoining you with the next issue.

*John Parman, Elizabeth Snowden,  
and Cathy Lang Ho*

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# industrial revolutions

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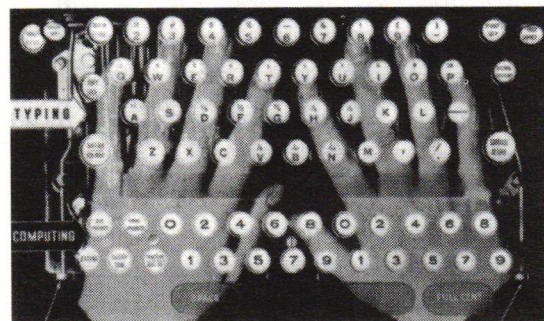
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- *Back of Big House: The Architecture of Plantation Slavery*, by John Michael Vlach

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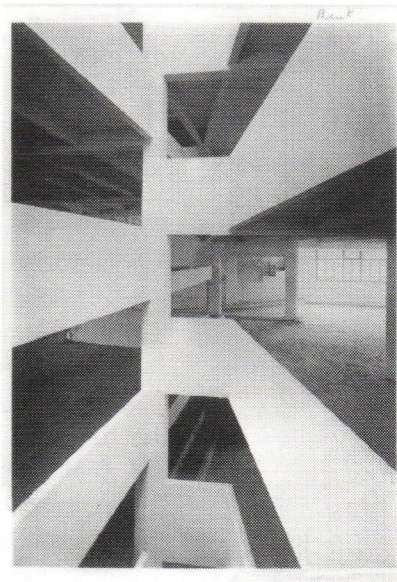
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# history by design

## BARRY M. KATZ

DOES TECHNOLOGY  
DRIVE HISTORY? THE  
DILEMMAS OF TECHNO-  
LOGICAL DETERMINISM,  
Merritt Roe Smith and Leo  
Marx, editors, MIT Press,  
1994, 280 pp., illus.,  
\$16.95.

MACHINE-AGE IDEOLOGY:  
SOCIAL ENGINEERING AND  
AMERICAN LIBERALISM,  
1911-1939, John M. Jordan,  
University of North  
Carolina Press, 1994,  
332 pp., illus., \$39.95.

TAYLORED LIVES: NARRA-  
TIVE PRODUCTIONS IN THE  
AGE OF TAYLOR, VEBLEN,  
AND FORD, Martha Banta,  
University of Chicago  
Press, 1993, 431 pp.,  
illus., \$34.95 (cloth);  
\$19.95 (paper).

Design may be considered a metaphoric bridge between art and engineering, or, more literally, an attempt to soften the hard edge of technology. Thus, when I turn on my Mac, I am greeted with a friendly "Hello"; a tiny analog wristwatch asks me to be patient while the system warms up, and a trashcan in the lower right-hand corner of the screen invites me to dispose of my literary detritus. The task of the designer is one of mediation: by focusing on the point of contact between the user of a product (or building or image or operating system) and the mechanisms and materials that enable it, good design will help to eliminate the friction between technology and culture.

Of late, however, the very categories "technology" and "culture" have been rendered problematic. As early as Karl Marx, the concepts of "forces of production" and "relations of production" resisted easy reduction to "machinery" and "society" respectively, for even at the dawn of the industrial era it was understood that social and technical arrangements are never independent entities that only at some later point "influence" one another. Today, the disruptive arguments of poststructuralist critics have sensitized us to the dangers of this sort of dichotomous thinking. The result is that designers, as intermediaries between parties whose identities have become conceptually blurred, find themselves at a crossroads. Fortunately, this is most often the most interesting place to be.

*Does Technology Drive History?*, a collection of essays edited by Merritt Roe Smith and Leo Marx, *Machine-Age Ideology* by John M. Jordan, and *Taylored Lives* by Martha Banta all deal with the problem of technology and culture in history and in theory. That technology figures centrally in human affairs is hardly controversial: This case was first made by Francis Bacon in the 1620s, was reaffirmed in the impassioned polemics of Lewis Mumford and Gordon Childe earlier this century, and is now common ground among all cultural commentators—liberal or conservative, technical or humanistic. But how, exactly, are complex sociotechnical systems to be understood? The various authors of these books approach this problem from a variety of disciplines and with varying degrees of success. The implications of their arguments for the theory and practice of design range from dubious to suggestive to compelling.

The terms of this investigation are laid out in *Does Technology Drive History?* Most of the essays in this collection were prepared for a two-day summit conference that brought some of the nation's most distinguished scholars to MIT in 1989, to dispose of, once and for all, "the dilemma of technological determinism," to paraphrase William James.

In addition to Smith and Marx, who edited the collection, participants in the 1989 workshop included historian Thomas P. Hughes, economist Robert Heilbroner, and a dozen others, including John Staudenmaier, Rosalind Williams, and Philip Scranton, who are indisputably names to conjure with in the social studies of technology. Indeed, rarely has such a lethal array of intellectual firepower been directed at a target that has shown no sign of life in years. In 1889 the philosopher Nietzsche was driven to madness by the sight of a driver beating a live horse; one hundred years later the spectacle of these learned scholars beating mercilessly upon a *dead* horse remains maddening, but in a different way.

I say this not as one who seeks to dethrone the Titans and disturb the Olympian order. Who in the design fields has not been influenced by Tom Hughes' masterful *Networks of Power* (Baltimore: Johns Hopkins University Press, 1983), provoked by Leo Marx's classic study *The Machine in the Garden* (London: Oxford University Press, 1964), or delighted by scintillating cultural explorations such as Rosalind Williams' *Notes on the Underground* (Cambridge, Mass.: MIT Press, 1990), to name but a few? My admiration for these pioneers was all the more reason for my mounting perplexity as I worked through this collaborative venture.

There are two essential problems with the book's essays. First, neither individually nor collectively do they provide a definition of their quarry—the beast called "technological determinism"—in a manner that is not incoherent or trivial. Second, apart from oft-repeated references to Karl Marx's "oft-quoted" jingle about feudal lords and hand mills, the essays provide very little evidence of the resurgence of this methodological demon.

In his opening essay, historian Merritt Roe Smith sets out to chart the growth of the theory of technological determinism over the last two hundred years of American intellectual history. His analysis hinges upon a preliminary distinction between a

"hard view," which perceives technology as "an autonomous force, completely independent of social constraints," and a "soft view," which "holds that technological change drives social change but at the same time responds discriminatingly to social pressures."

A moment's reflection, however, reveals this to be nothing but an escape clause concealing a Hamlet-like decisiveness that runs through most of the subsequent essays. In truth, it would be difficult to find any reasonable thinker who holds to the "hard view," and equally difficult to find one who does *not* subscribe to the flaccid version—which really says nothing more than that technology is an important factor in social change. Historian Thomas Misa tries valiantly to rescue the issue by distinguishing between "microlevel" and "macrolevel" applications, and Hughes suggests the more temperate idea of "technological momentum." But as political scientist Bruce Bimber concedes, after subjecting the concept to a formal semantic analysis, "it is hard to imagine a theory of history meeting this definition that would be plausible."

There are, to be sure, some real intellectual treats in this volume. Scranton of Rutgers and Williams of MIT make refreshing efforts to invigorate the field with recent cultural theory. Their feminist and post-modernist critiques of "totalizing determinism" disclose "a variety of silences and great forgettings" in the history of technology, and invite a measured retreat from all technological master narratives. The essays by Richard Bulliet and Peter Perdue balance the volume by bringing non-Western and preindustrial societies into the picture.

Ironically, the most compelling piece in this collection turns out to be a republication of Heilbroner's classic essay of 1967, "Do Machines Make History?" Indeed, his reflections on whether there is a fixed sequence of technological development through which all societies must pass are in some respects credited with provoking the MIT conference and this volume. Heilbroner alone seems to understand that, as a theoretical construct, "technological determinism" is a mere academic debating point of no consequence. Rather, the danger lies in its real historical possibility—that we may willfully abandon social control over technology.

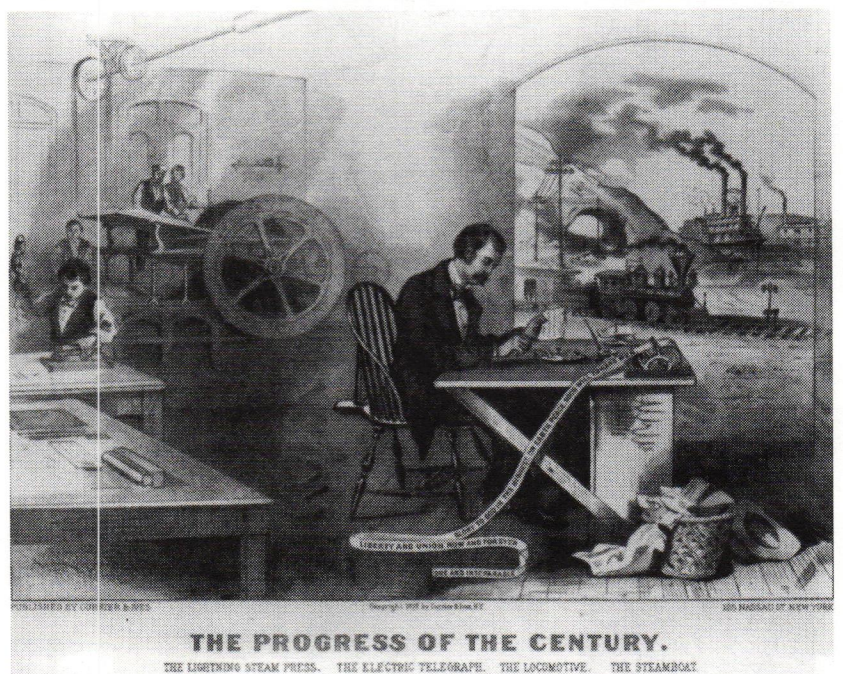
The collection as a whole may be seen as a minor skirmish in the battle that has been raging over the last several semesters between "social constructivists" on the one hand, and "technological determinists" (or "realists" or "internalists") on the other. One thinks naughtily of Henry Kissinger's famous

observation that, in academic debates, "the passions run so high because the stakes are so low." In one contribution, historian Michael L. Smith describes technological determinism as a concept that is "heartbreaking in its simplicity." Few who reach the end of this volume are likely to disagree.

If *Does Technology Drive History?* is a theory in search of facts, *Machine-Age Ideology*, John Jordan's study, framed by its subtitle, *Social Engineering and American Liberalism, 1911 to 1939*, might be described as a sea of historical information in search of an organizing theory. The author approaches the problem of technology and culture with the claim that engineering provided a myth or model for the "rational reform" of American social life. From about 1911, the year in which Frederick Winslow Taylor published his infamous treatise *The Principles of Scientific Management*, until about 1939, by which time the fascist dictatorships in Europe had discredited all schemes of social engineering, a generation of writers, organizers, and entrepreneurs relentlessly pursued a vision of a society that could run with the same frictionless efficiency as a well-oiled machine.

Jordan finds ample evidence of this *de facto* movement. The engineering professions in America had risen meteorically since the 1880s and their spectacular achievements fostered "an ideological context favorable to advocates of applied logic and productive expertise." In politics this stance was represented by the engineer-turned-politician Herbert Hoover; in economics, by the maverick Thorstein Veblen. It found philosophical justification in the pragmatism of John Dewey and animated the pop-

Between the 1860s and early 1900s, many popular books, articles, paintings, and lithographs celebrating new technology adorned America's sitting rooms and parlors. This 1876 lithograph by Currier & Ives is entitled "The Progress of the Century." (From *Does Technology Drive History?*)



ulist historicism of Charles Beard. The quest for "an applied science of society" was underwritten by philanthropic foundations such as Carnegie's and Rockefeller's, proclaimed by new publishing ventures such as *New Republic* magazine, and given legitimacy by Alvin Johnson's project for a neopositivist *Encyclopedia of the Social Sciences*.

These familiar intellectual landmarks of machine-age America only hint at the rich supply of materials Jordan mines. He scrutinizes the new social science foundations, and describes the popular technocracy movement. Backstage peeks at the 1933 Century of Progress exhibition in Chicago and the futuristic symbolism of the Tennessee Valley Authority's hydroelectric projects round out the picture of a culture no longer concerned with "civilizing the machine," as John F. Kasson described the republican ideal of the 19th century, but bent instead on mechanizing civilization.

An army of bureaucrats marches through the pages of this long book, most of them dedicated but colorless champions of technocratic progressivism, and a few—such as the Taylorist-Bolshevik Mary van Kleeck—memorable for their principled march into oblivion. Although competently told, this makes for a somewhat plodding story, which is only faintly enlivened by Jordan's images of an "epistemological rabbit [that] was pulled from the hat" and a few other such phrasings that somehow escaped the scrutiny of his editor.

A more significant limitation of the book, however,

is the gulf it leaves between the political and cultural expression of technology and the actual practice of it. Did those technocrats who embarked on the search for "a civic version of the engineering method" have a deep understanding of that method? Were the supra-political models of efficiency pursued by the rational reformers related to the real world of engineering beyond their mechanistic metaphors? The last several years have seen an increasingly close scrutiny of the messy practices of technical communities, and a con-

siderable body of literature now attests to a world startlingly different from the austere models of the positivists and technocrats. Far from being immune to politics, ambition, intuition, negotiation, and corruption, the world of the engineer turns out to be alarmingly similar to that inhabited by the rest of us.

Jordan is no fan of the managers, professors, and administrators whose infatuation with technique tended to restrict political debate over ends, whose peculiar conception of social progress remained focused on "best methods, as opposed to best purposes." His critique of their program, however, could have been strengthened by a critique of the false premises on which it was based.

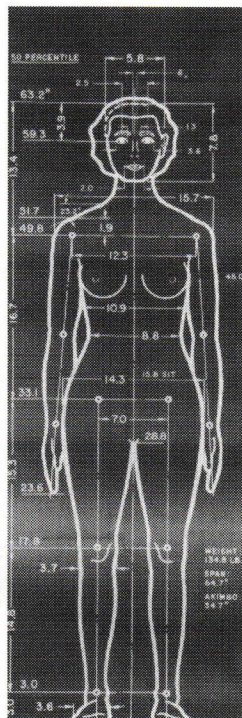
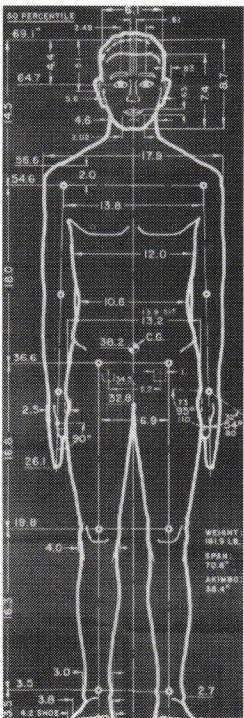
Much the same landscape is traversed by Martha Banta in *Taylored Lives: Narrative Productions in the Age of Taylor, Veblen, and Ford*. Of these three books, hers offers by far the most imaginative and sophisticated investigation of the problematics of technology and culture. The book's undefended, take-it-or-leave-it premise is that the veil of rationalization that settled over machine-age America should be seen as essentially a linguistic phenomenon: "For what is Taylorism but an extended narrative structure and discourse system that extends far beyond the factory floor to encompass every aspect of cultural existence?"

To this question, which bears the indelible imprint of Michel Foucault, one is initially inclined to answer that Taylorism was, in fact, much more than merely discursive. The imposition of "scientific management" over vast sectors of modern life changed not only human experiences and personal histories, but also the design of machine tools, the configuration of the factory floor, and the concrete, material relations of production that correspond to them. To speak of "linguistically based social struggles" or to see life as a system of competing narratives may be the prerogative of English professors, but will it suffice for a broader readership?

In fact, Banta's Foucauldian analysis is not so simple. What she implies (but does not feel pressed to argue) is that it is the manner in which we define our terms that effectively determines our practices, and that the Taylorites' incessant clamoring for "the one best way" was essentially a campaign to control the way in which we talk—and think—about work. What was at stake, ultimately, was the need to subdue the unruly "human element" in order to achieve a regime of efficient machine production.

The body of Banta's book consists of a marvelously diverse array of studies—drawn from the poetry of John Dos Passos and the planned commu-

In his 1959 book *The Measure of Man*, industrial designer Henry Dreyfuss envisioned prototypical workers "Joe" and "Josephine," using numbers to match human forms, or to correlate "the laws of nature" to "the laws of production." (From *Taylored Lives*.)



nities of Henry Ford, the exposés of journalist/urban reformer Jacob Riis and the manuals of the home efficiency movement—of the drive to routinize, standardize, and rationalize the human experience. The modern, Taylorized man and woman will take their place in the system of mechanized production, in the standardized housing it both creates and requires, in the clothing they wear and the wholly predictable plots they will enact in the course of living, working, and dying. Efficiency, functionalism, and scientific management are merely labels for what is essentially a grand business strategy of “how to get effective machine productivity in the face of having to accommodate ‘the human element.’”

To achieve this technocratic vision of social control, campaigners told stories with villains and heroes: for Veblen it is the unscientific manager; for Lenin, reactionary elements of the bourgeoisie. Armed with “a full string of rhetorical strategies and narratological devices,” Frederick Taylor appeared before a congressional committee in January of 1912, with fictionalized accounts of phlegmatic laborers, militant trade unionists, and benign managers. An epic battle “over the facticity of language” ensued, following which scientific management steadily became “the standard that defines effective discourse.” To gain attention, “to assure that one’s text would not be dismissed as . . . falling outside the bell-curve of probability,” one had to adopt the language of science.

Henry Ford is a key figure in Banta’s story—although less so than in Terry Smith’s sweeping book, *Making the Modern: Industry, Art, and Design in America* (see review on page 12). As his critics perceived, Ford understood that workers were also citizens and householders, and that “to implement the standardization of one element in this basic triad was to attempt the standardization of all three.” The evolution from Taylorism to Fordism is the relentless process of reining in the unruly “human element” in its every manifestation.

Fully rationalized, the standardized man and woman are ready, finally, to be handed over to the industrial designer who will finish them off. Under the pen of Henry Dreyfuss, who was not only a prolific industrial designer but the author of the books *Designing for People* (1955) and *The Measure of Man* (1959), the worker—now divested of “human will, moral purpose, or even technical skill”—is reduced to a mass of objective anthropometric data. Writes Banta, “The story of Joe and Josephine [statistical renderings of male and female workers] is about the perfection of the working body, the work task, and

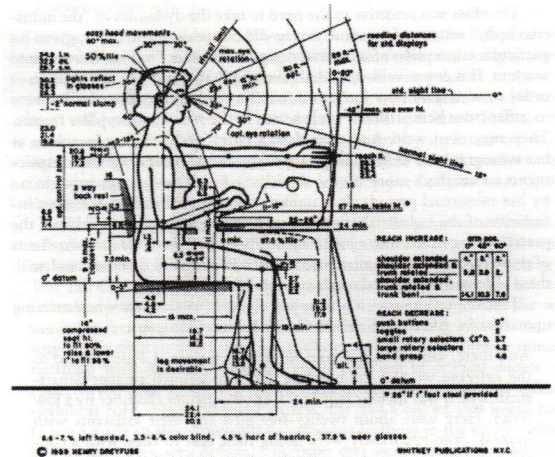
the work environment as authored by Henry Dreyfuss.” They have become the capitalist’s dream of pure labor power, unencumbered by emotional needs or intellectual doubts.

Banta admits, almost grudgingly, that through these representations Dreyfuss was “designing for people,” with consideration for

their safety and comfort as well as their productivity, and that most bodies do in fact fall within the statistical parameters he devised. She provides a clever but rather partial reading of Dreyfuss, but she more than compensates for it with her final, dazzling romp through the literature of the period, in which she traces the routinization of life in the novels of Nathaniel West, Theodore Dreiser, and William Faulkner.

Dissenters from the narrativist approach to history will have a tough time with *Taylored Lives*, and others still will wince at the author’s references to Egmont Arenas (Egmont Arens), Otl Archer (Aicher), and Alfred Einstein—an obvious misprint, unless she is referring to the famed physicist’s evil antimatter twin. But the depth of the book’s exposition, the richness of its individual studies, and the sparkle of its prose will make it worthwhile even to skeptical readers. Indeed, it may be as a concession to those who still suspect that there are facts behind the texts that Banta concludes “whatever the solutions, if solutions there are, they will take place outside the pages of novels.”

What, then, can be said about what has been called “the technology-culture contingency”? It is clear from *Does Technology Drive History?* that if technology does not determine the configuration of social life in any linear way, it is certainly a defining and a limiting factor. Jordan and Banta, in their parallel but quite distinctive studies, illuminate in detail the contingent and specific manner in which this took place in early 20th-century America. Together these three books confirm Karl Marx’s fundamental insight into the messy complexity of history. “Men make their own history,” he observed in the aftermath of the failed revolutions of 1848, “but not under circumstances they themselves have chosen.”



"Anthropometric Data—Adult Female Seated at Console," from Henry Dreyfuss' *The Measure of Man*, 1959. (From *Taylored Lives*.)

# the engineering of modernity

## FOLKE TYKO KILHSTEDT

**MACHINE-AGE IDEOLOGY:**  
SOCIAL ENGINEERING AND  
AMERICAN LIBERALISM,  
1911–1939, John M. Jordan,  
University of North  
Carolina Press, 1994,  
332 pp., illus., \$39.95.

**MAKING THE MODERN:**  
INDUSTRY, ART AND  
DESIGN IN AMERICA,  
Terry Smith, University  
of Chicago Press, 1993,  
512 pp., illus., \$50.00.

Technology, writes Peter Drucker, America's foremost management educator, "unites both the universe of doing and that of knowing, connects both the intellectual and the natural histories of man."<sup>1</sup> Over the past two centuries, the acceleration of technological development and changing concepts of technology have altered the human condition and transformed technology into a highly public affair. How we do things and how we perceive them are both conditioned by technology and the enormous industrial expansion that it has fostered.

The extent to which these forces of modernization have affected the way we see, act, and think, particularly in America, forms the basis for the books *Machine-Age Ideology* by John M. Jordan and *Making the Modern* by Terry Smith. These books show how technological forces intersected, in the former case with the fields of politics and history and in the latter with those of art and design, through the first four decades of the 20th century. In *Machine-Age Ideology* Jordan shows the extent to which social and political reform in America was based upon the concepts of engineering, industrial planning and corporate management. In *Making the Modern* Smith attempts to reveal the ways in which American industries—Ford Motor Company in one instance, *Life* magazine in another—actively contributed to an artistic image of modernity that was uniquely American and closely wedded to our industrial culture.

Of the two books, Jordan's is by far the more accessible. A teacher of historiography at Harvard University, Jordan has synthesized a wide range of primary sources to reveal with great clarity and insight how engineering and technology realigned politics through the work of our rational reformers. We recognize many of these reformers; some guided (while others influenced the guiding of) America as it grew into an industrial giant and became a modern world power, and all were major figures in their respective fields. Among the best known are John Dewey, Charles Beard, Herbert Hoover, Charles Steinmetz, Frederick

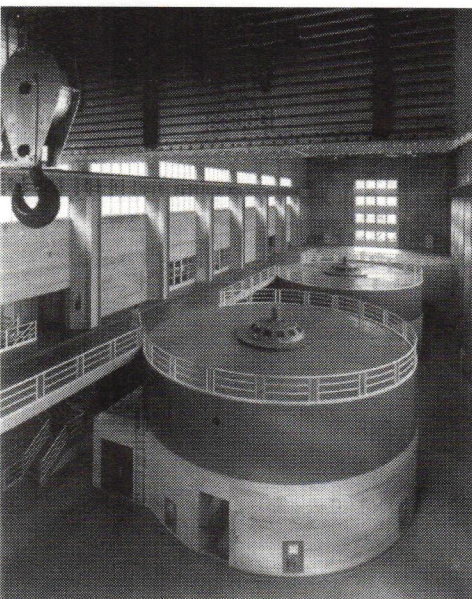
Taylor, Herbert Croly, Robert Lynd, Rexford Tugwell, Walter Lippmann, and Lewis Mumford. Jordan weaves their work into a tight fabric, the warp of which consists of both private and governmental institutions. Among the former are the Taylor Society and the New School for Social Research, periodicals such as the *New Republic* and *Engineering Magazine* (*Industrial Management* after 1916), and major publications such as the *Encyclopedia of the Social Sciences* and Lewis Mumford's *Technics and Civilization*. Among the latter are the Institute for Governmental Research (now the Brookings Institution), the President's Research Committee on Social Trends, the National Resources Planning Board, and the Tennessee Valley Authority.

The thread for this entire fabric—the individual reformers and the various organizations—consists of our attitudes toward engineering. We had valorized the engineer in the first decades of this century and had begun to think of technology as a substitute for politics. Efficiency and rational planning, the values behind engineering success, would now be directed to our increasingly complex social and political problems. Finally, the driving force that operated the machines by which this fabric would be woven was "corporate capital, organized research, and applied science." The product was to be, in Jordan's words, "a structural transformation comparable to the Renaissance."

What are some of the specifics of this transformation? Three examples from *Machine-Age Ideology* may suffice. The first can be found in the work of General Electric engineer Charles P. Steinmetz, whose popularizing writings of the second decade of this century championed the management abilities of industrial corporations over those of our traditional government of elected officials. His envisioned new state would run more efficiently, and the engineering ethos "promised a nonpolitics of administrative competence" that would breed a trust rare to any who experienced the political corruption of the previous "Gilded Age."

The second transformation can be found in pages of the *New Republic*, founded in 1914 by Herbert Croly, Walter Lippmann, and Walter Weyl with the goal of redirecting America into its new role as a modern state through the application of scientific management and rational administration. The *New Republic* became the intellectual forum in which technological models and "managerialism" could be

Interior of Norris Dam,  
"power as sterility," author  
John Jordan suggests.  
(From *Machine-Age  
Ideology*.)



applied to a changing world. Indeed, "engineering and managerial influence persisted [into the] 1960s, when corporate managers controlled important sectors of the federal government."

The third example can be found in the figure of Herbert Hoover, first as secretary of commerce under Thomas Harding and later as president. Known as "the Great Engineer," Hoover also came from a Quaker background, and these two strains colored his political activity. "In him," Jordan observes, "the logical, orderly, effective methods of the engineer and the social concern of the reformer appeared to fuse." Hoover perceived his role as a calling into public service. Still, his humane and altruistic approach to government was based on a type of objectivity and rationalism that belies his training as an engineer. For him, the application of engineering principles would elevate government to a higher ethical plateau. As Jordan notes after analyzing several of Hoover's political writings and speeches, "his use of technological metaphor . . . represented one aspect of a calculated attempt to reshape discourse in order to transcend conventional politics."

Examples such as these constitute the necessary historical foundations onto which one then can build studies (such as Smith's) which deal with issues of art and design in the same period. What Smith undertakes is an ambitious compilation of a diverse body of material that constitutes, in his words, an "iconology of modernity." He never clarifies exactly what he means by this phrase. However, if we agree that iconology deals with the intrinsic meanings of objects interpreted against the background of the historical conditions, particular tendencies of the mind, and the *Weltanschauung* of the period under examination, then the ideological content of Jordan's book would seem to offer an ideal lens for Smith's focus.<sup>2</sup>

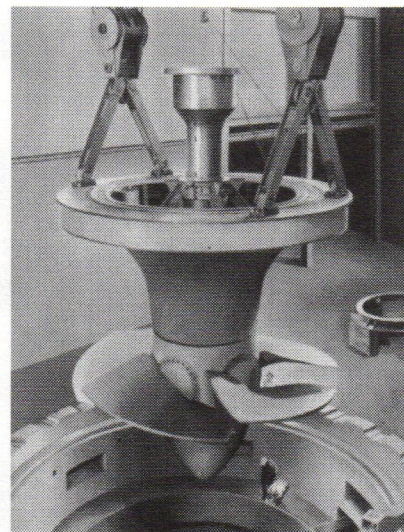
Unfortunately, instead of laying the foundations for his study of an American modernism within American historical discourse, Smith opens by looking through the eyes of a radically different culture. He builds his introductory remarks around an incident in a 1961 novel by Konstantin Fédin, *The Conflagration* (translated in 1968). Through this work by a Russian *litteratus* of secondary importance, Smith offers his first definition of modernity: "an insistence on the obliteration of the past." Why begin a book about the visual imagery of modernity in the United States of America around the work of a Russian writer? Furthermore, Smith chose to invoke a writer who quickly retreated into Socialist Realism in 1930 and later, as first secretary of the Union of Soviet Writers, pre-

vented the publication of Alexander Solzhenitsyn's *Cancer Ward*. Any comparison between the United States and the Soviet Union would have been risky, given the enormous cultural differences between them. However, selecting a person of Fédin's conservative leanings offers a particularly peculiar and confusing introductory source.

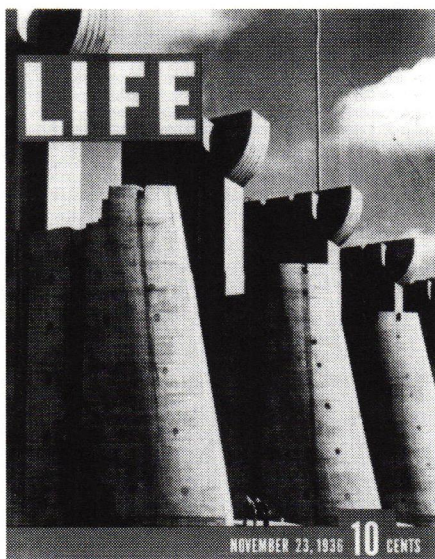
In the long run, however, the reader accepts or dismisses Smith's introductory motif and moves on to the main body of the text, only to encounter further confusion. His vocabulary is unnecessarily abstract. The reader constantly searches for the precision behind Smith's often ambiguous applications of words such as "discursive formations," "machinery of representation," "domains of invention," "visual shaping," "problematics," "positionings" and "repositionings," or "trajectories" of one thing or another. It is opaque and difficult reading. Contributing further to the opacity of this text is a writing style that reveals a preference for passive constructions, a proclivity toward vague referents, a tendency to neglect to bridge confusing jumps between topics, and an inclination toward extremely long sentences with complex structures. The writing itself places unnecessary demands upon the reader, gratuitous demands that the book's editor certainly ought to have remedied.

While most of these textual difficulties are stylistic, some may be attributable to the scope and method of his research. The scope is enormously broad. Smith examines the issues of Fordism and mass production, the architecture of Albert Kahn and factory design, the artistic work of Charles Sheeler for the Ford Motor Company, the pages of *Fortune*, *Life*, and *Vanity Fair*, the Detroit paintings of Diego Rivera and the personal paintings of Frida Kahlo, the work of several Farm Security Administration photographers, the work of major American industrial designers, the New York World's Fair of 1939-40, and the Museum of Modern Art as a cultural institution. Even though this may only encompass forty years of American culture, it still constitutes a lifetime of work for one individual.

It is precisely this breadth in scope that forces upon Smith a method of research that relies heavily on secondary sources. The range of those sources is enormous; his apparatus of research is impressive. He cites and uses all the appropriate sources for each topic. For this reason, the extensive section of endnotes, along



*Suspended Power*, oil on canvas; Charles Sheeler, 1939. This was one of six paintings on the theme of power commissioned by *Fortune* magazine. (From *Making the Modern*.)



The cover of first issue of *Life*, dated November 23, 1936, featured this photograph of the dam at Fort Peck, Montana, by Margaret Bourke-White. Author Terry Smith defines this cover as "high-modernist style." (From *Making the Modern*.)

with the book's 156 plates, will be of great value to the scholarly reader. Yet large chunks of the text are derivative of the vast range of sources that he has consulted. It is as if this book (four hundred fifty pages of text and sixty pages of notes) represents the penultimate stage of a vast research project in which the author's research notes await that final distillation by which the source material will be redirected and transformed into a fully original thesis. In my opinion, Smith's book has not quite achieved this final distillation.

Perhaps the underlying weakness of Smith's study is that he has not struggled effectively with the functional definitions of his terminology. In particular, the issue of "modernity" which forms the basis of Smith's study needs to be addressed. As I have mentioned, Smith identifies a uniquely American image of modernity that is built around our industrial culture (my words). But how does he define this modernity? He refers to a "Ford Company modernity," a "welfarist" aspect of modernity, a "Life-style modernity," a modernity embodied in the phrase "Nothing original, yet everything new," and a modernity defined by "the increasingly efficient reproduction of the past." Nowhere does he provide his own definition. Is there some way that we can give meaning to the term in connection with the material that he studies?

Paul Greenhalgh, in his introduction to *Modernism in Design* (London: Reaktion Books, 1990), notes that the word modern "has meant so much that it has often meant nothing," and Smith's many shadings of the word modernity provide support for Greenhalgh's observation. Yet "industry," whether referring to Ford or *Life* or *Fortune*, emerges as a constant in his study, and historically, the related word "industrialization" is understood to be part of the wider process of "modernization." Therefore, it may be possible to make a meaningful connection between modernity and the industrial manifestations to which Smith links this word.

In general terms, modernization refers to "the process of rationalization and urbanization that transforms a premodern economy into a modern one."<sup>3</sup> Modernity is the new culture (different from old antiquity, Renaissance, baroque, and so on) which is "essentially rational and progressive, with the assumption of a never-ending linear development." In the

context of these definitions, I am not so sure that Smith's various shadings of "modernity" are all really valid. On the other hand, the connection he suggests between an American modernity and the forces of industry that helped generate it accords with the general historical connections between modernization and industrialization. Moreover, given that modernity presupposes a rational, linear development associated with the idea of progress—and therefore with change—then we may accept a modernity that changes over time, which Smith implies.

In fact, near the end of his book, Smith seems to be identifying two modernisms. One is characterized by abstraction and the minimal forms of "precisionism," a modernism of the corporate executive or, as he puts it, "the visual language of the bosses." The other is the "Life-style modernity," which he defines as "the imaging of reality, [a] picturing of the lives of the people." The first is one that, I think, he traces from its beginnings in Highland Park, Michigan (site of the original Ford Motor Company factory), in 1914 and into the 1920s; the second is one that emerges and matures in the 1930s and is characterized by the populist vision of Socialist Realism and documentary photography.

I suspect that if terms like modernism were carefully defined at the book's outset, with the nonconforming and confusing uses of the word edited out, *Making the Modern* would have yielded important distillates. Fortunately, the tedious process of distillation may sometimes be bypassed with the help of an alternative and more appropriate primary source covering the same period. In this instance, Jordan's *Machine-Age Ideology* offers a quotation from an engineer who, in 1910, claimed: "Engineering creates modern life. Take away engineering, and we are what our predecessors were. Add engineering, and the modern world is." Within this pronouncement resides a reality that informs both of these studies. ☼

#### Notes

1. P. F. Drucker, "The Technological Revolution: Notes on the Relationship of Technology, Science, and Culture," *Technology and Culture* 2 (Fall 1961): 350.
2. See E. Panofsky, "Introductory," *Studies in Iconology. Humanistic Themes in the Art of the Renaissance* (New York: Oxford University Press, 1939).
3. This and the following definition come from S. Beller, "Central Europe: Birthplace of the Modern World," *Austrian History Yearbook* 23 (1992): 74–75.

# snapshot in a silver frame

JANE MORLEY

The summer between my freshman and sophomore years in college I worked as a salesperson in the silver department of a Charlotte, North Carolina, store. My mother's silver was something I had always taken for granted, for it functioned in our family life as an old and distant relation that appeared only on holidays for a meal, a bath, and a massage. But working in the silver department gave me an entirely different view of silver and the apparently special meaning it held for the predominantly white female customers who coveted and collected it: solid silver or sterling flatware was a must, preferably acquired from one's granny or during one's wedding engagement period, and the more esoteric the place and serving pieces, the better; plated flatware for everyday use; plate hollowware, since sterling was out of the price range of most customers; but if one collected sterling hollowware, then old and English was the most desirable. This was a mythology I accepted—albeit nervously—as fact, until many years later, when I read Roland Barthes' *Mythologies* (New York: Hill and Wang, 1985), and I began to understand that there was a subtext to this Southern female craving for silver. "Imitation materials have always indicated pretension," Barthes wrote. "They belonged to the world of appearances, not to that of actual use; they aimed at reproducing cheaply the rarest substances . . . all the brilliance in the world." According to Barthes, this subtext was firmly rooted in history: "The starting point to these reflections was usually a feeling of impatience at the sight of the 'naturalness' with which newspapers, art, and common sense constantly dress up a reality which, even though it is the one we live in, is undoubtedly determined by history."

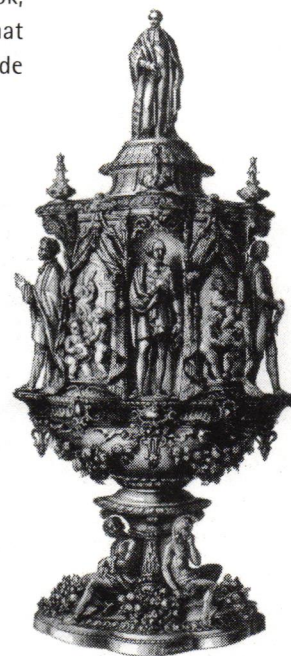
Julie Wosk's very fine book, *Breaking Frame: Technology and Visual Arts in the Nineteenth Century*, explains how silverplate and the other volume-produced imitative decorative arts became an important part of 19th-century American and British middle-class consumer culture and how their valuation was subsequently integrated into the 20th-century mythologies of upwardly mobile middle-class life. At London's Great Exhibition of 1851, New York's Crystal Palace Exhibition of 1853, and at the Philadelphia Centennial Exhibition of 1876, British and American manufacturers such as Elkington and Reed & Barton displayed their electroplated and electrotyped copies of much costlier solid silver flatware, hollowware, and other ornamental ware. Widely publicized, these

wares appealed to, according to Wosk, "a middle-class market eager for the look of luxury." Celebrating the availability of imitative decorative wares, now within the economic reach of many, American critics welcomed them and the concomitant developments in electrometallurgy. British critics, however, were less sanguine: The very existence of imitations "challenge[d] the privileged position of the original work of art," and ownership of them "threatened to blur social class distinctions." John Ruskin found cast or machine-made metalware "deceitful"—"an imposition, a vulgarity, an impertinence, and a sin." Charles Dickens satirized what he perceived as the vulgarity of elaborately ornamented tableware in his 1865 novel *Our Mutual Friend*: "Everything said boastfully, 'Here you have as much of me in my ugliness as if I were only lead.' . . . A corpulent straddling epergne, blotched all over as if it had broken out in an eruption rather than been ornamented, delivered this address from an unsightly silver platform in the center of the table."

In a particularly interesting section of the book, Wosk outlines the technological developments that permitted the volume production of machine-made metalwares, including new casting and plating processes, die-stamping, embossing metal with ornamental surfaces, and electrotyping. A number of new techniques were introduced or were developed to commercial viability in the 1840s. Electrotyping was a process whereby plaster molds of original decorative art were rendered electrically conductive and were then suspended in a conducting chemical solution with a copper sheet; an electrical current transferred copper from the sheet to the surface of the mold, and then this perfectly imitative copper shell was removed and electroplated with gold or silver. Electroplating was done after the object was made, whereas silverplating was done before the piece was shaped. Sheffield, as well as other Birmingham, England manufacturers became widely known for their high-quality "Sheffield" silverplate, which closely matched genuine solid silver. By 1840, however, the market for silverplate began to shrink with the introduction of relatively inexpensive electroplated silver, a development which expanded the consumer market generally for silver wares.

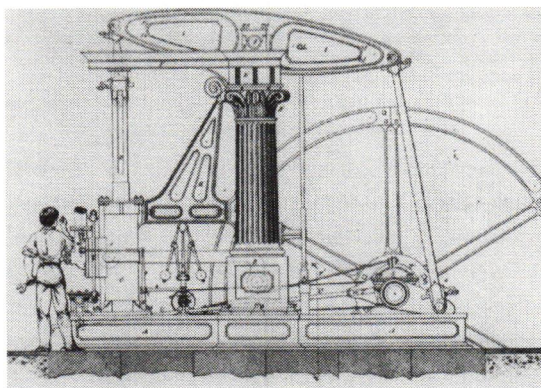
In the second half of the 19th century, American electroplate manufacturers began to warn consumers of fraudulent or poorly made "imitations" of

**BREAKING FRAME:**  
TECHNOLOGY AND THE  
VISUAL ARTS IN THE  
NINETEENTH CENTURY,  
Julie Wosk, Rutgers Uni-  
versity Press, 1992,  
267 pp., illus., \$32.95  
(cloth); \$16.95 (paper).



Electroplate designed by William Beattie for Elkington, Mason, & Co., entitled "The Triumph of Science and the Industrial Arts"; taken from the *Art-Journal Illustrated Catalogue of the Great Exhibition of Industry of All Nations*, 1851. (From *Breaking Frame*.)

An example of classicizing the machine, this high-pressure steam engine, built by the J. T. Sutton and Co. for Franklin Iron-works in Philadelphia (c. 1845), supported its massive beam and entablature on a fluted, cast-iron Corinthian column. This etching appeared in Oliver Byrne's 1853 treatise *The American Engineer, Draftsman and Machinist's Assistant*. (From *Breaking Frame*.)



electroplated ware, and commentators who had once lauded the democratization of the decorative arts began to insist, according to Wosk, "on status distinctions between different grades of electroplating." An 1869 article in *Harper's* claimed that not only would the use of silver in dining "place an infinite distance between ourselves and the brutes," but that there were also class differences between different levels of plating, the most desirable, or "genuine" being that which had taken three to seven hours to plate with the proper thickness of silver. The rhetoric of this article is interesting for in it one sees the beginnings of the "silver myth" I was to learn over one hundred years later in the silver department. Indeed, for Barthes, "myth" is most importantly a "system of communication," as well as a semiological system of signifier, signified, and sign. Read this way, the distinctions between the various quality levels of plate and between plate and sterling begin to signify class differences in American society, and it might be possible to "place" oneself or others in the social hierarchy simply by the type of silver owned. One's silver, therefore, becomes the sign of one's social standing, as expressed in the verbal and visual language of the "silver myth."

My remarks hardly do justice to the rest of Wosk's provocative work, perhaps because the book really has two different foci—which the author herself notes. The book's six chapters can also be read as individual essays, each a portrait of a particular aspect of the interaction of technology and culture in the 19th century. After the introduction, which is exemplary for its clarity, the first two chapters deal with how new developments in transportation technology (the steam carriage and the railroad, for example) were reflected in the visual arts, and how the relationship between humans and technology was depicted in art and literature. Much to her credit, Wosk senses the strong, diametrically opposed attitudes toward new technology embodied in many artistic works of the

period, and develops themes of fracture and coherence, division and unity, fragmentation and integration, in order to characterize the responses of graphic artists, painters, novelists, journalists, and others during the 19th century. Wosk's last chapter, "Classicizing the Machine," deals with the application of neoclassical ornamentation to machinery—an effort to legitimize the new technology and ease its public acceptance. Stationery steam engines, for example, were "architecturalized" with cast-iron columns in Tuscan, Doric, or other classical styles. According to Wosk, "Some designers went further, producing engines that were, in essence, miniature Greek temples complete with fluted columns, entablature, triglyphs, and base." The century's love of ornamentation—fueled by middle-class aspirations for respectability and status, and by a marketing strategy that sought to mitigate the steam engine's association with explosive danger—motivated this ornamentation of steam engines, machine tools, and domestic machinery. A brief afterword compares these 19th-century events to those of the 20th, from the Italian Futurists to Charles Sheeler's precisionist paintings, and to the "ironic classicism" of postmodern designers of the 1970s and 1980s. Wosk concludes perceptively that these later works—like those of the 19th century—sought "order and tradition in a world still feeling the tremors of technological change."

The title of Wosk's book, *Breaking Frame*, is a clever double entendre. It refers to the phrase used by social psychologist Erving Goffman in his book, *Frame Analysis: An Essay on the Organization of Experience* (Cambridge, Mass.: Harvard University Press, 1974) to describe the "feeling of disorientation [that occurs] when the basic frameworks of understanding used to make sense out of events no longer apply." Wosk argues convincingly that this experience was a strong influence on the 19th-century artistic vision, but that coherence and reconciliation of human life with machines were also equally strong influences. A "breaking frame" was also a piece of textile machinery that integrated short "slivers" of cotton thread into a continuous strand for spinning. Playing off the two meanings of "breaking frame," Wosk spins the primary theme of the book: "By visually clarifying the century's diverse cultural responses to technology, nineteenth-century artists were . . . creating their own version of a breaking frame—providing a means to integrate slivers of experience in a disruptive, disjunctive industrial era." For my part, I've provided only a small snapshot of this engagingly written, convincingly argued, and beautifully illustrated book—and put it in a silver frame. ✨

# montage and modernity

KATHLEEN JAMES

The splintered and cantilevered forms of today's deconstructivist buildings appear to challenge the stability of reference and construction associated with the architecture of the past, including most of that of the modern movement (the exception being Russian constructivism, of course). Historians of 20th-century art, however, are increasingly calling into question the degree to which the art and architecture of the second and third decades of this century were actually intended to operate as the purely formal investigation described by most early critics and championed, above all, by the Museum of Modern Art in New York. Nowhere is the complicated intersection between artistic innovation, ironic and fragmentary meaning, and the forces of rationalization and mass culture more clear than in the inter-war practice of montage, the cutting out of photographs, mostly from the burgeoning illustrated press, and the reassembling of them in new contexts. This technique was used in the creation of everything from original works of art to political posters and commercial advertising.

Two recent books, *Montage and Modern Life: 1919-1942* and *Cut with the Kitchen Knife: The Weimar Photomontages of Hannah Höch*, investigate the early practice of montage. The first is the catalog of a traveling exhibit organized by the Institute of Contemporary Art in Boston and curated by Matthew Teitelbaum. It includes essays on examples from Germany, the Soviet Union, and the United States, and on related developments in film. The second book is a more tightly focused study by Maud Lavin, devoted to the montages made between 1920 and 1933 by one of the pioneers of the technique, the German artist Hannah Höch. Lavin, who is also one of the contributors to *Montage and Modern Life* (the others are Annette Michelson, Christopher Phillips, Sally Stein, and Margarita Tupitsyn), is particularly interested in Höch's use of montage to create images of women which both reflected and challenged social and artistic conventions.

Historians of montage disagree about exactly who invented it and when. Although generally credited to the circle of Dada artists gathered in Berlin just after World War I, which included Höch and her lover Raoul Hausmann, research by Sally Stein as well as Höch's own accounts make clear that montage had a long history in 19th-century popular culture of which the Dadaists were well aware. As

employed between the two world wars, montage was particularly useful in exposing the tensions between abstraction and rationalization, technology and emotion, and high art and mass culture, which were elided over by more purely formalist artistic practices. Montage enabled artists to address rather than evade the often contradictory impact of modernization on contemporary life.

The essays in *Montage and Modern Life* demonstrate the range of influences on montage and the variety of uses to which it could be put. In "The Wings of Hypothesis: Of Montage and the Theory of the Interval," Michelson, for instance, argues that the popularization after 1919 of Albert Einstein's apparently antirational theory of relativity, with its particular concern for simultaneous occurrences, encouraged the use of montage by film directors such as Sergei Eisenstein. Montage also seemed a particularly appropriate way to express the dynamism of the modern metropolis; both German and Soviet examples typically include snippets of American skyscrapers. Ironically, as Stein's essay, "'Good Fences Make Good Neighbors': American Resistance to Photomontage between the Wars," makes clear, Americans used montage less to celebrate their own modernity than to express the dislocations wrought by the Great Depression. Less surprising, perhaps, is the ease with which montage was

MONTAGE AND MODERN LIFE: 1919-1942, Matthew Teitelbaum, editor, MIT Press, 1992, 208 pp., illus., \$15.95.

CUT WITH THE KITCHEN KNIFE: THE WEIMAR PHOTOMONTAGES OF HANNAH HÖCH, Maud Lavin, Yale University Press, 1993, 260 pp., illus., \$45.00 (cloth); \$22.50 (paper).



Early photomontage by Paul Citröen, *Metropolis*; 1919. (From *Montage and Modern Life*.)

used by those who, during the politically troubled 1930s, wanted to forge community out of disparate citizenries, whether American, German, or Russian. Tupitsyn's essay, "From the Politics of Montage to the Montage of Politics: Soviet Practice 1919 through 1937," explores the distinction between the more purely artistic exploration of montage by constructivists Aleksandr Rodchenko and El Lissitzky, and its development as a sophisticated instrument of political propaganda in the work of yet another Soviet artist, Gustav Klutis. Tupitsyn also documents the transition in Soviet montage from identification with the proletariat to the deification of Josef Stalin.

Klutis' German counterpart was John Heartfield, whose anti-Nazi montages for the Communist press have made him an exemplar of the politically committed artist. Lavin's essay, "Photomontage, Mass Culture, and Modernity: Utopianism in the Circle of New Advertising Designers," addresses a more complex topic: the degree to which artistic innovation could and did coexist in Germany during the Weimar Republic (1919–33), with the belief that mass production was the path to a more egalitarian society. This point of view encouraged a romanticization of technology, especially as a conduit for art for the masses, that appears naive today but which encouraged artists such as Kurt Schwitters, Willi Baumeister, and Herbert Bayer to proudly devote much of their energy to making and exhibiting advertisements for such commercial products as Pelican ink.

This enthusiasm for mass culture on the part of several of the era's most celebrated artists is typical

of the insights and discoveries that emerge from Lavin's careful attention to historical circumstance, and that characterize her rewarding monograph on Höch. Lavin is particularly discerning in her discussion of Ullstein Press, for which Höch worked as a designer of needlework and craft patterns. Ullstein was also the publisher of the most popular illustrated magazines in Germany at the time—the source for Höch's photographic montages. Although in both

her life and work Höch challenged convention—she never married Hausmann, had two illegal abortions, and enjoyed a long lesbian affair with the Dutch writer Til Brugman—she remained uncritical of Ullstein. Lavin sets forth the ways in which Höch could find mass culture liberating and modern, and the limits of labeling Ullstein's products as simply the result of bourgeois capitalism. Liberal Jewish capitalist enterprises like Ullstein Press stood opposed not only to a workers' culture on the left, but also to nationalists on the right. It was the latter group that most often decried rather than celebrated the trends highlighted in the firm's many publications, which were for the most part cheap enough to be familiar to almost all Berliners, regardless of class.

The major theme of *Cut with the Kitchen Knife, Dada through the Last Weimar Beer Belly Cultural Epoch of Germany*, however, is the relationship between Höch's montages and the mass-media image of the "New Woman," the often unmarried secretaries, telephone operators, and other female workers whose independence from patriarchal family structures and their attendant sexual restrictions became the most widely publicized example of social change in German cities after World War I. Working first within Dada and then constructivist circles, Höch put the techniques she shared with other Central European artists to highly individualistic and distinctively feminist ends. Lavin reconstructs the variable meaning of Höch's montages by identifying the sources and subjects of many of the individual elements, many of which would have been familiar to Höch's original viewers. They include, for example, photographic portraits of artist Käthe Kollwitz and dancer Niddy Impekoven, which Höch combined in the her most famous montage, *Cut with the Kitchen Knife Dada through the Last Weimar Beer Belly Cultural Epoch of Germany* (1919–20). She also explores what these images may have meant to Höch herself, as well as to their original mass culture audience, a particularly important distinction in the case of Höch's use of "exotic" images of African and Asian women.

Höch's reliance upon the illustrated press for sources in no way compromised her capacity to express difficult ideas. She excelled at juxtaposing figures and even parts of faces in ways that created new and often ambiguous meanings. In *Dada-Ernst*, for example, her overlay of two gold coins and a masculine eye on the intersection of an almost bare pair of female legs obviously alludes to prostitution. More subtle is the figure of women in an elegant evening dress, her face partially obscured by a tall dance hat. Höch also placed a sil-

*Cut with the Kitchen Knife Dada through the Last Weimar Beer Belly Cultural Epoch of Germany*; Hannah Höch, 1920–21. (From *Cut with the Kitchen Knife*.)



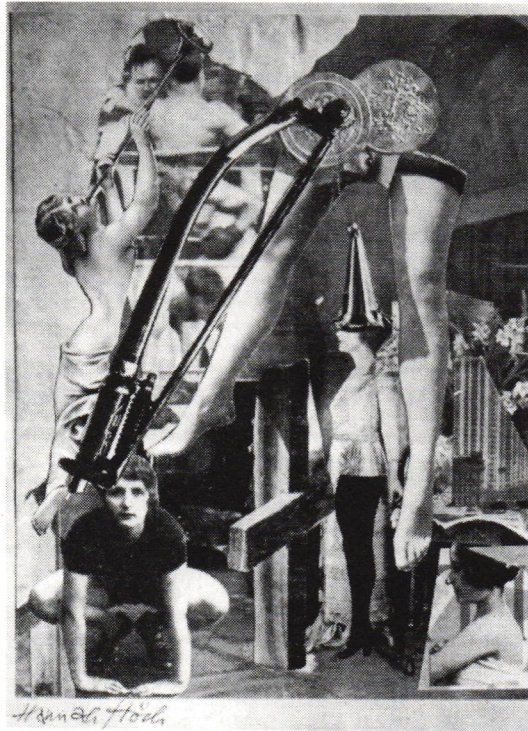
houette of a bare leg over the skirt of this figure in an x-ray-like gesture that further reveals the degree to which she saw genteel behavior as not only meaningless, but a thin screen for more vulgar behavior. The message of *Dada-Ernst* is not entirely disturbing, however. Lavin notes, "Female pleasure is represented in *Dada-Ernst* through the image of the female gymnast, crouching as if ready to spring forward. She is a point of identification, the only figure to look directly out at the viewer."

Instead of combining several different figures in a highly charged composition, many of Höch's later montages focus on the creation of individual figures. By juxtaposing facial features of different scales, genders, and races, she created unusually arresting critiques of clichéd representations of beauty, sexuality, and race. Lavin convincingly relates many of these images not only to Höch's own bisexuality, but to Weimar-era discussions of androgyny. As she points out, "Höch was not involved in simply representing or propagating homosexuality; her montages instead recombined masculine and feminine gender identities." She goes on to suggest that, for Höch's contemporaries, this ambiguity might have challenged the viewer's own gender identity, an effect that many women must have found empowering.

Perhaps the aspect of *Cut with the Kitchen Knife* that is most liberating for today's reader, however, is Lavin's insistence on confronting the ways in which Höch and her contemporaries enthusiastically embraced the multiple modernities of metropolitan life—whether skyscrapers, gymnasts, ethnographic museums, or fashion magazines—while transforming them in ways which still allowed for the individual expression of challenging ideas. In the section which most explicitly challenges the distinction between modern and avant-garde art made by the German cultural theorist Peter Bürger, Lavin writes:

Most commonly, modernist is used as a narrow description of small groups of artists focused on formal concerns specific to various artistic media such as painting and sculpture. I would broaden the term to reconnect modern artists with the experience of modernity itself. For it was exactly the idea of linking modern art production to the representation and effect of modern life that was so empowering to artists in the 1920s.

This argument, stated more obliquely by Teitelbaum and Phillips in *Montage and Modern Life*, offers, along with an emphasis on social history found in both books, a new template for regarding



*Dada-Ernst*; Hannah Höch, 1920–21. (From *Cut with the Kitchen Knife*.)

art and architecture which have been more commonly interpreted in formal and theoretical terms. In particular, Europe's modern architects repeatedly cited *Zeitgeist*, the spirit of the times, as an impetus for their radical designs, and yet much remains to be explored about their confrontation with the new consumer culture. How was Paul Scheerbart and Bruno Taut's idealization of the ability of colored light to affect emotions transformed by its application to cinemas rather than spiritually oriented community centers? What of the claim made by Adolf Behne, one of the founders of the Workers' Council for Art (the Arbeitsrat), launched in 1918, that the most beautiful art exhibit in Berlin (and also the least expensive) was to be found in the display windows of the city's major shopping streets—which, according to him, fulfilled the constructivist ideal of an art for daily use?

Finally, upon turning from the pages of these two books to the political art and deconstructivist architecture of our own time, one is also struck by the breadth of the ironies captured by the montages in comparison to the in-jokes too typical of the artistic production of our own times. Whether creating montages for exhibition in a gallery setting, as Höch did, or using the technique for posters aimed at a mass audience, as in the case of Klutsis and his colleagues, the artists whose work fills these two volumes address concerns common to the wider cultures of their times while deftly expanding a visual vocabulary that continues to delight and startle. ⚙

# the history, theory, and practice of product design

## JOHN HESKETT

DESIGN: GESCHICHTE,  
THEORIE UND PRAXIS DER  
PRODUKTGESTALTUNG,  
Bernhard E. Bürdek,  
DuMont Buchverlag  
(Cologne), 1991, 390 pp.,  
illus., DM 50.00.

The Australian comedian Barry Humphries, best known for his drag character, the zany megastar Dame Edna Everage, has also portrayed a second character, Les Patterson, a red-necked philistine who is supposedly Australia's Minister of Culture. Patterson once held forth on his achievements: "Look at that bookshelf," he boasted. "When I came into office, there was only two feet of books on Australian culture. Now there's three shelves full of the bloody stuff."

Using this measure, what might be called Patterson's Law of Cultural Significance, industrial design fares badly. In terms of shelf-length, or more apropos for the computer age, the length of bibliographical print-outs, the number of publications in English on the history, practice, and theory of industrial design is sparse. It can't even be said that the level of quality compensates for this paucity (it doesn't). The reasons for this are complex. In architecture, two major directions of development emerged from the medieval tradition of the master builder: the theorizing gentleman architect, a forerunner to modern professionals, and the jobbing builder who took over folk-building functions. Design, by contrast, only has the equivalent of the latter, with various origins: traditional handcrafting techniques as applied in protoindustrialization; the draughtsman/designer of early industrialization; and in the 20th century, styling in the context of mass-production industry. All of these emphasized pragmatic approaches which were generally apathetic to theory or formal methodologies; function, then, was integrated into industry and subordinated to management decision-making.

Unlike architecture, design has never been established as an independent profession with regulatory bodies, licensing procedures, and codes of conduct. Anyone can set up business and call him- or herself an industrial designer. Design education is still predominantly a process of learning by doing, with its more "advanced" stages characterized by notions of individual self-discovery derived from the romantic tradition in art. Little wonder that most designers go out into the world with a great sense of their importance, only to function, at best, as mid-level technocratic "executants" rather than as participants who make decisions about their work or its social effects.

This is not only frustrating for designers but a curious feature of our culture. Industrial design is, after all, the practice most closely concerned with translating technological possibilities into human potential, giving shape to products that bring both utility and meaning into people's lives. It is difficult to think of work that is more significant to the texture and quality of contemporary life, yet a profound gulf between its potential and reality persists.

In this situation it is tempting to look elsewhere for more enlightened models. Italy, for example, is widely regarded by designers as an ideal, the city of Milan especially, where designers, most originally trained as architects, are regarded as stars, with full media attention and accompanying *paparazzi*. By contrast, American designers are too frequently regarded as what design critic Ralph Caplan has called "exotic menials."

As in Italy, German designers also have high status in industry and in the eyes of the public, although the tone there is more serious, with a long tradition in publishing philosophical and analytical approaches to design, as epitomized by Bernhard Bürdek's recent book *Design: Geschichte, Theorie und Praxis der Produktgestaltung*. Unfortunately, much of this literature remains unavailable in English, in part because of the capacity of the German language to encompass ideas that are not easily translatable. For example, the German word *Wissenschaft* is widely translated as "science," which can create misunderstandings. A widespread usage is the compound noun, *Kunstwissenschaft*, which could be translated as "art-science," an oxymoron in English. In German usage, however, it makes perfect sense, for its root is the verb *wissen*, which has various meanings, including "to know," "to be aware of," and "to understand." As applied in *Designwissenschaft* it therefore connotes an organized and systematic body of knowledge in design theory and practice, which arises naturally from the tradition of German scholarship.

A second level of explanation lies in the historical evolution of design in Germany, which has taken a significantly different direction than in English-speaking countries. Germany began to industrialize late in European terms, and the process only began to really accelerate after the achievement of unifica-

tion under Prussian leadership in 1871, when there was serious concern about the international reputation of German products, which were widely regarded as cheap and nasty. The subsequent movement for reform drew on many sources, often from outside the country but always adapted to German conditions and preoccupations. For example, at Hellerau (near Dresden), Karl Schmidt established a workshop in 1897 on the model of English arts and crafts precedents, such as C. R. Ashbee's Guild of Handicrafts in London. However, whereas in England the arts and crafts movement elevated hand-work to almost mystical significance, Schmidt saw no contradiction between machines and quality work. To him, machines were simply another tool that could be used well or ill. While William Morris fulminated about the fact that his handcrafted products were only available to the rich, and Ashbee's Guild collapsed when he tried to move it into a rural setting, Schmidt's Deutsche Werkstätten evolved into a major business that over several decades opened up a broad middle-class market for well-designed, quality furnishings. Schmidt's positive evaluation of machines is only understandable in light of a further characteristic of German industrialization, in which technology came to be regarded as the embodiment of aspirations to develop forms appropriate for a modern culture.

The German Werkbund, a private organization founded in 1907, brought together members from such disparate disciplines as the crafts, industry, publishing, education, and government—all dedicated to higher standards in design. They often disagreed as to what precisely that meant, but none had any doubts about the cultural significance of their endeavors. Every product, for the country's internal and external markets alike, was regarded as

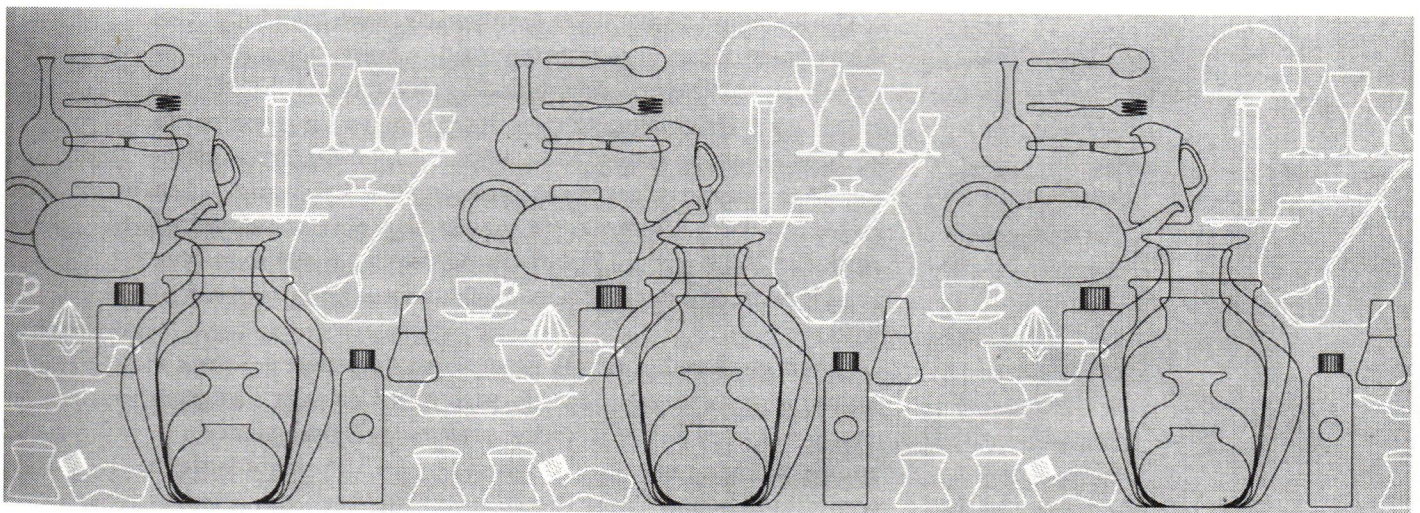
a manifestation of contemporary cultural values, which meant a coming to terms with modern industrial technology.

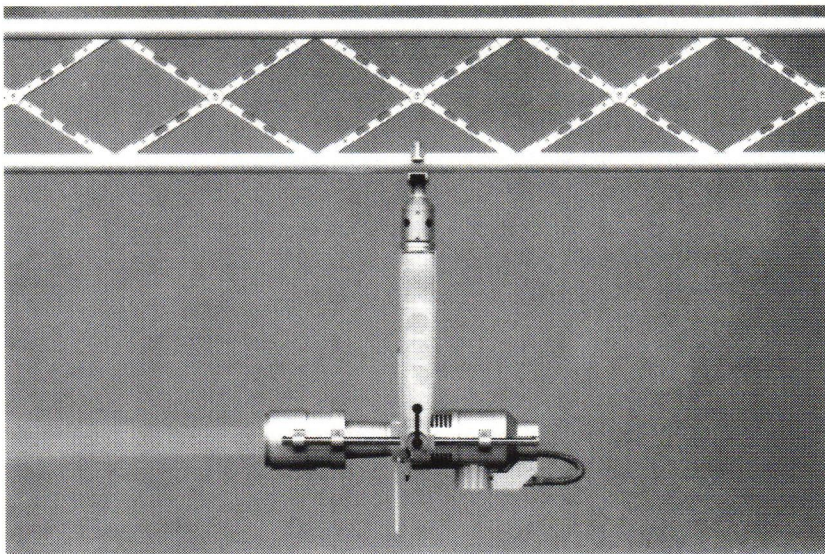
The Bauhaus, which occupies a central role in German design, was therefore the culmination of a vigorous debate about design and culture, and it is hardly surprising in retrospect that in its short existence from 1919 to 1933 it was able to evolve such powerful ideas about building a new society through the combination of art and technics. After the second world war, these ideas were revived and redefined at the Hochschule für Gestaltung in Ulm. Before falling foul of local politics, it was a magnet for teachers, students, and visitors from around the world who were attracted to new approaches to philosophy and methods in design. Another not insignificant fact is that the first president of the Federal German Republic, Theodor Heuss, had been an administrator of the Werkbund in the 1920s, and consistently promoted design while in office.

This blending of technology, culture, and social concerns in design created a rich intellectual tradition that has been of inestimable benefit to German industry; it has been promoted by federal and state governments, and has also been the source of a vigorous critique of industry from the standpoint of the social role of design.

Bernhard Bürdek studied at Ulm, which places his origins in the mainstream of this design tradition. If his disapproval of design as a modish fancy is typical of the tradition, at the same time he is strongly aware of the opportunities presented by new technologies and the need for change. He is widely experienced as a design consultant and became professor of design at the Hochschule für Gestaltung Offenbach (near Frankfurt) in the 1970s, at a time when it was considered a major center for theories of prod-

Invitation to an exhibition of the work of Wilhelm Wagenfeld, held in 1988 at the Design Center Stuttgart. (From *Design*.)





Side view of the Emanon 150 lighting fixture (1990) and the Gantry track system (1988), designed by Roy Fleetwood for Erco. (From *Design*.)

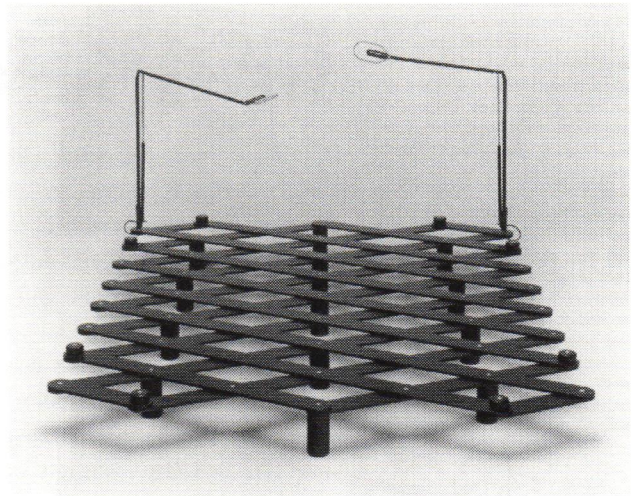
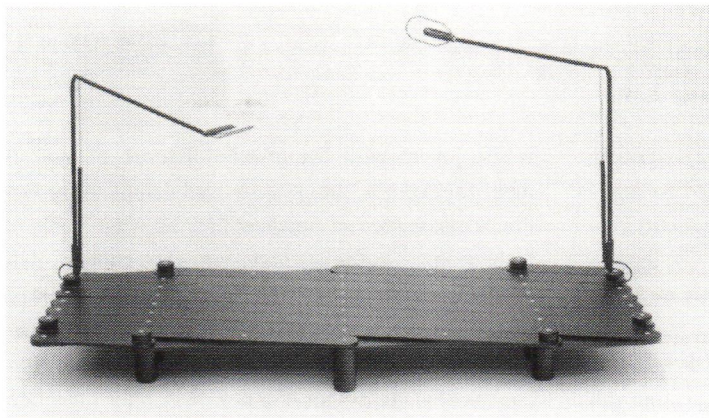
uct language and semiotics in design.

The subtitle of his book, *Geschichte, Theorie und Praxis der Produktgestaltung* (History, theory and practice of product design), indicates a very ambitious agenda. It should hardly be surprising, however, that not all these aspects are equally well treated. His section on history is probably the weakest. Bürdek does indeed preface the discussion by commenting that it cannot replace a comprehensive design history, but what follows is a potted historical progression essentially similar to that charted by Sir Nikolaus Pevsner in his *Pioneers of Modern Design from William Morris to Walter Gropius* (Harmondsworth, Eng.: Penguin, 1960), which positions German modernism in a seminal role. Essentially, Bürdek identifies Gottfried Semper, John Ruskin, and William Morris as the fathers of modern design, with a clear lineage running through the German Werkbund, to the Bauhaus, and to Ulm, from which good modern design derives, as exemplified by companies such as Braun. Although there is a brief review of developments in other countries, Bürdek's history is inevitably fragmentary and incomplete.

Bürdek identifies four points as particularly significant to the historical evolution of product design: first, the thread of industrial development in Germany culminating in the ideology of "good design"; second, the wave of criticism of this ideology that emerged in the mid-1970s, which in Germany resulted in an attempt to redefine design as a more avant-garde, free-ranging artistic activity, akin to the Milanese pattern; third, the American influence, defined predominantly in terms of styling as a marketing tool; and fourth, the emergence of microtechnology, which has led to miniaturization and the dematerialization of objects. One problem with

Bürdek's historical sketch is oversimplification, as in his juxtaposition of the German approach to design as culture against American commercialized styling, to the detriment of the latter. For example, he portrays major American theoretical concepts as derived from German thought, such as the recent wave of interest in product semantics. The influence of German ideas is undeniable; indeed, my own institution, the Institute of Design in Chicago, was founded in 1937 by László Mohóly-Nagy as the "New Bauhaus." What Bürdek fails to understand, however, is that American design is more than just styling—important though it may have been in the mass production of consumer goods. Many other diverse ideas in design are uniquely American and have been particularly influential in the evolution of design. Some of the ideas at the forefront of modern American practice, for example, stem from two designers, Jay Doblin and Richard Latham, who were based in Chicago from the mid-1950s onward. They developed concepts and methods of design-planning as an aspect of strategic decision-making that went far beyond the "executant" level of most contemporary practice. Latham was involved in high-level strategy as a member of the board of directors of companies such as Bang & Olufsen, Land's End, and Rosenthal (a German firm whose president, Philip Rosenthal, was also the chairman of the Rat für Formgebung, the West German Design Council). Doblin, who had worked for Raymond Loewy in New York, was for many years the director of the Institute of Design, and made important contributions to both the theory and practice of industrial design. Under his directorship, Charles Owen began his work in Structured Planning, a computer-based system that has developed into one of the most sophisticated design methodologies anywhere today.

My point is not to assert specifically American contributions. Rather, as an Englishman who has spent much time in Germany, but now works at an American university and consults for a major Japanese design firm, I'm very aware of the cosmopolitan nature of design ideas and practice. Doblin and Latham's ideas on design planning and Owen's Structured Planning are at least as widely appreciated in Asian countries as in their homeland. The failure of historians and critics to make such connections is regrettable, however, particularly when there are so many trends in common. In what is the best part of his book, Bürdek develops a sustained argument on the need for methodology if designers are to be regarded as serious partners in industry. Instead of basing education and practice on subjective values



and judgments, he emphasizes: "Through the intensive discussion of methodology, design becomes first practically teachable, learnable, and thereby communicable." This statement should be hung in neon lights in every design studio around the world. He supports it with a wide-ranging discussion that encompasses philosophy, semiotics, hermeneutics, and their application to design. Focusing not just on the processes of generating product form but also on the meaning and significance of products, Bürdek argues for products to be regarded simultaneously as signs that have cultural significance and as usable, utilitarian objects. "Design," he writes, "maintains its position more from its cultural than its technical orientation."

For design to assume this cultural role requires not only methodology but a language and grammar that will enable designers to clearly argue their ideas and values, and to convincingly establish cultural norms appropriate for our age. This, says Bürdek, is a real possibility as the use of computers becomes more widespread and our perception is increasingly shaped by visual forms of representation such as photography, illustration, diagrams, pictograms, typography, and symbols. "The culture of words," he asserts, "is changing into a culture of images."

Bürdek's book displays both the strengths and weaknesses of the German design tradition as it has evolved in the 20th century. The level of acceptance of design within both industry and government circles and the prolonged economic success it has gained for Germany have led to considerable complacency about what has been happening in the rest of the world. This was brought home to me about ten years ago, while I was working on an exhibition committee with prominent German designers to select examples of outstanding modern work in various categories. I recall blank stares when I suggested the Japanese bullet-trains, the *Shinkansen*, for the rail transportation cat-

egory. "What are they?" someone

asked. Another suggested instead a new unit on the Berlin suburban rail system.

Bürdek is much more open-minded, however, and understands a great deal about how current changes in the world at large impact design. Yet his agenda remains essentially conservative, reaffirming the cultural role of German design as established earlier this century; his bias is apparent in his discussion of an "electronic Bauhaus" and his obvious devotion to the ideals and practices of Ulm. The situation we face today, however, may require more than adapting new technology to old purposes, no matter how worthy the approach might seem, because the whole context of design is being radically altered. Information technology, biotechnology, and flexible manufacturing are changing not just products but markets, business structures, societies, and indeed, design, the world over. Old paradigms of "German design," or of any other national definition of design, may soon be inadequate.

Yet paradoxically, so much that is admirable about Bürdek's analysis is an integral part of this very German tradition. While his wide range of references from several other disciplines yields innumerable valuable insights, he strongly affirms the need for all those involved with design to clearly articulate its identity and value. He is certainly correct in his conclusion that designing by "gut-reaction" will be insufficient to cope with the challenge of new technologies; rather, a new disciplinary philosophy will be necessary. *Design: Geschichte, Theorie und Praxis der Produktgestaltung* intelligently argues the case for design and demands a thoughtful response. It is the kind of basic text we simply do not have in English and that is badly needed. ☼

*Scherenbett* (Scissorbed),  
by Kurt Thut, 1990.  
(From *Design*.)

# the design of modern design

## STEVEN SKOV HOLT

GEORGE NELSON:  
THE DESIGN OF MODERN  
DESIGN, Stanley Aber-  
crombie, foreword by  
Ettore Sottsass, Jr., MIT  
Press, 1994, 353 pp.,  
illus., \$55.00.

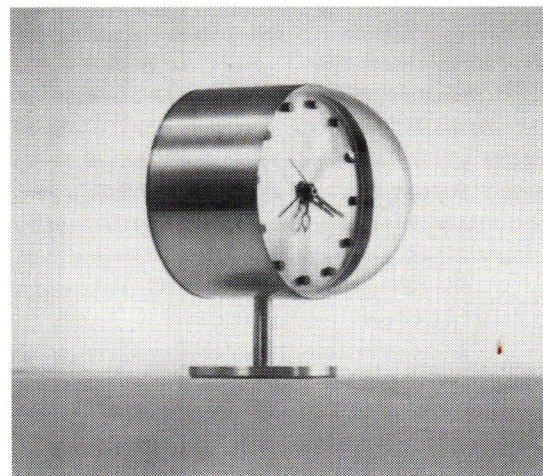
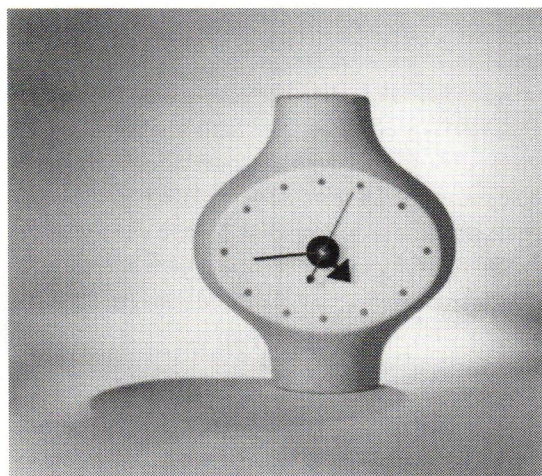
Nothing is more important to late 20th-century culture than the process and products of communication. Because the subject of design is still elusive to most of the world, nothing is more important than a designers who can communicate what others cannot. Of particular merit are those rare designers who are able to communicate visually, verbally, and textually, on numerous levels, through diverse media, and to as large an audience as possible. George Nelson was one such multivalent talent—a communicator as well as a collaborator, creator, and critic.

*George Nelson: The Design of Modern Design* is the first book on this prolific man, and it is a good read—a should-buy book for designers of all stripes, patterns, and colors. The Nelson I first met in the early 1980s is conveyed in this book: cranky, probing, and questioning—an energetic mind set in an old man's body. So, too, is the Nelson I commissioned in 1983 to write for *ID* magazine's thirtieth anniversary issue. In an article entitled "Design on a Small Planet," the youthful, passionate side of Nelson emerged, expressing a hope against hope that it is still possible to pull off this miracle we call civilization. Multiple Nelsons coexist within *George Nelson*, reflecting the ongoing evolution of one of this century's most important thinkers/doers.

*George Nelson* begins with a foreword by Ettore Sottsass, Jr., who met Nelson and worked briefly in his New York office in the early 1950s. While the selection of Sottsass may surprise some readers, he is an ideal choice to write a scene-setting introduction to this biography. His foreword offers the casual, conversational tone of a *My Dinner with Andre* tête-

à-tête joined with the anecdotal sense of amusement that comes from having lived a long, irony-rich life. Sottsass focuses unwaveringly on what it means to be human in the 20th century—the concern that most captivated Nelson throughout his life. Sottsass writes of Nelson's engagement in "a long complicated ritual . . . pursuing a vast solitary vision . . . trying to offer the design of a new metaphor for a new society." Sottsass emphasizes Nelson's intellectual path, making no mention of his physical appearance until the last paragraph, in which he describes their final meeting at an Aspen Design Conference. He says, with vintage Sottsassness, "In passing we shook hands/We were both dressed in black," a remark upon their many convergences, as well as a foreshadowing of Nelson's death shortly thereafter.

Abercrombie—himself a writer and architect, like his subject—devotes the next ten chapters to delving into Nelson's professional creativity. After becoming an architect in the early 1930s ("by mistake," he says), Nelson began his career by writing about design (principally for *Pencil Points*, *Architectural Forum*, and *Fortune*), using the process of writing to develop a critical view about his subject matter. He also embarked on his architecture and design career in the 1930s (William Hamby+George Nelson, Architects), which blossomed during the expansionist post-World War II years when Nelson was named design director at furniture manufacturer Herman Miller. As Nelson's prominence grew, Abercrombie was just beginning his own career. The author's familiarity with the nuances of the mid-20th-century New York design milieu shines through in the text's frequent references to culture



mavens and metropolitan designers alike.

A number of Nelson's seminal product designs emerged during this period, and Abercrombie carefully positions them within his professional history. The ball clock for the Howard Miller Clock Company (produced in 1947) combined key symbols of the era—asterisks, atoms, and star bursts—into a time-telling icon. The Marshmallow Love Seat of 1956 was also an instant icon; with its similarly atomistic attitude and eighteen multicolored round cushions, it was unlike any other furniture design of its time. The Action Office, first produced in 1964, changed office landscapes everywhere by clustering people together in team-oriented spaces rather than isolating them in discrete rooms; it is a testament to Nelson's ability to offer solutions to environmental design problems that others did not even know existed. Ultimately, this was the reason why Nelson was able to create products, furniture, and environmental designs unlike anyone or anything else of the period: He was able to get inside of a problem, and at the same time, maintain a great distance from it.

Abercrombie makes good use of a number of excerpts from Nelson's writings. These range from training booklets for the Social Security Administration, such as "How To See," which was aimed at revamping the agency's printed information, to a series of design-inspired articles for *Fortune*. The author also offers personal jottings of Nelson's and selected correspondence which infuse each chapter with a sense of connectedness to the larger issues of the time. Throughout the book, Abercrombie presents a view of Nelson as a designer who, like Sottsass, used design as a way of talking about life.

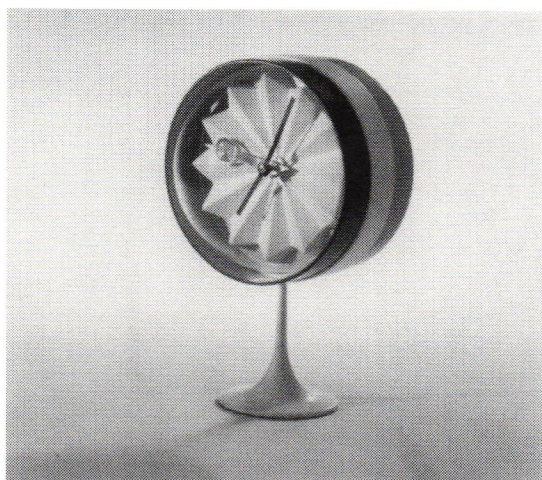
Today, such a Renaissance breadth of vision is considered a "strategic" or "total" approach. Nelson was among the first who aspired to and was capable of bringing the myriad commercial messages of

a modern multinational company into coherent creative focus. His society-shaking, yet always people-pleasing, work was no simple exercise in abstraction. It was solidly based on principles that he took pleasure in experiencing (and then abstracting) from his own life, work, and travel. While other designers sought, or settled for, purely visual solutions, Nelson was by nature unable to solve a problem stylistically; he was driven to quality, appropriateness, and innovation.

Abercrombie positions Nelson at the nexus of modern design, and renders him on intimate terms with such luminaries as Charles Eames, Buckminster Fuller, Alexander Girard, Philip Johnson, Isamu Noguchi, and Minoru Yamasaki. The key to Nelson's success is that he represented a new type of model for what a designer could be—not merely literate, not merely visual, but somehow both at once. He was not simply a form-giver, but a conceiver of new relationships between competing ideas, meanings, and, very often, people.

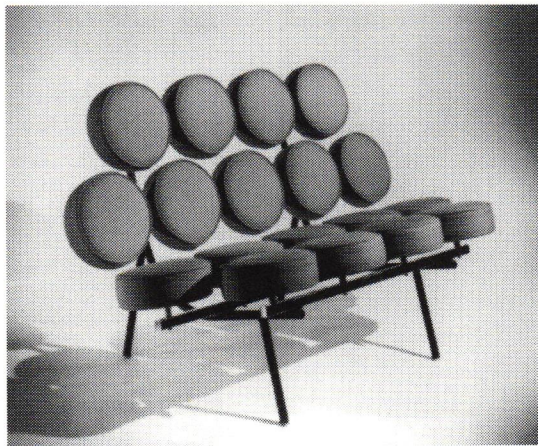
To designers at the end of the 20th century, Nelson offers a model of how one might keep curiosity and playfulness alive, even as one traverses increasingly intellectualized passages, and as the possibilities for disconnection between emotion and action become more profound. Rather than become a modern stylist, Nelson invested in the design process itself. He recognized that each project might be a source of education, hope, and enlightenment.

*George Nelson* exposes its subject as a problem-solving, problem-enriching connectionist, regularly alluding to his unceasing tendency to see things in context, for example, referring to his education at Yale as "the sort of training that encourages seeing things as related." In this way, Abercrombie echoes thinkers such as Gregory Bateson, whose phrase "Search for the pattern that connects" might well



Four of the many designs George Nelson created for the Howard Miller Clock Company in the late 1940s and early 1950s. (From *George Nelson*.)

The Marshmallow Love Seat (1956) was one of the many highly visible furniture designs George Nelson created for Herman Miller in the 1950s. (From *George Nelson*.)



have been Nelson's own. Abercrombie's seamless integration of the many Nelson quotes and letters, various cultural references, and the designer's developing work testifies to the author's deep understanding of the material at hand. That Nelson's sardonic complexity comes through clearly is a tribute to Abercrombie's facility as a writer. For example, he recounts a remark Nelson made to Ivan Chermayeff: "Ivan, did you ever see a new building that looked as good as a hole in the ground?" Similarly, after a young reporter runs up to him at the Aspen Design Conference and asks if anyone important is down at the big cookout, Abercrombie reports Nelson replying, with deadpan aplomb, "No, everyone important is dead."

While the book is filled with similar such illuminating, humorous material, it would have benefited from certain clarifications. For example, what is the role played by Ray Eames? She is never mentioned, but her husband, Charles, is a regular subject. What is the role played by either of Nelson's wives? First wife Frances "Fritzi" Hollister goes unmentioned except in the biographical chronology, and second wife Jacqueline Griffiths' presence in the book is negligible. What about the role of Nelson's family? His son, Nico, is mentioned in passing, as if he were a small finite project. What of Nelson's personal beliefs and political leanings? We learn nothing of his politics or his feelings about such world events as World War II and the Korean or Vietnam conflicts. The only sense of Nelson's proclivities as a person is intimated by Abercrombie's and Sottsass' recurring reference to his smoking and drinking—his being enveloped in a holy cloud of cigarette smoke, his multiple-martini lunches, and his ability to "consum[e] the entire stock of the local bar." Such details, however, hardly constitute a fair or full treatment of Nelson the man.

On the visual level, what is missing from the book

is a graphic exploration of Nelson's creative process. In the "Notes" section, we learn that he kept project diaries for years and years, but we never see a single page of these. I want to know more about Nelson's thought process—I want this book to give me a deep sense of his cognition at work. I want to palpably experience Nelson's mind as it burns on a project, and I want to experience it through a range of visual and anecdotal material. Nelson, as Sottsass states in the foreword, was a man who knew "how complicated it is to know something, how complicated it is to imagine the future, how complicated it is to design metaphors with at least a vestige of reliability." That is the Nelson I want to see documented. Even a transcript, a verbal record of his never-resting intelligence, would be illuminating. Sadly, the book offers only standard fare—photos of renowned finished products, prototypes, and occasional architectural sketches.

Because of this, *George Nelson* looks like a standard "important designer monograph." The book is technically well-executed, with a clear articulation of images to text and a liberal use of white space, but it could have been so much more. While MIT Press has created a rich tradition of well-designed design books, this one deserved special attention, to complement Abercrombie's reflections and insights. It is a missed opportunity—congruent, perhaps, with the very same missed opportunities that haunted Nelson throughout his career. The enduring irony of this book is that, while it showcases Nelson as an accomplished design humanist, the very human aspects of his life are hardly to be found.

Am I asking too much from what is already a thick, rich, and tasty book? You bet I am—and I believe the Nelson I met with in New York in the early 1980s—acerbic, confrontational, direct, disillusioned, and worn down by a lifetime of trying to survive the discrepancies between what was and what might yet be—would have felt the same way. ☼

# surveying design

EVE M. KAHN

For the next decade a spate of guidebooks and handbooks will undoubtedly try to summarize industrial design's first one hundred years. Unfortunately, the perfect database is a long way off. How long will we have to wait for a continually "updateable" CD-ROM package with clips of designer interviews, products in motion or manufacture, and design expositions in progress, narrated with the wit, pithiness, and descriptive power of Sir Nikolaus Pevsner's *Buildings of England*? For now, we must be satisfied with books that are limited in content and not always consistent or fresh in point of view. However, we can at least praise those publications that admit their limitations up front and thoroughly cover all they deem within their purview.

*Landmarks of Twentieth-Century Design*, edited by Kathryn B. Hiesinger and George H. Marcus, divides the century's design output into decades, a chapter per decade of thirty to fifty well-reproduced images, arranged in chronological order. Each chapter begins with a short introduction and the whole book culminates in an end-section of some three hundred handy biographies of significant designers and firms, each entry replete with bibliographies. This generally well-organized and carefully fact-checked book is marred by some tiny problems, such as minor misspellings; and while the index is admirable for headings of object types, making it possible to scan every chair or fabric mentioned, the lack of any sort of type differentiation to indicate the pages that have images with full-blown captions, is frustrating.

The introductions set forth the decades' major influences: geniuses at their peaks, well-received expositions, advances in materials technology, and the decline of the previous decade's theories. The writing is not sprightly but does evoke each era's idealistic sense that it was expressing and changing the zeitgeist through design, "to create new forms for a clean, efficient new world through modern technology" in the 1920s; or "to exploit the aesthetic effects of dynamic tension, movement, and the insubstantiality of materials" in the 1980s. The extended captions (a hundred words or more) on the four hundred "greatest design hits" of the century explain the object's purpose, construction, and continuing appeal, rarely devolving into gush or designpeak (for example, the brightly colored shapes in a Mitsuo Kat-sui poster are described as "eloquently testifying to

the aesthetic and expressive power [that] technology can wield if imaginatively applied by an artist."

The foreword explains the parameters for the selection of the top four hundred designs: the rise and fall of modernism. So it makes sense that important regional figures like Josep Maria Jujol (Catalonia), Jože Plečnik (Slovenia), William Wurster, Bernard Maybeck, Paul Tuttle, Richard Neutra, and the Fongs (all based in California) are missing, and that no one in the book represents the persistent classical vein that stretches from Karl Friedrich Schinkel through Biedermeier, to 19th and early 20th century Americans like Edith Wharton and Ogden Codman; from Elsie de Wolfe and McKim, Mead & White to 20th-century European designers like Jean-Michel Frank, Syrie Maugham, Baguès Frères, René Prou, and Gilbert Poillerat; and into our own time with the dispersive likes of Billy Baldwin, Ralph Lauren, Robert A. M. Stern, and Leon Krier. It's also understandable that the book ignores eccentric yet widely imitated craftspeople such as Albert Paley, Wendell Castle, and Beatrice Wood; kitsch maestros like Morris Lapidus, Alphonse Mucha, and Peter Max; and prolific producers of consumer goods like General Motors' Harley Earl, Montgomery Ward's Anne Swainson, and Sunbeam's Ivar Jepson.

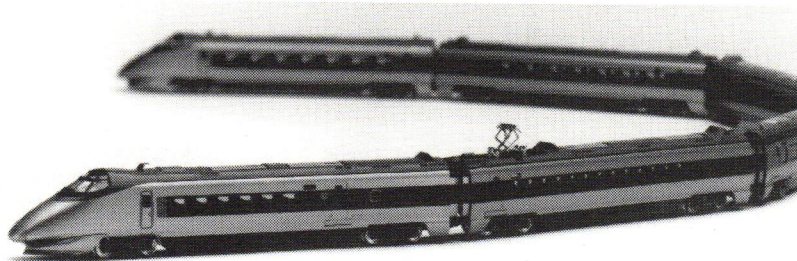
It's more difficult to fathom why only scant attention is given to fashion and why crucial historic figures like Christopher Dresser and the Herter Brothers are absent. Why does the book include design-significant artists like Egon Schiele and Ben Shahn, but not surrealist influences like Hannah Höch and John Heartfield and Pop and post-Pop icons like Robert Indiana, Andy Warhol, Claes Oldenburg, Frank Stella, and Keith Haring? Why are Japanese designers so well served, but the Italians less so (where are Piero Fornasetti, Aldo Rossi, Alberto Meda)? And why does this book date itself by ignoring both the heroes and villains of the 1990s, such as the cartoony Chicago architect Jordan Mozer, the hyperproductive manufacturing firm Vitra, the Gehry-kinder of Los Angeles like Thom Mayne of Morphosis, Michael Rotondi, and Frank Israel, Eric Owen Moss, and countless younger graphics hotshots like Chip Kidd, Tibor Kalman, David Carson, Paula Scher, and Emigre, not to mention oldsters like Ivan Chermayeff and Milton Glaser?

*The Design Encyclopedia* by Mel Byars casts a much wider net than *Landmarks of Twentieth-Century*

LANDMARKS OF  
TWENTIETH-CENTURY  
INDUSTRIAL DESIGN:  
AN ILLUSTRATED HAND-  
BOOK, Kathryn B.  
Hiesinger and George H.  
Marcus, Abbeville Press,  
1993, 432 pp., illus.,  
\$55.00.

THE DESIGN ENCYCLO-  
PEDIA, Mel Byars, John  
Wiley & Sons, 1994,  
700 pp., illus., \$60.00.

JAPANESE DESIGN:  
A SURVEY SINCE 1950,  
Kathryn B. Hiesinger  
and Felice Fischer,  
Philadelphia Museum  
of Art, 1994, 236 pp.,  
illus., \$30.00 (paper);  
cloth edition by Harry N.  
Abrams, 1995, \$60.00.



Toy model of the Super Limited Express Tsubasa bullet train, by Kenmochi Design Associates, manufactured by Tomy; 1993. (From *Japanese Design*.)

*Design*. Its four thousand alphabetical entries refer mostly to designers, firms, and factories (more than a thousand words for major figures). The entries also include bibliographies, and the book concludes with a list of major design expositions dating back to 1851. Interspersed amid the by-name entries are definitions for major movements and principles, such as arts and crafts, functionalism, Vienna secession; schools like the Soviet Vhutemas; loose or formal design fraternities like the Soviet constructivists' OSA (Union of Contemporary Artists); and a handful of important materials and technical or scholarly terms like fiberglass, Formica, *japonisme*, and *rya* (a rough Finnish weaving process).

There's a kind of kitchen-sink indiscrimination to the book. Sometimes it is a virtue: All the major historical figures and craftspeople are included, as well as many notable regional figures, classicists, and emerging architects and designers. The Mission Inn in Riverside, California, with its specially commissioned arts-and-crafts furnishings appears, the glamorous art deco ocean liner *Normandie*, and the Maharaja of Indore, who commissioned furniture for his palace from the likes of Le Corbusier and René Lalique. The summaries range from dry resume recitations to vividly detailed accounts, as in the entry on Chilean society hostess Eugenia Errazuriz, which describes her fondness for jasmine scents and black Chanel dresses and the profound influence of "her aesthetic, with its carefully contrived Mediterranean simplicity as a setting for a few well-chosen pieces."

But the book is somewhat impaired by sloppy organization and fact-checking; for instance, the 1988 exhibition "Deconstructivist Architecture" at the Museum of Modern Art in New York, appears in Philip Johnson's biography as "Deconstruction," and in Wolf Prix's as "Deconstructive." Additionally, the first page of listings under "K" are out of order. The 118 photos are bound amid the entries in four unlabeled batches of no discernible theme, and are not cross-referenced in the text. And while the author states in the introduction that "some limits had to be imposed," that he left out "fine artists, photographers, architects, and graphic, fashion, and vehicle

designers" and concentrated on "designers of furniture, textiles, glass, metalware, wallpaper, and interiors as well as ceramists, industrial designers, and interior architects," these categories are blurry, of course, and the selections sometimes seem arbitrary.

The antidesign movement receives a listing, but deconstructivism does not (it is only referred to in several other entries); Oscar Niemeyer appears while Louis Kahn, Paul Rudolph, and Hans Scharoun do not; Arquitectonica, Coop Himmelblau, and Rem Koolhaas, but not Frank Israel or Morphosis. Japanese designers get short shrift as well, but interested readers should turn to *Japanese Design: A Survey Since 1950*, the catalog companion to the exhibition that opened at the Philadelphia Museum of Art last fall, for more detailed treatment. Byars' *Encyclopedia* does not include the clever melders of Japanese and Western tradition such as Isamu Kenmochi, Sinya Okayama, and Riki Watanabe; design firms like GK and KAK; and design-sensitive manufacturers like Tendo Mokko, Olympus, Sanyo, and Sharp. IBM made it, but not Apple or Vitra; the jeweler Joseff of Hollywood but not Morris Lapidus; Joseph Urban, set designer for Florenz Ziegfeld, the Metropolitan Opera, and numerous Hollywood films, is included, but not Anton Furst of *Batman* fame; James Whistler is recognized, primarily because of his decorated Peacock Room, but not Roy Lichtenstein for his outlandish plates, tea sets, and chairs.

By contrast, *Japanese Design* is an admirably thorough and gloriously colorful study of a narrow field, with 255 captioned images of everything from bullet trains to bustiers and rice cookers (plus 146 biographies), all arranged in chronological order. The volume opens with nineteen brief essays surveying the history of Japanese design, focusing on design categories (fashion, graphics, packaging), issues (education, government support), and important design patrons and practitioners. There are a few pockets of vague hype ("the key to the future lies in giving true value to design") as well as many interesting anecdotes (such as how the Matsuya department store attracted Westernized Japanese yuppies by replacing its traditional circle symbol, which evoked rolls of kimonos, the store's original mainstay, with a Roman character logo). The text type conveniently turns to all capital letters to indicate any individuals or companies with full-blown biographies at the book's end.

Despite the inevitable fate of all these design reference books—to be doomed to obsolescence upon publication—they are all essentially solid. They will be valuable to libraries biding their time until more evolutionary media such as CD-ROM arrive. ☼

# pipe dreams

## ALICE T. FRIEDMAN

With technology, as in life, it pays to remember the lyrics of the old song: "You don't know what you've got 'til it's gone." The broken toilet, the disconnected phone, the defunct, defrosting refrigerator, the crashed hard-disk drive—we take them for granted until they break down, or "let us down," the more common, anthropomorphizing view of technology's failures. Who among us has not used the words "love" and "hate" about a computer, or experienced the exhilaration of joy and the depths of despair—or rage—in relation to one? We tend to treat machines as if they are invisible, until their absence or inability to perform reminds us of their impact not only on our day-to-day activities but also on our view of the world and its relational structure. Machines, both as extensions and symbolic representations of human activities, play a far greater role in shaping the culture and the built environment than we have been willing to acknowledge.

For this reason, three recently published books—*Corpus sanum in domo sano: The Architecture of the Domestic Sanitation Movement*, *The Bathroom, the Kitchen and the Aesthetics of Waste: A Process of Elimination*, and *Mechanical Brides: Women and Machines from Home to Office*—are welcome additions to the literature of architectural history. Although each was published in conjunction with exhibitions of the same titles, only *Corpus Sanum* is in any sense an exhibition catalog, as it is the only one that includes a list of the objects displayed—principally books and prints drawn from the collection of the Canadian Centre for Architecture (CCA). It is also by far the most modest of the three books, with a short yet informative, scholarly essay by Annmarie Adams (in French and English) that briefly introduces the themes of the exhibition: the Domestic Sanitation Movement of the late 19th and early

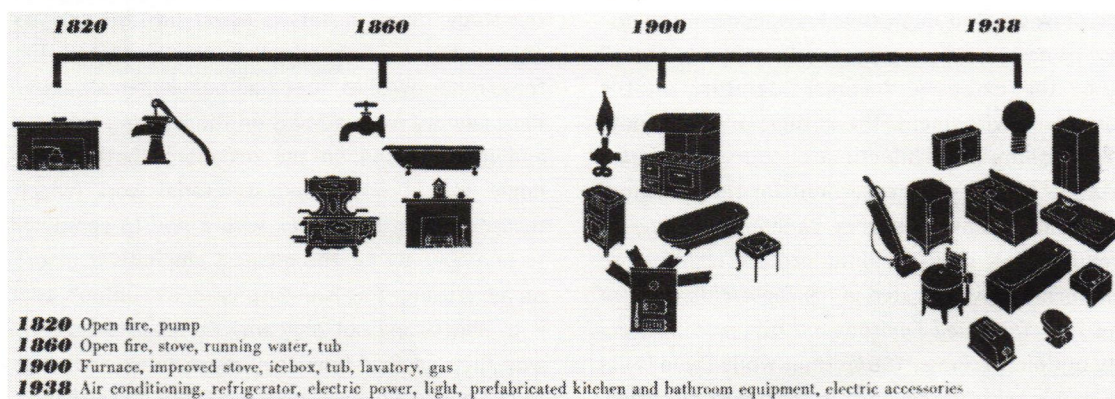
20th centuries; environmental notions of disease; the conflation of the terms "house" and "body" within the housing reform movement; and the assignment of responsibility for domestic cleanliness to women. None of these themes is explored in detail, but ample documentation of resources is provided in both the footnotes and the checklist of objects. The exhibition was intended to make the CCA's holdings in this area of study better known to researchers and to the public, and the catalog thus forms a valuable permanent record and bibliography on the subject.

*The Bathroom, the Kitchen, and the Aesthetics of Waste and Mechanical Brides*, both by Ellen Lupton, with J. Abbott Miller as coauthor on the first, ably stand independently as ambitious essays on the cultural significance of machine technology in the home and workplace. Both essays are extensively footnoted and include select bibliographies, and both make a serious effort to present a creative interpretation of their subjects rather than a simple narrative description or cultural history. Illustrations throughout the texts evoke and, in some cases, parallel the exhibitions out of which they grew, but neither is a record or a catalog of specific works. Objects are, in any case, only part of the stories told in these projects. Both use a combination of texts, objects, and images to focus attention on familiar machines and widely held attitudes in the first half of this century in the United States and Europe, pointing out the ways in which design, new technologies, and advertising encouraged women and men to enact cultural values in their own lives. The strength of this approach, in both the exhibitions (which included some interactive exhibits) and the books, is that it leaves to the audience the pleasure of recognizing other examples and making connections to the present.

**CORPUS SANUM IN DOMO SANO: THE ARCHITECTURE OF THE DOMESTIC SANITATION MOVEMENT**, essay by Annmarie Adams, Canadian Centre for Architecture (Montreal), 1991, 31 pp., illus., \$9.95 (Canadian).

**THE BATHROOM, THE KITCHEN, AND THE AESTHETICS OF WASTE: A PROCESS OF ELIMINATION**, Ellen Lupton and J. Abbott Miller, Princeton Architectural Press, 1992, 75 pp., illus., \$19.95.

**MECHANICAL BRIDES: WOMEN AND MACHINES FROM HOME TO OFFICE**, Ellen Lupton, Princeton Architectural Press, 1993, 65 pp., illus., \$19.95.



Diagram, dated 1938, showing the expansion of the kitchen and bathroom: "The mechanical core of the home has become increasingly complex and all essential." (From *The Bathroom, the Kitchen, and the Aesthetics of Waste*.)

*The Bathroom, the Kitchen, and the Aesthetics of Waste* is the more complex and original of the two books. Its ambitious thesis is suggested by its subtitle, *A Process of Elimination*, and is explained by the authors on the first page of the introduction: "By the phrase *process of elimination* we refer to the overlapping patterns of *biological* digestion, *economic* consumption, and *aesthetic* simplification." Here modern technology and design for the bathroom and kitchen are considered not simply within the context of American attitudes but as a representation in the broadest sense of the culture's fascination with cleanliness, bodily processes, and consumption—the desire both for food and for an endless supply of new products. The authors present the development of new products and their planned obsolescence as paired preoccupations which recapitulate the operations of consumption, digestion, and elimination. This approach puts the body, its needs and functions, in a key role for the history of design and ultimately results in a view of the streamlined style of the 1930s as an expression of America's preoccupation with the removal not only of wasteful ornamentation but also of dirt and human waste (seen here through the lens of Freudian theory).

Some of this may strike readers as heavy-handed rhetoric in pursuit of metaphor. Consider, for example, the following observation, offered without comment: "Although it raised the cost of conducting business, advertising was defended as a laxative for hastening the flow of goods through the economy." The authors sometimes stretch to make their points, yet by and large their arguments and the evidence they offer hold up impressively.

Chapters on housekeeping, personal hygiene, the bathroom, and the kitchen provide detailed histories of household technology and products. Along the way we encounter a great deal that is new and interesting; each chapter is thoroughly researched and documented. Lupton and Miller are widely read and draw on their impressive knowledge of the history of design, advertising, and housework, as well as of the extensive feminist literature on the domestic environment. The authors also take note of the failure of architectural discourse to address issues of gender and to account for the consumer in general, invoking Reyner Banham's critique of architecture's long-standing neglect of function and technology, as stated in his *The Architecture of the Well-Tempered Environment* (Chicago: University of Chicago Press, 1984). Thus, while there is little that is expressly feminist in the book's approach,

the emphasis on the body and its relationships to economics and power reveal a debt to feminist sources. The combination of design history, feminist theory, and material culture makes this book an important contribution to the discussion of domesticity now occurring in a number of fields.

*Mechanical Brides*, too, makes its thesis clear at the outset. It is both more explicitly feminist and simpler than *The Aesthetics of Waste*. Lupton writes:

The sexual division of labor is a central feature of the modern home and office. Certain tasks, accomplished with certain tools, have become associated with "women's work," while others traditionally have been assigned to men. Mechanical devices, from the washing machine to the typewriter, are designed to perform work: The work they do is cultural as well as utilitarian, helping to define the differences between men and women.

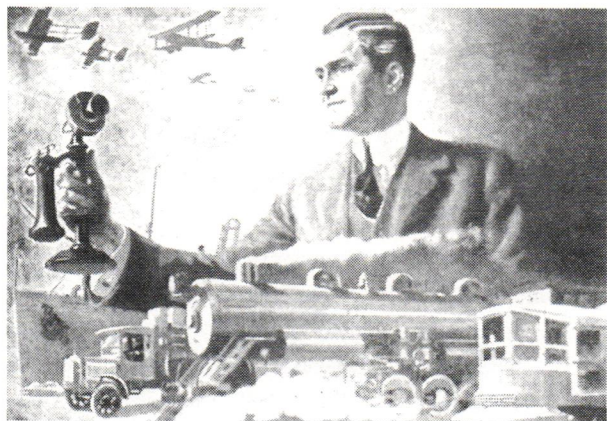
Thus gender, as a set of arbitrary categories constructed and reinforced through culture and design, is immediately placed at the forefront of the essay; that this was also true of the exhibition at the Cooper-Hewitt National Museum of Design in New York (where Lupton is a curator) marks it as intellectually ambitious and even daring. Her text takes the argument still further:

As a feminist study of design, this publication looks critically at the values that distinguish the experiences of women and men. Every history has a bias; by calling oneself a feminist, an author names the position from which her story will be told. Accounts of design that claim to speak in a neutral voice tend to center, by default, on male designers, inventors, entrepreneurs, and other *producers* of culture. Women, as the buyers and users of numerous consumer products, are a crucial field against which to view modern design.

The role of women as consumers and users of household and office machines is the primary concern of this study; design history is woven into the analysis only in terms of its relevance to this theme. The focus is narrowed to three traditionally female activities: laundry (with a focus on the washing machine and iron), talking on the telephone (both in the home and at work), and secretarial work (which focuses on the typewriter, with a nod to computer technology). By far the greatest emphasis is placed on advertising; this is unsurprising, as Lupton's goal is to understand not only why the objects look the way they do, but how they represented and reinforced gendered ideas about work and domesticity.

A woman embraces her phallic ironing board; Magla Products, 1956. (From *Mechanical Brides*.)





Lupton uses concepts and terms usually reserved for academic discourse—such as gender, fetishism (in both the Marxist and Freudian senses), and the domestic ideal—in a straightforward, relatively jargon-free manner. The “brief biographies” of the key objects that form the book’s principal chapters—“Sex Objects,” “Love, Leisure, and Laundry,” “The Voice with a Smile,” and “Office Politics”—trace these ideas through the evolution of design, through changing ideas about the environments in which these machines functioned, and through popular advertisements, making a strong argument for a feminist, consumer-based approach. While there is much to ridicule in the “glamorous” images of women’s work offered by advertisements—a woman hugging an upright, phallic ironing board, for example, or drawing a lipstick heart on the clothes dryer—it is a short step to the imagery and attitudes of our own day. The lessons learned from “reading the social text of the designed environment” in this way are, with very few lapses, allowed to reveal themselves without tendentious explanation.

The sections on the telephone and the typewriter are the strongest, perhaps because the other subjects—the domestic environment, housework, and related technology—have been so thoroughly discussed in recent years by feminist scholars like Dolores Hayden, Gwendolyn Wright, Susana Torre, Susan Strasser, and Ruth Schwartz Cowan, all of whom Lupton acknowledges and cites. Still, even the section on housekeeping makes a valuable contribution by shifting the focus to architecture and product design. It is refreshing to read a text in which products are discussed in terms of design and not only as social history and material culture.

Ultimately *Mechanical Brides*’ most significant contribution is its demonstration of how thoroughly attitudes toward technology reflect cultural values in general and gender in particular. Categories of work and relationships of power appear natural, thanks to the power of advertising and the daily reinforcements of conventional behavior through which architecture and designed objects are used. Lupton’s text and exhibition represent a courageous attempt to bring a serious analysis of this subject to the public. But there is still a great deal of work to be done: detailed histories of the programs and patronage of specific buildings must be compiled; feminist histories of furniture design and of building

types (office buildings in particular) need to be written. In this regard, we would be wise to remember a point Lupton makes in her chapter on the telephone and its use by female receptionists: “Cultural expectations about the behavior of female employees parallel expectations about communications devices: Both are asked to serve as passive hosts to a drama played out by others.” As these books suggest, future studies of buildings and designs of all types ought to investigate these dramas, their casts of characters, and the props that have the power to transform empty stages into signifying cultural environments. ☼

Men and women are associated with technology in different ways, as this pair of 1920 AT&T advertising illustrations demonstrates. The female telephone operator looks on the earth maternally, the phone line umbilical-cord-like. For the male engineer/executive, the phone is a vehicle of progress, akin to the train, plane, and automobile. (From *Mechanical Brides*.)

# a cognitive approach to design

## W. BERNARD CARLSON

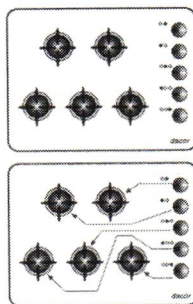
TURN SIGNALS ARE THE FACIAL EXPRESSIONS OF AUTOMOBILES, Donald A. Norman, Addison-Wesley, 1992, 224 pp., \$21.95 (cloth); \$10.95 (paper).

THINGS THAT MAKE US SMART: DEFENDING HUMAN ATTRIBUTES IN THE AGE OF THE MACHINE, Donald A. Norman, Addison-Wesley, 1993, 304 pp., \$22.95.

What is the rationale for the relationship between the burners and the controls of a stove top? (From *Turn Signals Are the Facial Expressions of Automobiles*.)

Donald A. Norman is a cognitive scientist with a mission. His two recent books, *Turn Signals Are the Facial Expressions of Automobiles* and *Things That Make Us Smart: Defending Human Attributes in the Age of the Machine*, call attention to his belief that technology is controlling people, rather than people controlling technology. Designers are creating products and systems that do not sufficiently address the physical and mental capabilities of users, forcing people to conform to the standards of the machine. Norman maintains that the solution to this problem lies in using cognitive science to develop a theory about how humans interact with technological artifacts. Echoing the motto of the 1933 Chicago World's Fair—"Science Finds, Industry Applies, Man Conforms"—Norman's new slogan, as stated in *Things That Make Us Smart*, is "People Propose, Science Studies, Technology Conforms."

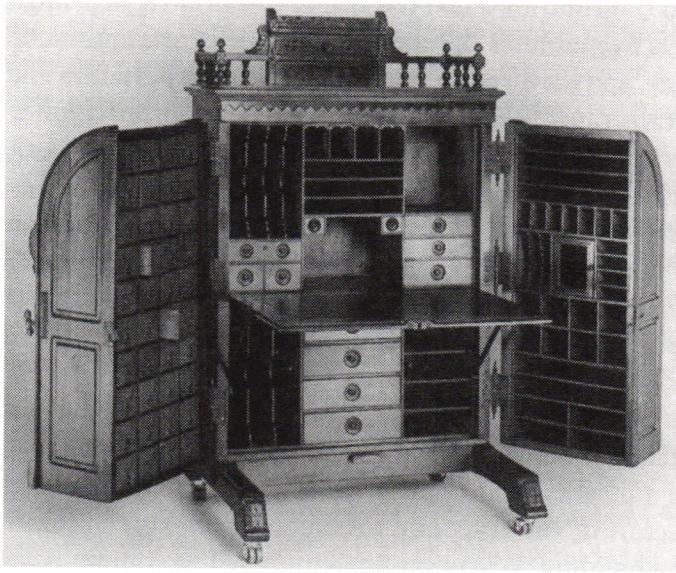
Norman began his crusade for user-centered design several years ago with his first popular book, *The Psychology of Everyday Things* (New York: Basic Books, 1988), which was republished in paperback in 1990 by Doubleday under the title *The Design of Everyday Things*. In this book, Norman uses familiar objects—door handles, faucets, light switches, et cetera—to argue that people employ devices on the basis of how they perceive them to function, rather than how the designers may have intended them to function. In his second popular book, *Turn Signals Are the Facial Expressions of Automobiles*, Norman cites additional examples of poorly designed objects from daily life, reserving special criticism for electronically controlled bathtubs which require one to read a manual before operating, and the automated subway ticket system in Sydney, Australia, which necessitates that personnel be on hand to explain each step of purchasing a ticket and boarding the trains. Intended as "a lighthearted and amusing treatment of important topics," *Turn Signals* is at its best when Norman discusses how technologies shape human communications—how American families use refrigerators as



message centers, for example, and how turn signals permit drivers to communicate their feelings and intentions. Although at times entertaining, Norman generally comes across as a crabby crusader. While he complains about the design of many everyday objects, he doesn't offer much in the way of a solution. I suspect most design professionals would quickly tire of this book as it recounts the sort of complaints they surely hear at cocktail parties.

Fortunately, Norman formulates a partial solution in his third book, *Things That Make Us Smart*. He begins by positing two types of cognition, experiential and reflective. Experiential cognition is "a state in which we perceive and react to the events around us, efficiently and effortlessly"; his favorite example of experiential cognition is watching television. Norman characterizes reflective cognition as a state "of comparison and contrast, of thought, of decision-making. This is the mode that leads to new ideas, novel responses." He then proposes that different technologies help with experiential or reflective cognition. With a nod to cultural critic Neil Postman, Norman is deeply concerned that the entertainment industry is rapidly appropriating all forms of information technology, with the intent of using it to enhance experiential cognition and eliminate reflection. As an example of this trend, he cites multimedia computer packages which delight the senses with lively sounds and pictures but which fail to feed the intellect with any deep or wide range ideas and information. (Notably, Norman is not simply an arm-chair critic of multimedia packages; he has published a CD-ROM title with Voyager entitled *Defending Human Attributes*.)

Given this trend, the real crusade is to create what Norman calls "cognitive artifacts," technologies that enhance reflection and analysis. To design better cognitive artifacts, we must recognize that thinking and intelligence are based on representation—that humans recognize patterns, create abstractions, and solve problems by creating representations. These representations may be internal or external to the mind, and they may involve words, symbols, and pictures. "The important point," writes Norman, "is that we can make marks or symbols that represent something else and then do our reasoning by using those marks."



"A place for everything, and everything in its place," proclaimed the advertisement for this desk by the Wooton Desk Manufacturing Company; ca. 1800. It promised to make the user "master of the situation," as does the latter-day "piling" cabinet. (From *Things That Make Us Smart*.)

To illustrate what cognitive artifacts are, Norman discusses the simple sketches people use to solve problems (as in a game of tic-tac-toe), the various graphs they rely on to sort through information about airline flights, and the assortment of cabinets, bulletin boards, and Post-It notes ("the decade's most important cognitive artifact," in his opinion) employed by office workers. Norman also makes the important point that many electronic products are difficult to use because the internal representations used to store and process information are often meaningless to the user. What these devices need are surface representations that draw on familiar motifs. As an example of a poor cognitive artifact, Norman deconstructs a voice-message system used for providing airline flight information. The system fails not only because it overloads short-term memory by asking the caller to remember more than five choices at each level, but also because it provides information on only one flight at a time, thus precluding comparison and analysis. In all these cases, Norman shows that useful representations are those which convert problems into easy experiential tasks; effective representations take into account the cognitive strengths and weaknesses of human users. Thus, the solution to lousy design of both cognitive artifacts and everyday objects is that designers simply must figure out what representations people have in their heads when they use a product.

But for all his valuable observations about what makes for good design, his formulation of the issues is troubling in that it lacks a sense of social process. Many designers would no doubt agree with Norman's call for making technology conform to human needs rather than vice versa, but he is strangely reticent about how they might reach this goal. For all his interest in

design, he seems indifferent to how designers work in a world filled with material and economic constraints. He does not consider how designs frequently result from a series of compromises made in order to mass-produce a product at a price that can be afforded by a large number of consumers. Norman also seems unaware that designers often must negotiate and compromise with other individuals and groups within the corporation, and that these negotiations often shape the final character of a product.<sup>1</sup> If designers are going to take Norman's cognitive precepts into account, then Norman needs to say something about how these precepts might be integrated into the pragmatic, day-to-day process of design. Fortunately, Norman has left his university position to work for Apple Computer, and perhaps his experience there will permit him to investigate how designers work.<sup>2</sup>

Experience in the corporate world may also help Norman develop a more sophisticated perspective on technology and power. Throughout both *Turn Signals* and *Things That Make Us Smart*, Norman presents technology as an agent that rules human lives. Technology decides, Technology does this, Technology does that—occasionally, Norman does concede that "technology did not create itself, it has all come from us," but this view is hardly accurate. Norman seems oblivious to the fact that people create and deploy technology to shape their relations with other people, and that moreover, only some people have the opportunity to use technology to advance their interests.<sup>3</sup> Since at least the Industrial Revolution of the 18th century, managers and owners have chosen to use machines as a means of getting more work out of workers. Much of 20th-century engineering—in particular, the approach of Frederick Winslow Taylor—has been to

shift reflection and thinking away from workers and consumers and to place decision-making in the hands of engineers and managers. This shift was undertaken in America partly with the best of intentions—to mass-produce a huge array of low-cost goods suitable for an egalitarian society—but this shift nonetheless enhanced the power and status of some groups over others.<sup>4</sup> And unfortunately, despite the seductive promises of computer advertisements, the current Information Revolution may well continue the shift of thinking and power away from workers and consumers.

In his heart, I think Norman knows that it is important to talk about the design of everyday things because poor design reveals the precarious imbalance of power between consumers and corporations. Poorly made, shoddy, and unsafe products tell us more about the callous indifference of corporate systems than perhaps anything else. Likewise, Norman is right to call attention to how we use cognitive artifacts to facilitate problem-solving and to remind us that these mental tools can be so poorly designed that they inhibit reflection and creative thought. The fact that he is a cognitive scientist on a mission is admirable, but for his mission to succeed, he must make explicit the social negotiations that take place in the design process and help us understand the relationship between technology and power. Norman is correct that things can make us smarter, but the real crusade should be to use things that make the world a better place. ✱

#### Notes

1. This view of technological design as a social or negotiatory process has been extensively developed in the history and sociology of technology; as examples see W. B. Carlson, *Innovation as a Social Process: Elihu Thomson and the Rise of General Electric, 1870-1900* (New York: Cambridge University Press, 1991); W. E. Bijker, T. P. Hughes, and T. J. Pinch, eds., *The Social Construction of Technological Systems* (Cambridge, Mass.: MIT Press, 1987); and W. E. Bijker and J. Law, eds., *Shaping Technology/Building Society* (MIT Press, 1992).
2. For an example of an ethnographic study of how designers work, see L. L. Bucciarelli, *Designing Engineers* (Cambridge, Mass.: MIT Press, 1994).
3. For an interesting view of the role of power in technology, see B. Latour, *Science in Action* (Cambridge, Mass.: Harvard University Press, 1987).
4. On the development of mass production in America, see D. A. Hounshell, *From the American System to Mass Production, 1800-1932* (Baltimore: Johns Hopkins University Press, 1984). For a discussion of how engineers and managers shifted the balance of power, consult D. F. Noble, *America by Design: Science, Technology, and the Rise of Corporate Capitalism* (New York: Alfred A. Knopf, 1977). For an especially insightful case study of how engineers shape knowledge and artifacts to advance their professional status, consult G. Cooper, "Custom Design, Engineering Guarantees, and Unpatentable Data: The Air Conditioning Industry, 1902-1935," *Technology and Culture* 35 (July 1994): 506-36.

## creativity MICHAEL E. GORMAN

Cognitive studies of invention have lagged behind those of science, and they typically rely upon conceptual frameworks derived from cognitive studies of scientific discovery.<sup>1</sup> Subrata Dasgupta's book, *Creativity in Invention and Design*, is no exception; indeed, he equates design with discovery. In fact, he makes no real distinction between invention and design, which means that he ignores the growing literature on the psychology of design. (This body of work includes, for example, Donald A. Norman's *Things That Make Us Smart: Defending Human Attributes in the Age of the Machine*, reviewed on page 32.)

In the first section of the book, Dasgupta provides a brief, engaging overview of the literature on creativity. He then describes his own conceptual framework which is a clever synthesis of different computational approaches, including, for example, discovery programs developed by Herbert Simon, Pat Langley, and others, as well as connectionist models of theory change created by Paul Thagard. Dasgupta's computational model of scientific creativity describes how symbolic structures that represent goals and knowledge are transformed into new structures by operations. One of the key processes is spreading activation: When a node representing a concept of object is activated, this activation will spread to related nodes, facilitating the process of knowledge transformation by triggering new concepts and rules.

One of the strengths of the book is the way in which Dasgupta's theory is illustrated by example—in this case, Maurice Wilkes' invention of microprogramming. In 1949 Wilkes and his colleagues at Cambridge University successfully demonstrated a computer of their design, called the EDSAC. Main memory was well organized in this computer, but control circuits were designed in an ad hoc fashion. The arithmetic control unit for another computer, the Whirlwind, built at the Massachusetts Institute of Technology, suggested that one might be able to use a similar structure in the control unit for an entire computer. However, the Whirlwind's control matrix required that the same fixed sequence of signals be generated for each arithmetic operation. Wilkes drew an analogy with programming: His control unit had to have the full flexibility of a programmed computer, but in miniature. He achieved this by integrating two diode matrices, one of

# in invention and design

which stored the control signals themselves, like the Whirlwind, and the other of which controlled the selection of which instructions to issue.

The second part of the book is aimed at demonstrating that a computational theory can be used to explain Wilkes' invention. Generally, Dasgupta's explanation consists of showing how Wilkes' overall goals can be broken into sub-goals which could have activated the appropriate background knowledge and procedures. One would expect such an account to be documented with primary sources—entries from Wilkes' notebooks and his correspondence, for instance—demonstrating that he really followed such a process, but Dasgupta maintains that, in the absence of such primary materials, a plausible reconstruction of events is the best one can do. The Wilkes that emerges in his account is a philosopher's dream: an inventor who marches deliberately through a progression of goals and sub-goals in order to reach a logical goal.

Here, Dasgupta shows his apparent ignorance of the literature on case-based reasoning in design. Experts frequently reason rapidly from analogy with other cases and situations without going through all the propositional steps required by Dasgupta's model.<sup>2</sup> One can counter-argue that these computational steps are really tacit, occurring at some unconscious level, perhaps so rapidly that we see no evidence of them when examining expert problem-solving closely.

One of the ways to test a tacit computational theory is to implement it in the form of a program, and show that it produces output resembling the processes of the expert, in this case, Wilkes. To his credit, Dasgupta wants his theory to be falsifiable. Surprisingly, he does not implement it in the form of a program, as Langley, Simon, Thagard, and others have done with their respective theories. So, by the end of the book's second section, readers may observe how Wilkes' discovery could be reconstructed according to a particular computational theory, but they have no reason to believe that this account is more compelling than a number of other possibilities.

In part three of *Creativity in Invention and Design*, Dasgupta concludes that "the broad picture that emerges is of a Maurice Wilkes who freely draws on a wide variety of knowledge tokens spanning across many different domains and levels of

abstraction as and when required to advance the solution to his particular problem" (emphasis is Dasgupta's). Dasgupta compares Wilkes' approach to Darwin's, whose theory of evolution grew as part of a network of enterprises. But Howard Gruber's analysis of Darwin's networks in his *Darwin on Man: A Psychological Study of Scientific Creativity* (Chicago: University of Chicago Press, 1981) was based on a far more detailed case study than Dasgupta's research on Wilkes. Furthermore, Gruber did not need a computational framework to describe the way in which Darwin connected different levels and domains of knowledge.

Even if one accepts that Dasgupta's model is adequate for Wilkes, it does not mean it will be applicable to other cases, such as that of Darwin. Wilkes is a computer scientist whose methods may fit well with a computer model. An inventor like Thomas Edison, by contrast, pursued multiple simultaneous goals; his knowledge and plans were embodied in sketches, not logical propositions. Dasgupta falls into a common trap in the literature about invention—building a framework on a single case. It is, however, an excellent place to start. Perhaps Dasgupta will turn next to other instances of invention and discovery and show us how his model might shed new light on them. ✱

## Notes

1. For a discussion, see M. Gorman, *Simulating Science* (Bloomington: Indiana University Press, 1992).
2. See for example, J. Kolodner, "Improving Human Decision Making through Case-Based Decision Aiding," *AI Magazine* (Summer 1991): 5268.

CREATIVITY IN INVENTION AND DESIGN: COMPUTATIONAL AND COGNITIVE EXPLORATIONS OF TECHNOLOGICAL ORIGINALITY, Subrata Dasgupta, Cambridge University Press, 1994, 370 pp., illus., \$37.95.



# fordism for architects

## JOHN M. STAUDENMAIER, S.J.

ALBERT KAHN: ARCHITECT OF FORD, Federico Bucci, introduction by Giancarlo Consonni, translated by Carmen DiCinque, Princeton Architectural Press, 1993, 186 pp., illus., \$24.95.

When Henry Ford died in the spring of 1947, an estimated one hundred thousand mourners lined up outside the education building at Greenfield Village to pay their respects. To many Americans, the passing of the man who "put America on wheels" marked the end of an era. Five years earlier, however, the passing of the man whose architectural originality created the physical frame within which Ford's manufacturing revolution matured occurred with considerably less fanfare. Albert Kahn Associated Architects and Engineers, Inc., immersed in wartime production contracts, survived the death of its principal and founder with its superbly organized production system hardly missing a beat. In the slim volume *Albert Kahn: Architect of Ford* by Federico Bucci, Kahn's death, like his life, remains mostly invisible. The author pays little attention to Kahn as an individual, to his motives and personal perspective. Instead, Bucci explores his conceptual contributions to architectural practice and his central role in linking the principles of "Fordism" to the often contradictory practices of the modernist period—which Kahn both embodied and rejected. Bucci's contribution is aptly epitomized in the last paragraph of Giancarlo Consonni's provocative introduction:

Federico Bucci's inquiry into the production of Albert Kahn, Inc. has the merit of offering itself not only as a basis for useful comparisons with the events of the Modern Movement, but also allows complex considerations on the building industry in the twentieth century. In fact it presents the social significance of design work, without neglecting the influence on its outcomes of the methods of labor management within large firms. This book provides groundbreaking work on this subject.

Why was Kahn so little remarked upon in his lifetime, at least among architectural critics? This question, raised by Consonni in his introduction, serves as a sub-theme throughout the book. The work of Kahn, Bucci argues, represented such a bewildering assortment of styles that critics alternated between dismissals of his work as clichéd eclecticism and, less often, frank admiration for a compelling new aesthetic in large factory design.

Much to the dismay of the European avant-garde, Kahn was happy to find "stylistically" specific solutions for each of these needs [of a diverse clientele], demonstrating his ability to swing easily from the functionalism of structures for mass production to the employment of an encyclopedic historical lex-

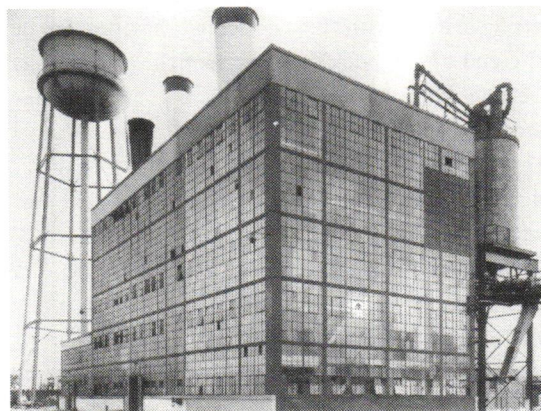
icon for public architecture.

This wholehearted acceptance of eclecticism brought a sort of schizophrenia to Albert Kahn's work. . . . To ignore one of the two parts of Kahn's work, or to take the "inconsistency" of his work as pretext for excluding him from architectural history would be an unfortunate error.

Much to his credit, Bucci avoids a similarly schizophrenic treatment of his subject. Indeed, the great strength of the book lies in his central hypothesis, which synthesizes Kahn's approach with his long and lucrative association with Ford—an association that Bucci interprets as transcending the typical client-architect relationship. In Bucci's reading, Kahn adopted the essential genius of Fordism and applied it to the architectural process on every level. It was a synthesis based on a handful of consistently followed principles. Several of them pertain exclusively to factories. For example, Kahn believed that the design of the factory exterior should be appropriate to the manufacturing technology in use and, as a corollary, interior floor space should be left as uncluttered as possible so that technological changes could be readily accommodated. Kahn's factory designs broke new ground for their innovative use of reinforced concrete, as well as their recognition of the crucial importance of open-floor factory spaces for a dynamically expanding industry. More important was the insight afforded by these practices—namely, that factory architects must integrate their designs with the cutting edge of the production engineer's plans to enable the building to adapt easily to changing production requirements.

Bucci, however, sees the architect-engineer collaboration as one element of a much more inclusive restructuring of the architectural practice itself, one based on the two central dogmas of the Kahn

Chrysler Corporation, Dodge Division, Half-Ton Truck Plant, in Warren, Michigan; Albert Kahn Associated Architects and Engineers, Inc., 1937. (From *Albert Kahn*.)



approach. The first dogma identified the client's stated wishes (e.g., changing production technologies at Ford) and cost/time constraints as the primary determinants of the building's aesthetic. A factory that was completed on time—as in the much-vaunted eighty-one day sprint from the initial phone call from Glenn L. Martin Inc. (February 5, 1939) to the date of first production in the 440,000-square-foot finished factory (April 27)—was "beautiful" precisely because it met and even exceeded the aircraft manufacturer's cost/time constraints. Kahn's functionalism, then, not only embraced but transcended the principle that the building's exterior should visually reflect the production process within: The construction process itself was part of an elegant architectural creation.

The second dogma shows up in Kahn's managerial organization. The firm followed Fordist principles by organizing its staff according to precisely defined roles and carefully monitored work rules, as well as by a policy of using standardized techniques and standardized designs wherever possible. The exaltation of individual architectural genius, which Bucci sees as characteristic of the work of most of Kahn's European contemporaries, gives way to the anonymity of a highly programmed group effort as exemplified by the Kahn home offices in Detroit. Kahn's shop, like the Ford Motor Company, defined precise system design and high-speed throughput as the epitome of sophisticated modern practice.

Bucci has rendered a real service by exploring Kahn's operating principles in perceptive detail. In doing so, he adds to a growing body of literature that calls attention to the remarkable penetration of Fordist principles in American versions of modernism. The Fordist assumption that a sustained expansionary boom would fund and require a constant redesigning of production technology, forever aimed at faster manufacture, together with Ford's penchant for anchoring these rapid changes in virtually unchanging standardized subcomponents, appears to have been adopted by Kahn Inc. with impressive results, especially in terms of the volume of work carried out by the architectural firm in the 1920s, 1930s, and 1940s. Kahn's nonindustrial designs—office buildings, private homes, university auditoriums, and banks—also embody Fordism, not in the manner of the daring functionalist severity of his factories, but in his use of stock design plans put together with cost-effective speed in the highly mechanized Kahn shop.

The book's many attractive qualities, which include a helpful array of illustrations and drawings, are unfortunately marred by two flaws of varying impor-



Fisher Building, Detroit; Albert Kahn Associated Architects and Engineers, Inc., 1928–29. (From *Albert Kahn*.)

tance. The book lacks fluency. Some of the infelicitous expressions might be laid to the door of the translator (the book was originally published in Italian, by Milan-based CittàStudi), but failures in organizational clarity are the author's responsibility. Thus, Bucci might have prefaced his many references to the "scientific management" of work with an earlier treatment of Kahn's organization of architectural practice. By holding this material until chapter three, he renders his earlier references to scientific management elliptical and unnecessarily confusing. In every chapter, I found myself distracted by similarly obscure thematic arrangements. Thus in chapter two, we follow the company through the lean years of the Depression and into a late 1930s rebound. Only then do we double-back to Kahn's Soviet period, which ended in 1932. Bucci's abrupt topical shifts all too often give the impression of a laundry-list of themes rather than a coherent and well-orchestrated presentation.

Moreover, Bucci's errors in historical details reveal a regrettable unfamiliarity with the scholarly literature on Fordism. To cite two examples, the Ford Motor Company produced submarine "chasers," not submarines, during World War I; Ford's Engineering Lab was built in 1923, not 1925, and was adjacent to Henry Ford's Fairlane estate, not the Rouge factory. The book lacks both an index and bibliography, finding tools that ought to be requirements for serious scholarship.

These flaws are unfortunate, primarily because they might deter the reader from sticking with the book long enough for it to deliver its very notable benefits—an understanding of the work of Kahn as one of the most creative and unusual incarnations of Fordism. ⚙

# fiat factory: model of modernism

## PAOLO SCRIVANO

IL LINGOTTO 1915–1939: L'ARCHITETTURA, L'IMAGINE, IL LAVORO, "Archivi di Architettura" series, Carlo Olmo, editor, Umberto Allemandi (Turin), 1994, 350 pp., illus.

When Le Corbusier visited Il Lingotto in 1933, accompanied by Ernesto Rogers, Luigi Banfi, Pietro Lingeri, and Gino Pollini, no one knows if he had the chance to enjoy the gastronomic specialties of Turin. It is certain, however, that on the modernist master's second visit to the immense Fiat factory, he viewed it not only through the thick lenses he wore for nearsightedness but also through the distorting lenses of modernist architectural imagery—an imagery, of course, to which he had been a significant contributor.

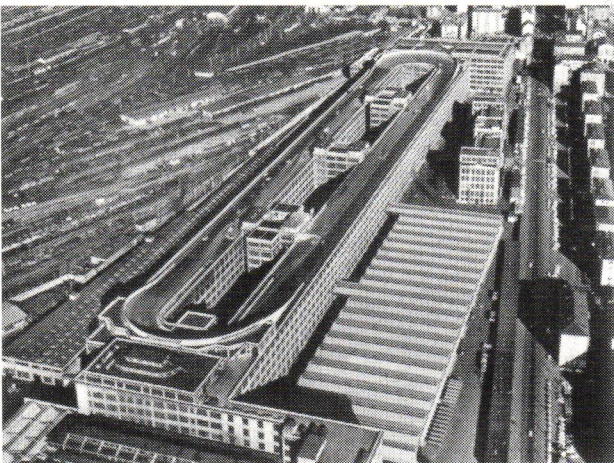
Today, when anyone wants to show a visitor around Turin (admittedly not one of the major stops on the international tourism circuit), Il Lingotto always comes up, serving as a local conversation piece of sorts. Designed in 1914 by Fiat's director of production, Giacomo Matté-Trucco, the factory's straightforward, rectangular form earned it the nickname *il lingotto*, the ingot. Its unmistakable profile on via Nizza is familiar even to those not particularly interested in architecture—an indication that the critical fortune of Lingotto may not be solely attributable to Le Corbusier's *Towards a New Architecture* (1923) or Reyner Banham's *A Concrete Atlantis* (Cambridge, Mass.: MIT Press, 1986). Edited by Carlo Olmo, *Il Lingotto 1915–1939: L'architettura, l'immagine, il lavoro* (Architecture, image, work) gathers a series of articles on the history of the complex during its twenty-four years of operation. The melancholy atmosphere of the building as depicted in the images of Carlo Carria and reproduced on the book's cover captures the spirit of the great industrial block, while the texts reveal an extremely multifaceted understanding of the *grand*

tion; Cristiano Buffa and Peppino Ortolera analyze the significance of Lingotto as a "cultural sign"; Duccio Bugazzi recounts the organization of factory work; and Beatrice Coda Negozio and Carla Lanzarecchia have compiled a list of archival documents.

The history of Lingotto is full of surprises. One discovers that only a few years after its completion, the Fiat factory was already recognized as a prototype of modernist architecture and a metaphor for progress, according to the perception that the symbolic value of architecture weighed heavier than the functional requirements. It is no accident that Lingotto is a witness to the shift of the European fascination with transatlantic culture to a condemnation of its value system, typical of the anti-Americanism of the 1930s. From this viewpoint, the iconographic apparatus that equips the book's texts constitutes an accurate testimony of both the cultural climate of the time and the progressively worldly perception of the complex. The factory becomes a site for receiving princes, kings, political delegations, prelates, as well as intellectuals, artists, and other bourgeois sorts. The test track on the roof proved to be a finish line for not only cars but visitors as well, who followed a curious sort of liberating ascension from the workshops, full of workers, so different from the honored guests, to the open space and alpine panorama offered by the summit of the building. The test track was built on the roof because an astute economic report estimated a potential cost reduction of 60 percent by placing it there rather than on the street.

What is astounding about Lingotto is the proximity of its story, both during its time and today, to the recurring themes of industrial archaeology. The problem of the form-function equation, as well as the imposition of the clients' need for a productive layout, are aspects of its story that continue to have extraordinary relevance. The project and its realization in phases, the fragmentation and heterogeneity of the roles and responsibilities of architects and engineers characterize the construction of any large industrial plant—perhaps more so today than ever before. The Fiat factory demonstrates aspects of a system of labor that are appropriate for industrial construction, and, as might be imagined, puts into crisis the metaphor of the linearity of an architectural project.

Il Lingotto, aerial view of the test track on the roof, Turin, as it appeared in 1970. Design work began in 1914, under the direction of Fiat's director of production, Giacomo Matté-Trucco.



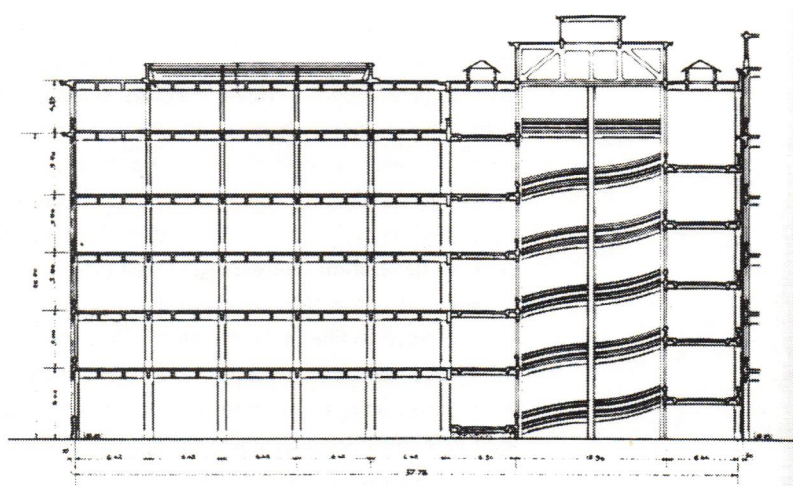
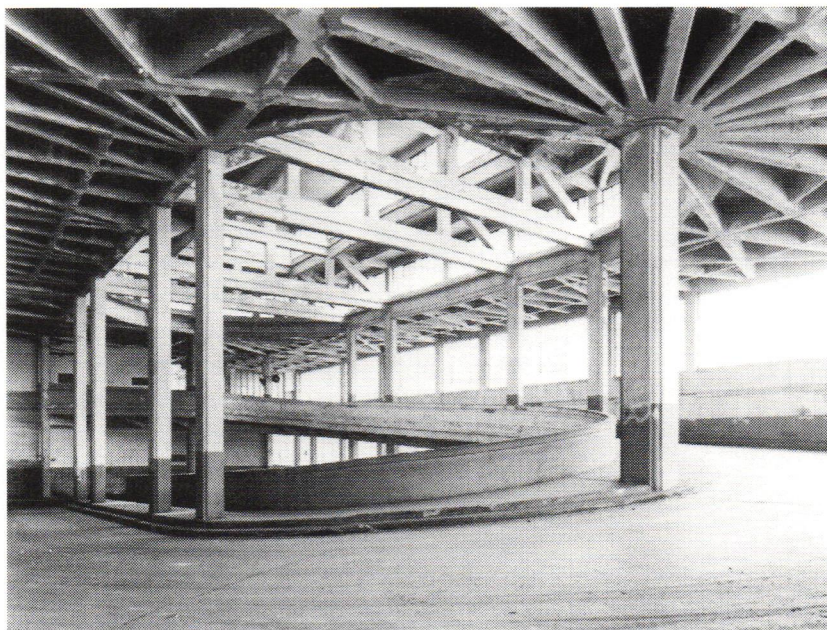
*paquebot* so admired by Le Corbusier. The diverse texts include an introductory essay by Olmo and Daniela Ferrero on the early negotiation of the acquisition of the property; Anee Maria Zoragno writes on the history of Lingotto's construc-

The birth and the continual transformation of the complex follow a different storyline with regards to the building's critical reception. The production model of Lingotto, where vehicles were assembled in stages as they rose from level to level, with the finished products arriving on the roof for testing, was already in use in the Fiat plant on via Marocchetti, built in 1912. More significant is how greatly this model differs from the system used by Ford Motor Company at its plant in Highland Park, Michigan, designed by Albert Kahn. The operation in Turin is more comparable in dimension to American companies such as Dodge, Hudson, Nash Packard, Pierce Arrow.

The construction of Lingotto is not tied so much to the logic of the assembly line as to the need for expanding operations. In fact, the Fiat technicians did not come to the United States to study the assembly line; the "Americanization" experimented by Fiat in a plant in Poughkeepsie, New York, shows the highest use of automation in automobile manufacturing. The progressive mechanization of the assembly line does not come until later, after 1925, and thus Fiat was in no way behind its principal European competitors, Citroën, Peugeot, Renault, Opel, and Morris.

The texts in this volume provide a look at Lingotto through the historical filter of the city and its architecture, and through cultural history and the history of construction. The attentive observer will notice not only the factory's bosque of columns, which adheres to a six-meter-square grid (built according to the Hennebique system of reinforced concrete), and the two cycloidal ramps (built in 1923 and 1927), and the photographs of long banks of Gleason countersinking machines, but the shockingly rapid obsolescence of the Fiat plant as well. But even here there are surprises: Despite its alleged obsolescence in 1925, the plant on via Nizza was probably the most advanced factory in Europe in terms of its rational coordination of work cycles. Lingotto prevails as a myth about architecture and place, a product of history and of social stratification. Editor Carlo Olmo suggests that the perception of the factory's "antiquatedness" relative to its American counterparts comes from an attitude that "puts the image rather than architecture and history in the foreground."

Although the authors chose 1939 as the terminating date of the story of Lingotto, the impetus for telling this story is much closer to the present. This book cannot disassociate itself from the current debate on the transformation of urban industrial districts and the reuse of abandoned work spaces—



issues which were unleashed at the moment of Lingotto's closing. Furthermore, it cannot elude the process of monumentalization that began, albeit perhaps unconsciously, before the departure of the last worker from the factory. The international conference in 1982 on the fate of the Lingotto, as Pepino Ortoleva writes, was more an "act of communication . . . than of edification" on the part of Fiat. The company's decision to consult some of the most noted representatives of the architectural jet set implied the preferred destiny for the building. The resulting proposals, to install a seat of the university in Lingotto or to use it for a convention center, an automobile museum, or a science park, all point in the same direction: the conservation of the building for its recognized symbolic value. It tells of the recognition of the evocative force of Lingotto as a historic site and as emblematic of the convergence of formal and economic values. ⚙

Il Lingotto, photo of the southern ramp, and section drawing of the spiral ramp.

# the poetics of construction

## KARLA CAVARRA BRITTON

AUGUSTE PERRET,  
1874–1954: *TEORIA E  
OPERE*, Roberto Gargiani,  
Electa (Milan) and  
Gallimard (Paris), 1993,  
338 pp., illus., \$130.00.

Le Corbusier wrote in the introduction to his *Complete Works* (1929) that at an early moment in his career he sought out the work of Auguste Perret, whom he considered "the only one on the path of a new architectural direction." Twenty years later, in a 1949 article devoted to the architectural "doctrine" of Perret, the French architect Denis Honneger wrote of his mentor: "Perret will have the glory of having disengaged Architecture from the jargons, provincialism, and dialects in which it has been enslaved for a century. He has endowed Architecture with a new language, pure and clear, intelligible to all, an international language that he speaks in poetry." Indeed, Perret's architectural "language" and the "new" direction it set had a substantial impact on architectural theory and production in the 20th century. Often linked to the "great generation" of architects such as Peter Behrens, Hendrik Petrus Berlage, and Otto Wagner, Perret shared with these "pioneers" a sense of continuity with the past, and their intuitive conservatism made for complex and often discontinuous relations with the personal originality of the younger generation represented by Le Corbusier.

Perret is commonly perceived as the first architect to have deliberately researched a system for reinforced-concrete construction, experimenting with the structural potential of this new material alongside his brother Gustave while working in their family construction business, Perret Frères in Paris, which they inherited from their father in 1905. Auguste Perret's integrity as a builder (or *constructeur*) is most evident in the consistent focus he maintained in his work, with its sophisticated level of control, careful manipulation of material, and thorough technical understanding and insight. Most significant, however, is the single-mindedness with which he pursued a language for architecture and a constructional system that would serve as its syntax. Perret's progressive conservatism led him to a sustained exploration of a particular tradition of building, a search for an understanding that was not just rational but had an intuitive appreciation of the tradition's inner dynamics. Such an understanding of architecture contrasts with the reformist impulse of most "modern" architecture which searched for ways of using space to achieve aesthetic revelations, and to pursue economic and social renewal that would ultimately move architecture beyond its perceived cultural limits. Rather, Perret's purpose was to

explore a language for architecture using the new vocabulary of concrete-frame construction within a traditional syntax of structural rationalism, whereby the language of building would be more evolutionary than revolutionary, holding a dialogical tension between cultural continuity and technological modernization.

By the time of his death in 1954, Perret had garnered a long list of international awards and wide recognition, including election to the French Academy which underscored his title as *maître*, as he was addressed by many colleagues within the architectural establishment. This title of *maître* suggests his institutional prestige as the living embodiment of a tradition. His professional prominence is evident in the number and variety of projects with which his firm was involved: over two hundred and forty projects, ranging from well-known Parisian apartment houses and theaters (Perret's tiny Salle Cortot concert hall at the Ecole Normale de Musique in Paris is still considered acoustically the best piano recital space in the city), the Naval Ministry headquarters, museums, churches, dockyards, and factories, urban schemes for Paris, major postwar reconstructions at Le Havre, and studios for artists such as André Gide, Maurice Denis, Marc Chagall, Georges Braque, Chana Orloff, and Mela Muter. Most of Perret's works were built in and around Paris, although he also did a wide range of work in French colonial Africa (notably Casablanca and Algiers), and in Tunisia, Cairo, Istanbul, Beirut, and Buenos Aires. Like Tony Garnier (1869–1948), Perret was thus associated with the development of an international French culture rooted in the extension of a capitalist, technocratic welfare society.

His status as a master builder secured his ongoing influence. In a piece entitled "The Perret Ascendancy," Reyner Banham wrote: "If the phrase Form-giver of the Twentieth Century applies to anybody, it applies to Perret, for even those who did not accept his detail treatments and surfaces still accepted his basic propositions on structure; those who did not share his academic preferences for symmetry and tall windows still accepted his propositions on frame-and-fill." It is rather surprising, then, given Perret's authoritative contribution to the development of modern architecture, the volume of his output, and the impact he had on the next generation and on Le Corbusier in particular, and especially the alternative

voice he gave to modern architecture, that recent studies on him are rare. Roberto Gargiani's *Auguste Perret, 1874–1954: Teoria e opere* (Theory and work) initiates an appraisal of Perret that encompasses the full breadth of his work, supporting its detailed synopsis with an extensive collection of archival material.

The relative scarcity of significant studies on Perret is perhaps due to the fact that his buildings—with two or three notable exceptions from early in his career, such as the rue Franklin apartments (1903) and the Church of Nôtre Dame du Raincy (1923)—do not lend themselves to modernist sensibilities of graphic or pictorial effect. For students trained to view the history of modern architecture as essentially a history of the avant-garde, with its emphasis on the search for the “new,” Perret’s work remains frustratingly enigmatic: too traditional in its fenestration, too rigorously classical, too repetitive with columns and beams, too restrained—in a word, too banal. But in fact, “banal” is the word that Perret himself used to describe a quality of endurance he sought, so that his work would “seem always to have existed.” His buildings, almost without exception, are composed of formal, cautious geometries and rigid proportions. And this methodical distancing or cerebral dimension of Perret’s architecture—what Manfredo Tafuri has referred to as its “detachment outside of time”—makes his built form often difficult to appreciate, particularly when it is compared, say, to the striking power of the buildings of his American contemporary, Frank Lloyd Wright. There are, however, moments of great expressiveness, such as the sweeping helicoidal freestanding staircase in the Musée des Travaux Publics in Paris (1936), and the staircase in Perret’s own atelier (1928) on rue Rayonard. (Perret insisted that the staircase was the fundamental proof of the status of a civilization.) Starting with the elegant photograph on the jacket cover of the staircase at the Musée, Gargiani’s book will challenge many architecture students’ assumptions that Perret’s work was devoid of expressive power. Indeed, the quality and extensiveness of the illustrative material in this book—which includes photographs, drawings, plans, and construction details—impressively underscores Perret’s construction finesse with his chosen medium of concrete.

It is precisely the highly pared down formality of his work—what is often referred to as its “academicism,” with its emphasis on the lucidity of the skeletal framework, the classical vocabulary of the column, the careful control of the window framing, and the stark precision and economy of form—that



Interior view of the Henri Esders factory in Paris; Auguste Perret, 1919. (From *Auguste Perret*.)

demonstrates the exploratory aspect of Perret’s constructional expertise. His integrity as a builder was rooted in the intellectual concerns he brought to his work. In the exemplary 1959 book *Concrete: The Vision of a New Architecture* (still the only book-length study of Perret in English, though long out of print), author Peter Collins comments on the theoretical dimension of Perret’s work, demonstrating that the values that motivated him had little to do with the asymmetrical compositions, manipulation of cubic shapes, and flat planar surfaces of the International Style. Rather, Collins honors Perret for his “life-long devotion” to an architecture that is essentially “intellectual” rather than “graphic,” an “elaboration and embodiment of a sequence of rationalizations rather than a passionate manipulation of emotive plastic forms.” Perret was steeped in the traditions of French building and architectural theory; with his faith in the universal rules of architecture and the science of building, he is a descendant of Jean-Nicolas-Louis Durand, Pierre-François Henri Labrouste, Ferdinand Dutert, Gustav Eiffel, and to the construction theories of Eugène Emmanuel Viollet-le-Duc, Anatole de Baudot, and Perret’s own instructor from the Ecole des Beaux Arts, Julien Guadet. As the historian Leonardo Benevolo wrote, Perret’s particular merit “was to have sensed that this glorious tradition, impoverished by eclecticism, still had a margin of unexplored possibilities to help resolve the problems of our time, and to have developed these possibilities courageously.”

Given Perret’s intellectual affiliation with the tradition of French structural rationalism, he has most often been described by historians and critics as a point of reference along the trajectory from academicism through art nouveau to modernism, quickly superseded

by the new horizons opened up by Le Corbusier. This position was adopted, for example, by Sigfried Giedion in his discussion of Perret's rue Franklin apartment house as a pivotal moment in the development of modern architecture. The essential contribution of Gargiani's study is that it treats Perret's oeuvre as having independent significance—and not just as a pivot point along the modernist trajectory. Gargiani is most concerned with developing a comprehensive catalog of Perret's work in its own right, and with broadening our identification of Perret's sources in a broader cultural arena. This study, then, contributes to the fracturing of the supposedly linear development of modernism by suggesting a divergent strand in Perret, with his sense of continuity with respect to the cultural aspirations of his society.

Gargiani contributes to our understanding of Perret by emphasizing that his significance in the history of 20th-century architecture lies as much in the theoretical dimension as in the formal qualities of his work. In particular, Gargiani brings to the fore the diverse sources of Perret's approach, especially as it is expressed in Perret's only systematic theoretical statement, *Contribution à une théorie de l'architecture* (1952), published two years before his death. Perret chose to offer this credo on a new architectural language in the form of a collection of his own aphorisms, together with quotations from French literary sources, gathered throughout his career. Gargiani stresses the literary dimension of this collection, arguing that Perret's development is intimately linked with that of the protagonists of the "synthesis of symbolism and classicism," including such figures

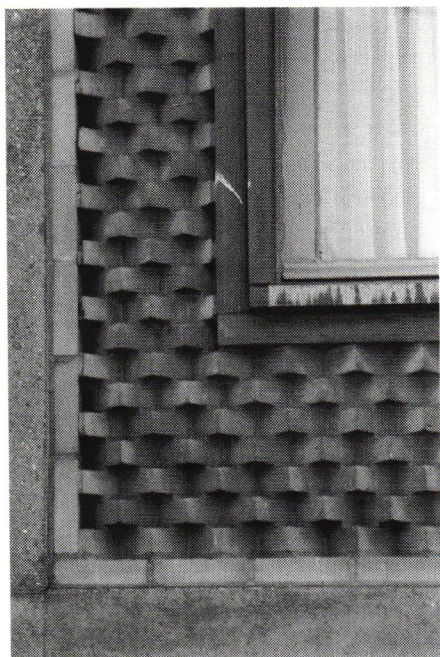
as sculptor Emile-Antoine Bourdelle, painter Maurice Denis, writer André Gide, and poets such as Charles Baudelaire, Paul Verlaine, Stéphane Mallarmé, and especially Paul Valéry. Gargiani argues that it is this "fin-de-siècle cultural climate" that inspired "the allusive dimension of Perret's architecture," rooted as it is in metaphorical play and "poetic intensity." In other words, he believes that the theoretical aura of Perret's architecture developed from "experiences of French culture appearing between the 19th and 20th centuries in which the symbolistic impulses are brought back to the riverbed of classical culture." Indeed, Gargiani begins to dislodge Perret from the

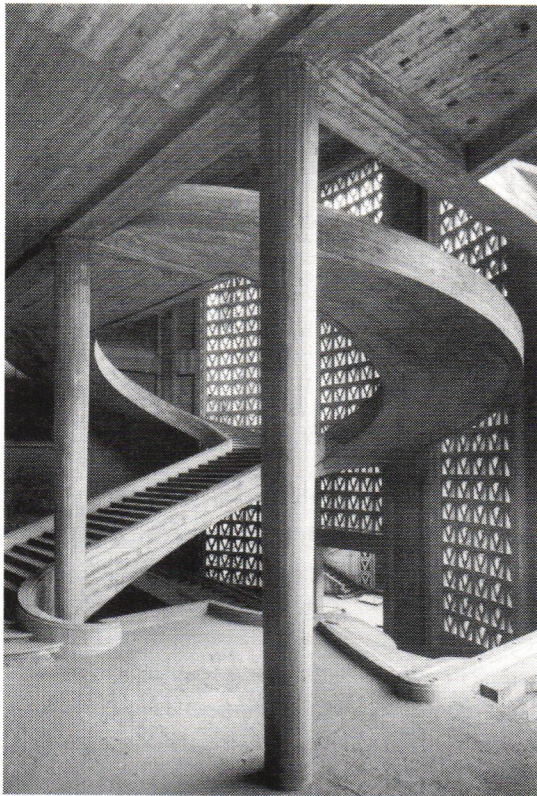
"cult of construction technique" by pointing out that his influences are just as much artistic and literary as they are architectural. By doing so, the author encourages an appreciation of a sense of the poetics of Perret's highly self-conscious architecture. As Perret himself wrote in his most often quoted aphorism: "Construction is the maternal language of the architect. The architect is a poet who thinks and speaks in construction."

Gargiani's main purpose is to offer documentary evidence of Perret's broader cultural affiliations, particularly those influences that lie outside the oft-recited figures of the French rationalist building tradition. But the author does not pursue in any real depth the deeper meanings of these literary influences—for example, how Perret's philosophy of an architecture rooted in language may mirror Valéry and Mallarmé's sensibilities for the artist's creative act, wherein *making* takes precedence over the final object. Nor does he explore how Perret's pursuit of a line of critical thought proposed by Valéry may well have produced new alternatives for architecture with regards to understanding the tensions between experience and form, theory and practice, rationalism and intuition, or the functional differentiation between the language of prose and the disciplined rhythm of poetry. However, these philosophical issues are not the primary intention of Gargiani's book.

What he does set out to do, and accomplishes brilliantly, is to introduce the full breadth of Perret's work, taking advantage of documentary material that has only recently become available. Only at the end of the 1980s did the Perret archives, consisting of some thirty thousand drawings, photographs, and pieces of correspondence, begin to make their way from the Conservatoire National des Arts et Métiers (CNAM), where they had been "buried" since 1959, to their current home at the Archives d'Architecture du XX<sup>e</sup> Siècle (part of the Institut Français d'Architecture in Paris), where they are being cataloged. Gargiani and his colleague Giovanni Fanelli were among the first scholars to take advantage of this wealth of material. Together, they began to construct an account of the life and work of Perret, bringing to light such dimensions as the number and variety of his clientele, and his connections with Parisian artistic groups such as Art et Liberté. Their findings were published in two books which they coauthored: *Perret e Le Corbusier confronti* (Rome and Bari: Laterza, 1990) and *Auguste Perret* (Laterza, 1991). Similarly, since 1985, the French scholar Joseph Abram, who coined the term "avant-garde classicism" to define Perret's work, has been publish-

Facade detail of the studio/home of Chana Orloff in Paris; Auguste Perret, 1926. (From *Auguste Perret*.)





ing significant new studies, including in his sources the perspectives of some of Perret's own students, such as Paul Nelson and Oscar Nitchke. Based on this work, Abram published in 1989 the first of four volumes of an extensive monograph on Perret and the production of his architectural office, entitled *A. et G. Perret, une monographi; Première partie: Architecture, entreprise et expérimentation* (Villers-les-Nancy and Paris). An even more recent contribution has been made by Kenneth Frampton, who devotes a chapter of his new book, *Studies in Tectonic Culture* (Cambridge, Mass.: MIT Press, 1995), to Perret's use of reinforced-concrete frame construction as a system that would "synthesize the two-hundred-year-old aspirations of the Greco-Gothic ideal." Frampton sees in Perret a synthesis of Platonic form and the tectonic rigor of structural rationalism, heightened by an awareness of the craft tradition of building to which Perret was heir.

Gargiani's *Auguste Perret*, however, is a valuable new resource particularly given the extensive documentary research in this book, its seemingly exhaustive bibliography, and the elegant clarity of its layout. Working with archaeological determination, Gargiani has exhumed much new material and rediscovered old in the collection at the Institut Français d'Architecture, as well as less in likely places, such as the archives of Radio France for taped broadcast interviews with Perret; the Musée Départemental du

Prieuré in Saint-Germain-en-Laye for letters between Perret and the painter Maurice Denis; the Getty Center for the History of Art and Humanities in California for documents relating to the *hôtel particulier* Perret designed for Pierre Gaut (the commission he "stole" away from Le Corbusier in 1923); and the Bibliothèque Nationale for Perret's correspondence with Valéry. Intent on providing a comprehensive survey of Perret's theory and work, Gargiani addresses head-on the historical breadth of the classicism evident in Perret's theory without overlooking his later work—buildings which many previous historians have found arid. The author divides his survey of Perret's career into two parts: The first and larger part, "Per una teoria dell'architettura" (Toward a theory of architecture) seeks to unravel the historical threads that account for Perret's classicism as spelled out in his *Contribution*, while the second part, "L'idea di città" (The idea of the city), explores these theoretical themes as they relate to Perret's urbanism. In his discussion of this less recognized direction of Perret's work, Gargiani cites the "Villes-Tours" project for the expansion of Paris (1922), which inspired Le Corbusier's Plan Voisin for Paris; the proposal for Paris in preparation for the 1937 World's Fair; and his reconstructions in Amiens (1942–58), the city center of Le Havre (1945), and the port in Marseilles (1951).

While Gargiani begins to shift the field of inquiry of Perret's work from his widely recognized position as a pioneer in concrete construction to his wider cultural affiliations, he certainly has not exhausted a discussion of Perret's institutional practice or its sociopolitical position. Perret's buildings, for instance, were in fact a cooperative effort between the Perret brothers, Gustave, Claude, and Auguste. And as Jean-Louis Cohen has pointed out, their firm was unique in its "complex cooperation of an internal kind," whose internal divisions of labor had a unique bearing on the company's "architectural production and its technical interventions." Perret is not only a perpetuator of a theoretical tradition of structural rationalism; he—and his firm—are explicit and self-aware heirs of a complex cultural expectation of the craft of architecture, and future analyses of his work must find a way to come to terms with these complexities. Moreover, Perret's institutional prominence in the architectural establishment suggests that his career as an architect, in which he stands noticeably apart from the modern movement, must be further assessed not just as an anomaly, but as an alternative to the deterministic formalism in the technological impulse of the machine age. ⚙

The staircase at the Musée des Travaux Publics in Paris, under construction; Auguste Perret, 1936–46. (From *Auguste Perret*)

# pioneers of the modern movement in israel

## MICHAEL LEVIN

TEL AVIV NEUES BAUEN 1930–1939, edited by Irmel Kamp-Bandau and the Institut für Auslandsbeziehungen (Stuttgart) and the Architekturmuseum der Technischen Universität (Munich), essays by Irmel Kamp-Bandau, Pe'era Goldman, Edina Meyer-Maril, Winfried Nerdinger, and Manfred Schneckenburger, photographs by Irmel Kamp-Bandau, Ernst Wasmuth Verlag (Tübingen and Berlin), 1993, 252 pp., illus., DM 98.00.

MUNIO GITAI WEINRAUB: BAUHAUS ARCHITECT IN ERETZ ISRAEL, Richard Ingersoll, photographs by Gabriele Basilico, Electa (Milan), 1994, 239 pp., illus., \$45.00.

Baumöl House, Tel Aviv; Carl Rubin; 1935–36. (From *Tel Aviv neues Bauen*.)

International Style architecture in Israel is an almost unknown chapter in the annals of the modern movement. Due to special historical circumstances, the highest concentration of buildings in the International Style emerged early on in Eretz Israel (the Hebrew term for Palestine, or pre-state Israel). While Le Corbusier, Mies van der Rohe, Walter Gropius, and other modernist pioneers were building a few houses here and there in the capitals of Europe, young and inexperienced architects in Israel were being given the opportunity to build quite extensively. The largest urban concentration was in Tel Aviv, but there was also a great deal of activity in the new workers' suburbs. The many kibbutzim founded between the two world wars were built in the spirit of the International Style—an architectural language that proved to be socially and politically appropriate to the leftist ideals of the founders of the kibbutzim.

Some of the architects building in Eretz Israel had worked in the offices of Le Corbusier, Mies van der Rohe, and Erich Mendelsohn. In Tel Aviv a large group of dynamic architects actively participated in organizations such as the Architects' Association and various public forums that received wide public and media coverage. In the years before the establishment of the state of Israel, architects in Tel Aviv, Jerusalem, and Haifa focused primarily on building in their own areas; only a few also built

in other cities. The social and urban character of each city was distinct. In Tel Aviv, the eight cooperative workers' residences that were built between 1931 and 1940 by Arie Sharon, with Dov Kutchinsky, Joseph Neufeld, and Israel Dicker, had the general tone of private building. In Haifa and the workers' suburbs, however, the institutions of the Histadrut (the General Federation of Labor) sponsored extensive building. Despite the common vocabulary of forms, in most cases the buildings of Tel Aviv would not be mistaken for those of Haifa.

The September 1937 issue of *L'Architecture d'Aujourd'hui* was devoted to architecture in Palestine. Edited by Sam Barkai and Julius Posener, the issue presented examples from the Arab village, the kibbutzim, houses and villas in Tel Aviv, and the Levant Fair (a biennial trade fair). The Levant Fairs of 1934 and 1936 were the most prominent. For many years thereafter, the Israeli chapter in the history of modernist architecture was forgotten. In 1984, in honor of the seventy-fifth anniversary of the founding of Tel Aviv, I curated the exhibition "White City: International Style Architecture in Israel," held at the Tel Aviv Museum. The exhibition was shown again ten years later, in the summer of 1994, on the occasion of the International Style Architecture Conference held at various sites throughout Tel Aviv and initiated by UNESCO, the Municipality of Tel Aviv–Yafo, and the Tel Aviv Foundation. In addition to "White City," the conference featured a number of

other exhibitions devoted to the vestiges of the movement throughout the world. Among them were "Tel Aviv neues Bauen 1930–1939" (Tel Aviv modern architecture), organized by the German Institut für Auslandsbeziehungen in Stuttgart, and "Munio Gitai Weinraub: Bauhaus Architect in Eretz Israel," which originated at the Israel Museum in Jerusalem. Both the German and the Israeli exhibitions were accompanied by the publication of a catalog or monograph. A comparison of the two vol-



umes will contribute to an understanding of the different characters of Tel Aviv and Haifa.

*Tel Aviv neues Bauen* documents the many houses built in the International Style in Tel Aviv during the 1930s. Photographed by Irmel Kamp-Bandau, who also served as the book's editor, the examples included in the book are depicted in the best manner possible, captured when they looked their best in natural light, and when automobile and pedestrian traffic did not obstruct the buildings. Moreover, they benefit from the publication's high quality of printing. The most important facade of each building is invariably presented, often complemented by a detail shot to emphasize the building's unique qualities. The choice of photographs was random to a large extent, necessarily guided by what structures still exist today and are still photogenic. Thus, the work of important architects such as Dov Karmi, Zeev Rechter, Yaacov Yarost, Joseph Neufeld, and Arie Sharon is not given the degree of representation appropriate to their significance in the history of the architecture of Tel Aviv. On the other hand, the book does demonstrate that during the 1930s a great many architects—some well-known, others not at all—built houses using the best of the modern lexicon of forms. The book, which contains essays by Pe'era Goldman, Edina Meyer-Maril, Winfried Nerdinger, and Manfred Schneckenburger, provides much additional raw material for researching and analyzing the thousands of examples of International Style houses built in Tel Aviv in the 1930s.

Munio Gitai Weinraub (1909–1970) was one of the eighteen students at the Bauhaus who were active in Eretz Israel. Only three of the eighteen were architecture students, and the quality and extent of their work influenced the urban landscape of the country: Sharon, who wrote an autobiographical monograph *Kibbutz+Bauhaus* (Stuttgart: Massada, Givataim and Karl Krämer, 1976); Schmuël Messtechkin, and Weinraub, who hebraized his surname to Gitai late in his life, but continued to be called by his former name, and so is sometimes called by both names together. He was born in a German-speaking area of Poland, and while growing up, he was a member of the Socialist-Zionist youth movement, Hashomer Hatza'ir.

Surprisingly, it was Hannes Meyer, the first director of the architecture department at the Bauhaus (the department was founded in 1927, while Walter Gropius was the principal of the school), who encouraged the eighteen-year-old Weinraub to study at a technical college in Berlin

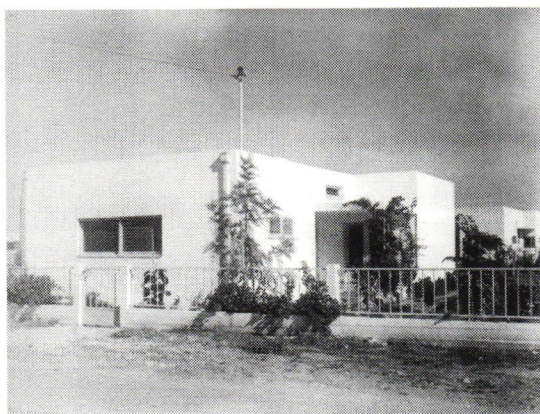


Mirenburg House, Tel Aviv;  
Philip Hütt, 1935–36.  
(From *Tel Aviv neues  
Bauen*.)

before enrolling at the Bauhaus. He attended the Berliner Tischlerschule on Stressmannstrasse, where learned what "he would [later] have to unlearn at the Bauhaus: antihistorical *Vorkurs*, or foundation classes," as Richard Ingersoll remarks in his book, *Munio Gitai Weinraub: Bauhaus Architect in Eretz Israel*. He notes that although Weinraub's architecture and town planning seem closer to the social and architectural theories of Meyer and the *neue Sachlichkeit* of Ludwig Hilbersheimer, only Mies van der Rohe is cited by Weinraub in his writings and lectures as a source of influence. While it was Mies (then principal of the Bauhaus) who asked Weinraub to discontinue his studies at the Bauhaus because of his radical political activities, it was also Mies who later employed him in his Berlin office. Weinraub supervised the construction of a number of Mies' buildings in the Deutsche Bauausstellung in 1931.

When the Bauhaus moved to Berlin in October 1932, the Jewish students left. Weinraub was deported to Switzerland for political reasons, and worked at the Zurich architecture firm of Haefeli, Moser, and Steiger. In 1934 he migrated to Eretz Israel and chose to settle in Haifa, which was a key urban base of the Jewish labor movement (thus earning the nickname "Red Haifa"). In Ingersoll's view, Haifa was well-suited to Weinraub's industrial and socially conscious architecture. Weinraub was just one of many young architects then practicing in Israel who had studied and worked in Europe and had received progressive educations in the spirit of the progressive social movements prevalent at that time. According to Ingersoll:

Pinkus (Weinraub) House, which Munio Gitai Weinraub built for his parents in Kiryat Bialik, a suburb of Haifa; 1937. (From *Munio Gitai Weinraub*.)



This common pedagogical background, alongside with the productivist and Socialist ideological agenda of Jewish settlers, created a uniquely consensual cultural opportunity: It was almost as if the Jewish attempt to create a homeland was the utopia of the Modern architecture—something that Modernist protagonists such as Walter Gropius and Le Corbusier had been trying to establish elsewhere without success.

Three years after his arrival in Israel, Weinraub took as a partner Al Mansfeld, who had studied with Auguste Perret, the French architect-builder known for his classical planning and structural rationalism. Most of the output of Weinraub/Mansfeld partnership is marked by stylistic restraint. As Ingersoll notes, they avoided using elements that were directly identified with Le Corbusier and Mendelsohn, who had an immense influence on architecture in Eretz Israel during those years.

Weinraub and Mansfeld rarely strayed from producing serene, boxy volumes; they even designed porches and balconies to be contained within volumes rather than cantilevering out from them so as not to betray simple geometry or create structural overloading.

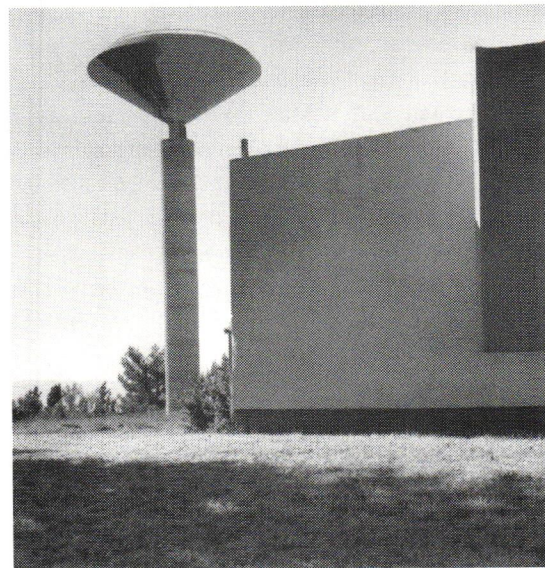
Weinraub and Mansfeld designed and built residential houses and public buildings for the Histadrut and the kibbutzim, including those in Kiryat Chaim, a suburb of Haifa founded in 1933 for working-class residents and planned on Garden City principles. Sympathetic to the notion of a classless society, the partnership designed buildings that employed simple elements such as block forms with a repeating detail. The result was that their buildings—whether an apartment house, a school, a workers' club, a cultural center, or a shop—all looked very much alike. The residential houses were built like modular white cubes, extendable in all directions. Only a few of these houses have survived to this day without addi-

tions. Weinraub and Mansfeld succeeded in consolidating an architectonic formula for workers' neighborhoods that responded to the aesthetic and pragmatic needs of a working-class utopia.

When Weinraub and Mansfeld parted ways in the late 1950s, they each went on to produce work that expressed a more personal language, although this is more true of Mansfeld than of Weinraub. Weinraub's last buildings attest to his increased interest in solutions that placed greater significance on form—a concern that did not inform his earlier works, such as the apartment houses in the workers' neighborhoods in the Haifa suburbs. For the Histadrut Tax Office in Haifa (1960–64), for example, Weinraub's use of exposed concrete reflects the brutalist architecture of Le Corbusier after the World War II. This building also belies the influence of Marcel Breuer in his American period and of Kenzo Tange's work in Japan. At the Gil Am Boys' Reform School in Shefaram (1961–64), the monumental water tower, elementally composed of a thin cylindrical column topped by a flat, inverted cone, serves as the symbol of the settlement and, as Ingersoll notes, a prototype for other water towers.

*Munio Gitai Weinraub* is the most important monograph on an Israeli architect published to date, for reasons stemming both from the paucity of monographic material on such topics and from this book's exceptional quality. Ingersoll states in the introduction that this project arose from his friendship with the architect's son, Amos Gitai. The fact that Ingersoll is a foreigner, an outsider who is neither Jewish nor speaks Hebrew, posed a challenge for him—one which, in my opinion, he has more than adequately met. For this project, his status as an out-

Gil Am Boys' Reform School in Shefaram; Munio Gitai Weinraub, 1961–64. Photograph by Gabriele Basilico. (From *Munio Gitai Weinraub*.)



sider was an asset rather than a disadvantage because it allowed him to be objective.

The importance of *Munio Gitai Weinraub: Bauhaus Architect in Eretz Israel* is especially evident in light of the fact that Weinraub was not a leading form-giver, and did not become a source for later imitations of forms. Indeed, his architecture was modest and functional, and therefore was not subject to the sort of dramatic effects that typically stress the designer's abilities and influence. Writes Ingersoll:

To reassess the architecture of Gitai Weinraub is to pose a retrospective challenge to the current system of evaluating architecture, which is generally concerned with novelty and images. There is an outstanding body of work that may not seem interesting or exceptional at first glance because of its disciplined minimalism. But the architecture contains a dignity and coherence that is predicated on the virtuous synthesis of technological refinement and artistic sensibility: It never appears visually extreme yet it is exceptional in the quality of its conception and production and, as such, deserves a close look.

Ingersoll deserves thanks for uncovering much valuable material and for presenting it at a high level of analysis. The book draws upon archival material, vintage photographs, as well as more recent images taken by Italian Gabriele Basilico, who has managed to add an artistic dimension to documentary photography. His compositions of architectural details and the atmosphere he has created with lighting greatly enhance the pleasure of reading the book. Ingersoll's ideas are well stated, and he demonstrates extensive knowledge of Gitai Weinraub's work and its ramifications on the local architecture. Ingersoll also places Gitai Weinraub's oeuvre in the context of the international trends prevalent at the time. This book should serve as an inspiration to other scholars. The state of research on architecture in Israel in general and during the period of the International Style in particular will be radically improved if further studies follow the profound and comprehensive model offered by Ingersoll's *Munio Gitai Weinraub*. ❁

# the roots of failure

## RICHARD L. MEEHAN

Two years ago I was invited to Boston to review the technical facts underlying a legal action which pitted a group of property owners from the city's historic Brimmer Street against the nearby Trinity Church and the city of Boston. The city, according to the homeowners, had mismanaged its sewer system in such a way that the foundations of some of the finest examples of Boston's 19th-century architecture were ruined. Several years had passed since I had worked in Boston but as I toured Brimmer Street and the adjoining neighborhoods on the river side of Beacon Hill, with their shady elms and genteel brownstones, an obscure but familiar pattern of damage began to reestablish itself in my mind. While some visitors might view the irregularities in the brick sidewalks, the faintly misaligned lintels of creamy Nova Scotia sandstone, and the oddly sunken stairways as quaint or picturesque, these are in fact signs of foundation piling failures, an increasingly common affliction among aging but distinguished East Coast neighborhoods.

Deterioration of wooden piles beneath the buildings of Boston and other century-old cities is a problem most frequently associated with changes in the level of groundwater. Archaeological explorations show that wooden saplings that are thoroughly immersed below the groundwater table remain intact for thousands of years. However, with exposure to air, timber pilings in low-lying estuarine areas succumb to the attacks of small organisms known as marine wood borers. In a few years, or decades, depending on temperature and locality, the piles rot away and the buildings they support begin to sink into the fill and mud underlying the city streets.

Yet in the Boston case, it was clear that the worst of the problem was associated with one neighborhood confined almost exclusively to Brimmer Street. Why? Was it the age of the buildings? Had the foundations simply outlived their useful lives? Why weren't buildings of comparable age settling all over the Back Bay area? The plaintiff homeowners had a theory, backed by the testimony of the best local engineers, that the city's negligence had been especially egregious next to Brimmer Street. Sewer leakage had been worse there than in neighboring streets, they claimed. This theory made good tactical sense considering the deepest pocket was the city's.

DESIGN PARADIGMS: CASE HISTORIES OF ERROR AND JUDGMENT IN ENGINEERING, Henry Petroski, Cambridge University Press, 1994, 250 pp., illus., \$44.95 (cloth); \$17.95 (paper).

DESIGNING ENGINEERS, Louis L. Bucciarelli, MIT Press, 1994, 220 pp., \$24.95.

But a brief review of the recent history of the area added some contending views. Half a block away was one of Boston's most proper churches, Trinity Church, which underwent major restoration, including foundation work, sometime in the mid-1980s. Some said it was shortly thereafter that the foundations of some of the elegant brownstones of Brimmer Street began to shift. A plausible chain of events was proposed: Excavation for the church restoration had lowered the groundwater level temporarily, thus causing the ground enclosing the sewer line in the middle of Brimmer Street to settle. Movement of the sewer had pulled on the branch sewers, stretching them and opening the joints between the old clay sewer tiles so that water from the surrounding ground began to dribble steadily into the branch and main sewers. This further depleted the groundwater which caused more settlement. The result was a self-aggravating situation. Eventually, one could surmise, the surface of the water dropped below the dangerous elevation of five feet above sea level, the highest allowable elevation for the top of piles as specified in Boston for the last hundred years. The marine wood borers had set to work and within three or four years the tops of the piles were eaten away. This theory of causation, while plausible, was not attractive from a litigation standpoint. No one wanted to blame a church. The city's local negligence was a more attractive target.

There was another yet another possibility. Having lived in California for many years, I knew that many engineering successes and failures were rooted in real estate speculation, and I knew that for several years Boston had been shaking with real estate fever. Back Bay brownstones were being acquired from aging spinsters and converted into condominiums with contagious fervor. Brimmer Street, at the foot of fashionable Beacon Hill, was awash in new money, and most of the buildings were undergoing extensive remodeling. Some of the distinguished, tony residences of old Boston families were being converted into condos priced upwards of \$135,000, at more than \$1,000 per square foot. Fifty years ago no proper Bostonian would have publicly accused the city, let alone a local church, of wrongdoing. But these are brasher times, with brasher demographic groups more intent on protecting their investments. Could it be that the building foundations were simply not up to the stresses and strains of yuppie greed? From a technological point of view, I saw plenty of evidence that new loads and temporary construction dewatering associated with frantic remodeling could have contributed to the problem.

To Henry Petroski, who has patiently written himself into the position of chief commentator on the history and philosophy of civil engineering, the foregoing case study is an example of the lessons that engineers and builders keep learning—and then keep forgetting. In the Brimmer Street case, the obvious and appropriate precedent is the city of Venice, where the hazards of falling water tables and rotting piles have been known for centuries. The chronic problem, according to Petroski in his most recent book, *Design Paradigms: Case Histories of Error and Judgment in Engineering*, seems to be that engineers in training spend too much time worrying about theory and not enough time learning from history:

Engineering judgment does not necessarily come from a deeper understanding of theory or a more powerful command of computational tools. The traditional engineering sciences are servants and students but not masters and teachers of engineering judgment, and even design experiences in an academic context can provide but limited perspective on the meaning of judgment. The single most fruitful source of lessons in engineering judgment exists in the case histories of failures, which point incontrovertibly to examples of bad judgment and therefore provide guideposts for negotiating around the pitfalls in the design process itself. Another invaluable source of lessons in sound engineering judgment comes from the great engineers, who by their works have demonstrated that they possessed impeccable judgment, which has more often than not come from their critical study of failures and near-failures.

In Petroski's opinion, failure is at the root of all improvement, a viewpoint so persistently and successfully pursued in both his technical and general writings that one suspects it derives from some underlying Darwinian principle that every notable success, if not entirely accidental, is invariably supported on the shoulders of many failures.

To Petroski, a critical moment occurs when someone attempts to introduce an improvement (aesthetic or practical) or an economy into an older design. This is the moment when designers often forget to look back and consider the types of failure that their predecessors once agonized over. The success of the last design becomes a siren song falsely assuring continued future success. Why not upgrade the old design, add some attractive new features, some small economies? Petroski warns that in buildings—as well as in bridges, a topic which he analyzes with especial astuteness—tinkering with past successes, whether to economize or to improve appear-

ance, is dangerous business unless one is willing and able to repeat much of the detailed evaluation that the original designers and engineers carried out in the course of developing the initial design. Much of his short book is devoted to the evaluation of historical cases ranging from Roman columns to Galilean cantilevers. Certain timeless principles emerge, such as the danger of scaling up, for example. As a practicing engineer, I found that Petroski's witty and literate case studies and pithily derived principles rang true. Certainly in my field of building foundation engineering Petroski is dead right: The key to success is early recognition of potential failure modes. The development of analytical techniques that, one hopes, assure an adequate factor of safety against the identified failure is a useful exercise perhaps best done in academia. But analysis itself is never sufficient. One must imagine that the piles *can* rot before analyzing whether it is *likely* to rot in the instance at hand. Writes Petroski:

All meaningful improvements in analytical and computational capabilities are at heart improvements in our ability to anticipate and predict failure. Every engineering calculation is really a failure calculation, for a calculated quantity has meaning for engineering only when it is compared with a value representing a design constraint or failure criterion of some kind. Indeed, a factor of safety can only be calculated within the explicit context of a failure mode, and the most successful designs are those that involve the most complete proactive failure analysis on the drawing board in the design office. The surest way of conducting as completely as possible a proactive failure analysis is for those individuals most involved with a design to have as broad and sound a range of engineering judgment as the project demands.

This is why engineering and architecture, like medicine, require apprenticeship in addition to academic training. Consider again the Brimmer Street pilings. It is unlikely that an engineer with a master's degree in structural engineering would have encountered in his or her normal course work the possibility of foundation failure arising from the biological decay of wood. Civil engineering education simply does not focus on such processes. And yet a qualified practicing engineer *must* know what his predecessors have known for hundreds of years, that wooden pilings are satisfactory as long as they are submerged, but rot quickly when exposed above the water table.

Petroski is inclined to consider engineering work as an activity performed in an individual, heroic mold: New designs are frequently presented as the

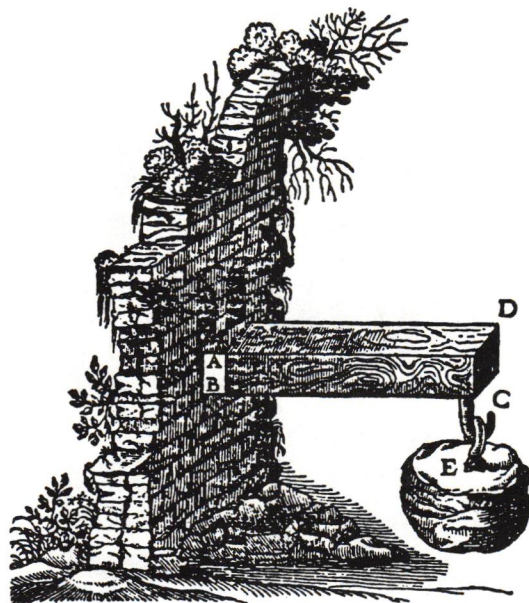


Sketch of a Boston brownstone with the tops of the wooden foundation pilings exposed and rotted away; drawing by Richard L. Meehan.

work of single creators, and their success or failure depends in part on whether the designers appropriately consider the lessons of the past. This perspective recalls the training of leaders, courtiers, patrons, and artists of the Renaissance who were urged to study and master the lessons of classical civilization.

Louis L. Bucciarelli's *Designing Engineers*, an ethnography-inspired dissection of engineering practice, provides a very different view of the design process. Here, we have no Aristotle contemplating the bust of Homer. For better or worse, Bucciarelli's analysis aligns itself with the evaluation of actual practice, an approach that is increasingly applied by academicians to such fields as education and the social sciences. *Designing Engineers* treats the design of three manufactured products: an x-ray machine for detecting terrorist bombs, a solar power system, and a remedy for an unsatisfactory copying machine. The author does not aim to dazzle us with the romance of the devices or the heroism of the designer. Rather, his goal is to provide some original insight into the symbolic and social aspects of the design process, in which the initial participants—and there are many, including customers, managers, and

The classic problem of the cantilever beam, as explored by Galileo in his 1638 *Discorsi dimonstrazioni matematiche*. (From *Designing Engineers*.)



various scientists and technicians—negotiate a design solution working from an agenda that is much more flexible than it may appear to be. Bucciarelli's descriptions are self-consciously impressionistic, focusing on symbols, language, and social interaction. His prose is reminiscent of Tracy Kidder's in *Soul of a New Machine* (Boston: Little, Brown, 1981) *House* (Boston: Houghton Mifflin, 1985) and even the novels of Nevil Shute, where character and motive are major design determinants.

Bucciarelli's approach suggests that the outcome of an engineering project—its success or failure—may not be the black-and-white affair that Petroski implies. For example, to what degree are many failures actually the anticipated outcome, arrived at through a process of negotiation in a context that may not be altogether apparent in retrospect? The decision *not* to design for the five-hundred-year flood or the twenty-year hurricane may have been conscious and explicit to the designers, but concealed from other participants, most notably future homeowners.

In this regard, some of the results of my historical investigation into the piling failures on Brimmer Street became relevant. It happens that the matter of foundation-piling cut-off elevation had been extensively discussed at the meetings of the Boston Society of Engineers decades before the construction of the houses on Brimmer Street in the late 19th-century. These records reveal that Thomas Worcester, founder of one of Boston's most prominent engineering firms, had proclaimed that it was acceptable to cut off the wooden piles that supported buildings in lower elevations of Boston at seven feet above sea

level—two feet higher than had been considered acceptable practice in the past. Correspondence in the Society's proceedings indicated that Worcester's recommendation had been widely adopted for a short while, though not all engineers had agreed that it was safe enough.

As it turned out, Worcester's influence was the strongest during the period in which the Brimmer Street houses had been built. Whatever the forces and personalities were at work during these years (was Worcester trying to justify some of his own pile cut-off elevations, recognizing perhaps that they were a little too risky?), the new standard was adopted as Brimmer Street was being developed and then subsequently abandoned in favor of the older and more conservative level of five feet. The result is that most of the Brimmer Street pilings, as we subsequently verified from building and repair records, were cut off at seven feet instead of the standard five. Clearly, the failures were caused as much by a locally insufficient factor of safety, adopted through a process of negotiation a century ago, as by the more recent actions or negligence of the city or the church.

Both *Design Paradigms* and *Design Engineers* provide valid insight into the Brimmer Street piling problem, as well as into most other engineering failures of buildings. Petroski's case histories are gracefully presented and accessible to the general audience; his book is admirably well-suited to the student and practitioner alike, and perhaps even to the client for whom it might serve as an eloquent explanation of what the engineering fee really buys. Bucciarelli's *Designing Engineers* is more academic but it penetrates the design process more deeply. It shows that the *recognition* of failure is not the complete story. After all, the biological vulnerability of pilings was recognized by Brimmer Street's original builders. They, or their designers, took a risk when they adopted a more convenient standard. History has shown that their foundations were good for only a century! Practicing engineers and architects will recognize the milieu of negotiation in which such decisions are made, the tug of war between marketing and construction budgets, between image and reality, between immediate functionality and future reliability. An ethnography of the culture of real estate development has yet to be written. Bucciarelli does a fine job of doing this for the manufactured product. Perhaps he might take the building business as a topic for a future book. ✱

# nothing like the sun

## GREGORY KISS

Will photovoltaics have the same impact on architecture as air conditioning, the elevator, reinforced concrete, and structural steel have had? This question will seem ludicrous to most architects because the vast majority of them have either never heard of the technology or have no idea that it can have anything to do with buildings. Yet photovoltaics, the technology of solar electricity, could have a very profound—and visible—effect on the built environment. Photovoltaics (PVs) are undoubtedly one of the most promising energy sources today, enabling the conversion of sunlight directly into electricity—the most valuable and flexible form of energy. The technology requires no moving parts and little maintenance, and creates no by-products. Recent technological developments have broadened their application, from satellites (twenty years ago at the cost of \$1,000 to produce a single watt of energy), to consumer goods such as calculators and watches (ten years ago at \$10/watt), to power generation for remote sites (five years ago at \$5/watt).

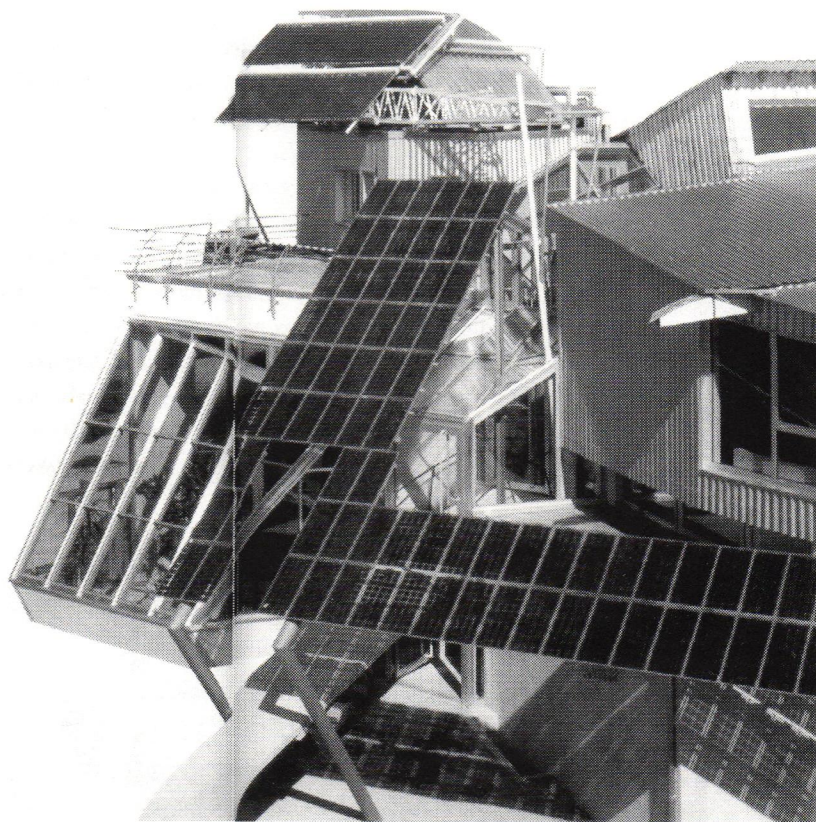
Buildings may be the next significant market for PVs: At present, most PVs are made on glass substrates (solar cells are made from crystalline silicon applied to the glass in thin layers), and can be used wherever glass panels are used in construction. PVs are also being applied to sheet metal and other materials suitable for roofing or wall cladding. PV-integrated building materials are becoming increasingly cost-competitive per square meter with traditional cladding materials, and module sizes (as big as one by-two meters) are now large enough to replace conventional glazing or spandrel panels. The value of the displaced construction materials can then be credited to the cost of the PV system. PVs on buildings afford further economies in that the land and structure supporting the solar modules are free, thus saving on the cost of constructing and maintaining other types of power plants or even field-mounted solar arrays.

*Photovoltaik und Architektur/Photovoltaics in Architecture* by Othmar Humm and Peter Toggweiler is a handsomely illustrated survey of the state of the art. The slim, multilingual book (the text appears in German, French, Italian, and English) includes a short primer on PV technology and methods for its integration into buildings, as well as summaries of some fifty built and unbuilt projects, all but two of which are in Europe. Unfortun-

nately, the state of the art has not produced much inspiring architecture. To return to the original proposition: Why shouldn't PVs revolutionize architecture? Since the 1970s and the advent of energy codes, most commercial buildings have reduced energy consumption by shutting themselves off from the local environment, sealing in conditioned air and reflecting the sun with coated windows and increasingly insulated wall and roof surfaces. Mainstream architects have shown no interest in expressing the fascinating and expensive interaction of a building skin with the environment. How would the urge to maximize solar gain, rather than minimize its effects, be physically manifested in architecture? Will a renewed sensitivity to solar orientation and the interaction between buildings and their environment, between the indoors and out, affect other aspects of architecture, such as natural ventilation and daylighting? After taking the time to design a PV-integrated roof for a building, will an architect think twice about a design that requires artificial lighting during the day, which would consume half of the power produced by PVs?

PHOTOVOLTAIK UND ARCHITEKTUR: DIE INTEGRATION VON SOLARZELLEN IN GEBÄUDEHULLEN / PHOTOVOLTAICS AND ARCHITECTURE: THE INTEGRATION OF PHOTOVOLTAIC CELLS IN BUILDING ENVELOPES, Othmar Humm and Peter Toggweiler, Birkhäuser (Basel and Boston), 1993, 120 pp., illus., \$49.00.

Villa Deconstructa in Breisach, Germany; Thomas Spiegelhalter, 1992. (From *Photovoltaik und Architektur*.)



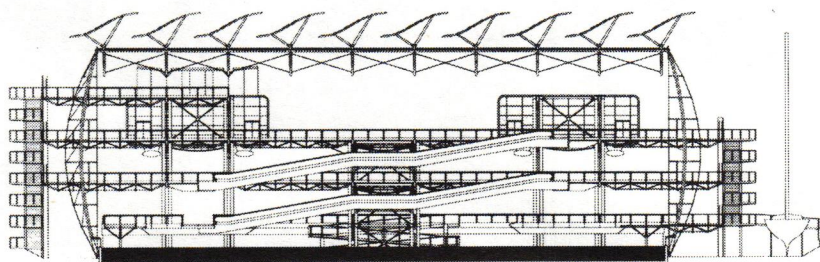
PV technology is evolving quickly, but the same cannot be said for building construction techniques and materials. It is perhaps inevitable that first-generation PV-building projects (nearly all of the examples in the book were built in the last four years) represent solutions that are more technical than architectural. Many of the book's examples are retrofits, in which PV modules attempt to blend in politely with existing roofs or facades; and even new works, in their adherence to traditional building forms, appear to be retrofits. Many of the projects were sponsored and/or designed by the PV industry or by government agencies, and most are clearly aimed at making the technology appear nonthreatening. Only a few projects make architectonic gestures to the PVs. For instance, the Villa Deconstructa, a house in Breisach, Germany, by Thomas Spiegelhalter gives some function to the interwoven planes of the house's eponymous style, while the roof-mounted sails of Nicholas Grimshaw's British pavilion for the 1992 Seville Exposition (which seem to want to harness the wind as much as the sun) power the water wall on the east side of the building. But even these gestures are tempered: On closer inspection, Grimshaw's sails, while fitted with solar cells, prove to be almost entirely composed of fabric panels. Did budget problems preclude the use of more PVs? Relegated to a small area at the center of each sail, the solar modules are clearly a specialized device, not a building material. For a project as visible as the UK pavilion, by a firm as adventurous as Grimshaw's, this was a significant missed opportunity for an architectonic use of PVs.

Just as it is not necessary for every building to be a monument, every demonstration of new technology need not be a futurist manifesto. Despite their high-tech underpinnings, most PV-integrated buildings are surprisingly handcrafted. A number of companies in Germany and Switzerland specialize in custom-laminating individual solar cells onto large-area glass modules. These can be fashioned into any size and shape, and the spacing between

individual PV cells (which are opaque) can be specified to create the degree of overall transparency. In several projects, these modules are elegantly integrated into rational skins of glass, wood, and metal, often with passive or active shading functions. For the Workshop für neue Technologien in Liestal, Switzerland, the firm Artevetro AG has effectively woven a semi-independent outer skin of PV modules, attached to a thin metal frame, onto a wood-clad, wood-framed building. In Digital Equipment Corporation's headquarters in Geneva designed by J. F. Lecouturier, thin PV modules are integrated into the sheet metal panels on a barrel-vaulted roof, while an interior atrium sports a spectacular sunscreen of motorized PV louvers. Although they are visually stunning, the kinetic PV elements in the atrium roof, and in several other examples in the book, raise the question of appropriate technology. One of the greatest advantages of PVs is that they are simple, solid-state devices with no moving parts. To animate these 21st-century devices by placing them on motorized armatures is to saddle them with the costs and maintenance requirements of 19th-century mechanical technology.

Curiously, the book lacks a discussion of the economics of PV technology. Cost-effectiveness will certainly be the main factor in determining whether or not PVs will become a successful building material. It is unlikely that any of the projects in the book meet the standard American economic criterion of a short-term (five years or less) return on investment. Although this standard may be impractical—based as it is on artificially low energy

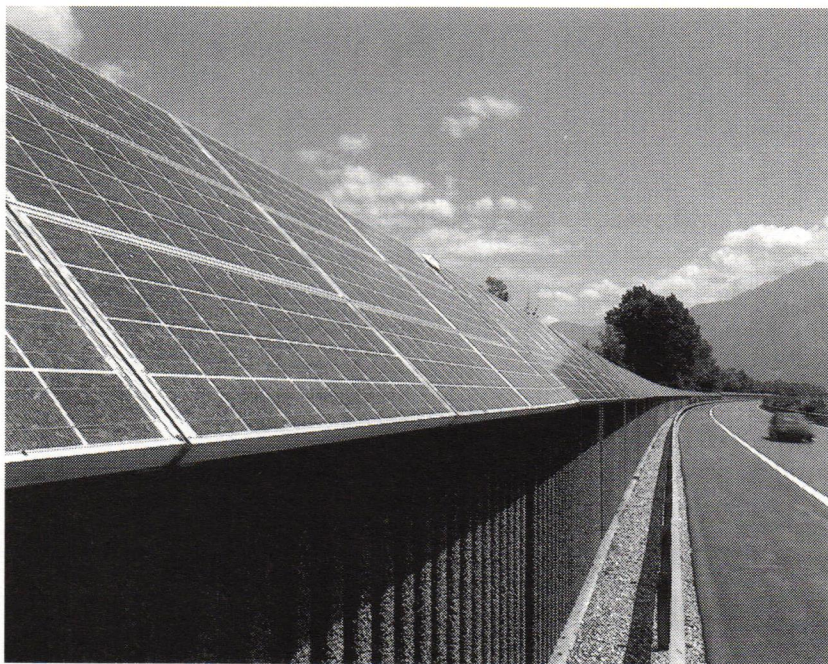
The British pavilion at the 1992 Seville Exposition, by Nicholas Grimshaw & Partners. The solar cells are located only on the center of the middle-band cloth sails. (From *Photovoltaik und Architektur*.)



costs and unrealistic short-term planning—some appropriate standard should be applied. A whole book could, and should, be devoted to an analysis of the true value of renewable energy produced by PVs in buildings. If related costs are factored in—such as pollution mitigation, new power plant construction, transmission line upgrades (not necessary if electricity is being produced near the point of use)—then the value of PV power would be greater and payback would be quicker. Much more attention should also be given to the up-front costs or benefits of integrating PVs into the building process, such as the additional cost of wiring and other electrical equipment, or the value of displaced construction materials.

It is too early to be disappointed in the lack of any great PV architecture. The technology is still immature and is not yet known to most architects. Recent interest in sustainable design has focused more on energy efficiency, embodied energy, and the toxicity of construction materials than on the larger design process and the environmental impact of buildings throughout their life cycles. The use of photovoltaics in building envelopes has the potential to bring sustainable design to the level of architecture. In the next few years, architects will have the opportunity to experiment with what is one of the few new building materials of this generation. New thin-film technologies on glass and metal substrates are lowering costs and increasing efficiency tremendously. The growing body of completed projects will build confidence in the reliability of PVs. Wider exposure via publications such as *Photovoltaik und Architektur* (which earned the commendation of the American Institute of Architects as one of last year's outstanding publications), as well as sourcebooks and other materials distributed by organizations like the International Energy Agency (based in Paris) and the National Renewable Energy Laboratory (in Golden, Colorado) will help to educate the design community on this subject.

In December of 1994, the Enron Corporation in Houston, the largest natural gas company in the U.S., announced plans to build a 100-megawatt PV power plant in the Nevada desert; it intends to sell the electricity to the government for 5.5 cents per kilowatt-hour. The economies of scale that will be derived from a project of this size and from new, more efficient thin-film technologies will make PV electricity cheaper than almost any other source of new generating capacity. In other areas, where sunshine and financing are less favorable, building



integration can significantly improve the economics of photovoltaics. If some of the economies of scale of the Enron project can be applied to building projects, PV buildings will be completely cost-effective, even by American standards, within the next few years.

As the Enron project demonstrates, large-scale PV power is imminent, and the implications for the built environment are enormous. In parts of the world where population is dense and land is scarce, buildings and the built infrastructure may be the only practical place to install PVs. When the economics dictate, the technology will come. If architects do not take the lead in shaping the built environment, others will. Already the boldest projects in *Photovoltaik und Architektur* are not buildings at all: In Switzerland, PVs are installed on train sheds and railroad utility buildings, on a church spire, and on sound barriers along the autobahn. In the latter example, as the array snakes along the highway, it transforms a banal piece of infrastructure into an energy-generating sculpture, demonstrating the light, modular, flexible nature of the material. The next few years will hopefully reveal whether PVs will have a similar effect on buildings. ☼

This 830-meter-long solar cell band was installed on an existing sound barrier along the autobahn between Felsberg and Domat/Ems, south of Chur, in Switzerland. The project was constructed in 1989, under the sponsorship of the Swiss Office of Energy; engineering by TNC Consulting, AG, in Chur; photovoltaic system by Lintech, in Chesières. (From *Photovoltaik und Architektur*.)

# manhole covers and the myths of america

## JULIE WOSK

MANHOLE COVERS,  
text by Mimi Melnick,  
photographs by Robert A.  
Melnick, foreword by Allan  
Sekula, MIT Press, 1994,  
272 pp., illus., \$39.95.

In *Manhole Covers* authors Mimi and Robert Melnick document a neglected area of urban history. Throughout two hundred black-and-white photographs taken by the late Robert Melnick and a long opening narrative written by his widow, Mimi Melnick, the book spans one hundred and fifty years, moving from ornate 19th-century cast-iron covers to contemporary versions surfaced with machine-made treads. With its spare text and surprisingly compelling series of photos, this book maps out the origins of manhole covers and their many guises, as portals to the vast subterranean world of water and gas mains, coal chutes, telephone and electric wires, steam systems, and sewers.

But the Melnicks' project is more than a technological history or picture book; it is a surprisingly fascinating urban odyssey, a Whitmanesque catalog that delights in these artifacts of America, a Beat-like, on-the-road venture that revels at this country with its buried sewers and soaring hopes, its pride in its infrastructure, its water works, and its gas lights which first lit up its cities and turned a street like Broadway into the Great White Way. The manhole covers reflect a time when the country was proud to sport its stuff, as is evident in a New York cover lettered with art deco chic, or one from California that is strewn with stars.

This 19th-century cover  
by Sned & Co. Iron Works  
(1859–1956) could not be  
manufactured today be-  
cause safety regulations  
today prohibit wide  
openings in ventilated  
covers and grates.  
(From *Manhole Covers*.)



Manholes in the Melnicks' eyes provide a gateway to the myths of America—a country of heady aspirations and a quest for efficiency, of vaunted achievements in public utilities, of cables and transformers, power and light—a country that could even summon an almost religious reverence for indoor plumbing. It was an America where abstractionist Morton Schamberg could, in 1918, mount a plumbing trap on a miter box and sardonically label it "God."

The book opens with Mimi Melnick's account of how she and her husband first began to search the streets and byways of American cities for these remnants of the country's past. She writes with deadpan seriousness that this project began with their simple quest to find an object to put over their sofa. The Melnicks were already collectors of urban artifacts, but somehow had not found the right object to grace their living room wall. A comment made by an acquaintance, about how manhole cover designs would make nice silk-screen prints, inspired them to explore their own neighborhood in Los Angeles, and their excitement grew as they discovered the myriad patterns, sizes, and functions of the covers.

In 1974 they published the now out-of-print *Manhole Covers of Los Angeles*, and for five years afterwards they traveled across the country cataloging their findings. Their obsession, and the photographs taken by Robert Melnick in the 1970s, reveal a nearly forgotten aspect of 19th-century America. As the nation's covers quickly become lost to bulldozers and urban renewal, their documentation constitutes an unexpected treasure.

*Manhole Covers* informs that cast-iron street covers date back at least to the 1840s, when cities were becoming more extensively paved and sewer, gas, and water systems were growing increasingly sophisticated. Even earlier, maintenance covers were used to ventilate steam pipes, to access coal chutes and oil tanks, and to serve as vault lights and "sidewalk illuminators." Smaller handhole covers provided access to water and gas meters and valves, while ornate openwork covers were used to ventilate gas build-up and heat from transformers.

The term "manhole," writes Melnick, "originally referred to a hole allowing bodily entrance through an opening in a floor or ship." Evoking a body

metaphor, she refers to the "intestinal passages" and muses about "St. Cloacina," the "goddess of the sewer." Allan Sekula, in his brief foreword to the book, describes manhole covers as "the very image of the discrete ceremonial opening to the urban cloaca." The covers themselves are indeed ripe with intimations of urban anatomy, acting as an umbilicus of sorts, connecting the outer city to its urban innards, a realm of arteries and veins, conduits for fluids and currents, waste and energy.

Unlike today's manhole covers, which have few distinctive new patterns (they are often covered in standardized treads in diamond, fishplate, and pebble patterns), the earlier versions had more variety. They were fancifully covered with stars, concentric circles, knobs, and sunburst patterns. Some covers evoke the image of a mandala—wide, circular, patterned emblems with radiating lines pointing toward the infinite. The manhole covers tended to mirror the prevailing styles of the period, whether Gothic revival or art nouveau, and were often indicative of function. Covers owned by telephone, telegraph, and electric companies, for example, often had a basket-weave pattern, while sanitation covers were apt to have a waffle design.

The covers in this book would have gained an added dimension if the Melnicks had considered them in the wider context of the social preoccupations of the 19th century and its developing industrial design. The covers, for instance, reflect the century's love of ornament and its delight in decorative cast iron. American cast-iron manufacturers, such as the New York Wire Railing Company (later the Composite Iron Works) and the J. L. Mott Iron Works, also in New York (which in 1881 produced one of the earliest catalogs containing cast-iron manhole covers), advertised ornate cast-iron garden furniture as well as indoor chairs, hall stands, stoves, and fireplace grates, all covered in floral, neoclassical, and Gothic imagery. These patterns were often pirated from British foundries which had, in turn, adapted them from earlier Prussian designs.

During the 19th century, emblems of industrial and urban progress—from cast-iron fire alarms and hydrants to mailboxes and even porcelain toilets—were commonly decorated as a celebratory gesture. At a time of burgeoning industrialism, 19th-century manufacturers proudly ornamented their products, from engines to sewing machines and other tools, using floral or historical imagery that sometimes turned the machinery into miniature Greek and Roman temples, with fluted cylinders and Doric entablatures, urns, or other neoclassical motifs.



Manhole covers thus mirrored one of the paradoxes of 19th-century design, for they were forward-looking in their celebration of progress yet nostalgic in their appropriation of ornamental idioms of the past. This alliance between functionalism and ornament, evident in the design of manhole covers, was of the type denounced by Adolf Loos, whose essays of the 1890s championed the aesthetic of functional simplicity over superfluous ornament. Loos admired the functional simplicity embodied in the aesthetic of both modern machines and ancient Greece—an equation reminiscent of the sentiments of American sculptor Horatio Greenough, who had forty years earlier made a plea for "Greek principles, not Greek things." For Loos, modern plumbing was the very embodiment of functional efficiency and the classical ideal. In his 1898 essay "Glass and Clay," he praised the achievements in plumbing, proclaiming that "the English and the engineers are our Greeks." It was thus an unintended tribute when the building Loos designed for Michaelerplatz in Vienna (now known as Looshaus) was satirically compared to a sewer grating.

(The elevation of the unadorned plumbing fixture as the embodiment of the modern age was twitted by Dada artist Marcel Duchamp who submitted a urinal as his entry for the exhibit of the Society of Independent Artists held in New York in 1917 [the urinal was rejected]. He signed the urinal with his pseudonym "R. Mutt," a reference, he said later, not only to the cartoon character from "Mutt and Jeff," but also to the Mott Iron Works

Gothic patterns decorate this cover, cast by the Louisville, Kentucky, foundry Sned & Sayre. (From *Manhole Covers*.)

sanitary equipment store on Fifth Avenue. Defending Duchamp's elevation of the urinal to the status of art, the small magazine he helped found, *The Blind Man*, proclaimed in 1917, "The only works of art America has given are her plumbing and her bridges.")

The ornamented manhole covers of the 19th century not only embody America's infatuation with sanitation and power systems, but also, to a lesser extent, allude to another tendency of the time: the use of ornamentation to conceal danger. In a century when newspapers regularly reported steamship explosions, marine engines were sometimes designed with neoclassical details, evoking a sense of stasis and calm. Manhole covers, with their fancifully decorated surfaces, belie the presence of underground dangers. Mimi Melnick reports that gas and sewer covers must be opened cautiously to guard against the threat of explosions or noxious fumes from gas residues.

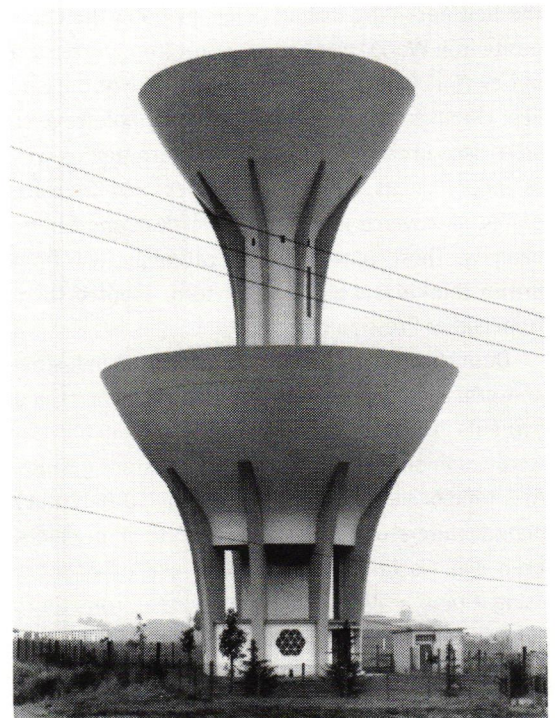
Ultimately, what makes this book so fascinating is that, as the photographs so succinctly suggest, the covers work on a level that is both metaphoric and mundane, and embody the contradictions that accompanied America's industrial and urban growth—the wish to celebrate and to hide, to advertise the wondrous new possibilities of electricity, gas, and light, and to mask the stench of urban sewers filled with industrial waste. The covers also reflect America's complex psyche: They are impassive yet passionate, they keep a lid on things while bespeaking an eruptive, barely contained sense of urban pride.

The text also provides interesting technological details about the materials and casting processes of modern covers, which are made using wood, plastic, or aluminum patterns. Today's manhole covers are composed of old, melted-down engine blocks and manhole covers, with added coke, limestone, and other alloys, and most are made in the Far East and Mexico, where they are manufactured more cheaply. Today's designers are more concerned with function than ornament, addressing such issues as leak-proof seals and locking devices. Ultimately, however, it is not the technology of the covers that fascinates as much as the social history they evoke. *Manhole Covers* invites us to tread the pavements and round the corners in our neighborhoods with more care, more attention, as we seek out these emblems of America's sense of promise and future, moving forward to recapture the past. ⚙

## industry on exhibit FREDRIC L. QUIVIK

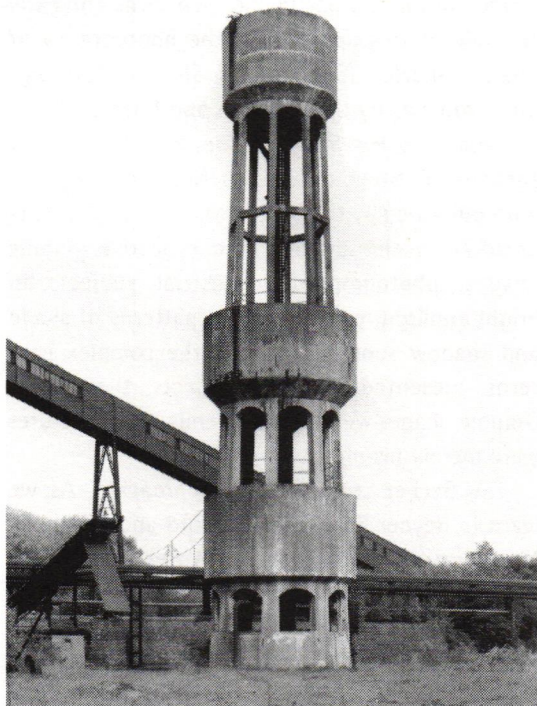
German photographers Bernd and Hilla Becher have been recording industrial structures since the 1950s, drawing attention to structures that are not often noticed but are emblematic of the industrial age: cooling towers, blast furnaces, silos, water towers, gas tanks. The Bechers present their work in collections they call "typologies" of a single class of these structures. *Water Towers* and *Gas Tanks*, two exquisite publications by MIT Press, display two such typologies. (A previous typology published by MIT in 1990 on blast furnaces is already out of print.)

The Bechers' books provide an experience comparable to that of visiting the natural history museum at the Wagner Free Institute in Philadelphia or the Mercer Museum of preindustrial American tools in Doylestown, Pennsylvania. Ascending the stairs at the Wagner Free Institute is like entering a time capsule; this beautifully preserved 19th-century natural history museum features row upon row of wood-framed, glass-paned display cases, each filled with innumerable specimens of butterflies and beetles and birds. The organization of the exhibits provokes such musings as why each species of moth has its own distinct antennae shape or pat-



tern of wing spots. Whether this experience is as useful as learning about how one particular species lives in its natural environment is debatable, and, in any case, does not detract from the pleasure of the experience in the least.

Roaming through the several stories of cast-in-place concrete cells at the Mercer Museum, each filled with a distinct class of hand-made, preindustrial tools, affords a similar experience. The museum contains some forty thousand items, organized according to Henry C. Mercer's classification system. Mercer was a turn-of-the-century archaeologist of independent means, who also made it his task to collect American tools rendered obsolete by industrialization. He sorted and displayed his collection according to categories, each falling under one of two headings: "primary," or necessary for survival, and "secondary," representing such activities as law, learning, and amusement. When viewing his collection, one marvels that there were so many facets to preindustrial American life, each requiring its own class of tools, and each class consisting of so many individual varieties. Yet none of the displays depicts in any significant detail how a craftsperson actually made or used the tools. A late 20th-century scholar or museum curator may argue that the experience of Colonial Williamsburg or Old Sturbridge Village is more useful for understanding preindustrial life in America. This might be true, but I would quickly add that they do not challenge my pattern-finding mind as the Mercer Museum does.



The Bechers' photographs—more particularly, their arrangement of them—offer the same pattern-finding opportunities. For example, it would be possible to visit the railroad yard where one of the water towers is located and learn how its design is appropriate to its context, recognizing that the tower is an integral part of a larger, complex industrial system. While a contextual view might provide a better understanding of the workings of our industrial environments, it would not reveal how the water tower relates to others of its kind—which is precisely what the Bechers' typologies convey.

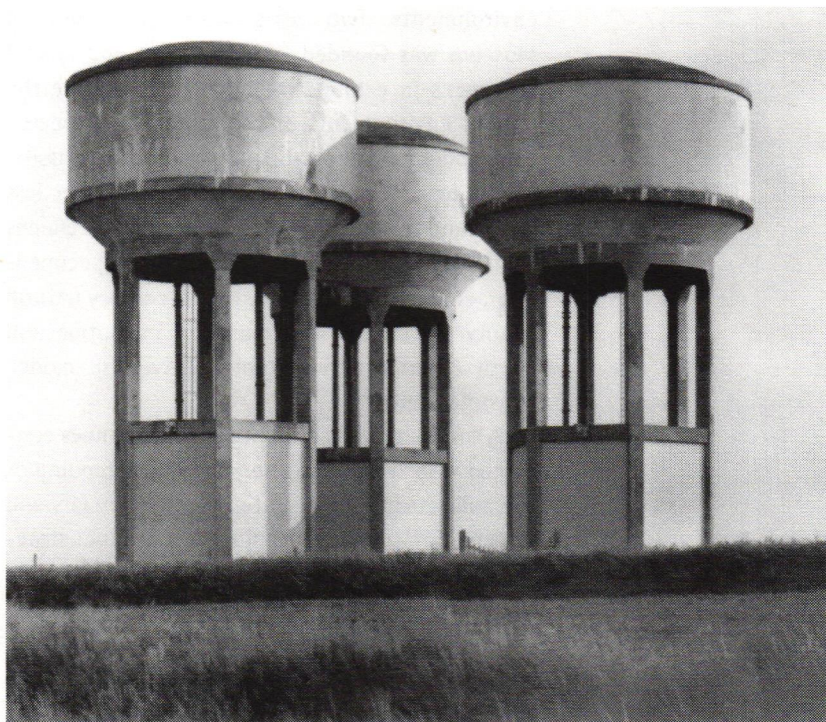
Without being labeled as such, the photographs in *Water Towers* are grouped according to category, like the shape of the tank or the structure of the support tower. The arrangement often suggests the transmutation of the tower. One marvelous series begins with photo number 154, in which bulbous, metal tanks on tubular legs make the transition into concrete tanks on assorted concrete legs or support towers. The whimsical series culminates in water tower number 170, which consists of one concrete tank positioned directly above its mate, followed by tower number 171, in which three tanks are so arranged vertically. From there, the photographs embark on a series of tanks situated in pairs, side by side, or in one case, number 177, in a group of three towers standing in a triangular pattern.

The towers, photographed by the Bechers from the 1960s through the 1980s, stand (or stood) in Germany, France, Great Britain, and elsewhere in

WATER TOWERS, Bernd and Hilla Becher, with foreword by Reyner Banham, commentary by Weston J. Naef, MIT Press, 1988, 12 pp. plus 223 photographic plates, \$60.00.

GAS TANKS, Bernd and Hilla Becher, MIT Press, 1993, 19 pp. plus 223 photographic plates, \$60.00.

Water towers, from left to right: photograph #170, in Arras, Pas-de-Calais, France; #171, in Gladbeck, Germany; and #177, in Villers-Carbonnel, Somme, France; photographed by Bernd and Hilla Becher, in 1979, 1972, and 1967, respectively. (From *Water Towers*.)



Europe, as well as the United States. The towers exist in a variety of industrial, residential, commercial, and rural settings. But as the towers are presented by the Bechers, such details have little impact on how we view each tower. Rather, each example is set only in the context of its neighbors in the book. This organization parallels the curatorial approach of early museums like the Wagner and the Mercer, and departs from more recent notions regarding what we are to learn from collections of objects.

As Enlightenment-era scientists scoured the globe in search of specimens of the wildly different species that inhabit our planet, they sought means of making sense of all they were finding. They devised the botanical and zoological classification systems still in use today. Endeavoring to educate the public about the meaning of the earth's bewildering array of life, they filled museum display cases with specimens labeled according to those classification systems. In the aftermath of Charles Darwin's theory of evolution, some natural history museums deviated from exhibiting their collections according to simple classification systems in favor of arrangements intended to convey a sense of evolutionary progression. Nineteenth- and early 20th-century museums of technology followed both models.

A new approach to museum design, however, arose in Sweden, beginning with the Skansen in 1891, an outdoor museum that presented artifacts of Swedish culture in the context of their built environments. Two years later, the Biological Museum was founded, offering plant and animal specimens in exhibits intended to reproduce the natural environments of the represented species. This model held that abstract systems of classification or of evolutionary connections were less important to understanding individual specimens than information about how those specimens interacted in the world. Most 20th-century natural history and technology museums in Europe and North America derive from the Swedish model, stressing context.

A similar trend is evident in the disciplines concerned with the preservation and understanding of the built environment. Until recently, scholars and preservationists gave meaning to individual structures by locating them along evolutionary progressions within specific classifications (for example, courthouses, log structures, Greek revival houses, and so on). Although this approach has not been abandoned, there is a much greater emphasis today

upon the analysis and preservation of entire landscapes, neighborhoods, and industrial complexes than on individual components of those environments. This is especially true in the field of industrial archaeology, in which scholars and preservationists seek to grasp entire systems, moving our attention, for example, from a lone headframe standing over a mineshaft to encompass the hoist house, ore bins, change house, and other ancillary buildings essential to a working mine, as well as to the surrounding mine waste dumps, to transportation linkages to mills or smelters, and to nearby housing for the miners.

It is in this regard that the Bechers' work can be considered a throwback to an earlier time. Their photographs convey little useful information about the relationship of a particular water tower or gas tank to its environment. The subjects are instead specimens isolated from their real-world environments, placed only in the context of other objects like themselves. In this realm, delight in the object is paramount.

The Bechers' work differs from several conventions in the photography of industrial structures and landscapes. One such convention uses material culture as a stage on which to depict the condition of human beings living and working in industrial society. A powerful recent example is Sebastiao Salgado's *Workers: An Archaeology of the Industrial Age* (New York: Aperture, 1993). Another convention uses the forms of industrial structures as the basis for powerful graphic images, ultimately portraying them as art. An early example of this approach is the photography of Charles Sheeler. (See *Charles Sheeler: Paintings and Drawings* by Carol Troyen and Erica E. Hirshler and *Charles Sheeler: The Photographs* by Theodore E. Stebbins, Jr. and Norman Keyes, Jr., both published by the Boston Museum of Fine Arts in 1987). Sheeler sought strong, evocative, graphic images, photographing industrial subjects in bright sunlight, capturing bold patterns of shade and shadow superimposed on the complex patterns presented by the subjects themselves. Graphic images were Sheeler's ends; the structures were merely his means.

The Bechers eschew both approaches. As we learn in Reyner Banham's foreword and Weston J. Naef's introductory essay to *Water Towers*, the Bechers set strict parameters on the conditions under which they carried out their work. No people are present in the photographs; human experience of the structures is irrelevant to the Bechers'

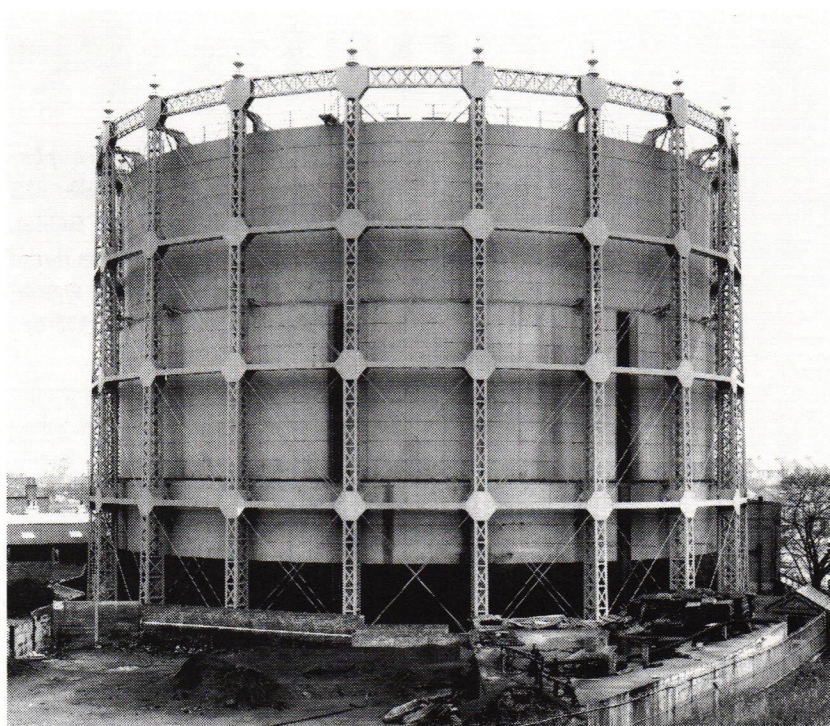
work. Unlike Sheeler, they photograph only on cloudy days, leaving a minimum of shade and shadow to detract from the forms themselves. The camera is elevated on ladders or scaffolding to secure a relatively straight-on perspective. They only photograph examples that are relatively disengaged from their context. The result is what Banham calls "deadpan portraits." Although the Bechers often achieve stunning graphic images with their photographs, it is due not so much to the play of light and dark as to the boldness of the subjects themselves. The primary aim of the resulting graphic images is to lead the viewer to focus on the subjects themselves. The Bechers further remove the human element by not divulging which of them is responsible for any given photograph.

The Bechers' work might be compared to another tradition of photographing industrial structures, exemplified in the work of Jet Lowe, whose images are featured in *Industrial Eye* (Washington, D.C.: Preservation Press, 1986). Like the Bechers, Lowe pays primary attention to the subjects themselves. But the similarity ends in their intentions. Lowe works for the Historic American Engineering Record (HAER), a division of the National Park Service. His photographs are intended to depict how the industrial subjects function and relate to their context. Moreover, his photographs are meant to be understood in the context of the documentation accompanying them, which includes detailed historical narratives and measured drawings. Narrative informs photographs and photographs inform narrative. The entire set of archival material is deposited by HAER at the Library of Congress.

The Bechers' documentation of industrial structures stands in contrast to Lowe's work. They offer only minimal narrative information about what the structures do, how they do it, and what their parts are. The photographs tell us the rest of what the Bechers want us to know, following the 19th-century natural history mode which gives classification and type preeminence.

Just as the natural history museum at the Wagner Free Institute allows visitors to marvel at a vast array of butterflies without regard for whether they came from Arkansas, Central America, or Madagascar, or whether their caterpillars eat the leaf of one particular tree or another, the Bechers allow us to wonder about wildly differing species of water towers in ways we never could if presented with only one tower standing in its larger context.

Beyond the visual pleasure these books bring,



they also serve a more serious purpose. Like the botanist or zoologist who must explore context to explain the bewildering assortment of plant and animal "designs," serious students of industrial culture must look to industrial environments to understand the variety of designs for water towers or gas tanks. The Bechers' typologies pose such questions as, Why are some water tanks arranged in pairs? And when arranged in pairs, why are some arranged vertically and some side by side? Seeking answers to these questions brings us back to context, but these questions might not be quite so apparent without the Bechers' typologies.

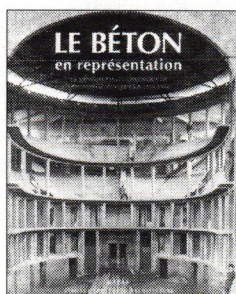
Those who feel the need for some verbal introduction to the Bechers' photographs should start with *Water Towers* because the essays by Banham and Naef provide useful background on the pair's methodology. *Gas Tanks* contains no text except for the Bechers' brief, deadpan description of their subject. Both books, however, offer the attentive "reader" new realms of meaning for easily overlooked industrial objects. ⚙

Photograph #32, of a gas tank in London-Finchley, Great Britain; Bernd and Hilla Becher, 1966. (From *Gas Tanks*.)

# briefly reviewed:

***Le béton en représentation: La mémoire photographique de l'entreprise Hennebique 1890-1930***, essays by Gwenaél Delhumeau, Jacques Gubler, Réjean Legault, and Cyrille Simonnet, Editions Hazan and Institut Français d'Architecture (Paris; distributed in the U.S. by Phillip Galgiani), 1993, 192 pp., illus., \$39.95.

The four essays that accompany this catalog of images drawn from the Hennebique archives serve as a history of the pioneering French entrepreneur of rein-



forced concrete. François Hennebique not only perfected and patented a system of construction in 1892 but he also initiated a self-serving newsletter, *Le béton armé* (Reinforced concrete), which visually chronicled the construction and performance of the

company's thousands of projects, which included factories, bridges, churches, exhibition structures, and housing. In retrospect, this vanity documentation allows insight into both the business and the technique of the first generation of builders to use concrete on an industrial scale. **Richard Ingersoll**

***L'esperienza dei luoghi, fotografie di Gabriele Basilico, 1978-1993***, text by Roberta Valtorta, Fondazione Galleria Gottardo (Lugano, Switzerland), 1993, 120 pp., illus.

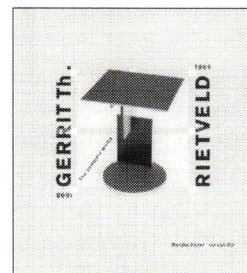
The work of Gabriele Basilico, one of the leading architectural photographers of the last decade, is the centerpiece of this catalog for a recent exhibition held at the Galleria Gottardo in Lugano. Devoted to industrial districts and landscapes seriously affected by the tools of industry, *L'esperienza dei luoghi* (The experience of places) pictures factory environments, such as the seething shores of Bilbao, the docklands and crane fields of Dunkerque, workers' housing in Milan and Madrid, various trainyards throughout Europe (also the subject of another catalog by Basilico, *Il treno verso l'Europa*, Modena, 1994), and the devastation wrought by twenty-five years of bombing in Beirut. There is an uncanny stillness in all of his work, a feeling of sacred emptiness that seems antithetical to the unholy nature of the subjects he depicts, and which charges his photographs with metaphysical intimations. Industry through his lens assumes a truly terrifying and uncontrollable beauty. **RI**

***Streamlining, the Aesthetics of Minimal Drag: A Metaphor for Progress***, Claude Lichtenstein and Franz Eigler, editors, Lars Müller (Baden, Switzerland; distributed in the U.S. by D.A.P.), 272 pp., illus., \$35.00.

"Minimal drag" refers not to transvestitism in the modern age, but is a splendid transcultural term for the tear-drop-shaped aerodynamic designs that revolutionized the style of transportation machines during the 1920s and 1930s. Produced by a small independent Swiss publisher, Lars Müller, this intriguing scrapbook assembles the careers of American and European designers and the significant items of their production. It demythologizes the American hegemony in streamlining, revealing for instance that the real father of streamlining was Austrian Paul Jarry, designer of the Zeppelin airship in 1919 and of various monocoque car bodies in 1921, long before the concept came to Detroit. Among the characters resurrected to take their proper place alongside Henry Dreyfuss and Raymond Loewy are Emile Claveau and his various pre-Citroën attempts at a "*voiture rationnelle*," and William B. Stout, designer of Ford's tri-motor airplane. The trains and automobiles designed by the Tatra Company in Czechoslovakia during the 1930s are also a discovery that reapportions the history of streamlining. **RI**

***Gerrit Th. Rietveld: The Complete Works, 1888-1964***, Marijke Küper and Ida van Zijl, Centraal Museum Utrecht (distributed in the U.S. by Princeton Architectural Press), 1992, 396 pp., illus. \$75.00.

While the Dutch designer Gerrit Rietveld is known almost exclusively for his Red Blue Chair (1918) and his first building, the Rietveld-Schröder House in Utrecht (1923), he was in fact a prolific designer of both objects and buildings, particularly in the last two decades of his career. This annotated catalog, which accompanied an exhibit held in Utrecht in 1992, covers 681 projects. His work in the 1920s, characterized by its intersecting colored planes, came to embody the essence of the de Stijl movement and had a profound effect on the Bauhaus and on Russian constructivism. Aside from outfitting interiors for private patrons with custom-made furniture, Rietveld devoted much of his energy to developing mass-producible chairs, tables, and lamps. Among the surprises of the

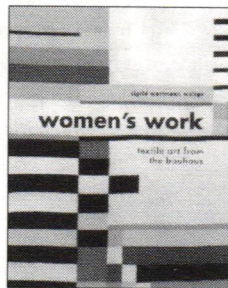


# a critical bibliography

exhibition were the tiny two-inch paper models of his furniture. The accordionlike Zigzag chair of 1932–33 was probably Rietveld's most daring structural exploit, its cantilevers still inspiring disbelief that the construction could support an average adult's weight. He was one of the first designers to work with molded plywood, tubular metal, and aluminum sheets. In the same vein as the Rietveld-Schröder House, with its movable partitions and flexible space, many of his designs were for folding or convertible furniture. His later architectural works never achieved the exuberance of that first house (which was largely influenced by Trude Schröder), even if they, too, displayed a language of asymmetrically displaced planes. In essence, Rietveld was a functionalist and he obtained his best results in the De Ploeg Textile Factory (Bergeyk, 1958) and the villa for H. Van den Doel (Ilpendam, 1958), which is reminiscent of the villa designs of Mies van der Rohe. This catalog offers six of Rietveld's writings, including "Chairs" (1930) in which he sets forward the modest working method that informed most of his designs: "Chairs," he wrote, "do not have to be any representation of the idea of sitting, but they are as it were the supporting part of the people who are sitting—the extension of their supple spines; this is why it is not yet over and done with." **RI**

***Women's Work: Textile Art from the Bauhaus*, Sigrid Wortman Weltge, Chronicle Books, 1993, 208 pp., illus., \$40.00.**

In 1920 Walter Gropius, the first director of the Bauhaus, declared that women were "too strongly represented" at the now-legendary school. In response, he advocated their strict segregation, initially into a women's department and eventually into the weaving workshop. As Sigrid Wortmann Weltge demonstrates in *Women's Work: Textile Art from the Bauhaus*, despite continuing discrimination, the weavers came to be among the most widely admired and commercially successful *Bauhäuslers* and, in the process, transformed the design of 20th-century textiles.

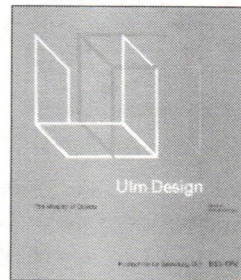


Most of the women who joined the workshop were artists rather than craftspersons (faculty member Johannes Itten had himself studied with one of the more experienced students, Ida Kerkovius). None had previous experience as weavers. Led by Gunta Stölzl, the first woman to become a Bauhaus Master, the stu-

dents pioneered the application of the abstract aesthetics taught by painters like Paul Klee and Wassily Kandinsky to textiles. By the mid-1920s, Anni Albers was among those who were adapting to the school's new, more industrially oriented direction, developing prototypes for industry with innovative textures and bold patterns that helped alleviate the sparseness of International Style architecture. In this thoroughly researched and lavishly illustrated book, Weltge not only tells the story of the weaving workshop, but also traces the later careers of its participants, and even of their students, many of whom emigrated to other European countries and to the United States. Such an approach makes *Women's Work* more than merely a specialized account of one aspect of the Bauhaus; indeed, it offers a lesson on the history of 20th-century textile design. **Kathleen James**

***Ulm Design: The Morality of Objects*, Herbert Lindinger, editor, MIT Press, 1991, 287 pp., illus., \$45.00.**

After their country suffers a devastating military defeat, a small band of German intellectuals—determined to create a new artistic order—establishes a controversial design school which is shut down only a decade and a half later, when a conservative provincial government withdraws its funding. This description applies to the Bauhaus, of course, but also to the Hochschule für Gestaltung in Ulm, founded in 1953



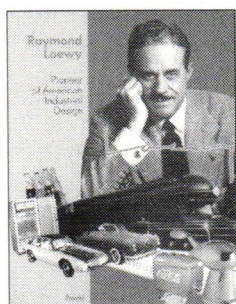
by Inge Scholl Aicher and closed in 1968, a casualty of the polarization between left and right that accompanied the student revolts. Not surprisingly, *Ulm Design: The Morality of Objects*, the first attempt to define and document the HfG, recalls *The Bauhaus: Weimar, Dessau, Berlin, Chicago* (Cambridge, Mass.: MIT Press, 1969), Hans Wingler's monumental survey of Ulm's predecessor, which continues to overshadow it.

Edited by Herbert Lindinger, himself a former member of the HfG faculty, *Ulm Design* differs from the Wingler model in key details. Most members of the HfG community maintained and even expanded upon the Bauhaus claims to objectivity, above all its emphasis on production and use over consumption, which they tended to deplore as an unfortunate encumbrance. Lindinger and contributor Michael Erloff, an art historian, make no attempt, however, to mimic Wingler's apparent objectivity, and instead engage in a dialogue

about the character of the school and its legacy. The result is a book which may anger some veterans of the institution's often contentious debates, but which will at the same time introduce its accomplishments to a new generation likely to be beguiled by the depth of its commitment to rationally defined "good design." **KJ**

**Raymond Loewy: Pioneer of American Industrial Design, Angela Schönberger, editor, Prestel (Munich; distributed in the U.S. by te Neues), 1990, 264 pp, illus., \$65.00.**

Raymond Loewy's most successful design was not the logo for Shell or for Lucky Strike or any of the numerous other icons of streamlined modernity, but was his own career as a design celebrity. This excellent collection of essays, assembled by Angela Schönberger for an exhibition of Loewy's work at the International Design Center in Berlin and the Stedelijk Museum in Amsterdam in 1990, provides a rich set of details from the parallel stories of a unique career and of the developing profession of industrial design. A self-exiled Frenchman,

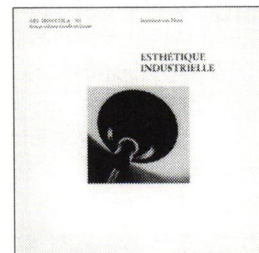


enthusiastic for the industrialized American Dream, Loewy brought a certain seductive charm to his acts of design, making them true objects of desire. Jeffrey Meikle's essay, "From Celebrity to Anonymity," and Arthur Pulos' chronicle of Loewy's major product designs reconstruct this transitional period in consumer culture, the 1930s and 1940s, when industrial styling invested products with a fascination for change. One of the more interesting chapters is by Elizabeth Reese, the erstwhile publicist for Loewy, who maps out the corporate structure of his office which at its height employed one hundred and eighty designers in three cities. Loewy signed every drawing, but his mode of practice was usually that of selecting what he liked best from his staff. The authors bring us beyond the Loewy myth, providing well-researched and thoughtful interpretations of the context of American product design in the middle of this century, and revealing how marketing, technology, and ideology affected consumer culture. The book includes chapters on Loewy's work for Studebaker, NASA, various department stores, and some surprising digressions on Loewy's French enterprise, the Compagnie de l'Esthétique Industrielle, as well as the influence he exerted on Soviet product design in the 1960s as a consultant. Together, the essays produce a thorough portrait of a true design impresario who was a protagonist in the struggle to change American taste toward a simpler, more functionalist aesthetic. **RI**

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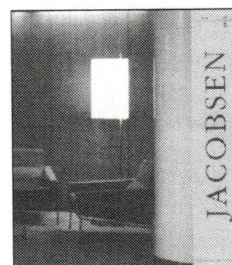
**Esthétique industrielle, Stanislaus von Moos, ARS Helvetica, Pro Helvetia/Editions Desertina, 1992, 324 pp., illus.**

*Esthétique industrielle* is a richly documented historical almanac of industrial design in Switzerland—arguably the most thoroughly industrialized country in Europe. The story begins with the Swiss section at the 1851 Great Exhibition in the Crystal Palace in London, and proceeds through the history of clockmaking, industrially produced food such as bouillon and chocolates, embroidery factories, transportation technologies, and sanatoria design. Throughout the book there is a tension between luxurious decoration and a Protestant sense of the necessary. The aesthetic response to these items of universal culture by Swiss functionalist Hannes Meyer and Le Corbusier is always beneath the surface. Swiss modernism produced significant *Bauhäuslers* Max Bill and Willi Baumeister, functionalist Hans Schmidt, as well as Sigfried Giedion's evangelism and the design of such consumer goods as smooth, coved floorlamps (used on the cover image). Von Moos never misses the connections to pop art that have occurred in the postindustrial age, which is also represented by the wild, antiproduktive machines of sculptor Jean Tinguely. **RI**



**Arne Jacobsen, "Design Classics" series, Felix Solaguren-Beascoa, editor, Santa & Croce (Barcelona), 1991, 222 pp., illus., \$64.00.**

Like Le Corbusier's chaise longue and Mies van der Rohe's Barcelona Chair, Arne Jacobsen's distinctive Seven Stacking Chair (an increasingly common accessory of the well-composed, austere spaces so favored by shelter magazines) embodies a modern sensibility indicative of the degree to which industry has transformed our ideas



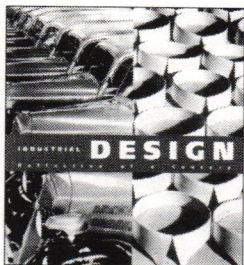
about handcrafts. With spindly steel legs delicately supporting a sinuous plywood shell, Jacobsen's chair simultaneously expresses the anonymity of the mass-produced industrial artifact and the autobiographical imprint of its creator. Indeed, the

20th-century Danish architect's capacity to assimilate industrial techniques with a clear aesthetic intention is the very embodiment of the notion of functionalism. This monograph catalogs the many designs he produced during his prolific career, dividing them into two sections, one on objects, the other on buildings. However, the sur-

vey emphasizes the former over the latter, with several interior views that reflect the degree of integration Jacobsen sought between buildings and their components. In his "total environments," every detail is subject to transformation or redesign. Fabrics, utensils, chairs, fixtures, desks, stairs, and sofas animate the relatively indistinct spaces, and disclose an iconography of modernity. While the book's emphasis on the individuality of the objects is intentional, a more generous coverage of the buildings would have revealed that their production was part of a broader vision of building and dwelling that was acutely attuned to the times. **Antonio Lao**

***Industrial Design: Reflections of a Century*, Jocelyn de Noblet, editor, Flammarion (Paris), 1993, 432 pp., illus., \$65.00.**

A suitably weighty catalog for an impressive exhibition, *Industrial Design* is like a shopping bag stuffed full of historical souvenirs, design chronologies, great moments in design, and occasional anthropological gloss. Everything about the material is quite familiar, which is to say that it retraces a design history that neither enriches the historical understanding of the phenomenon, nor organizes it into a new synthetic source. Despite a few passages that attempt to catch up with contemporary interpretations, such as an essay by Henri Pierre Jeudy entitled "Beyond a Semiology of Objects," the entire enterprise is a fairly explicit celebration of the commodity fetish. It begins with a preface by consumerist mogul Sir Terence Conran and offers more of a marketing summation than a material history of items such as the Thonet chair, the Singer Sewing machine, the Kodak camera, the Coca-Cola bottle, the Remington typewriter, the Volkswagen, the Barbie Doll, and a dozen other featured products. Caught in the midst of these superficial displays are a few worthwhile essays, such as Lionel Richard's on the turn-of-the-century debate over decoration, Jeffery Meikle's on streamlining, and Suzanne Tise's on art deco. But in general the catalog lacks a critical perspective (except for an occasional bit of French chauvinism, such as revindicating Barthélemy Thimonnier as the inventor of the sewing machine, or insisting on Raymond Loewy as the creator of "industrial design" in the United States); it is conveniently uncomplicated by the earlier awareness of mass culture transmitted by Walter Benjamin or the surrealists. As a product it does not supply the minimum criterion that good design usually promises: that there will be some use for it. **RI**



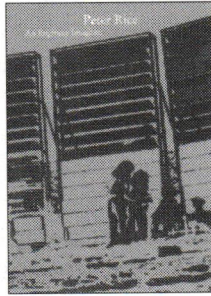
***Theory and Design in the Second Machine Age*, Martin Pawley, Blackwell (Oxford and Cambridge, Eng.), 1990, 190 pp., illus., \$27.95.**

Intended as a sequel to the late Reyner Banham's indispensable volume devoted to the first machine age, Martin Pawley's *Theory and Design in the Second Machine Age*, although driven by a similar obsession with technology, in no way approaches the depth of historical research and interpretation of its precursor. The second machine age is also known as the elusive "age of information," in which technology has become, in Buckminster Fuller's term, "ephemeralized"; it is Pawley's brief to chronicle its relationship to architecture. "The failure to keep up with applied science through technology transfer after World War II," he imputes, "was the price that architecture paid to keep the artistic integrity it had inherited from its own past." Unfortunately much of the book reads as a journalistic polemic with Prince Charles (for which Pawley paid regally, losing his job as critic at the *Guardian* for his antiroyalist diatribes) and other "conscientious objectors in the battle with nature" who have shifted architectural discourse and the parameters of the profession to the realm of inconsequential package designers and populist preservationists. Pawley makes rich use of Fuller, about whom he has written a biography, invoking examples of mass-produced buildings such as the Nissen Hut, in addition to less-known adventures in ecology-conscious designs, such as Glenn Small's Biomorphic Biospheres of the 1980s, and various applications of British High Tech, in particular the work of Nicholas Grimshaw. But in general he does not treat any of his topic headings in a systematic way. His greatest concern is for the role of the architect, which he considers "tragically diminished," and the imminence of technological transfer, which he proposes will lead to a contemporary "Gothic solution." Pawley makes a dubious return to Oswald Spengler's *Decline of the West* to explicate the technocratic impetus of the protagonists of the first machine age, implying that in order to survive the "unprecedented redundancy" of the information age, the emergence of an expert technocrat may be the only path of the architect. **RI**

***An Engineer Imagines*, Peter Rice, Artemis (Zurich), 1994, 192 pp., illus., \$49.95.**

"This then is a noble role that the engineer can assume," wrote Peter Rice in one of the fragments that make up this autobiographical collection, "the role of controlling and taming industry." The Irish-born engineer who participated in creating several of the most memorable structures of the 20th century, including the Sydney Opera House, Centre Georges Pompidou, Lloyds of London, and the de Menil Collection, played

an essential role not only in taming industry but also in interpreting architects' ideas and coaxing them toward adventurous innovations in structure. His book, which was in preparation when he died in 1992, covers his decision-making process on the major projects of his career, reflections on structural materials such as steel, stone, glass, and fabric as they related to his practice, his appreciation for Sir Ove Arup, in whose office he worked for over thirty years, and a fond assessment of the French engineer Jean Prouvé, who served as his role model in many ways. Rice was the sort of engineer who preferred to explore not what materials and structure were *supposed* to do but rather what other possibilities they had. Much of his work is located in Paris, distributed as poetic fragments of the postindustrial city: the gossamer clouds hanging from the cubic arch of La Défense, the sheer-glass conservatories on the Museum of Science at La Villette, the suspended canopies of Parc de la Villette, the inverted pyramid of the Louvre, not to mention the drumstick-shaped *gerberettes* of Centre Pompidou, which kicked off a generation of enduring monuments to lightness, tension, and strength. Rice admits that innovation in building technology is always expensive, and suggests that his projects demonstrate another type of economy in terms of how materials serve the forces of nature. It is rare to hear the voice of the engineer in the story of architecture, and this alone makes the book invaluable. In his accounts of working with architects, Rice has made a compelling overture to them to get more involved in the tectonics of their art. **RI**



***Ontology of Construction: On Nihilism of Technology in the Theories of Modern Architecture*, Gevork Hartoonian, Cambridge University Press, 1994, 110 pp., illus., \$44.95.**

The notion that architecture in the modern era is plagued by nihilism, threatened always with falling into fragmentation and arbitrariness, is commonly invoked these days as an explanation for the urge of architects to create master narratives. Nihilism, as a philosophy of despair at the loss of essence and meaning, forms a backdrop to the heroic and totalizing strategies of modern architects and city planners. Nihilism poses the ontological quandary of architecture, which possesses a zealous yet vain craving for essential meaning. Architecture in the age of nihilism is the subject of Gevork Hartoonian's *Ontology of Construction*, coloring almost every facet of his short

narrative on over three hundred years of architectural theory and design. The philosophical questions he poses are complex, having emerged from specialized discourses in both modern architectural theory and philosophical metaphysics. This short book is clearly written for readers well-versed in these discourses.

In a historical sense, Hartoonian attributes the loss of Being (*Dasein*) in architecture to the separation of construction from artistic creation that occurred in the late 17th century. Tracing back to the break between the ancients and the moderns, a process of secularism extracted construction from its place within art and brought it into a world of measure, mechanics, and quantitative reasoning.

After defining the classical era as ontologically secure, Hartoonian proceeds to cast the modern era as a derivative of montage. He writes, "The making of montage is a process that permeates a structural-spatial experience far beyond that of 19th-century architects." No longer possessing a bridge from the finite to the infinite, architecture in the secular era is trapped in reconciliatory schemes for construction and art. For Hartoonian, the transition from classical *techne* to modern tectonics best expresses this dilemma. Tectonics, as a response to unanchored essence, must go beyond construction, which by now has become a patently mechanical process of making. Ornament is a destabilizing necessity, the outgrowth of the tectonic goal to relink structural utility to analogical representation. Like other areas of study of the modern condition, architectural theory is condemned to living beyond itself, in arbitrary dreams for lost Being.

Hartoonian's key contribution is his contention that modern tectonic theories strive to reconcile architecture's former ontological unity between construction and ornament. He is rash, however, in including all significant architectural theories from the last three centuries within this framework. Should the concept of a secular era, as centered on tectonics or montage, appease the quite substantial differences among the many modern theorists of architecture? Are there not as well fundamental differences in modern and postmodern approaches to the questions of ontology and nihilism? It seems that, whereas most modernist architects embraced totality through the adoption of master narratives which either directly fulfill or reject nihilism, postmodernists have largely begged the question. They seek instead to reinvest the world of architecture with the mystery and coarseness it possessed before the age of reason and metaphysics. While full of crucial insights, it remains to be seen whether theories can re-center modern and postmodern any more than it can center modernity itself. **Mitchell Schwarzer**

# city of collective memory

DAVID VAN ZANTEN

M. Christine Boyer's *The City of Collective Memory: Its Historical Imagery and Architectural Entertainments* is an excellent book. It is clearly and powerfully written. It addresses an important topic—the manifest failings of recent urban projects—and frames a theory for addressing those failings. In many places it is a great pleasure to read. That said, what else?

The book is divided into three unequal parts. The first two chapters deal with the author's basic idea of urban shaping and focus on what she calls, after 19th-century geographer Maurice Halbwachs, the "City of Collective Memory"; the four succeeding chapters analyze the 19th-century city from this standpoint; and the final two chapters examine recent examples of urban design. Each chapter is individually impressive, though in some places the narrative seems to get away from the author, like a story that rolls on by itself, and sometimes the parts do not always fit smoothly together.

Boyer's conceptual stance, as stated in the first two chapters, is that the city is fundamentally heterogeneous. The urban designer must accept this in order to create a community that is aware of its various contrasting components, and thus unafraid of difference or of being truly democratic. What she objects to is the creation of closed urban "compositions" that reassure while manipulating, that preclude alternatives, and that create an illusion of easy community unity while, in fact, particular interests are imposing a propagandistic image of what they want the community to value. Such "compositions" are actually private public spaces. Boyer traces their modern acceptance to 19th-century European urbanistic strategies which she feels are naively continued today by historians and preservationists. She frames her own counter-ideal around the ideal of "collective memory," spontaneous and free from manipulation, with each individual reducing his or her city to a personal "text." Citing Walter Benjamin and

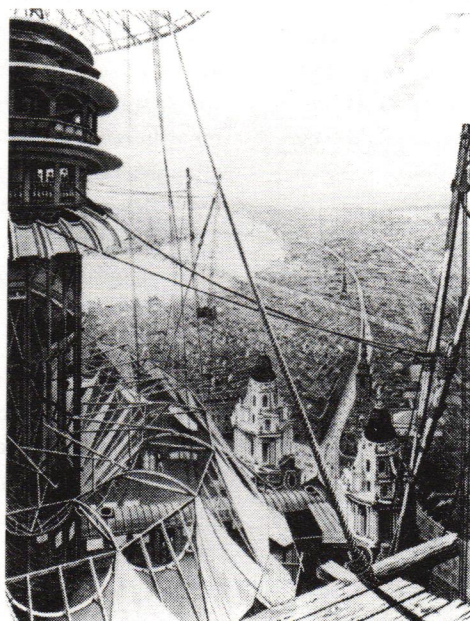
Aldo Rossi especially, as well as Halbwachs (her own addition to the canon), Eugène Atget, Sergei Eisenstein, Sigmund Freud, Marcel Poete, Aby Warburg, Michel Foucault, Henri Lefebvre, and Fredric Jameson, she explores the 19th- and early 20th-century city. Most of these personalities, ideas, and topics are familiar to recent urban theorists, as they have been fundamental for the so-called deconstructivist analysis of the last two decades. Boyer's distinct contribution, however, is the clarity with which she explains and illustrates their various roles and influences. The idea of a fixed urban history or of a final urban form holds little sway today. Boyer's explanation of alternative approaches is gratifying; it is what we want to think about and understand.

My criticism, that Boyer sometimes loses control of her narrative, applies particularly to chapters three and six, which explore the early modern city. She divides her discussion into the following categories: the city shaped as theater, the city as a museum, the city mapped and quantified, and the city as a place of "invented tradition." This is the core of Boyer's conception of the "City of Collective Memory" and each chapter supplies three or four illustrative essays. Some are delightful, such as her depiction of the enterprising Patrick Geddes in chapter five, or her additions to the literature on the contradictions of museology in chapter four, or her musings on New Orleans in chapter six; others, like her explanation of Rossi's "analogous city" are edifying. But some seem

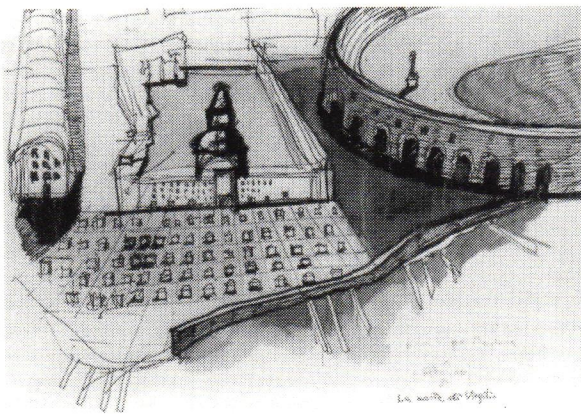
too detailed for the point they aim to make, as is the case with her essay on Athens in chapter four and the one on Washington, D.C., in chapter six. These four chapters constitute the mass of her text—her demonstration of how rich and heterogeneous responses to the city can be—but they are, unfortunately, a bit too long.

My one real disappointment in the book, however, is the relative unevenness of these four chapters and the lack of relation between the historical examples and today's urban dilemma.

THE CITY OF COLLECTIVE MEMORY: ITS HISTORICAL IMAGERY AND ARCHITECTURAL ENTERTAINMENTS, M. Christine Boyer, MIT Press, 1994, 560 pp., illus., \$45.00.



An all-embracing view painted on a cylindrical canvas became popular in London and Paris during the last decade of the 18th century. When scaffolding was erected in 1821 to repair the dome of St. Paul's in London, painter Thomas Horner climbed to its top and graphically recorded the city's panorama. A special colosseum was designed in Regent's Park to house the immense circular canvas; this drawing is a simulation of St. Paul's tower and the London panorama inside the colosseum. (From *The City of Collective Memory*.)



Perspective view of the plan for Mantua, by Aldo Rossi, 1981; this originally appeared in his 1984 book *Three Cities*. (From *The City of Collective Memory*.)

Chapters seven and eight offer accounts of recent urban preservation work as manifested in specific examples such as South Street Seaport and Battery Park, both in New York City. Here, the complexity of Boyer's style thins; she becomes journalistic,

adamantly delineating a tale of deception and chicanery in a manner that lacks the subtle turns of her earlier chapters. These last two chapters float free of the rich and heavy text that precedes them.

Possible reasons why the first six chapters do not work well with the last two include the fact that the latter focus on New York in the 1980s, while the former avoid the American experience (with the exception of chapter six) in order to address the thicker, richer historical texture of European sites. South Street Seaport simply is not Rossi's Rome or Benjamin's Paris. Again, late 20th-century economic systems based on the science of marketing and the new technology of image-making are infinitely different from those of one or two hundred years ago. For example, in order to link the decades-old Battery Park to Washington, D.C., which has been evolving since 1791, one would have to, among other things, write a whole history of "consumer technology," which is not broached here. Instead, the book betrays a hostility to the mechanisms of consumerism which leaves them unanalyzed.

But the real question remains: What exactly is Boyer's "collective memory" and how might it operate in 1994? Boyer emphasizes that it is neither a fixed history nor consumerist plenitude and "spectacle." She writes:

Memory, as opposed to history, responds more than it records, it bursts upon the scene in an unexpected manner, demanding an alteration of existing traditions. Operating only in fragments, memory is an art that connects disparate events; it is formed on the tactics of surprise, ruptures and overturnings that reveal its true power and its grip over the spectator's imagination . . .

In the *City of Collective Memory*, the architect, city planner, and spectator must begin to move beyond the will to instrumentally formulate historical utilities. . . . What will become fascinatingly rich in the *City of Collective Memory* will be the

play of opposition, the existence of randomness, disturbances, dispersion, and accidents.

There is no more detailed demonstration of the enormity of the *City of Collective Memory* in the book than this. It ends with negative examples instead of models that might demonstrate its implementation in our own time. That the creation of such cities is something designers must inspire in others rather than set forth themselves appears fundamental to the nature of "collective memory"; they must make room for communities to accomplish it for themselves. The book remind us, however, that there is nothing sadder than the liberal urbanists' invitations to self-expression, shunned or received with a telling indulgence by their (supposedly) humble audience. At least authoritarian configurations are not patronizing. The joy of urban life must reside in the city's discontinuities and its openness to encounter and fantasy, but one of the requirements for such discontinuity is the framing of successive and abortive efforts at formal unity.

The brave and sobering task of shaping these partial unities, which real life so unsparingly erodes, has always belonged to architects and urban designers. They have always been the "fall guy." To this Boyer responds that, in the *City of Collective Memory*, everyone becomes a tourist or a sympathetic observer who is open to its "entertainments." By implication, the designers blend into the general community, relinquishing their privileged positions and participating in its discovery. But here, again, Boyer is not specific.

It seems then that this book's virtues produce its defects. *The City of Collective Memory* is perhaps the most clear, thorough, and in places (such as the sections on museums and on New Orleans) sparkling enunciation of an important line of argument in recent urban analysis. It has not yet been adapted, however, to the problems currently facing cities in the United States, and in the world outside Europe. The epilogue is correct: The dense, early modern city is gone. The last chapter, too, is right: Late capitalist consumerism is what is shaping out cities, and it must be confronted. The book remains unconvincing, however, in its suggestions that Benjamin, Rossi, and Halbwachs, or Paris, Rome, and New Orleans can tell us *how*—this, in spite of the fact that I love these writers and these places passionately, and admire Boyer's evocation of them. ☼

# city of food courts

CINDI KATZ

A peculiarly American and rather nasty brand of antiurban urbanism is exposed in *Magic Lands: Western Cityscapes and American Culture After 1940* by cultural historian John M. Findlay. But it is revealed only between the lines; the lines themselves chart the course of urban development in the American West as it is signified by a handful of particular sites, developing Findlay's argument that, while western cityscapes may not conform to traditional images of the city, they are not only representative of true cities, but are emblematic of cities of the future. *Magic Lands* is a detailed probe of the complex histories of Disneyland, Stanford Industrial Park, Sun City, Arizona, and the Seattle World's Fair, and the cities that grew around them. The book is also an argument that these sites be taken seriously as influential new urban forms.

While each of these stories is interesting and well told, Findlay's overall thesis regarding the influence of these sites is rather weak and is demonstrated only fitfully. It is arguable, for instance, that it is not the "magic lands" that are so influential but the social relations and sentiments that fueled their development in the first place. The unpleasant truths about the parallel rise of western cities and racism, sexism, and class difference are suggested everywhere but left to percolate around the edges of Findlay's tale by a narrative insistent on demonstrating the peculiar influences of these cityscapes. Perhaps the magic of these landscapes is that their designers thought they could make the problems of urban poverty and racism disappear and their most singular influence is that millions of people bought the idea. But as the 1992 Los Angeles uprisings made clear, the very existence and forms of these cityscapes exude these problems.

The interpenetration between cityscape and social relations is evoked throughout *Magic Lands*, but Findlay's treatment of the subject largely overlooks the more sinister aspects of the relationship. The lack of analysis is all the more frustrating because the book is so well researched that it brims with suggestions of broader implications. Findlay points some of these out, but consistently refuses to interrogate their meaning with respect to either social relations or spatial form. The slide around race and class begins on the second page as Findlay introduces his project. He observes that while the West became the most urbanized part of the United States

during the mid-20th century, the salient myths of the West in American development continued to center on its open and perceived "virginal" land. He suggests that westerners grafted myth and reality to see their cities as "virgin cities" where "Americans [had] a unique opportunity to live according to their preferences."

While Findlay is clear that the "virgin city" is the imagined western city, he does not jab at its underbelly to determine just what those "preferences" might be, and leaves it to the reader to determine how they might be expressed in the landscape. While it is probably already clear that I saw issues of race, class, and gender underwriting the development of "the cityscapes" of the American West, other readers might interpret Findlay as referring to more benign "preferences" such as outdoor lifestyle, car culture, or detached private dwellings—the portrait of urban dwelling as painted by *Sunset Magazine*, as mythical as it is real. Findlay's commentary makes clear that he is not buying this romantic vision, but his reluctance to question it in some way aligns him with those who are selling it.

Like most of the United States, the development of the West was a roiling riot of greed, racism, and militarism. Even a cursory reading of Mike Davis' *City of Quartz* (London: Verso, 1990) makes vivid how these phenomena were integral with urban form in Los Angeles and elsewhere in the western states. The consequences explode from Davis' text. Detailing the same processes in the opening chapter of *Magic Lands*, Findlay manages somehow to make the region's development sound nice. He is clear on the economic pitfalls of urbanization tied so tightly to military growth, but does not remark upon the larger social, cultural, and political ramifications of such a cozy relationship. Sentences like "International conflict stimulated much western expansion," flatten the contradictions of urban growth based in military expansionism; terms such as the "Boeing years" or the "economic miracle" conceal the larger costs of pervasive militarism; and linking this process of

MAGIC LANDS: WESTERN CITYSCAPES AND AMERICAN CULTURE AFTER 1940, John M. Findlay, University of California Press, 1992, 334 pp., illus., \$35.00 (cloth); \$15.00 (paper).

Planted amid cotton fields on the outskirts of metropolitan Phoenix in 1959, Sun City was laid out around a golf course that assured prospective buyers that the town, with its green grass, would stand apart from the surrounding desert. (From *Magic Lands*.)





This alley, photographed in 1957, marks the approximate site of the Space Needle in Seattle, and is a testament to the fair planners' and city officials' estimation of the Warren neighborhood as a blighted district. (From *Magic Lands*.)

growth to "magic lands" such as Disneyland and the 1962 Seattle World's Fair mystifies the connections even as it allows glimpses of them.

The connections are far too charged to be left unscrutinized. Findlay does a great job of showing how enmeshed big business and government were in the growth and boosters of western cities, but then dilutes his findings with voluntarist explanations of politically and economically driven social processes such as suburbanization, residential choice, and even western migration itself. He posits the rise of the automobile and the decline of public transportation in the West as if they were questions of efficiency in a dispersed settlement pattern when in fact, "cars ruled the day" because of a set of deliberate (and well-documented) strategies on the part of the state in cahoots with the automobile, oil, and rubber industries. More pernicious still is Findlay's discussion of the links between the postwar deterioration of downtowns in western cities and the development of highways, shopping centers, and office and industrial parks away from the city centers. He notes blandly that "minorities were particularly vulnerable to the dislocations caused by urban renewal," but does not seem to entertain the notion that these racialized, uneven developments in the regional space economy were systemic, not exceptional. Yet each cityscape he discusses—Disneyland, Stanford Industrial Park, Sun City, and the 1962 Seattle World's Fair—was born of and helped drive these developments. The construction of these sites as urban forms for a new time and place demonstrated a coalescence of corporate interests in producing spaces that would avoid what was perceived as troubles back East. At certain points

in my reading—in keeping with the theme park motif—I scribbled notes about "apartheid kingdoms," "manlands," and "class zones." Such names seemed more apt than "magic lands" to describe the cityscapes discussed by Findlay.

All of this is not to say that I was not enlightened by Findlay's case studies. His discussion of each "magic land" is informative, incisive, and engaging. The illustrations are well chosen, often fun, and help elucidate his arguments, although more maps would have been useful. Most significantly, Findlay's consideration of these sites as a part of the progress of western urbanization is astute. Indeed, two of the sites—Disneyland and the Silicon Valley—are also treated in Michael Sorkin's *Variations on a Theme Park* (New York: Hill and Wang, 1992), indicative of their emblematic nature. But where Findlay considers these cityscapes as influential, unique focal points for urban growth which offered coherence when little was apparent, the authors in Sorkin's book (Sorkin on Disneyland and Langdon Winner on the Silicon Valley) view them as figurative sites of artifice, the apostasy of what is most important about cities: their diversity and particularity. Findlay is not oblivious to the artifice of these cityscapes, but he is more concerned with demonstrating how their thematic designs gave these locales and their surrounds meaning and definition.

In *Magic Lands* Findlay rejects any readings that cast these sites as deracinated urban forms. The problem with excluding this aspect is not a quibble—a preference for East over West—but rather, it reflects a long-simmering concern shared by urbanists well outside of the folds of Sorkin's book: that the themeparking of U.S. cities is part of and propels an appalling antidemocratic impulse. This impulse, like the city form it spawns, values order over difference, legibility over novelty, consumerism over grit. Privatization and corporate concerns have underwritten the nationwide move from city to "cityscape." Findlay's book gives readers a solid look at some of the origins of this move.

The concerns that drove the development of cities modeled around "magic lands" in the West have come home to roost. About five years ago, Daniel Biederman, president of the Grand Central Partnership delivered a disturbing lecture on this theme (park) in midtown Manhattan. The Grand Central Partnership, one of those new "cybourg" forms whereby the private sector takes over public functions by and for themselves, was formed in response to Mobil Oil's headquarters' wrenching departure from midtown Manhattan to Houston. According to

Biederman, Mobil's parting shot was a videotape depicting the tribulations of "everyman"—a white, male, executive commuter—getting to his midtown office from the Grand Central Terminal.

The Partnership was formed, in part, to stanch the flow. The Grand Central Partnership is an association of property owners, tenants, and public officials in the fifty-block area between Fifth and Second avenues from 39th to 48th streets, including Bryant Park to the west of Fifth, established in 1985 to improve services and the "capital plant" in the area around Grand Central Terminal. The Partnership was given the authority to tax the property owners in the area through New York State's Business Improvement District Law to fund the maintenance and improvement of its physical spaces and support a variety of public cultural events. The Partnership is typical of new trends in the privatization of public space and services, and its civic-mindedness has increased local pleasantness enormously. But according to Biederman, its model is Disneyland and therein lies my disquiet.

With its own sanitation workers, security force, and homeless shelter, the Partnership, has "cleaned up" and beautified midtown Manhattan for middle-class users. Striving for Disneyesque legibility and efficiency, they have attempted to institute codes for signage, reduced street and Terminal clutter, provided and staffed truly public toilets, and enhanced all manner of services aimed at visitors and business people. But along with those who might hustle your luggage as they hailed you a cab went the street vendors and shoe shiners—informal service workers who lost their livelihoods. As the Terminal's big clock went, so did the rights of some publics to assemble. Moreover, because the Partnership provided its own public services, it was less inclined to pressure city government to do its job. While some might see the privatization of public functions as an example of corporations assuming social responsibility, this trend is worrisome because, in contrast to public-private partnerships, municipalities provide services for all. When groups with clout take care of their own backyards, it becomes easier for the city to cut further into low-income and underserved areas, especially during times of fiscal crisis.

As "difference" in the Grand Central Terminal area was managed and controlled—the metaphors of dirt, chaos, and undesirability abetting the process—the neighborhood was resignified by "food cascading into the street," a phrase repeated ad nauseam by Biederman. It is not coincidental that the Partnership's redesign efforts were headed by Benjamin

Thompson and Associates, architects for ubiquitous Rouse Company cityscapes such as South Street Seaport in New York, Baltimore's Harborplace, and Fanueil Hall Marketplace in Boston, where diversity is offered in the form of tacos and tapas, pizzas and pirogi. With the same diabolical seductiveness as Disneyland, the middle of Manhattan was to become a food court—the edginess of difference reduced to a (literally) palatable diversity.

Biederman's predilection for Disneyland seemed surreal in a city choking on its own contradictions, but reading Findlay rendered the inspiration downright unseemly. In Disneyland, the orchestrated presentation of a mythic version of the United States is historically undergirded by racist and xenophobic hiring practices. Every aspect of the infrastructure is concealed—work that does not resemble play is hidden. The perimeters are so carefully controlled that not only is the staff made to conform to retrogressive dress and behavior codes, but even visitors are monitored. And not just the scruffy are kept out. On his 1959 visit to the land of the free, Nikita Khrushchev was not given a visa to this magic land. Biederman and his contemporaries coast to coast are latter-day Disneys. Operating like Frederick Terman, the powerful president of Stanford University who envisioned and oversaw the realization of Stanford Industrial Park, or Del E. Webb who founded the planned community of Sun City in Arizona, or the city fathers of Seattle who orchestrated the 1962 World's Fair as a cornerstone of future urban development, the heads of privatized cityscapes operate hand in glove with corporate capitalism and its public servants. Their interests are in particular forms of capital accumulation and particular directions for urban development. These visions exclude many more than they include: The public is not the master of its so-called servants and genuinely public space is becoming a thing of the past.

Findlay lays all of this out but refuses to see it as fundamentally problematic. On the contrary, he celebrates the ingenuity and vision of those who saw to the development of these new urban forms even as he notes their antiliberal and exclusionary tendencies. Yet it is precisely these tendencies that have produced divided cities, privatized public space, and polarized patterns of development and underdevelopment. Greater vigilance by scholars and critics is required to help counter the spatial flattening of contradiction and the exclusions it perpetuates. The United States needs more than a sleight of hand to enter the next millennium as a multicultural urban society. ☼

# palaces of the people

## MARY TALIAFERRO BOATWRIGHT

BATHS AND BATHING IN  
CLASSICAL ANTIQUITY,  
Fikret Yegül, Architectural  
History Foundation and  
MIT Press, 1992, 501 pp.,  
illus., \$65.00.

Classical antiquity—its architecture in particular—seems all too familiar, for our cities are filled with Greco-Roman forms in the hackneyed guise of countless post offices, courthouses, and museums. Postmodernism has reintroduced into public and private buildings soaring Roman vaults, gleaming marble veneers, and classical columns whose opulence is accepted as befitting a great country. The frequent appropriation of classical architecture may blind us to the importance of seeing it in its own context, as an expression not only of aesthetics, but of function—a function determined by the customs and beliefs of those who originally constructed and used the buildings. In this important new book, *Baths and Bathing in Classical Antiquity*, Fikret Yegül successfully accomplishes the task of simultaneously exploring the design of baths and the popularity of bathing as a cultural institution in the ancient world.

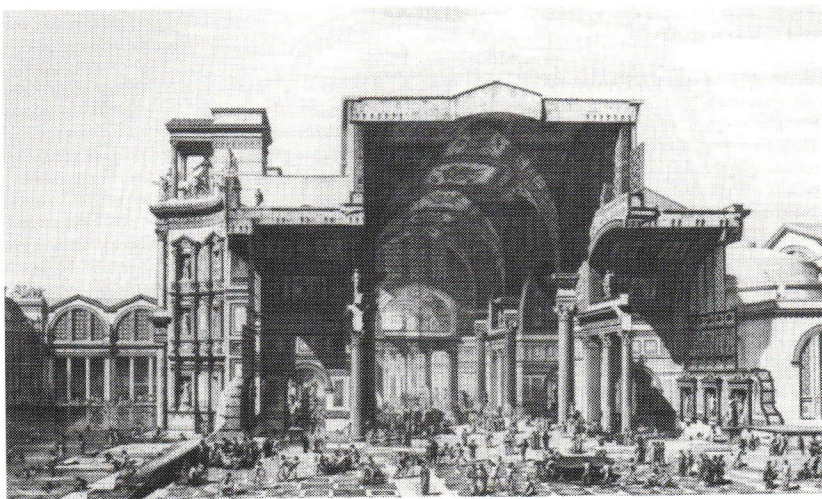
His goal is ambitious, since baths hold pride of place among the innumerable ancient remains scattered through the lands incorporated into the Roman empire, including the cities inhabited by the Greeks. The archaeological remains span a period from the 5th century B.C. to the 8th century A.D. In almost every ancient city—from Britain and northern Germany up the Nile, from the Atlantic deep into modern Syria—numerous buildings can be identified as communal public baths. And these structures are diverse, ranging from the huge baths of Diocletian in Rome, whose late-3rd-century (A.D.) *frigidarium* is still overpowering in its reconstruction as Santa Maria degli Angeli, to the five-roomed Greek baths in the sanctuary of Apollo in Cyrene, built six centuries earlier, with hip baths carved partly from virgin rock

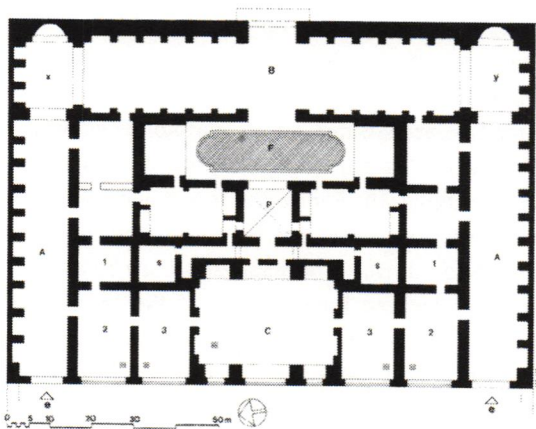
perched atop a sacred spring. Sturdy bathing facilities, which necessarily incorporated impermeable stone or cement and mortared brick (at least in the heating elements), have weathered the centuries better than other ancient buildings. The institution of bathing is similarly long-lived; in an epilogue to the book, Yegül holds that today's traditional Turkish baths are a continuation of the Roman baths of antiquity. Of this daunting array of buildings from diverse regions, eras, and cultures, the author accords most emphasis to the Roman baths of Italy, North Africa, and Asia Minor. Even so, the 506 impressive illustrations reveal the breadth of his scope.

Yegül manages to tie his material together by his main and novel thesis, that Roman bathing, which "incorporated physical exercise as a fundamental part of its routine," was inspired by the Greek gymnasium, developed in the 6th century B.C. as "an institution for the military and athletic training of young citizens as well as for their intellectual and artistic development." This program naturally included washing and bathing facilities. The link was especially obvious and decisive in Asia Minor during the Roman empire, where and when Greek and Roman cultures fused most easily; with solid evidence, Yegül also contends that the relationship was "thematic and theoretical" in the West. His thesis is animated by his work in the early 1970s on the imperial bath and gymnasium complex in Sardis, and his cogency comes from his background as an architect and as a professor in the history of architecture. He has drawn or redrawn many of the book's numerous plans, often on the basis of his own field observations. Thus, they thankfully have north points, scales, and standardized keys. Handsome photographs of the remains of baths help convey the spatial aspects so vital to the appeal of these "palaces of the people."

His reproductions of illustrations, engravings, sketches, and reconstructions of Greek and Roman baths, from Athens in the 6th century B.C. through the Beaux Arts period, demonstrate the fascination of classical bathing facilities and their aesthetic grace. Additionally, Yegül is thoroughly familiar with the ancient literary and epigraphic evidence surrounding his topic, has a firm grasp of the relevant technology, and displays a broad understanding of the cultures and regions he surveys. He communicates his knowledge well. His down-to-earth introduction succinctly sets out his premises, methods,

Thermae of Diocletian,  
Rome. Restored perspective  
of the *frigidarium*  
and *natatio*. (From *Baths  
and Bathing in Classical  
Antiquity*.)





and aims, and touches on the various implications of baths and bathing. His translation of recurrent Greek and Latin terms throughout the text and his glossary of terms related to baths and bathing make for a clear narrative. A map locates the cities whose baths he discusses, while specialized information and analyses are relegated to appendices. Architectural historians, classicists, architects, and travelers interested in learning more about the marvelous baths found throughout the Mediterranean will find this book extremely valuable. Because of its clear and complete plans, endnotes, and bibliography, as well as its accessible yet subtle interpretations and discussion, Yegül's study will become the standard reference book on Roman baths in English.

Within a broadly chronological framework, the book is arranged by topic and by region. Although this makes for some repetition, the reiteration of plans and material is useful and welcome in a book as wide-ranging as this. Yegül presents the Greek gymnasium and bath first, somewhat briefly, as he moves to his major subject, the more numerous and more elaborate Roman baths. He also introduces a controversial topic to which he returns later in the book: the architectural emphasis accorded to one side of the continuous colonnade which embellished all four sides of the expansive palaestrae (defined by Yegül in the glossary as "a colonnaded enclosure for athletic exercise; originally a part of the Greek gymnasium, in Roman usage it was the exercise yard of baths"). Delineating the design elements of this achievement, he dates the emphasis to the second half of the 4th century B.C., and links it to the developing design of contemporary religious architecture. Although the architectural focus in 4th-century palaestrae was usually a central room identified as an *ephebeum* (a hall for young men), Yegül argues that the space was subsequently used for Hellenistic ruler cults and later the Roman imperial cult. Other key attributes of the book emerge here: Yegül's deft use



Bath-gymnasium at Alexandria Troas (modern Turkey), which dates to the middle of the 2nd century. Restored plan by Fikret Yegül (after Kolderwey and Smith), and present-day view of the ashlar arches connecting the corner piers of the square central hall, labeled P on the drawing. (From *Baths and Bathing in Classical Antiquity*.)

of texts to provide lively details on the construction, function, personnel, and patrons of baths (especially noteworthy are the fascinating and lengthy Hellenistic inscriptions he adduces); his valuable emphasis on the "delicate balance between mind and body," which he sees as characteristic of bathing in classical antiquity; and his admirable refusal to simplify the material and its interpretations. The last is evident as he leaves open, but well discussed, the problematic fusion of Greek gymnasia with the Roman use of multiple and well-articulated rooms to provide orderly temperature gradations for bathers.

In the following chapter, "Bathing and Baths in the Roman World," Yegül's main aim is to substantiate his proposition that sensory attractions chiefly account for the popularity of bathing among the Romans. His general framework is psychological: "For the Romans, bathing was a luxury and a necessity. A man, freshly bathed, appeared and felt radiant." His discussion continues in this vein, touching on who frequented the baths (predominantly male citizens), and when; what bathers wore and used when bathing; and the varied bath routine which included light exercise such as easy ball games, occasional entertainment provided by traveling jugglers, strolling poets, and the like, and the opportunity for a snack or a glass of wine. The last leads to a section on bathing and morality, in which Yegül judiciously puts in their place Roman moralistic fulminations against bathing. (They seem not to have deterred a

soul!) In keeping with his psychological interpretation, Yegül relegates the section "Bath Economics" to the end of the chapter, and incorporates "social" considerations, such as the personal appearances of emperors among other bathers at the public *thermae*, into the discussion of bath routine.

The bulk of the book focuses on architecture, with a chronological narrative shaped by chapter three, "The Origins and Early Development of Roman Baths," and chapter eight, "Baths and Bathing in the Late Antique and Early Byzantine World." Addressing head-on the vexed question of the origins of Roman bathing, Yegül does not downplay the influence of rural, central Italy, even as he emphasizes the impact of "more sophisticated and non-Italian sources"; in particular, he is referring to the Greek concept of gymnastics which he sees as manifested in the region of Campania, as for instance, in the case of Pompeii's Samnite palaestra. Only here and in part of the following chapter do baths from Northern Italy, Gaul, Spain, and central and northwestern Europe appear; overall, they constitute a very small proportion of his examples.<sup>1</sup> Ending the chapter with a roughly typological classification that expands on the work of Daniel Krencker, Yegül wisely notes the numerous obstructions to the development of pure types, as well as the impossibility of tracing a chronological scheme.<sup>2</sup> Assessing specialized function can be just as useful, as the subsequent fascinating chapter on thermo-mineral baths proves. Most of this chapter is devoted to the baths at Baiae and in the Phlegraean Fields, and Yegül touches on the powerful nexus of religion, hygiene, medicine, and baths. He provides a more thorough discussion of these connections in the first appendix.

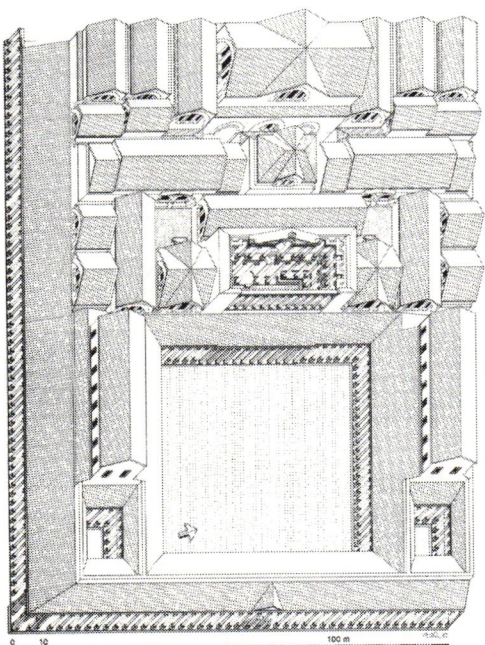
Yegül goes on to discuss the great imperial baths of Rome, the *thermae*, confirming their uniqueness in design, physical expanse, and demands on personnel and infrastructure. Surveying even examples that are no longer visible, such as those of Trajan Decius, this thorough treatment of the type and its function in Rome is enhanced by some of the most varied illustrations in the book. Indeed, much of Yegül's evidence for the early and fundamental *thermae* of Agrippa and of Nero are sketches by Andrea

Palladio. (His use here of previously published illustrations unfortunately results in the book's few muddy reproductions.) Although the imperial *thermae* type appears rarely outside of Rome (notably in Trier, Lepcis Magna, and Carthage), it is an important one for Yegül. The Roman *thermae* provide the most convincing evidence that Greek gymnastics, which aimed to cultivate the mind and body simultaneously, influenced Roman baths of the Latin West. Inscriptions and literature suggest tantalizingly that the vast spaces and many rooms of Rome's *thermae* were used for educational purposes, perhaps even containing Greek and Latin libraries. A far cry from the pulsating workout videos at modern gyms!

The following chapter on the baths of North Africa begins with a few examples of an "imperial type," and then scans a dizzying variety of baths from modern Morocco to Libya. These baths show more experimentation with curvilinear forms, non-axial arrangements, and multiple plunge pools than any baths elsewhere. Many were quite small, with tightly set rooms that served perhaps less than twenty bathers at any time. But while this chapter contains some interesting insights—for example, Yegül notes appositely that baths in general, and especially in North Africa, may have served as the entertainment centers of private clubs—it was the least satisfying. Most of the baths cannot be dated any more exactly than to the second or third centuries A.D. Furthermore, Yegül begins with the premise that North Africa was a "land that had considerably few traditions of its own in artistic and architectural matters," which leads him to organize the various North African baths into either direct derivations from Roman and Italian models or hybrids of local and Western sources. Yegül arranges the many baths he discusses by typological plan (whose intricate details are relegated to one of the appendices), bypassing the historical and topographical contextualization that is so impressive elsewhere in the book. The baths become indistinguishable.

In contrast, the chapter on the baths and gymnasia of Asia Minor is immediately engaging. Moving away from a strictly typological analysis, Yegül returns to a wider context, evaluating construction techniques and materials. He claims, for example, that bath structures in this part of the Roman world figured in imperial cults, with rituals centered in the marble halls that often opened palaestrae as *ephebea* had earlier. The fine reconstructions, such as his own axonometric study of the bath-gymnasium complex at Sardis, graphically corroborate his thesis on the synthesis of Greek and Roman cultural traditions in

Yegül's restored axonometric view of the 2nd-century bath-gymnasium complex in Sardis. The marble *ephebeum*, or central hall, associated by Yegül with the imperial cult, is located behind the open, rectilinear palaestra. Flanking and beyond this highly articulated space are the vaulted rooms and halls used for the heated baths. (From *Baths and Bathing in Classical Antiquity*.)



Asia Minor: The "Greek," rectilinear, wooden-roofed palaestra with its incessant columns looks almost grafted onto the massed Roman barrel-vaulted halls used for the heated baths.

The final chapter charts the later transmission and transformation of the Roman bathing institution and bath designs. Yegül appropriately insists on tracing and illustrating this continuation, despite both the adamant early Christian condemnations of baths, and the traditional exclusion of Arabic and Turkish societies as "non-Western." His deep knowledge of baths lets him draw compelling parallels in the designs of, for example, the 8th-century Umayyad baths at Khirbat al-Mafjar near Jericho and the 2nd-century Legionary baths at Lambaesis in Algeria. Although the number and general size of baths dropped significantly during this period, bathing continued to be an important social ritual in the East and West. The early church denounced the sensuous aspects of bathing while condoning its medicinal and curative uses—and while maintaining luxurious baths at episcopal and imperial palaces and residences. The equivocation of the church's stance is unintentionally reflected in a wonderful engraving by Luca Ciamberlano, which depicts St. Philip exorcising the baths of Diocletian. While a tiny devil flees from the ruinous *thermae* in the upper right, St. Philip and his companions stand securely framed by their classical heritage, represented by the Colosseum and the Arch of Constantine. Yegül concludes his book by paraphrasing Islamic texts on the *majlis al-Lahweh*, or "pleasurable gatherings of friends." As the male members of elite Arab society drink, listen to poetry recitals, watch dancers, and splash in swimming pools, Yegül's earlier portrayals of the sophisticated luxury of the Roman baths come to mind. His clear plans, photographs, and reproductions have provided the reader with numerous settings in which to place such lucky bathers, while his fascinating detail makes perfectly understandable the baths' longevity as a cultural institution.



Yegül's impressive and provocative narrative prompts me to conclude with some further observations. Although properly setting his investigation of baths and bathing within a Roman empire characterized by diversity and a multicultural heritage, he distinguishes a bath architecture common to the regions he examines—an orderly arrangement of rooms offering numerous sequences of temperature gradations, and the general elaboration of these rooms by architectural design or decoration. Yet his captivating psycho-

logical interpretation of the institution these characteristics represent tends to blur the unique qualities of Rome that both made these baths possible and integrated the many cultures of the Roman empire. Rome's engineering resources, combined with almost unparalleled abilities of harnessing manpower and resources, were essential to the baths. Complete as it is in its provision of fascinating details, Yegül's appendix on the heating and water supply of baths could have emphasized much more forcefully the vast amounts of firewood and water expended in daily maintenance. Veritable battalions of slaves worked the furnaces, cleaned the fixtures and tubs, and kept up the grounds of the *thermae*; we can guess their numbers by comparing the surface area of the *thermae* of Diocletian—120,000 square meters—to that of the flourishing North African city of Timgad, which covered 112,000 square meters. The priority Romans accorded baths is suggested by Pompeii's reconstruction effort after the earthquake of A.D. 62; at the time of Vesuvius' eruption seventeen years later, the main baths were the public buildings back in service, not the major temples or governmental buildings.

The Romans devoted stupendous amounts of effort and wealth to their baths. Their sturdy and pleasing construction and their sumptuous and psychologically appealing decoration were the result of brickyards that might have been Rome's only real industry at the time, and of far-reaching networks of marble production and elaboration.

This early 17th-century engraving, *Saint Philip Exorcising the Thermae of Diocletian* by Luca Ciamberlano, shows the devil (at upper left) fleeing from the presence of the saint. The devil may be seen as representative of pagan Rome, and the gesture of the saint may indicate the sanctification of the baths, a process of purification by the Church prior to the conversion of part of the *thermae* of Diocletian into a monastery at the end of the 11th century. (From *Baths and Bathing in Classical Antiquity*.)

Their gorgeous mosaic, fresco, and stucco work came from hours of painstaking labor, again by workers who probably only rarely enjoyed the baths themselves. Nor should we neglect the iconography of their decoration. Although Gamaliel II, a 2nd-century scholar and rabbi, could disregard a statue of Aphrodite set up in the baths as "harmless and unidolatrour because it was only an 'ornament' decorating a non-cultic environment," representational decoration did carry many meanings. Largely from the findspots of imperial statues and statue bases, Yegül himself holds that the marble halls of palaestrae in Asia Minor served imperial cults. (This controversial point is still disputed, with some present-day scholars echoing the rabbi's view.) And what should we make of the statues and bust found in Ostia's baths depicting Plotina, Sabina, and other imperial women of the court of Trajan and Hadrian? How was the image of prim Marciana, Trajan's sister, viewed by the largely male clientele in such sensuous surroundings? At the very least, representations of the imperial family and deities provided constant reminders of the political and cultural commonalities of the Roman world. The frequency and ubiquity of such reminders were among the distinctive, cohesive strengths of that empire.

But no one person could cover every aspect of Roman baths, and Yegül has made a most valuable contribution to this large area of study. All who read *Baths and Bathing in Classical Antiquity*, specialists and general readers alike, will finish with a better understanding of Roman architecture and institutions. Yegül enables us to visualize the Romans at their leisure as they strolled through domed hot-rooms and marble-sheathed halls; we can hear snatches of poetry and stirring bits of oratory amidst the constant splash of water; a refreshing tendril of cool air beckons from the spacious and well-lit room beyond the warm and humid one we stand in. Yegül has helped us to envision the architecture of the Roman baths, and has opened our eyes to its many meanings. ⚙

#### Notes

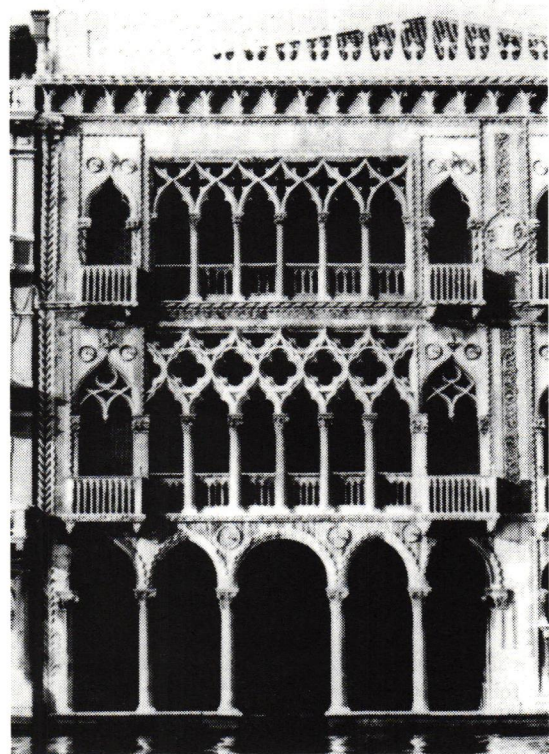
1. For baths in these areas, see I. Nielsen, *Thermae et Balnea: The Architecture and Cultural History of Roman Public Baths* (Aarhus: Aarhus University Press, 1990), and H. Manderscheid, *Bibliographie zum römischen Badewesen unter besonderer Berücksichtigung der öffentlichen Thermen* (Munich: Wasmuth, 1988).

2. D. Krencker, *Die Trierer Kaiserthermen* (Ausburg: B. Filser, 1929).

## house of gold DEBRA PINCUS

In *House of Gold: Building a Palace in Medieval Venice*, Richard Goy provides an intimate look at the construction of one of the great urban houses of the early 15th-century Europe. The book deals specifically with a long-standing Venetian typology, one which began in the late 12th century (extant examples date from the 13th century), and which reached its full Gothic expression in the 15th century.

The literature on the architecture of 15th-century Venice prior to the "intrusion" of Renaissance classicism has grown substantially in recent years. Edoardo Arslan's *Venezia Gotica* (Milan: Electa, 1970), translated into English as *Gothic Architecture in Venice* (London and New York: Phaidon and Praeger, 1971), launched something of a post-Ruskinian revival of interest in the Venetian architectural vocabulary. The pre-Renaissance architecture of 15th-century Venice has had an important place in many survey treatments, in particular Ralph Lieberman's *Renaissance Architecture in Venice 1450–1540* (London and Florence: Frederick Muller and Becocchi, 1982) and John McAndrew's



*Venetian Architecture of the Early Renaissance* (Cambridge: Mass.: MIT Press, 1980), and in the opening chapters of Deborah Howard's *The Architectural History of Venice* (London: Batsford, 1980). There is also the brilliant analysis of *Venezia minore* (literally "lesser Venice," referring to non-patrician housing) by Giorgiao Gianighian and Paolo Pavanini, entitled *Dietro i palazzi: tre secoli di architettura minore a Venezia, 1492-1803* (Venice: Arsenale, 1984).

Goy's previous two books reflect this growing interest in the lesser domestic architecture of Venice. *Chioggia and the Villages of the Venetian Lagoon: Studies in Urban History* (New York and Cambridge, Eng.: Cambridge University Press, 1985) is a study of urban development in the ambient of Venice, starting with Chioggia in the 11th century. *Venetian Vernacular Architecture: Traditional Housing in the Venetian Lagoon* (Cambridge University Press, 1989) examines the architectural types and buildings methods that accompanied the region's urbanization, concentrating primarily on Venice itself. Goy's creative use of archival sources, combined with his analysis of the materials and mindset of the practicing architect, forged the methodology of these earlier studies. But the slightly ponderous, painstakingly didactic tone that characterizes his earlier pioneering work has subsided in this new book. In *House of Gold*, Goy knows he has a good story to tell, and he presents the most detailed account we have of any building in Venice, sharing with readers the passion of his involvement.

Two "personalities" become intertwined as Goy's narrative unfolds: first, the house itself as it gradually expands, developing in exuberance and originality, with its glittering, gilded and polychromed facade that by the late 16th century earned it the name of Cà d'Oro; and second, the patron, Marin Contarini, a solidly placed member of Venice's merchant upper class who was confident enough to serve as his own building supervisor and was clearly determined to upstage his fellow patricians. He had an inventive streak that was as prudent as it was fanciful. For example, he devised doors with fourteen locks, strong chains, and iron hinges, as well as a cost-accounting system that he employed throughout the entire project.

Goy introduces Contarini as he enters into marriage with Soradamor Zeno, a member of another prominent Venetian family. Through his marriage and some manipulation of dowry arrangements, he managed to acquire an important piece of Zeno

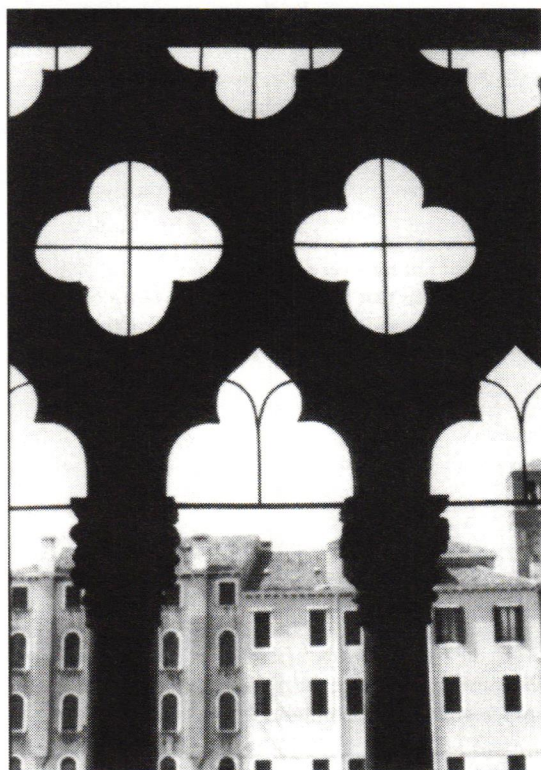
property fronting the Grand Canal, where a spacious residence known as the Domus Magna, the Large House, already stood. But the old Domus Magna apparently did not provide the imposing image that Contarini wished to convey. Goy argues convincingly that the initial motivation for going to the enormous expense of rebuilding may have been part of the family's political ambitions in the 1420s, a strategy to propel Contarini's father into the dogeship. Though Goy doesn't lean heavily on the point, it is clear from the beginning that the Cà d'Oro stands as a tangible expression of the patrician ethic, a complex overlay of private interest and public good. The first stages of planning and organization began in 1417 or 1418, with Contarini consulting with his father. The Domus Magna was torn down, and its materials salvaged, recorded, and stored. When the last sums of money were paid out twenty-two years later, Contarini had only a few more years to live (he died in 1441), and his eldest son had begun to play a role in the final building arrangements.

The Cà d'Oro is of the type that Goy and others have termed the *palazzo-fontego*, the palace-warehouse. Such buildings, however, were not known as palaces but as "houses," *cà* being Venetian dialect for *casa*. As the Venetian writer Francesco Sansovino wrote in the late 16th-century, "No city in Europe has such grand palaces . . . but we call them 'houses' out of modesty, for only the Doge has a Palace." The ground floor was given over to commerce, with living quarters for several generations of the family up above. The ground floor provided a dock for the loading and unloading of merchandise, with ample openings at water level allowing access to a large storage hall known as the *androne*, which ran the full length of the building from front to back. In their early formulation, the buildings were two-storied affairs, but by the time of the construction of the Cà d'Oro, the type had grown to a standard four-story elevation. The upper stories echoed the commercial floor; they are tripartite in plan, with a large center hall, the *portego*, of the same dimensions as the *androne*. Smaller rooms filled in the sides. At least one of the upper stories was richly decorated on the exterior, with floor-to-ceiling openings framed in stone tracery. Contarini's unusually large site allowed for an additional set of rooms on the right side of the building, but they were given a distinct, less imposing articulation so as to maintain the traditional organization and proportions of the water facade.

HOUSE OF GOLD:  
BUILDING A PALACE IN  
MEDIEVAL VENICE,  
Richard J. Goy, Cambridge  
University Press, 1992,  
304 pp., illus., \$95.00.

The left side of the facade of Cà d'Oro (pictured here) is articulated differently than the right side. Planning began in 1417 or 1418, but construction did not begin until 1429. The ground-floor arcade is the work of Giovanni Bon, who reused materials from the Zeno Palace, while Matteo Raverti executed the two upper-level loggias, which featured Gothic tracery. (From *House of Gold*.)

Silhouette detail of the tracery of the first-floor loggia, the work of *capomaestro* Matteo Raverti. (From *House of Gold*.)



The Cà d'Oro is renowned as the most splendid example of the *palazzo-fontego* type in all Venice. In his 19th-century treatise *L'architettura e la scultura del rinascimento in Venezia*, Pietro Paoletti had already named the key figures involved in its erection. He published extensive extracts from Contarini's account books, establishing that the Lombard architect and sculptor Matteo Raverti played an important role in the building, along with the Venetian workshop headed by Giovanni Bon, with the participation of his son Bartolomeo. But Goy suspected that the full story lay hidden in the Contarini papers, and there he found it. The book is the product of an exhaustive, creative analysis of Contarini's four extant personal account books—"small, unassuming paper ledgers, or *libretti*"—in which Contarini recorded weekly and monthly payments as the work proceeded. In addition, Goy studied a number of contractual agreements also from the Venetian archives. From this diverse material, he has drawn an intimate view of the world of medieval building in Venice. He succeeds at characterizing the interaction between the various building trades, the interplay between exterior and interior work, the different kinds of payment for work performed, and the extent of the involvement of the project's principal masters.

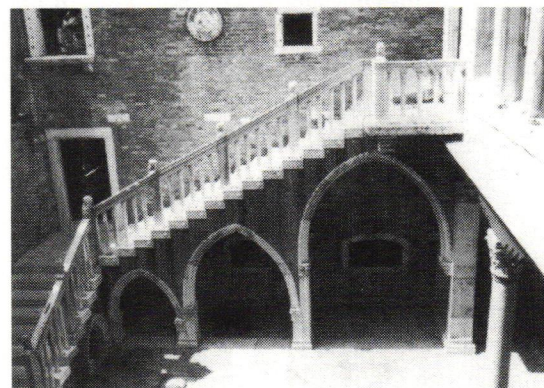
The book derives a wonderful richness from Goy's understanding of the building trades in Venice. He deftly interrupts his narrative, for

instance, to give us a short disquisition on the template, the "heart of the decorative construct." Serving as the master mason's "signature," templates were carved of wood, carefully marked with the name and symbol of the master mason, and kept in a secure place. We see the supplies arriving at the site—bricks from Mestre and the nearby *terraferma*, stone brought across the gulf from Istria on special cargo vessels known as *marani*. Daily supplies of wine were almost always part of the contractual agreement, and Goy informs us of the provision of good Malvasia for the master workmen, as opposed to the ordinary and much less expensive Trebbiano for the lay workers. An admirable aspect of the book is the balance it strikes between the details of the contribution of the ordinary workmen and the role played by the foremen, the *capomaestri*. The three major names are Raverti and the two Bons. When they are set against the patrician Marin Contarini, we have the book's broadest vision: a rich slice of life through the class-bound structure of 15th-century Venice.

The big question raised by the Ca d'Oro—which is set within a building type that is strongly traditional yet allows a wide range of possible variations—is who served as architect. In the 19th-century, Paoletti came to the conclusion that Contarini was his own architect. Goy modifies this somewhat. He calls Contarini an architect *manqué*, and suggests that the eccentricity and the brio of the facade are in large part attributable to the patron's role as an amateur organizing the components.

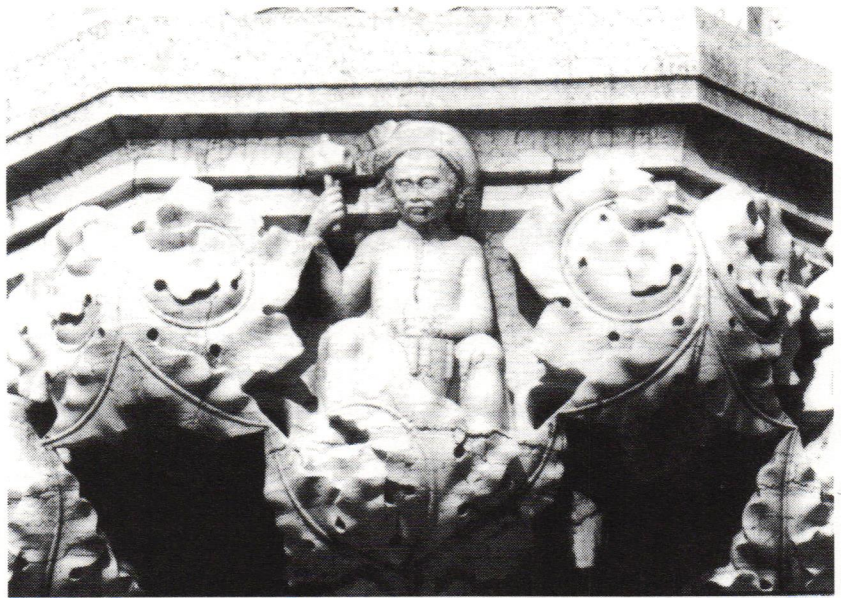
Cà d'Oro set a new standard of magnificence for the houses of Venice, and particularly for those fronting the Grand Canal. Shortly thereafter, Bartolomeo Bon, one the most important participants in the Cà d'Oro project, initiated the grandiose plan for the Cà del Duca, a brilliant, uncompleted stump of a palace begun under the patronage of Andrea Cornaro in the late 1450s. In 1493 Marin Sanudo, chronicler of the burgeoning city,

The cortile staircase, by the Raverti workshop. Carving the stone began in 1425. (From *House of Gold*.)



described the Grand Canal as "bordered by the houses of noblemen . . . better than any others." These are buildings that, on the one hand, speak of the general image of Venice as a flourishing metropolis, and, on the other, glorify the few extremely powerful families that ran the city. (Contarini made sure that his coat of arms was prominently placed at the upper corners of his building, as well as on the facade.) But such buildings were meant to be understood first and foremost as the contributions of the wealthy to the city's urban fabric. This idea was made more explicit toward the end of the 15th century, when the Grand Canal facade of the newly built Cà Dario bellowed out in bold Roman capitals: *URBIS GENIO/IONNES DARIUS*—Giovanni Dario (dedicates this) to the genius of the city.

The focus of Goy's book, as it was for the patron, is the facade, which accounted for close to half the entire cost of the building. Begun in 1429 and built on new foundations, its construction is the subject of one of the most engaging chapters. The facade is composed of two sections: a broad tripartite arrangement at the left, and a relatively solid, marble-veneered complementary area at the right, anchored by a file of windows at either end. A spine wall separates the two sections, and is marked on the facade with a band of decorative reliefs salvaged from the old Zeno Palace. Contarini's arms are set into his band, a visible statement of the union of two powerful clans. The left side of the building has always captivated viewers, with its three open loggias on three levels, each with a distinct character. What is fascinating is the way in which the two *capomaestri*, Matteo Raverti and Giovanni Bon (Goy calls him Zane Bon, following the dialect form of the documents), complemented each other. The ground-floor loggia, which provided a sturdy entrance to Contarini's *magazzini*, is the work of Bon, who reused older materials, again from the Zeno Palace. Above this are two imaginative demonstrations in Gothic tracery by Matteo Raverti, the most thrilling examples of the type in all of Venice. Zane Bon re-emerges in the building's ropelike binding at the palace's corners, and in its crenellated crown—something Contarini was especially proud of (a separate contract was drawn for it), its flowery, wavelike form reminiscent of the crown of San Marco, the state church of Venice. To the extravagance of the carving was added the dazzle of color and the glitter of gold. The final polychroming of the facade illustrates the kind of escalation in Con-



tarini's aims for the palace that Goy sees as shot through the building process. Gold leaf was applied to virtually all of the facade's projecting decorative stone elements, while areas around openings such as windows were outlined in black to give them greater relief. Decorative reliefs were highlighted with white and black paint, touches of the precious blue ultramarine were applied in particular to the Contarini coat of arms (two coats of ultramarine for the arms on the facade), and an oil-based varnish was applied to deepen the tonality of the red colored stones.

Over time, the building suffered a variety of alterations and other losses. But the history of the Cà d'Oro has an upbeat postscript: At the end of the last century, it was bought by the Baron Giorgio Franchetti, who began to restore it to its original appearance. Franchetti even managed to track down pieces of the original open staircase by Raverti and had it restored in an "archaeologically correct" manner. He also retrieved from the international art market the fine well-head executed by Bartolomeo Bon for the courtyard, and brought it back to its original site. Franchetti donated the palace, along with his considerable art collection, to the Venetian government, and it is now one of the city's most important museums. At present, unfortunately, visitors to Venice encounter a Cà d'Oro completely covered with wooden planking, behind which a complete restoration is in progress. ✨

Detail from a capital on the Palazzo Ducale, showing the craft of the master stonemason. Author Richard Goy provides an in-depth discussion of the world of building in medieval Venice. (From *House of Gold*.)

# classicism for the masses: books on stalinist architecture

GREG CASTILLO

LANDMARKS OF SOVIET ARCHITECTURE 1917–1991, Alexander Ryabushin and Nadia Smolina, translated by Gerard Magennis, Rizzoli, 1992, 159 pp., illus., \$35.00.

ARCHITECTURE OF THE STALIN ERA, Alexei Tarkhanov and Sergei Kavtaradze, translated by Robin and Julia Whitby, Rizzoli, 1992, 192 pp., illus., \$50.00.

L'ARCHITECTURE DE LA PERIODE STALINIENNE, Anatole Kopp, Presses Universitaires de Grenoble, 1978, 416 pp., illus.

BLUEPRINTS AND BLOOD: THE STALINIZATION OF SOVIET ARCHITECTURE 1917–1937, Hugh D. Hudson, Jr., Princeton University Press, 1994, 260 pp., illus., \$35.00.

CULTURAL REVOLUTION IN RUSSIA, 1928–1931, Sheila Fitzpatrick, editor, Indiana University Press, 1978, 1984, 309 pp., illus., \$35.00.

THE TOTAL ART OF STALINISM: AVANT-GARDE, AESTHETIC DICTATORSHIP, AND BEYOND, Boris Groys, translated by Charles Rougle, Princeton University Press, 1992, 126 pp., illus., \$24.95.

TOTALITARIAN ART: IN THE SOVIET UNION, THE THIRD REICH, FASCIST ITALY, AND THE PEOPLE'S REPUBLIC OF CHINA, Igor Golomstock, translated by Robert Chandler, IconEditions/HarperCollins, 1990, 416 pp., illus., \$50.00.

RUSSIAN HOUSING IN THE MODERN AGE: DESIGN AND SOCIAL HISTORY, William Craft Brumfield and Blair A. Ruble, editors, Cambridge University Press, 1993, 322 pp., illus., \$95.00.

ARCHITECTURE AND IDEOLOGY IN EASTERN EUROPE DURING THE STALIN ERA: AN ASPECT OF COLD WAR HISTORY, Anders Åman, MIT Press, 1992, 285 pp., illus., \$35.00.

Once in a great while the artifacts of a vanished culture are unearthed in their entirety and brought to light before an inquisitive audience. Socialist Realism, the emblem of "High Stalinism," is undergoing just such a rediscovery. Retired from the cold war's ideological arsenal, its painting, sculpture, theater design, street pageantry, and architecture are making a comeback on museum walls across Europe and America. "Applause paintings"—those idealized slices of socialist life committed to canvas—were featured in recent traveling exhibits organized by Oxford's Museum of Modern Art and Prague's Galerie Rudolfinum. Not to be outdone, Vienna last year boasted two retrospectives: "Art and Dictatorship," an anthology of totalitarian cultural production, and "Tyranny of the Beautiful," the first comprehensive exhibit on Stalinist architecture. Here in the United States, the offerings include "Stalin's Choice" at New York's P.S.1 art gallery, and "Soviet and Russian Realism: Treasures from the Motherland" at the Fleischer Museum in Scottsdale, Arizona. Of course where curators tread, publishers are sure to follow. Catalogs of anticapitalist art are now available as glossy coffee-table fodder, and a fresh crop of scholarly texts is defining a new field of inquiry.

Stalinist environmental design reached its high tide in the early 1950s, its influence reaching across a hemisphere bound by Berlin at one extreme and Beijing at the other. Yet unlike Russian constructivism, rediscovered by the West thirty years ago, Socialist Realism has remained something of a *terra incognita*. The dearth of literature on the topic gives the false impression of the absence of a scholarly discourse. In fact, this studied silence is one of its features. Disinterest in what was dismissed as "dictatorial kitsch" sustained an art historical narrative that coupled Soviet modernism and classicism as aesthetic and political antipodes. In the realm of architecture, the trope yielded the tragic formula of an egalitarian utopia smothered by totalitarian schlock.

Recent scholarship either renders this thesis with greater nuance or disputes its basic premises. The former approach sometimes unintentionally accomplishes the latter, as demonstrated in a comparison of the 1983 edition of William Brumfield's *Gold in Azure:*

*One Thousand Years of Russian Architecture* (Boston: David Godine) and its 1993 revision as *A History of Russian Architecture* (New York: Cambridge University Press). The earlier edition dissected Soviet modernism into component movements and actors, dispensing with Soviet classicism in a few paragraphs under the heading "The Destruction of Soviet Modernism." In the revised edition, this episode is titled "Architecture and the Totalitarian State," and is greatly expanded. While Socialist Realism is still played as modernism's antithetical "other," the bulkheads isolating the two seem to have sprouted leaks. The self-contained community structure of the quintessential Stalinist highrise, Moscow State University, now suggests to Brumfield the "melding of utopian notions of communism with the unparalleled elitism of the late Stalinist period." Surprising individual design trajectories emerge from what was, in the earlier text, an undifferentiated sea of Stalinist "hackdom." The prominent Socialist Realist architect Andrei Burov, for example, turns out to have been a prominent modernist in a former professional life. Even the standards of connoisseurship fundamental to the prevailing trope are contested, albeit implicitly, by the characterization of Stalinist construction as "by turns bombastic and superbly detailed."

More explicit challenges to convention are contained in two recent pictorials: *Landmarks of Soviet Architecture 1917–1991* by Alexander Ryabushin and Nadia Smolina and *Architecture of the Stalin Era* by Alexei Tarkhanov and Sergei Kavtaradze. Of the two works, *Landmarks* is broader in scope and more eccentric in approach. Its turbid translation, which has murals adorning a building's "butt end," is a disincentive to a close reading. But braving this murk has its rewards. From their insider's perspective, Ryabushin and Smolina present the clashing succession of Soviet design movements as ingredients in a coherent architectural tradition.

The authors open with a brisk historical overview, moving on to take a closer look at two dozen buildings that serve as benchmarks in their exegesis of a design heritage. In stark contrast to American and Western European historiography, Socialist Realism carries greater weight in this nar-

rative than constructivism—at least as measured by representation in the book's designated "landmarks," where the score is Modernists 4, Classicists 11. All but two of these exemplars are located in Moscow. This is both an artifact of centrist chauvinism and a cultural datum. Moscow's preeminence in an official hierarchy of Soviet cities was bolstered by a host of reifying myths, some of them architectural. Building sites in this "paradigm of all capitals of the world" keyed into an urban landscape of incandescent political significance. Only the profession's luminaries built there; correspondingly, architects who received commissions in Moscow were automatically ranked the best. From a viewpoint within this architectural establishment, any survey of Soviet landmarks is largely coincident with a chronicle of the capital's redevelopment.

The authors' appreciation of the Socialist Realist chapter of Moscow's reconstruction will shock colleagues farther West. Soviet skyscrapers of the 1950s are deemed "great architectural gestures," the capital's skyline "unthinkable without them." Designers who are dismissed in the Western canon as revivalist hacks are held here in highest regard. Ivan Zholtovskii, whose 1934 knock-off of Andrea Palladio's Loggia del Capitaniato is customarily invoked as the definition of Stalinist retrogression, is singled out for particular veneration and referred to as "the master." Georgii Golts, Andrei Burov, and other members of a Renaissance-revivalist group identified as the "Silver Line" are remembered as the "artistic opposition to the official architecture of strength and power," a claim that underscores the need for a reexamination of the presumed homogeneity of Stalinist architectural praxis.

Tarkhanov and Kavtaradze's *Architecture of the Stalin Era* focuses exclusively on buildings conceived during the Soviet detour from modernist practice, a trajectory the authors study with revisionist intent. They dismiss criticisms of Stalinist classicism turned out by Soviet reviewers who, by the 1960s, "often at the instigation of authorities, were competing with one another to invent amusing descriptions of 'confectionery architecture.'" Tarkhanov and Kavtaradze respond by presenting an eclectic harvest of projects, undermining the notion of a fixed Stalinist style. The adolescence of the style is revealed in improvisational amalgams of modernism and classicism from the early 1930s, milestones in a fervid campaign to invent an architectural signature for Soviet Socialism. "Mastery of the heritage" became a rallying cry in the second half of the decade, and the authors demonstrate its impact on the architec-



ture and urban planning of Moscow. With the onset of war in 1941, architects devoted themselves to visionary projects for the "socialist reconstruction" of ravaged cities and the design of war monuments. The bombastic rhetoric incubated during this round of paper architecture enjoyed its moment in the sun during the postwar efflorescence of what the authors term "triumphalism," Socialist Realism's concluding movement.

Tarkhanov and Kavtaradze summon up a dense patchwork of information to place Stalinist architecture in its cultural context. Sources range from Party proclamations and official memoirs to the collective rumors that constructed an unofficial, and often subversive, history of sites and building projects. Some of these observations drift into the text unanchored by notes or documentation, providing tantalizing but frustrating fare for the research-minded. An incidental comment that prisoners built "the most magnificent Stalinist works, from dams, locks, canals and skyscrapers to entire cities," for example, is of more than sensationalistic interest. It suggests that Khrushchev's abandonment of architectural elaboration in the mid-1950s was a logical consequence of his decision to wind down the coerced-labor economy, and not merely a sign of changed aesthetic predilections.<sup>1</sup> Potentially as significant is the notion that Stalinist monuments "made up a separate city of their own, coexisting with the real one." The image of a landscape of magisterial splendor superimposed on one of squalor is echoed in a well-known eyewitness account of the building of the Soviet Union's first industrial new town, John Scott's *Behind the Urals* (Bloomington: Indiana University Press, 1989). Historians and geographers can-

Stalin as conservative: This 1952 poster is labeled "Glory to the Great Stalin—the Architect of Communism!" At left is an apartment building on the Kotelnicheskaya embankment, by a design team headed by architects Dmitri Chechulin, 1949. (From *Totalitarian Art*.)



Stalin as revolutionary: This 1930s photomontage poster shows Stalin surrounded by symbols of modernization, such as factories, shipyards, tractors, and, immediately to his right, a celebrated constructivist-style workers' club by Illya Golosov. (From *Moskav 1917–1935*.)

not presume to fathom the complexity of Soviet urbanism until more is understood about the conceptual mechanisms by which these twin environments merged into a single gestalt.

*Landmarks of Soviet Architecture and Architecture of the Stalin Era* will undoubtedly be perceived by some readers as companions in heresy. The didactics of ecstasy which constituted Socialist Realism's *champ d'honneur* are explored in both books with the open curiosity of an anthropologist rather than the scorn of a connoisseur. Neither employs as its lodestar the standardized narrative of architecture's corruption "under Stalin." To understand the paradigm collectively abandoned

by Ryabushin, Smolina, Tarkhanov, Kavtaradze, as well as Boris Groys and Igor Golomstock (whose works are reviewed below), we must turn for a moment to the prehistory of Socialist Realism—that is, to Soviet modernism and the conventions of its account.

The story of the Russian avant-garde transcribed by the West is largely autobiographical. Soviet artist-revolutionaries took on the task of reinventing the world with a boldness that broadcast shock waves across borders. To a Western European vanguard, the future seemed to have moved east, and by the early 1930s over a thousand of its architects had followed suit. They arrived in Moscow hoping to escape an economic depression hailed as the final crisis of capitalism, and to take part in the construction bonanza of Stalin's First Five-Year Plan.

The inauguration of Soviet industrialization spurred a cultural overhaul that was short-lived. Its backlash was a state-sponsored wave of xenophobia which bode poorly for modernism, given its international ambitions and institutions. The building of "socialism in one country" now demanded its own indigenous expression, which it received in 1932. Socialist Realism, defined as a working method rather than a style, called on artists to reclaim and assimilate critically the full cultural heritage of past centuries.

To architectural historians like Nikolaus Pevsner and Sigfried Giedion, the rescinded Soviet future still seemed fresh, while the banquet of recycled neoclassicism was pungent with decay. In their view, modernism remained the only honest reflection of a 20th-century zeitgeist. For Giedion, the apparent

chaos of Europe's conflicting avant-gardes held "a true, if hidden, unity, a secret synthesis" that would define a modernist culture waiting around the bend.<sup>2</sup> Lost on these scholars was the irony that their brand of historicism—this defined by Karl Popper in *Conjectures and Refutations: The Growth of Scientific Knowledge* (1963) as "the view that the story of mankind has a plot, and that if we succeed in unraveling this plot we shall hold the key to the future"—conformed precisely to the Marxist underpinnings of Socialist Realism's heresies. As the narrative of 20th-century architecture pioneered by Pevsner and Giedion was elaborated, Stalinist classicism found its place in the West as a Judas in modernism's myth of martyrdom and resurrection.

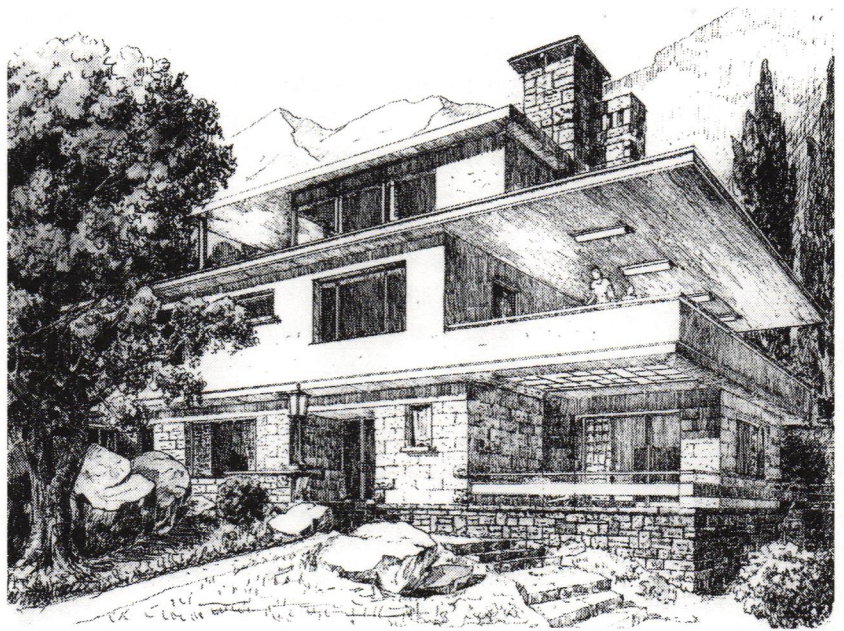
The first non-Soviet chronicle of Stalinist architecture, Anatole Kopp's *L'architecture de la période Stalinienne*, is a catalog of these propositions and their attendant problems. The study is a coda to the author's *Ville et révolution* of 1967, the West's first interpretive survey of Soviet modernism (published in English translation as *Town and Revolution*, New York: George Braziller, 1970). Both works are plotted as the tragedy of an avant-garde springtime recanted by dictatorial command. *L'architecture de la période Stalinienne* opens with a thumbnail survey of the designers and monuments associated with the cultural revolution of the 1920s. They are the story's protagonists, continually present as a standard against which to measure the "inanity" of Socialist Realism. Unfortunately, the passion invested in this polemic had a detrimental influence on its accounting procedures. Among other factual errors, Kopp dates the main pavilion of Moscow's Exhibition of Economic Achievements—a tiered tower akin to Moscow's postwar skyscrapers—to 1938 rather than 1953. The chronological error is as misleading here as it would be if it were in a study of the C.I.A.M. This false evidence for Socialist Realism as a static invention rather than an evolving discourse is reinforced in the author's use of citations from the late 1940s in his discussion of architectural developments from the early 1930s. Details take a back seat to the goal of maintaining the internal consistency of Kopp's equation of style and politics, which renders Soviet modernism and Socialist Realism as transparent signifiers of authentic and debauched versions of the Communist project.

This narrative, mirrored in the work of Soviet architectural historian Selim Khan-Magomedov, suited historical formulas on both sides of the iron curtain. The story of martyred Soviet modernists was comfortable and familiar to a Western audience. It

echoed our own stories about the Nazi suppression of Bauhaus masters, and further legitimated the postwar apotheosis of their International Style over the classicizing state architecture of Nazi Germany and of Fascist Italy. In the U.S.S.R. it was compatible with the search for a new start. Khrushchev's thaw had been founded on an inversion of the Stalinist personality cult, which formerly credited that "immortal genius of the working class" with all positive aspects of Soviet life. De-Stalinization postulated a retrievable communist legacy unsullied by totalitarian metastasis, and Kopp, like Khrushchev, located that legacy in the 1920s. He links its avant-garde architecture with the resurgence of Soviet modernism in the 1960s, endorsing the new wave in Soviet design with the assertion that the U.S.S.R. had again outstripped the West in the architecture of social reform. *L'architecture de la période Stalinienne* documents the moment of rapprochement of Western European and Soviet architectural narratives. As such, it illuminates the aftermath of Stalinism, not its unfolding.

The historian of Soviet culture S. Frederick Starr noted in the late 1970s that the axioms of Stalinist architecture's standard account were "subject to countless exceptions," "insufficiently precise," or "downright inaccurate."<sup>3</sup> At the same time an alternative was unveiled by the West German architectural historian Christian Borngräber in a study of the Moscow Metro. In a volley of published letters, Borngräber defended his scholarship against Kopp's charge that it rehabilitated Stalinism politically as well as aesthetically.<sup>4</sup> Borngräber's long-awaited survey of what he chose to call "Soviet academic architecture" would have surely become a standard reference had the author's untimely death in 1992 not left his magnum opus in unfinished fragments.

Despite these critiques, the orthodoxies surrounding Stalinist architecture still boast adherents, as demonstrated by Hugh D. Hudson's *Blueprints and Blood: The Stalinization of Soviet Architecture, 1917–1937*. From Manichean polemic to agit-prop locutions, Hudson excels at doing Kopp one better. An impassioned obituary for constructivism, for example, informs readers that "as a result of its demise, millions of people were forced to live in tiny prison-like apartments." Hyperbole spawns misrepresentation in the text's pivotal claim that Soviet modernists dreamed of "restructuring human relations around a core of love, honor, and beauty." Such notions were explicitly condemned as petty-bourgeois sentiment by the avant-garde, regaining legitimacy only after being rehabilitated by the unabashed pathos of Socialist Realism.



*Blueprints and Blood* engages in its own brand of revisionism, fine-tuning the workings of Kopp's narrative. Hudson asserts that by 1930 constructivists had turned over a new leaf. The masses, rather than a design elite, would now determine the shape of things to come. "This acceptance of the people's desires as the basis for social reconstruction," Hudson states, "constituted one of the greatest intellectual achievements of the intelligentsia during the 1920s." This departs from Kopp's account, which accepted modernists in general as the de facto representatives of the will of the people. Hudson allows only constructivists this distinction. He identifies Mikhail Okhitovich, a sociologist-turned-urbanist, as a force behind Soviet modernism's new humanist vector. A minimum of text is devoted to exploring his visionary town planning—a notable lapse given its importance in this account. The author reveals that "a revolution in transport, the automobilization of territory," was Okhitovich's prerequisite for the eradication of the capitalist city. Its socialist reformatting would disperse residents in demountable, mass-produced cabins perched on story-high pilotis. Hudson quails when it comes to addressing the feasibility of this plan, which brings to mind Kenneth Frampton's epigram for Chandigarh: a utopia "designed for automobiles in a country where many still, as yet, lack a bicycle."

The events leading to Okhitovich's purge and execution epitomize the Stalinization of architecture, in Hudson's view. Here his account shifts into a mythic key, with references to a human sacrifice spearheaded by "Stalin's Caliban," Karo Alabian, then vice president of the Union of Soviet Architects. This

Resort homes built for Stalin in the early and mid-1930s remained unpublished, and were thus immune from architectural dictates that governed "official" representations of the state. Stalin's *dacha* at Sochi, pictured above, was designed in 1934–35 by Miron Merzhanov, an admirer of Frank Lloyd Wright and a constructivist trained at Moscow's Vkhutein. The building was subsequently remodeled beyond recognition by the state. It was redrawn in 1970 by Merzhanov from memory. (From *Tyranny dei Schönen*.)

execution, we are told, aborted the prospects of "an architecture of freedom." Its antithesis is pinpointed in the ferryboat-shaped Northern River Station of 1937. Here "the Stalinization of architecture achieved its most evil form," one shaped in stone and majolica by prison labor.

The greatest contribution of *Blueprints and Blood* lies in its account of the epidemic of denunciations which began in the late 1920s and which culminated in the Great Purge of 1936–38. Hudson's chronicle of its impact on architects is mined from formerly inaccessible archives. He wields these documents to establish Okhitovich as the guileless quarry of Stalinists, an assertion made less convincing when one considers the victim's habitually high-risk behavior. Okhitovich was one of over a million party members to be relieved of that distinction in the relatively bloodless purge of 1933–34. Dismissed from his job, he obtained new employment by falsely claiming Party membership. Worse yet, he continued to advocate radical urban decentralization—an approach to city planning already condemned by Stalin's right-hand man, Lazar Kaganovitch, as a Menshevik deviation.

While the resultant tragedy does not astonish, details incidental to it do. A case in point is the allegation by an apprentice in the studio of Alexei Shchusev, the lauded designer of Lenin's Mausoleum, of his master's dalliance with counter-revolutionaries who were accused of wrecking vast amounts of government property. This glimpse of professional ethics reveals much about the state of architecture in the 1930s. Hudson's archival material documents the extent to which ethnic rivalries colored this turmoil, a topic inadequately addressed in the text. The author dubs the leading circle of non-Russian architects "the Transcaucasian mafia," and describes their acts and motives with equal subtlety. Their story, as presented in S. Frederick Starr's superb monograph

on Konstantin Melnikov, entitled *Melnikov: Solo Architect in a Mass Society* (Princeton: Princeton University Press, 1978), deserves better. Non-Russian architects came to outnumber their Russian colleagues on the presidium of the All-Union Congress of Soviet Architects through the organization's "equal opportunity" provisions. By insisting that the celebration of local tradition was the cornerstone of a socialist architecture, the non-Russian contingent carved its niche in a field dominated by Russian talent. Their demands laid the groundwork for the developed praxis of an architecture "national in form and socialist in content." The fateful outcome of the power struggle between ruthlessly ambitious, non-Russian designers and their Muscovite colleagues prompted Starr to invert the conventional view of Stalinism as the "revenge of Muscovy" to a "revenge against Muscovy" within the Soviet architectural establishment. Hudson's blunt morality tale precludes a nuanced assessment of that institutional battle, leaving his professed goal of explaining the bureaucratization of architecture under Stalin largely unaccomplished.

The tendentious polemic exercised in *Blueprints and Blood* pinpoints a crisis at the locus of cultural history where Soviet classicism and modernism meet. Once secured by coterminous Soviet and Western narratives, it is again contested turf. At stake is the maintenance of the quarantine isolating constructivism from Stalinism. Hudson and Paul Wood, the author of the lead article in the *The Great Utopia* exhibition catalog (New York: Rizzoli, 1992), both insist that the essence of Stalinism is totalitarian conservatism. Their salvos are directed at a growing number of scholars who posit a Janus-faced Stalinism, one with both retrograde and revolutionary guises.

A benchmark in that revision is Soviet social historian Sheila Fitzpatrick's edited collection, *Cultural Revolution in Russia, 1928–1931*. Its essays scrutinize the turmoil within cultural institutions during Stalin's First Five-Year Plan. As Russia's patchwork of socialist intentions and capitalist survivals submitted to central planning, enthusiasm bordered on delirium. The Great Utopia was immanent. The transformation of the nation's economic base would spawn a cultural superstructure consistent with socialism. Fueled by a potent amalgam of passion and opportunism, theorists across a spectrum of disciplines vied for positions of preeminence in the new order. S. Frederick Starr's chapter on visionary town planning surveys the chaotic efflorescence of avant-garde proposals, contextualizing the Okhitovich incident that occupies center stage in Hudson's account.

Apartment house on Mokhavaia Street, Moscow; Ivan Zholtovskii, 1934. (From *Landmarks of Soviet Architecture*.)

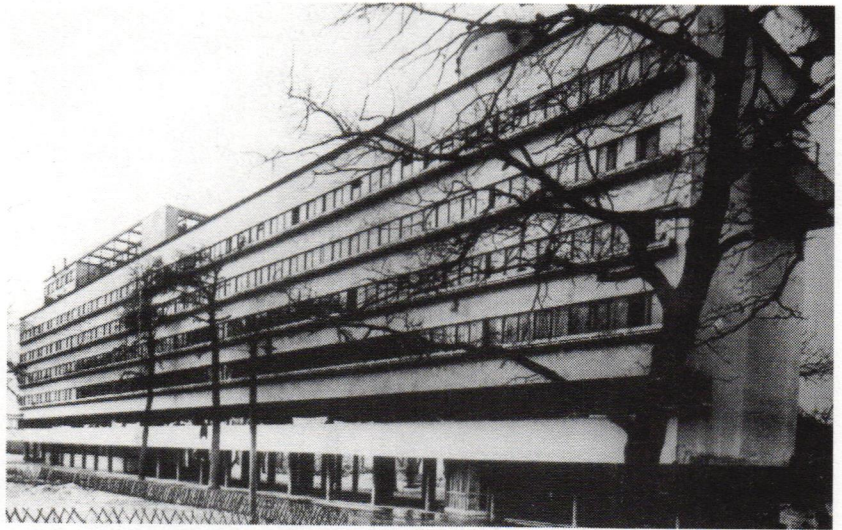


As in other fields, designers became adept at pitching utopian blueprints at state agencies and invective at competitors. Former colleagues defamed each other as "Fascists," "Trotskyites," and "cubo-futurist bastards" as the design profession splintered into warring tribes. The state soon lost its tolerance for professional rivalries masquerading as class warfare, and in 1932 architecture's cultural revolution ended with the consolidation of all factions within a monolithic Union of Soviet Architects, a reorganization consonant with the goal of rationalizing production under a system of centralized management.

Fitzpatrick's exegesis of the cultural revolution suggests its character as an avant-garde preamble to a later phase of Stalinism, and raises fundamental questions about what we mean when we talk about "Stalinist" or "Stalin-era" architecture. The timing of Soviet modernism's moment in the spotlight is singularly ill-suited to its reputation as the antithesis of Stalinist culture. The First Five-Year Plan saw the forging of Stalin's "cult of personality," his economic formula for smokestack socialism, and the building of most of constructivism's canonic monuments. Constructivism's good character references are traditionally substantiated with a ritual unfurling of its designers' utopian claims, a practice that loses credibility with Starr's revelation that these were coined in the context of a rancorous struggle for professional self-advancement.

What, then, should we take to be the hallmarks of "real" Stalinist architecture? Is it the one that subverted egalitarian impulses and put architecture at the service of a Soviet elite? Socialist Realism's ideologues claimed that its building program benefited the masses, and architectural historians have been quick to dismiss these dissimulations, and rightly so. But a similar skepticism is rarely exercised in regard to constructivist housing, despite the absence of data establishing its residential demographics. The fifty apartments contained in the standard exemplar, Moisei Ginzberg's Narkomfin block, were built by a ministry whose employees are known to have numbered thirty-seven thousand three years after the project's completion.<sup>5</sup> Here, as would become standard practice in a later, unrepentant phase of Soviet elitism, the architect claimed the most desirable unit as his own. Perhaps Kopp should be taken literally when he writes that the apartment block "was built for the officials of Narkomfin."

Is the calling card of a Stalinist architecture its use in the construction of a hegemonic culture of state and in the suppression of all alternatives? That definition is often implied in discussions of Stalin-



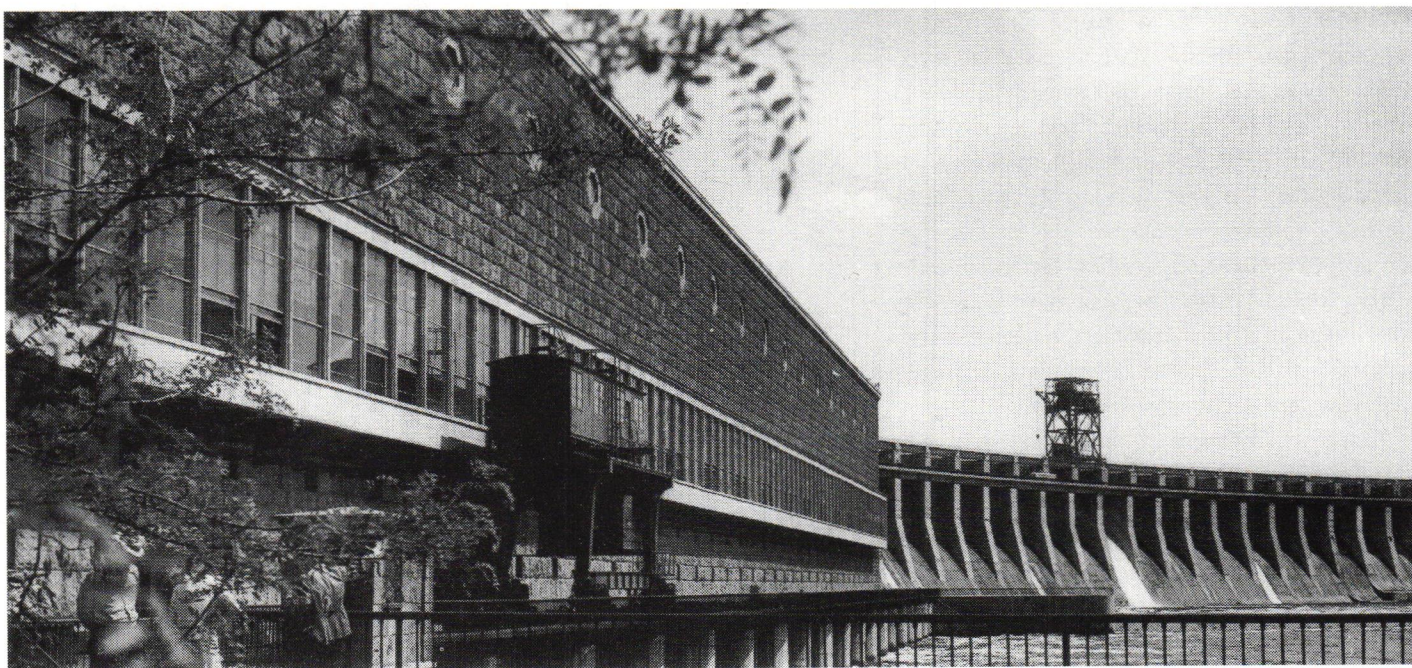
Apartment building on Novinskii Boulevard, Moscow; Moisei Ginzburg and Ignaty Milinis, 1930. (From *Landmarks of Soviet Architecture*.)

ism's voracious appetite for church demolition, the most frequently cited example being associated with the quintessential Socialist Realist project, the Palace of the Soviets, for which Moscow's 19th-century Cathedral of Christ the Savior was leveled. Constructivist monuments like Alexander, Leonid, and Viktor Vesnin's Club for the Likhachev Auto Works, which entailed the dynamiting of 15th-century pilgrimage churches attached to the Siminov monastery, would also qualify as Stalinist by that criterion.

Is Stalinist architecture that built by political prisoners, as alleged by Hudson? The deployment of coerced labor became a significant element of the Soviet planned economy after 1928. Forced labor helped build the Dneprostoi hydroelectric plant, designed by a constructivist team headed by Viktor Vesnin, and admired by Anatole Kopp as "a work of contemporary architecture without any concession to styles of the past."<sup>6</sup> The gross discrepancies implicit in such a narrative begs the application of Fitzpatrick's model of a multi-stage Stalinism to the periodization of Soviet modernism.<sup>7</sup>

The standard reading of the Russian avant-garde as a visionary enterprise unblemished by Stalinist coercion is disputed in two recent and highly controversial studies by Soviet émigré scholars Igor Golomstock and Boris Groys. Both authors consider the redesign of daily life to be the core project of the Soviet avant-garde, and both regard this unbridled reformism as a building block of Stalinist culture. The notion of Soviet modernism and Socialist Realism as antipodes is rejected by both authors, who devote great effort to identifying a connective tissue of underlying similarities.

Groys' essay-length study, *The Total Art of Stalinism*, packs a wallop disproportionate to its size. It is offered as a remedy to a 20th-century practice



Dneprostroi hydroelectric station; Viktor Vesnin, Nikolai Kolli, G. Orlov, and S. Andreevskii, 1927–32. The damming of the Dnepr River displaced over 10,000 farmers from the land and into forced labor. (From *Landmarks of Soviet Architecture*.)

decried by the author: the production of art theory as the appendage of aesthetic movements rather than as their critical "meta-description." Groys' exercise in "cultural archaeology" sifts through successive layers of aesthetic discourse to conclude that Stalinism accomplished rather than extinguished the avant-garde dream. The belief that political revolution demanded an aesthetic equivalent was common to both constructivism and Socialist Realism. The formal vocabulary ultimately developed under Stalin was, of course, antithetical to modernism. But that is less significant, Groys insists, than the continuities of an internal logic assimilated from avant-garde praxis.

Groys attributes Soviet modernism's fall to a fatal inconsistency within its discourse. The most radical force in postrevolutionary art, Aleksandr Rodchenko's Lef group, demanded the subordination of all autonomous artistic activity to the fulfillment of the Revolution's "social commissions." But according to Groys, avant-garde prescriptions for the "reconstruction of life" implied exactly the opposite, conflating individual creative genius with communal transcendence. The claim that artists possessed unique qualifications to design the new socialist environment was politically charged, encroaching upon the Party's exclusive franchise as the vanguard of revolution. In the end, artists were denied the prerogative of creation and demoted to the position of specialists carrying out state directives. In contrast to other chroniclers of this event, Groys sees this outcome as entirely consistent with the avant-garde's original proposal, celebrated by the poet Vladimir

Mayakovsky in stanzas anticipating the day when lyric output would conform to planned production quotas like those of steel and grain.

Groys' radical reassessment of Stalinist culture extends to its aesthetic vocabulary as well. The easy dismissal of Stalinist representation as kitsch, he insists, ignores the logic behind its high recycled content. In contrast to the avant-garde's notion of a permanent revolution in perception, which dismantled verisimilitude to reveal the authentic, the "barring devices" of Socialist Realism were rooted in realism. Avant-garde art was about revolution, the demolition of bourgeois institutions, and the heady promise of renewal. Stalin made those goals history. He issued notice in 1936 that the familiar metaphor of socialism "under construction" was obsolete: The foundations of socialism were now firmly established. Representational art provided a *trompe-l'œil* window into the new world, ameliorating its glaring inconsistencies and displaying what was typical in Soviet life—that is, in the late Stalinist sense of "the typical" defined by one ideologue as "not that which is encountered most often, but that which most pervasively expresses the essence of a given social force." Socialist Realism retrieved the mimetic techniques spurned by the avant-garde and used them to spin a simulated reality constructed of ideological abstractions as recondite as any system of hieroglyphics, according to Groys. The code yields its meanings to the indoctrinated; others simply see "bad art."

While *The Total Art of Stalinism* has already reconfigured its discipline—Groys' study is credited

as the inspiration behind "Tyranny of the Beautiful," Vienna's groundbreaking exhibit on Stalinist architecture—its lightning brevity makes it more a manifesto than a thorough exposition of a discourse.<sup>8</sup> The broad-stroke approach has the disadvantage of blurring distinctions between Socialist Realist theory and its normative use in literature, painting, architecture, and music, reifying the movement's claim to be a working method applied with equal validity to all aesthetic endeavors. As might be expected in a work of such compression, the roster of relevant speeches, resolutions, and other documentation is largely missing from the text. Unfortunately, so are illustrations. The book is made less user-friendly still by the absence of an index, a remarkable omission for a work of such importance.

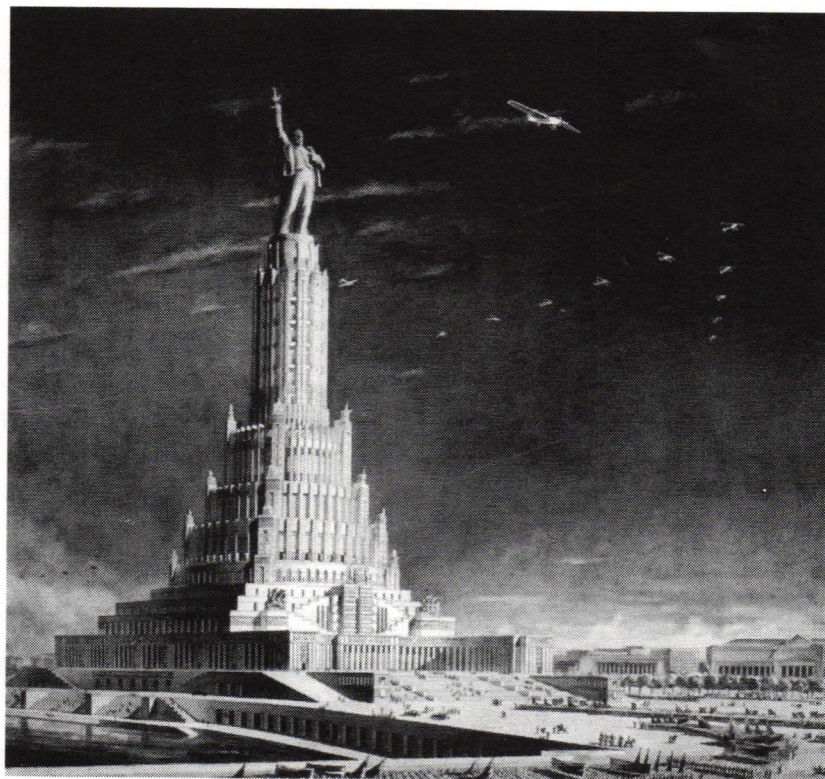
Igor Golomstock's *Totalitarian Art: In the Soviet Union, the Third Reich, Fascist Italy, and the People's Republic of China*, on the other hand, supplies the uninitiated with a general orientation to important names, dates, and examples of Stalinist cultural production. The idea for Golomstock's treatise was born in an epiphany. While the author was employed at Moscow's Pushkin Museum in the late 1950s, a forgotten copy of *The Art of the Third Reich* was discovered stuffed toward the back of a library shelf. Broadly reinterpreting his educational outreach duties, Golomstock showed successive plates from this Nazi journal to a school group, asking students to identify the artist responsible for each work. Out came a roll-call of famous Soviet Socialist Realists. A painting of a family gathered around a radio finally gave the students pause: The usual political portrait displayed on the parlor wall sported a mustache and haircut quite unlike Stalin's.

Golomstock and Groys both pursue the linkages between Soviet modernist and Socialist Realist ideology, but the similarities end there. The title of Golomstock's book suggests its underlying premise, that all totalitarian regimes employ art in parallel ways and to similar ends. The state establishes a monopoly over cultural production through mechanisms of control and patronage. One art movement is singled out and institutionalized as an official expression of ideology. All other movements are eliminated. Golomstock summarizes the major events of this process for each of the dictatorships he addresses.

As variations on a single political theme, art produced under these regimes shares formal traits as well. One is a penchant for realism, alternately saturated with mawkish sentimentality or chest-beating militarism. "Gigantomania" is another recurrent

theme, with Communist Moscow proposing the world's tallest tower and Nazi Berlin its biggest dome. Choreographed mass demonstrations, heroic representations of leaders and laborers, and expansive urban squares and boulevards are all proposed as totalitarian constants. While Golomstock's discussion of these examples is informative, the panorama he builds out of them is reductive. It lends itself to generalizations like "Totalitarianism does not produce new ideas," and constructs like the author's "Totalitarian Man"—an interchangeable proletarian ideal promoted by each of the regimes in question. The same operation performed on 19th-century capitalism might identify department stores, the cult of domesticity, and conspicuous consumption as the common denominators of "Bourgeois Man" in Paris, Chicago, London, and Vienna. But an assessment of those cosmopolitan cultures, even with their similarities, could never be satisfactory without an appreciation of local factors, ranging from geography and economy to the agency of individual personalities. Similarly, the coining of formulas to resolve the culture-specific complexities of Nazi, Fascist, Stalinist, and Maoist aesthetic discourse has this underlying implication: that what is important and interesting about these movements is limited to the characteristics they share. Such a viewpoint closes avenues of inquiry prematurely, producing an agenda for cultural research consisting primarily of dead-ends.

Palace of the Soviets, Moscow, competition project by architects Boris Iofan, Vladimir Gelfreich, and Vladimir Shchuko. This design is the version that was finally approved in the last round of the competition in 1934, however, it was never built. (From *Architecture of the Stalin Era*).





Stalinallée in former East Berlin; Hermann Henselmann, chief architect, 1952–60. (Photograph by Greg Castillo.)

A very different impression of the potentials of scholarship on Stalinist built culture is imparted by two recent monographs: *Russian Housing in the Modern Age*, a collection of essays edited by William Craft Brumfield and Blair Ruble, and *Architecture and Ideology in Eastern Europe During the Stalin Era* by Anders Åman. Brumfield and Ruble's anthology is the most comprehensive book on its topic available in English. Its component essays sweep across a century, starting with the vernacular of peasant huts and the high-style design of prerevolutionary urban dwellings, and ending with an appraisal of the return of domesticity in post-Communist Russia. Sandwiched between are four disparate studies of Stalinist housing.

Milka Bliznakov's essay, "Soviet Housing During the Experimental Years, 1918 to 1933," is a rehearsal of the familiar territory of avant-garde architectural production. Bliznakov provides a knowledgeable and useful survey in a concise, well-illustrated package. But as is frequently the case in studies of the avant-garde, the gap between the visionary idealism of a paper architecture and the concrete facts of its realization remains unexplored here. For example, after noting that "the government's commitment to provide adequate housing for all citizens never materialized," the author compares the Soviet commune favorably with Western workers' housing, criticizing the latter for failing to include "complete community services, such as education, child care, entertainment, communal food preparation, laundry facilities, and above all, a separate room for every adult."

A similar transposition of the real and the ideal marks Judith Pallot's contribution, "Living in the Soviet Countryside," which addresses agrarian housing reform as promoted within collective-farm plan-

ning. Contradictions between town and countryside were to be obliterated through the socialist reconstruction of the village. Those interventions—designed to inject urban order into the peasant landscape by siting workers' clubs where the village church stood, and adding communal facilities and public statues of leaders—constituted the paper architecture of the countryside, a fact obscured in this piece by the author's reliance on information from Soviet planning literature. The utopian biases of those documents are aided and abetted by the author's use of an anthropological citation to establish the cultural uniformity of rural housing, down to its "furniture, nickel-plated electric samovars, crockery, radios, and sewing machines that are found in any dwelling in Russia." These rare consumer goods were far from the standard contents of a typical peasant home in the 1930s, or even an urban one, for that matter. They were the stock in trade of Socialist Realist models of Soviet rural life, inhabited prototypes manufactured for media consumption. In her recent study, *Stalin's Peasants* (New York: Oxford University Press, 1994), Sheila Fitzpatrick labels these "Potemkin villages," explaining their function as "a preview of the coming attractions of Socialism." This village of the imagination stood in harsh contrast to the "hungry, drab, depopulated, and demoralized" village which, according to Fitzpatrick, was typical of rural Russia, but which is nowhere to be found in Pallot's account.

Chimerical visions of Soviet life were also mass-produced in celebration of Stalin's program for the development of smokestack socialism. But they clearly are not the substance of Stephen Kotkin's essay on housing in the steel town of Magnitogorsk, the flagship industrial new town of the First Five-Year Plan. Kotkin's research, like Fitzpatrick's on collectivized peasantry, accesses the narratives of built socialism from the subaltern's perspective. The result is a history of what Kotkin calls "the little tactics of the habitat": strategies devised by workers to negotiate the ambiguities of new societal myths; inept municipal administration and its maze of contradictory regulations; the lack of privacy and presence of informants; and above all, the scarcity of living space. Marriage was a plausible escape hatch for men, providing both a place on the waiting list to get out of dormitory barracks and a reliable source of hygienic meals and clean laundry. But true deliverance was found in the *zemlianki*, or mud huts, that housed as many as one quarter of the city's population. "It was as if the old peasant hut or *izba* had reasserted itself in the city, only without the social

control enforced by the peasant commune," writes Kotkin. Officially reviled for their humiliating association with preindustrial backwardness and petty bourgeois home ownership, suspect as a sanctuary from surveillance, the expansive shantytowns fell under new municipal regulations in 1936. They were to be demolished and replaced by cottages constructed with government permission from its supply of building materials. Since municipal authorities controlled both, the single-family cottage could now be embraced as a viable socialist housing type, serving as the ultimate reward for model workers and their families.

The paradigm shift in Soviet proletarian culture, shedding earlier visions of a radically restructured domesticity for a belated consecration of the nuclear family, is the focus of Vladimir Paperny's essay, "Men, Women, and the Living Space." Paperny's contribution recaps the thesis of his influential book, *Kultura Dva*, or "Culture Two" (Ann Arbor: Ardis, 1985), currently available only in Russian, although an English translation is in the works. In this study Paperny develops a structuralist appraisal of the schism dividing Soviet Socialism's modernist and classicist guises, or, according to his classifications, Cultures One and Two. The methodological allusion is to Heinrich Wölfflin's contrast of Renaissance and Baroque art, and although the broad categorizations that emerge require a certain critical indulgence, the fit between theory and evidence is comfortable enough to permit it. For example, the binary opposition of a cult of mobility in Culture One and one of rootedness in Culture Two gains support from Moisei Ginzberg's constructivist designs for demountable dwellings temporarily moored to their site on slender pilotis, and his invocation of "steamship cabins, airplanes, [and] sleeping cars on trains" as prototypes for the new dwelling. Compare this, as Paperny does, with the earthbound monumentality of apartments in the Soviet classicist mode and the coincident development of a system of internal passports to assign each resident her or his proper place in the landscape. Other cultural divergences explored by the author include the move from revolutionary anarchy to absolutist hierarchy, from commune to family, and from mechanistic Taylorism to the lush pathos of late Stalinism. It is an overly tidy schema, vulnerable to assaults by historians wielding contradicting evidence. Its contribution lies not in a bulletproof argument, but in the opening of a discourse addressing the cycle of myths promoted to construct a Soviet social reality.



The second world war concluded with the installation of Socialist Realism's worldview across a new European periphery. In *Architecture and Ideology in Eastern Europe During the Stalin Era: An Aspect of Cold War History*, Anders Åman examines the process by which a Stalinist "International Style" was tailored to express the foundation myths of the six "Peoples' Democracies." Surveying the multiple trajectories of postwar reconstruction across the East Bloc before 1949, the author establishes the galvanizing impact of the onset of the cold war on built culture. As the contest of superpowers filtered down to architecture, modernism was vilified by authorities as the symbol of "imperialist Cosmopolitanism." Campaigns against Western formalism, bouts of professional self-criticism, consultations with Soviet advisors, and field trips to Moscow all pointed to the correct resolution of the question of style. As bluntly put by Hungary's Minister of Education, József Révai, "Any architectural opinion contrary to Soviet architectural opinion is nothing but reaction."<sup>9</sup>

Despite these particulars, Åman insists that "the common allegation that the architecture of the Stalin era looks as if it had been imported directly from the Soviet Union is nearly always wrong." It is difficult to account for this odd conclusion. When the author conducted his research in the early 1980s, the Eastern European architects who were his inside sources may have emphasized this interpretation of events out of prudence or pride. Another influence may have been documentary. Local officials as well as Soviet consultants always portrayed Stalinist design as having native roots, going so far as to chide architects in East Berlin for copying Moscow prototypes. As demanded by the

Hansaviertel (Interbau) in former West Berlin; planned by Kreuz, Jobst & Schieeser, 1954–57. (Photograph by Greg Castillo.)

tenets of Socialist Realism, its Eastern European expressions were invariably trimmed in regional detail—local and national illustrations of an imposed cultural paradigm.

The models to be followed extended to urban planning as well. As Åman demonstrates, the fetish for an economy dominated by heavy industry produced, in the first crack at socialist city-building, a legacy of Soviet-style steel towns: East Germany's Stalinstadt, Hungary's Sztálinváros, Poland's Nowa Huta, Bulgaria's Dimitrovgrad. Magisterial administrative centers made up of formal urban ensembles were another specialty. The cargo of doctrinal associations borne by this urban syntax was given added clarity by capitalist Western Europe's rejection of the spatial closure of street and square in favor of an open landscape of buildings disengaged from the street line.

The ideological battle waged by architectural proxy was most vividly expressed in that capital city of the cold war, Berlin. The East's showplace was the grand boulevard called Stalinallee—the first stretch of the road heading east toward Moscow, according to the rhetoric of the cornerstone-laying ceremonies. The Western counterattack, the Interbau architectural exhibition, is the subject of Åman's closing chapter. The project mobilized the talents of modernism's greats, such as Le Corbusier, Walter Gropius, Alvar Aalto, and others.

But by the time the Interbau opened in 1957, the battle lines had shifted. With the de-Stalinization of Soviet culture, a new building style emerged. Its trademark apartment blocks were stripped of frills, their unelaborated "look" a byproduct of panelized construction. Soviet architectural history went through another round of cut-and-paste revision, with Socialist Realism dumped from the cultural script. Soon the changes at the center reverberated along the periphery. Stalinallee was finished out in concrete slabs and rid of its embarrassing name.

With Socialist Realism now reduced to a distant, unwanted memory by the unraveling of socialism's Soviet incarnation, Åman's excavation of its moment of international glory might be dismissed as an exercise in the recovery of an irrelevant history. It shouldn't be.

On the eve of postwar reconstruction, Arkadii Mordvinov, the Soviet minister of architecture, set the goal of Soviet architecture as the design integration of every aspect of life: "Clothes, furniture, equipment, interior decoration, buildings, streets, parks, and towns as a whole—everything must be beautiful." Given the Socialist Realist meanings of

the word "beauty"—a term loaded with the portent that "function" had in modernist discourse—this pronouncement is nothing less than a Soviet analogue of the *Gesamtkunstwerk*, the total work of art. Neither did the modernist project of the West, at least as defined by its great apologist, Pevsner, hold any illusions about its claims to totality. "This new style of the 20th century," Pevsner announced, "because it is a genuine style as opposed to a passing fashion, is totalitarian." These affinities, culminating in the cold war antagonisms of modernism and Socialist Realism as vying environmental orders freighted with geopolitical significance, should alert us to the more-than-passing resemblance of these styles in categories other than looks. Perhaps a fuller understanding of the discourses of modernism will prove to be one of the best arguments for studying the architecture of Stalinism. ☼

#### Notes

1. As with Lenin, it would be a mistake to conflate Khrushchev's politics with any given aesthetic position. In John Berger's biography of the Russian sculptor Ernst Neivestny, *Art and Revolution* (New York: Pantheon, 1969), Khrushchev is quoted by the artist as saying "The methods Stalin used were wrong, but the art itself was not."
2. S. Giedion, *Space, Time and Architecture: The Growth of a New Tradition* (1941), 5th ed. (Cambridge, Mass.: Harvard University Press, 1971), p. vi.
3. S. Frederick Starr, "The Social Character of Stalinist Architecture," *Architectural Association Quarterly* 11, no. 2, (1979): 49–55.
4. C. Borngräber, "The Moscow Metro," *Architectural Design* 49, no. 8/9 (1979): 48–53. See also A. Kopp's retort in the same journal, vol. 50, no. 7/8 (1980): 76–77; and Borngräber's reply, vol. 51, no. 3/4 (1981): 26–27.
5. H. Kuromiya, *Stalin's Industrial Revolution* (Cambridge, Eng.: Cambridge University Press, 1988), p. 294.
6. A. Kopp, *Constructivist Architecture in the U.S.S.R.* (London: Academy Editions, 1985), p. 197.
7. This argument is further developed in G. Castillo, "(de)Constructivism (re)Contextualized," *Aris* 3 (Pittsburgh: Carnegie Mellon School of Architecture, in press).
8. A catalog was published to accompany the exhibit, *Tyranei dei Schönen*, P. Noever, ed. (Munich: Prestel, 1994).
9. A. Morávanszky, "The Architecture of Socialist Realism in Hungary, 1951–1955," *Harvard Architectural Review* 4 (1987): 33.

# site-seeing

## CHRISTIAN HUBERT

Among electronically inclined literary theorists, the contemporary moment is often described as the "late age of the book." While the book may be on its way out in the long run, a certain kind of book seems to be flowering today—a kind that finds its inspiration in the mediated visual fields of film, television, and advertising. In this new literary breed, visual and verbal texts are finding new configurations, often directly aided by the very technologies—computers, video, and so on—that are purportedly announcing the book's demise. In a manner reminiscent of the film captions of Jean-Luc Godard and following the design examples of MIT Press' sumptuous *Zone* publications, these books are in equal parts a visual and a verbal "read."

The work of New York-based architects Elizabeth Diller and Ricardo Scofidio fits squarely into this hybrid art form. Having eschewed building practice for more artistic forms of architecture, Diller and Scofidio's collaborations register the double impact of electronic media and of the new academic field of cultural studies on architectural thought. They have developed a body of work whose primary venues are galleries, museums, publications, and academies of architecture; it consists primarily of installations that use textual and media strategies similar to those of Barbara Kruger, Jenny Holzer, and Dara Birnbaum, to explore what they call the "reciprocity between the authentic and the inauthentic." D+S combine contemporary visual display technologies with a Duchampian understanding of the libidinal work of objects and places. "Theoretical" or "critical" architecture today is generally attached to institutions, particularly schools of architecture. Two institutions are particularly relevant to the work of D+S: the architecture schools at the Cooper Union and at Princeton University, where Scofidio and Diller teach, respectively. A feeling for the fetish power of objects characterizes the teaching of architecture at Cooper Union, while the pair's current fascination with the cultural field of semiosis is attributable, at least in part, to Diller's current affiliation with Princeton.

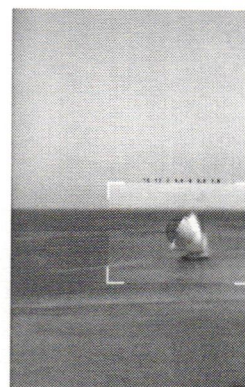
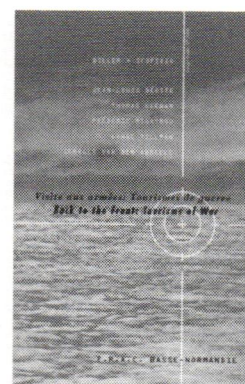
The book *Visite aux armées: Tourismes de guerre/Back to the Front: Tourism of War* is an offshoot of the installation of D+S' "SuitCase Studies," a traveling exhibition of fifty Samsonite suitcases, sponsored by and first exhibited at the Walker Art Center in Minneapolis. Purporting to "produce a national past" (the exhibition's subtitle) through images of famous beds or battlefields, Diller and Scofidio play-

fully categorized tourist sites according to revenue, selecting one popular site per state. Each "case study" contained an overhead projection device displaying information on the chosen attraction, as well as some quotes from critical writings. One indication of the humorous yet worrisome aspect of their work is the interchangeability they posit between the bed and the battlefield, both "sites of conflict." Diller proposes this as part of their "gentle" critique of tourism's economy of authenticity. She states, "The exhibition operates with the understanding that the target and the weapon can be the same. . . . The installation accepts its own role as tourist attraction, and the museum as an institution working in complicity with the institution of tourism." In fact, the authors' judicious choice of quotations almost write a review of the work. In this intertextual world, the more strenuously we work at enlarging our experience, the more pervasive its tautological aspect becomes. To (re)quote one of the suitcase caption: "We look into a mirror instead of out of a window, and we see only ourselves" (Daniel Boorstein).

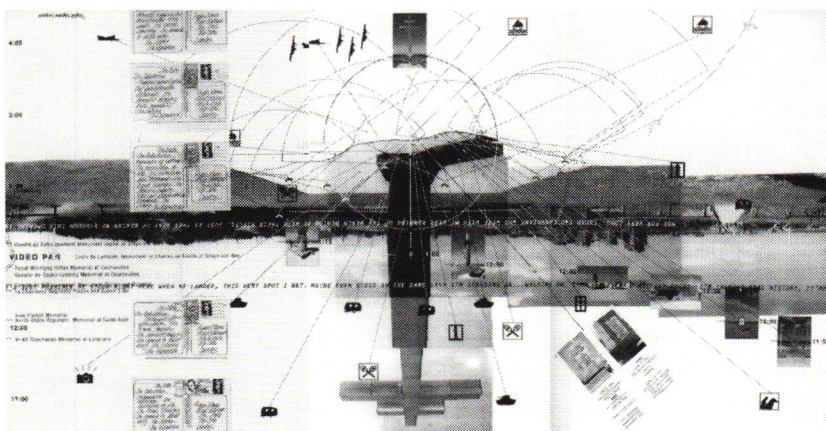
Diller and Scofidio were invited to exhibit "Suit-Case Studies" in Normandy, at the Abbaye-aux-Dames in Caen, as part of the fiftieth anniversary of the D-Day landing. While they did not change the exhibit itself, the book is an attempt to recontextualize the work in terms of the problematic commemoration of that event. It functions as a catalog of the show and reproduces the contents of every suitcase. It also includes a fold-out "special project" by D+S centered on the Normandy beaches, and assembles a set of essays by French and American cultural critics, as well as a piece of "para-fiction" by Lynn Tillman. Thus, the book itself becomes one more fold in the work of D+S, whose subject matter this time is the economy of the relationship between war and tourism.

This juxtaposition of war and tourism operates as a sort of "high concept," to use a film-industry term, and the elaborate credits and logos on the book's inside cover attest to its filmlike modes of conception and realization. The cover and inner leaf act as "establishing shots," framing the subject visually. They communicate the equivalence/transformation of the view through a periscope or gunsight, as depicted on the cover, to the view through a tourist's camera, as pictured on the inner leaf. Inside, other pieces by D+S compare the contents of soldier's "gear" to those of a well-prepared tourist.

VISITE AUX ARMÉES:  
TOURISMES DE GUERRE /  
BACK TO THE FRONT:  
TOURISMS OF WAR, Eliza-  
beth Diller and Ricardo  
Scofidio, editors, with  
essays by Jean-Louis  
Déotte, Thomas Keenan,  
Frédéric Migayrou, Lynne  
Tillman, and Georges Van  
den Abbeele, Fonds  
Régional d'Art Contempo-  
rain de Basse-Normandie  
(distributed in the U.S. by  
Princeton Architectural  
Press), 1994, 329 pp., illus.,  
\$29.95.



Cover and inside cover of  
*Visite aux armées*.



The book concludes with several fold-out collages by Diller+Scofidio, which reconsider the beaches of Normandy today by juxtaposing, among other images, military perspectives, tourist snapshots of embattlements, and postcards. (From *Visite aux armées*.)

Why make this comparison? D+S cites tropes such as "Join the Navy and See the World" as indications of the overlapping economies of signification. They question how the Normandy beaches, as sites of tourism, can also function as sites of historical commemoration. The critical pieces in the book seek to address the elaborate tangle of perceptions held by many in America and Western Europe who have never experienced war directly, but who have experienced it vicariously, through television or film. In the postmodern age, the military/industrial complex is being replaced by a military/entertainment complex as an object of ambivalent fascination. The movie camera has been compared to the machine gun, and the conduct of war has been analyzed as the deployment of a "logistics of perception" that, to quote Paul Virilio's book title, includes both *War and Cinema* (London: Verso, 1989). The observation that events themselves come to be shaped by media is now commonplace. Accordingly, the fascination with the telegenic qualities of the Gulf War as a "media event" permitted the high priest of simulation, Jean Baudrillard, to write a book with the obscene title of *La Guerre du Golfe n'a pas eu lieu* (The Gulf War did not take place). It is here that the voyeuristic fascination with media reveals its complicity with managed thought, its infatuation with "the fascism that causes us to love power, to desire the very thing that dominates and exploits us," as Michel Foucault has written in the preface to Gilles Deleuze and Félix Guattari's *The Anti-Oedipus* (New York: Viking, 1977). In the Gulf War, the Western nations were no more interested than Saddam Hussein in counting the Iraqi war dead. The withdrawal from Somalia and the American refusal to engage in the Bosnian conflict, the fantasies of war without (Western) casualties are all symptoms of the repression of the horror of war even as its images are widely circulated. And for the most part, critics who describe the process are themselves caught up in its promotion.

As we know all too well, remembrance itself has

become problematic, and the essays in this book attempt to address its appropriations. Rather than trying to retell the story of the Normandy landing, *Back to the Front* examines the curious transformation of battlefields into tourist sites. Starting from the observation made by Georges van den Abbeele, that "it is not the physical place and environs that matter but its inscription within the systems of cultural memory," the book inquires how the landscape is transformed into a site of historical consumption. The book invokes a central irony in the visual experience of the Normandy landscape: Visitors to the sites arrive by land and look out over the water, thus adopting the German position rather than the incoming view of the allies—a "potential scandal" in van den Abbeele's words. The special fold-outs by D+S at the end of the book attempt to address this reversal of points of view, with drawings based on D-Day which have two orientations, with a picture of the beach as the dividing line. This piece is somewhat weakened by the fact that the upside-down image of the beach still shows it as seen from the shore. The book's primary strategies are based on a number of such visual/critical positions. The horizon line becomes another kind of mirror, and the titles of the essays are laid out straddling it.

Both the subject matter and strategies of D+S are still best described as postmodern, the products of a sensibility that thrives on recognizing its implications in its subject, and that enlists media technologies and critical writing into the folds of its artistic project. Like "paraliterary" criticism, this is "paracritical" architecture, blurring the boundaries between architecture and criticism. Diller and Scofidio are the most inventive and important "practitioners" of this genre but this framework is both a source of fascination for their work and its potential undoing. It can too easily result in the domestication of criticism by wryly serving it up for cultural consumption.

In the culture of the moment, quoting a slogan from the 1960s may seem indelicate, but is it really no longer possible to say "If you're not part of the solution, you're part of the problem"? The critical impulse behind cultural studies traces its lineage back through the New Left to the Frankfurt School. As a result, one might expect a more suspicious attitude toward the post-Baudrillardian fascination with the confusion between the event and its mediation. For instance, when contributor Thomas Kennan sees the American expedition in Somalia as a "competition for publicity" and asks, "So where did those marines land? On the beach in Mogadishu, or on TV and the front page?" isn't he further promoting this voyeuristic "bad faith" toward warfare? And doesn't the coyness with which the identifications between warfare and tourism are represented in the offerings of D+S work to conceal the obscenity of the juxtaposition? ☼

# the structure of slavery

ELLEN WEISS

Astonishingly, it has been almost two decades since Carl Anthony made it clear in the pages of *Landscape* magazine (Spring and Fall 1976) that he, a black architect, needed to find ethnic identity in built form. Anthony went hunting and turned up outbuildings in Williamsburg, Virginia, which reminded him of African houses and of Thomas Jefferson's design efforts at Monticello to separate himself from his servants—a negative that Anthony was willing to view positively as a sign of the black presence. Others during the 1970s were also investigating African-American building, including Richard K. Dozier, Dreck S. Wilson, Charles H. Fairbanks, and the late Harrison M. Ethridge, but Anthony was the most eloquent in his challenge of the academic establishment. His was the most unequivocal demonstration of the necessity of this cultural task.

John Michael Vlach was also working in this area during the 1970s, publishing influential articles which proposed that the shotgun house is essentially African, a form brought by slaves to the Caribbean, where it merged with a native West Indian type and then came to New Orleans for dispersal throughout the South. Vlach, who heads the American studies and folklife programs at George Washington University, went on to explore in book after book the many ways in which African-American crafts hewed to their transoceanic source, suggesting along the way that such common vernacular building elements as porches or frontal gables might also be rooted in traditional African syntaxes. Arguing as he did for an African impact on American building comparable to that on language, music, and dance, Vlach has been Anthony's most generous respondent. While others have been working in these fields as well, with supporting and discounting points of view, all the work has been carried out in the dispersed scholarly literature of archaeological journals and local and regional historical presses. Painstaking investigations continue, site by site, at a somewhat reasonable speed. The thrust of this work tends toward the conclusion that there are fewer African survivals in America than many had hoped, but the jury is still very much out.

Those who have followed these discussions will begin Vlach's latest book, *Back of the Big House: The Architecture of Plantation Slavery*, with some surprise, then, because it offers not a summation of all buildings with African sources but a straight presentation of the plantation outbuildings themselves—

the quarters, kitchens, and barns in which the slaves lived and worked—without attempts at establishing lineage. Vlach waffles at one point about the similarities between the small windowless cabins of the Carolina coast and Congolese huts, and he argues against the "Africanness" of two well-known icons of architectural ethnicity, the round possible slave quarter at the Keswick plantation in Powhatan County, Virginia, and the "African House," a storage building with a dramatically pitched, overhanging roof, located on the Melrose plantation in Natchitoches Parish, Louisiana. The brick Keswick building is the wrong shape for the part of Africa where its workers came from, Vlach argues, and is more likely the device of a technologically inventive master's fancy. Vlach's arguments about the lack of African influence on the Louisiana building are fuller than those of many Louisiana scholars with whom his conclusions coincide, and most of whom have so far refrained from publishing their doubts. Carl Anthony might be saddened by such "subtractions" though he need not be, for the richness of the built reality more than makes up for these "losses."

The reality is splendid. Using photographs and drawings from the Historic American Buildings Survey (HABS) dating back to the 1930s, oral histories of former slaves taken by the Federal Writers Program, antebellum travel accounts and agricultural journals, modern agricultural histories, and the vast literature on the history of slavery, Vlach deftly weaves an account of plantation life in the slave's territory, back of the "Big House." The chapters cover twenty types of outbuildings, including dairies, springhouses,

BACK OF THE BIG HOUSE: THE ARCHITECTURE OF PLANTATION SLAVERY, John Michael Vlach, University of North Carolina Press, 1993, 258 pp., illus., \$37.50 (cloth); \$18.95 (paper).

Storehouse with pitched, overhanging roof, at the Melrose plantation, Natchitoches Parish, Louisiana; photograph by Lester Jones, 1940. (From *Back of the Big House*.)



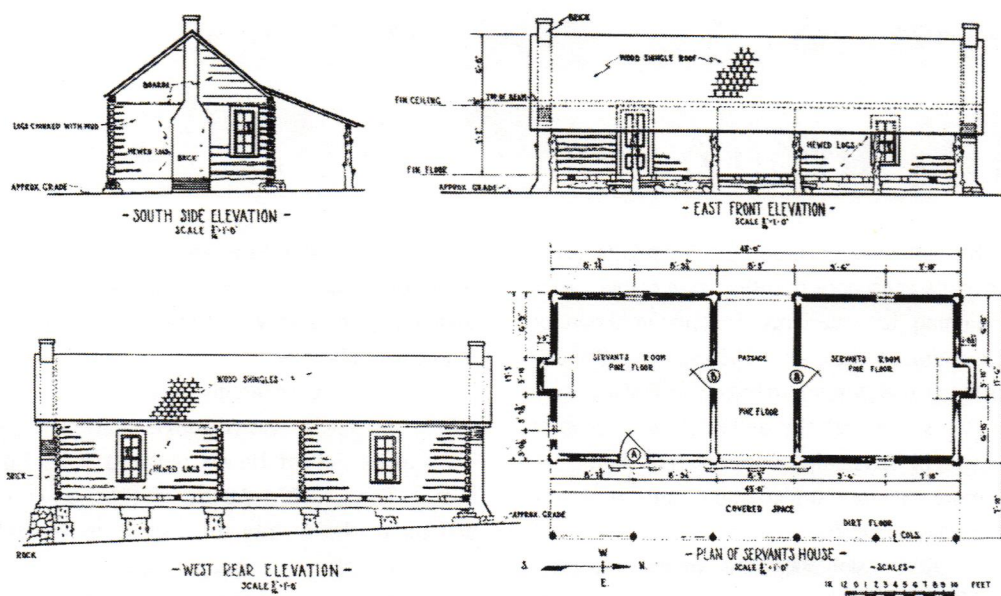
corncribs, hospitals, weaving sheds, kitchens, laundries, stables, cotton gins, cisterns, and of course, slave cabins. The chapters are arranged so that one can turn to smokehouses, for instance, and find drawings and photographs of eleven examples—an especially useful thing to be able to do if one is confronted with a building that might have been one. The text weaves observations culled from the archival documents to explain and evoke, perhaps



as well as can ever be done, the activity within and without these structures. The short section on smokehouses, for example, provides details about pork in the southern diet, dry salting, the different fuels for flavoring, pilferage, punishment by smoking and a slave song that promises to return the favor after emancipation, in addition to a discussion of various forms and interior arrangements that may or may not correspond to broad cultural patterns. Throughout *Back of the Big House*, specific descriptions evoke the realities of mid-19th-century farm life as well as the particularities of slavery and the southern condition. Not everyone will agree with all of Vlach's evaluations, particularly his assertion that individual family cabins set in a straight row are no better at providing privacy and dignity than the communal barrack housing common in the West Indies. But these oddities are few and far between. The chapters on plantation layout and landscape usage demonstrate that the physical organization of the great plantations was clearly hierarchical, controlled to and from the mansion, to set the owner apart not only from his human chattel but from lesser white people as well. But while the outbuildings and their arrangement were forced onto their occupants, slaves could still subvert the master's order with shortcuts across the symmetries or by fleeing, at least temporarily, onto secret paths into woods and swamps. (A hidden swamp "where dreams and devils lives" is a near-protagonist in the 1911 novel *The Quest of the Silver Fleece* by W. E. B. Dubois. It is a spiritual source for one of his memorable, independent heroines and its transformation is a measure of the plot's advancement, suggesting the continuity of such secret places in African-American rural life.)

Having abandoned his search for African building traditions on American soil, Vlach's new quest is to examine how African-American culture, forged on a few great plantations which housed hundreds of slaves, was born out of the task of resistance. In the book's opening and closing chapters, which stand ably as independent speculative essays, Vlach proposes that we must learn to understand how a behavioral, not material, culture helped slaves live in a world not of their making. Vlach cites instances where slaves simply appropriated their assigned buildings and yards, guarding them from outsiders, including the plantation owners. Such tales give a different slant to the stories of "loyal" freedmen who would not desert the plantation after the Civil War. They may actually—and understandably—have felt that they now owned the land they had worked so long. Acts of appropriation may not leave lasting marks, the author realizes. (As any modern renter knows, the point is not to.) But this does not lessen the inhabitants' attachment to place or the possibilities of creating a humane life within.

The heart of *Back of the Big House*, as Vlach makes clear, is the two hundred plus photographs and drawings made by unemployed Depression-era architects and, in recent years, students. He seems to be writing to honor this work. The HABS material shows tough, little structures of considerable visual appeal which blatantly display their fundamental constructed selves in stone, log, frame, and brick. Materials appear enlarged in scale, due to the buildings' small size. The few mansions (which are included as background, as it were) seem not only overscaled but bland, in spite of their symmetries and full columnar porticoes. Vlach's selection



This and facing page: View, elevation, and floorplan of slave quarter at Thornhill plantation, Greene County, Alabama; photograph by Alex Bush, 1934, drawings by Kent W. McWilliams, 1934-35. (From *Back of the Big House*.)

includes multitudes of the square-plan, pyramid-roofed types which Carl Anthony saw at Williamsburg, here masquerading as chicken houses, dairies, ice houses, cisterns, dovecotes, well-heads, and smokehouses. These alone are enough to warm any neoclassicist's heart, as would the Tuscan dairy at the Folly plantation in Augusta County, Virginia, or the practically Palladian barn at Bremon in Fluvanna County, also in Virginia. Browsers can observe how the Doric order seems to reinvent itself in an Alabama kitchen where the top of one of four fat, capital-less columns supporting an overhang has acquired an abacus, presumably to fill a gap caused by slippage. Anyone can enjoy the fierce angularity of sharp jutting gables or the object quality of buildings when they are raised on stone pilings for protection from damp or vermin. The expressive force of minor variations, such as chimney placement, on simple structures is both instructive and a source of pleasure, as scholars of vernacular architecture have long known. Written with clarity, grace, and palpable ease, *Back of the Big House* will not only be an essential tool for historians and preservationists, but also balm for architects wearied by the complexities of modern practice and for academics stressed out by critical theory. As a corrective to the "moonlight and magnolias" myth of antebellum plantation life, the history that Vlach has uncovered should be taught in inner-city schools, and suburban ones as well. *Back of the Big House* should be in the shopping-mall chain stores as well as the best architectural bookstores.

Like any good book, *Back of the Big House* raises questions as it answers them. This work will, one hopes, generate wider public enthusiasm for

the study, preservation, and even reconstruction of the architecture of plantation slavery. The South is vast and it is carpeted with thousands of sites that demand close analysis and interpretation. Even basic HABS work is ongoing: Tulane students have just recently recorded the bevy of antebellum outbuildings, including a monumental allée of twenty-four slave cabins, at Evergreen plantation, near New Orleans. Recent archaeological findings in Louisiana suggest that there was once a greater variety of building types—such as multistory, multifamily slave tenements—than we could know from the buildings that survived until the 1930s. The specialist archaeological literature on Virginia reports material signs of resistance which Vlach neglects to mention, such as "hidey-holes," under-floor pits where slaves may have slipped evidence of pilferage. Other observations, such as the resemblance of plantations, as industrialized production compounds, to mill villages or company towns, raise questions about the essentialness of race and servitude to the physical formation of such quarters, and suggests tasks for future analysts. *Back of the Big House* will not be the last word on this subject, but it is certainly one that has arrived not a moment too soon. ❄

# architects: the history of one profession in finland

## RIITTA NIKULA

THE WORK OF ARCHITECTS:  
THE FINNISH ASSOCIATION  
OF ARCHITECTS  
1892–1992, Pekka Korven-  
maa, editor, The Finnish  
Association of Architects  
and the Finnish Building  
Centre (Helsinki), 1992,  
320 pp., illus., \$65.00.

When the Finnish Association of Architects (SAFA) celebrated its centenary in 1992, its members were just beginning to experience the phenomenon of unemployment. By the end of 1994 some eight hundred of the two thousand architects in Finland were without work, and yet the architecture schools at universities in Helsinki, Tampere, and Oulu, still attract more talented student applicants than any other departments in the country.

The current recession makes one wonder how it was ever possible for architects to become such big heroes in Finland. Fortunately, there is a new book that sheds light on these issues. The useful volume, *The Work of Architects*, edited by Pekka Korvenmaa, is the enduring accomplishment of the recent SAFA centenary. It is not only sizable (with three hundred and twenty richly illustrated pages) and beautiful (graphic design by Jyrki Nieminen), but above all, it is a remarkable collection of twenty fresh and more or less scholarly articles covering the architecture of Finland from the early 1800s to the present. This book provides a broad picture of the history of the profession.

In 1872 architecture was added to the program of the Polytechnical School (called the Polytechnical Institute after 1879) of Helsinki. Until then, the Superintendent's Bureau, which was formed soon after 1809 when Finland was annexed to the Russian Empire as an autonomous Grand Duchy, was the only place a young man could learn the practical skills of

an architect. The Superintendent's Bureau was responsible for plans and supervision of all state building projects as well as many churches and even municipal buildings.

The Italian-born architect Charles (Carlo) Bassi (1772–1840), who was educated in Sweden, was the first superintendent. He was replaced in 1824 by Carl Ludvig Engel (1778–1840) of Prussia. From the beginning, the architectural scene in Finland was richly international, although the staff of the Bureau did not grow to more than three assistant architects by 1843. The first official mention of trainees is in 1824. It is almost impossible for us to understand today how such a tiny office could be responsible for the quantity and quality of remarkable production that occurred under Engel's sixteen-year tenure, comprising all the classical architecture that still forms one of the most monumental and enjoyable chapters in Finnish architectural history. Engel was succeeded after his death by his countryman Ernst Bernhard Lohrmann (1803–1870), who organized province-level administration and thus brought new employment possibilities to trained architects in the country. From the 1850s on, in answer to the new demands of the nation's expanding industry and administration, Finnish architects frequently brought Swedish academic experts on the scene.

The founding in 1892 of the Architects' Club, a fairly heterogeneous group of professionals with various educational backgrounds, signaled to society and to the architects themselves that they represented one special field of skills and learning. It is evident that the unusual authority of Finnish architects is largely due to the strength of this professional organization.

The first chapter of *The Work of Architects* proceeds in a clear historical order. Jarkko Sinisalo writes about the formative years of the profession (1809 to 1865), presenting the architects' work in a concrete manner, based on his pioneering research in the state archives. Eeva Maija Viljo carries the story up to the turn of the century, describing the ways in which architects' work changed in the cross-swell formed by the developing institutions and building industry. Ritva Wäre's essay "Making Architecture Finnish" (which began as her doctoral dissertation) focuses on the profession at the beginning of the

Planning and designing  
the center and monu-  
mental buildings of  
Helsinki, Finland's new  
capital, were Carl Ludvig  
Engel's main achievement.  
Lithography by S. Teng-  
strom, 1838. (From *The  
Work of Architects*.)



20th century. All these researchers base their studies on a clearly structured picture of the social and ideological history of the period. At the turn of the century, there were some ninety architects in Finland. Ten years later, their number had nearly doubled.

Merja Härö's article about systematic architectural education in Finland is unfortunately stuck in the last section of the book. It would have been better placed earlier in the book as it provides a broad overview of the educational process—something that would have enhanced the reader's experience with Renja Suominen-Kokkonen's article about female architects which appears in the first section of the book. Using detailed tables, Suominen-Kokkonen discusses all the women who graduated by 1923. Signe Hornborg, who graduated in 1890, was apparently the first female architect in Europe. Only Loise Blanchard Bethune, who was accepted as a member of the American Institute of Architects in 1888, seems to have entered this male occupation before her. Sophia Hayden, who graduated from the Massachusetts Institute of Technology in 1890, was Hornborg's exact contemporary.

In his article "On the Borderline of the Modern: Architects vs. Master-Builders," Karl-Erik Michelsen approaches his topic in a fresh manner. He details the power struggle between the architects and the master-builders in the 1920s and 1930s, between the classicism of the 1920s and emerging modernism. Essays by Pekka Korvenmaa, Asko Salokorpi, and Michelsen address various aspects of the 1940s and 1950s. In "War Destroys and Organizes," Korvenmaa narrates the history of standardized housing in Finland, offering an interesting comparison between the country's wartime and postwar construction with the activities of the National Housing Administration in the United States after 1942. Writing about more recent times, Lars Hedman and Jere Maula examine postwar urban planning, gradually bringing *The Work of Architects* up to the present. Both authors clearly express the fundamental social questions of urban planning, such as why urban

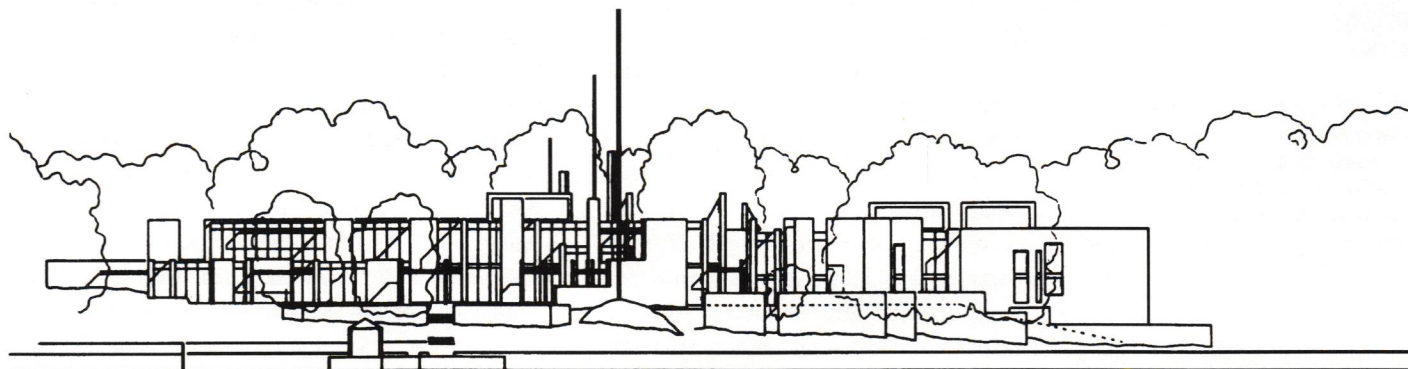
planning is needed, what can be achieved by it, and what is the premise of the common criticisms of urban planning today.

At the book's conclusion, the view of the profession is based more on modern issues than on historical contexts. The variety of subjects also indicates that perhaps the editor ran out of time. After a strong historical sweep in the book's first half, the reader is not prepared for the collection of *Reader's Digest*-like fragments that compose the second, even though each article contains something new and interesting. Liisa Häyrynen opens with the novel concept of historical psychology, while Kristiina Nivari surveys the publication history of the architectural association's journal *Arkitekten/Arkkitehti* which has been published since 1903. Pertti Solla highlights the heroic story of architectural competitions, while Erkki Vanhakoski takes on the tools of architects, admirably placing them in historical and material order. The last chapter of the book is a precise and skillfully written history of the Architects' Club and the Finnish Association of Architects by Patrik Nyberg.

When Antti Veltheim, in his article "Architecture and the Media in the 1980s," suggests that architectural criticism was institutionalized in that decade, essays such as "Stray Paths and Voyages of Discovery: On Being an Architect in Finland in 1992" by architect and critic Kaarin Taipale must be read with some seriousness. Surprisingly, Taipale shifts the focus away from architecture and toward empty space. She writes, "The metaphysical dimensions have disappeared, and there is nothing outside man himself. The lost center can no longer be constructed, and ideologies have crumbled. Social values have been replaced by an apparent *égalité*, the prime rate, and physical gratification. Buy! Sell! Enjoy! Democracy has no common dream. It has broken down into an archipelago of pluralism and individualistic guerrilla bands on the barricades of the good life."

Does this signal the end of the heroic story of the work of Finnish architects? ❄

Juha Leiviskä's winning entry for the embassy of the Federal Republic of Germany in Helsinki. This international competition was held in 1987. (From *The Work of Architects*.)



# a meteor in swedish architecture

## BO GÖRAN HELLERS

FERDINAND BOBERG—  
ARCHITECT: THE COMPLETE  
WORK, Ann Thorson Wal-  
ton, MIT Press for the  
Swedish Museum of Archi-  
tecture and the Swedish  
Council for Building  
Research, 1994, 345 pp.  
illus., \$60.00.

In Stockholm, every other Sunday afternoon a bus departs from the upper level of the main railway station. It is called "the Ferdinand tour," a two-hour encounter with the work of an architect whose hallmark is indelibly imprinted on Sweden's capital city. Ferdinand Boberg managed to leave his mark in a comparatively short period of time (about twenty-five years), rising meteorically in status around 1890 and leaving the scene less voluntarily in 1915, as the "old world" was crumbling in the horrors of war. He belongs to the category of "national" architects, like Charles Rennie Mackintosh in Scotland, Otto Wagner in Austria, and above all, Antonio Gaudí in Spain, all of whom expressed in a very personal way a new era of freedom in architectural design. They founded no schools and had no real followers. As a result, their reputations were vulnerable to changes in taste; they were soon overlooked and sometimes forgotten, and the details of their lives and work were stored away, like curiosities, in the vast cabinet of architectural history.

As the end of the 20th century approaches, popular interest seems to point to the end of the previous century—a time when architecture took a daring turn toward the imaginative, drawing on the novel developments of industrial production and new materials, which lent themselves well to fanciful combination and inspired great structural and ornamental innovation. One remarkable contribution to this spate

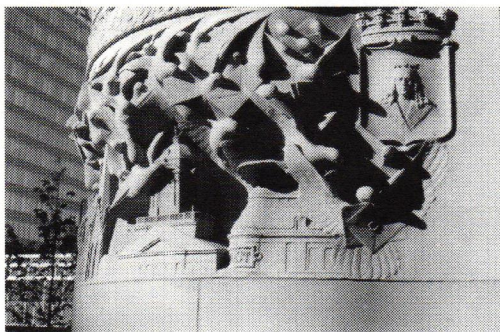
of retrospective studies Ann Thorson Walton's *Ferdinand Boberg—Architect: The Complete Work*. The first comprehensive survey of Boberg's life and work, this is a greatly expanded version of Walton's doctoral dissertation at the University of Minnesota, which focused on only one of his buildings, the Swedish Pavilion

at the 1900 Exposition Universelle in Paris. Despite the limited scope of her initial study, it yielded rich results—a testament to the complexity of Boberg as an architect, particularly as an architect of public buildings. He was the most prominent articulator of the Swedish character in building in the international arena between 1900 and 1915. His architectural language for expositions was playful, rationalized by the

consoling notion that he once expressed: "Should I here and there do something foolish—well, it is all gone in two months. An exposition should be like a merry dream—to the builder and to the public."

The attempt to grasp the complete works of Boberg, however, does not allow for comprehensive study of each work. Walton compensates for the many loose ends in her book by making a variety of provocative remarks on individual projects which may inspire further and more conclusive studies. She has devoted many years to her endeavors; her study includes a biography of Boberg from his modest, middle-class childhood, to his happy marriage to Anna Scholander (daughter of Fredrik Wilhelm Scholander, an influential architect and secretary of the Royal Academy of Fine Arts), to his climb to the zenith of fame and power. She recounts his intimate friendships with princes and bankers who commissioned him to design their homes on Djurgården, a fashionable island to the east of central Stockholm, as well as the decline of his practice and his final retreat into creating romantic sketches and watercolors of the built environment throughout Sweden, a hobby that kept him busy for a decade after leaving architecture. Still, Walton modestly claims that "the political, social, and personal aspects of the lives of Ferdinand and his wife are left to future biographers." Given the strength of her analyses and insights into Boberg, she need not have stopped at this point. She might have ably placed Boberg into his intellectual milieu and explored his friendships with Swedish intellectuals such as mathematician Gustaf Mittag-Leffler and poet Verner von Heidenstam, who won the Nobel Prize for literature in 1916.

During the course of Walton's work, the Swedish Museum of Architecture organized the first exhibition on Boberg in 1992. Before the exhibition's opening, *Ferdinand Boberg: Arkitekten som konstnar* (The architect as an artist) by cultural critic Ulf Sörenson was published. Preparing for the publication of the two books, the museum, which played the difficult role of double sponsor, endorsed an agreement stipulating that Sörenson's work would focus mainly on the architect, on Boberg as an artist and social figure, while Walton's would explore the architecture. A generous exchange of results clearly occurred. The two books overlap substantially, although Sörenson's is in Swedish, and takes a rather ethnocentric approach based on his knowledge of contemporary Swedish cultural life, while Walton's



Bas-relief on the rounded corner of the portal of the Stockholm Central Post Office, depicting pigeons carrying letters; Ferdinand Boberg, 1897–1904. (From *Ferdinand Boberg*.)

takes a more international perspective based on her scholarly knowledge of architectural history.

In a subtly charming way, Walton's book reveals Boberg's dual nature, as a skilled structural engineer (his original training) and as a craftsman with an imaginative talent for ornamentation. These two sides are sometimes referred to as the "male" and "female" aspects of Boberg's architecture. It is this seemingly androgynous quality that may explain the recent popularity of his work in Sweden.

Boberg was in many respects a master at adapting the function of a building to its architectural character, using expressive components and extending appropriate motifs to the detailing. For example, he created a bas-relief with pigeons carrying letters in their beaks for the portal of Stockholm's central post office, and a relief with coins flowing from a purse for the entrance of the Nordisk Kreditbanken. His ornamental elements show some oriental influence, while his towers and oriels seem to mimic Venetian and Spanish shapes. Boberg combined expressions of his own taste in an ideologically unencumbered manner that would now be considered "cosmopolitan." Admirably, he managed to convince clients to accept his imaginative designs, despite their oftentimes radical divergence from Swedish tradition.

Interestingly, some of Boberg's strongest influences were American—in particular, the work of Henry Hobson Richardson and Louis Sullivan. He learned about Richardson in the late 1880s from architecture journals; the first major commission he completed, a fire station at Gävle, Sweden (1889–91), was clearly influenced by the New England practitioner. Boberg used natural materials for the fire station, and let the exterior of the building express its inner life: Horseshoe-shaped portals dominate a facade through which horse-drawn wagons dashed in response to the sounding of the fire alarm, while a traditional, cylindrical tower rests upon a pedestal of brick rolls, reminiscent of a coiled fire hose. In this first project, Boberg demonstrated a mastery at shaping arched portals, in this case, lined with beautiful limestone *voussoirs*. This was a feature he was to repeat time and time again.

In addition to the work of Richardson and Sullivan, Boberg was greatly affected by what he saw when he visited the 1893 Columbian Exposition in Chicago. At the time, the Scandinavian influence on the city's built environment was strongly felt due to the large number of immigrants. Boberg visited Sullivan's Transportation Building and made pilgrimages to Richardson's work throughout the eastern United States. He also toured the new public libraries that were then opening in the U.S., a social trend that was soon fol-

lowed in the Sweden. Walton claims that there is now evidence that Boberg actually worked during the summer of 1893 in the office of Dankmar Adler and Louis Sullivan in Chicago. Apparently he was by then hooked on exposition architecture, and made regular contributions to the genre in the subsequent years, which

Walton charts: 1897 in Stockholm, 1900 in Paris, 1902 in Turin, 1904 in St. Louis, 1905 in Venice, 1906 in Norrköping, Sweden, 1907 in Berlin, 1909 in Stockholm, 1912 in Venice, 1914 at the Baltic Exposition in Malmö, Sweden, and 1915 at the Panama-Pacific International Exposition in San Francisco. She points out that the Swedish pavilion of the 1904 St. Louis exposition is the only surviving work of Boberg outside of Scandinavia (it is now outside of Lindsborg, Kansas).

The many examples of public architecture by Boberg, especially plants for water, electricity, and gas companies, may seem overbuilt according to functionalist sensibilities, but many of them now stand as historical monuments. The Stockholm Gas Works (now closing) features two large, round brick buildings which may be rehabilitated for use for Olympic events if Stockholm wins its bid for the Summer Games of 2004. More lasting examples of Boberg's public works are his many large office buildings, such as Stockholm's main post office, the Carlberg building, and above all, the Rosenbad building, which currently houses the Swedish prime minister's offices. It rivals in beauty Stockholm's city hall, which was designed by Boberg's competitor Ragnar Östberg.

His last major project, the headquarters for the Nobel Foundation, was to be built in the small Nobel Park in Stockholm. Boberg's design provoked much opposition because it proposed enlarging—at the behest of his clients—the auditorium from twelve hundred to two thousand seats, an act that would have expanded the building to the limits of the site. The design was severely criticized by his contemporaries, including Östberg, of course, and Carl Westman, who held much sway over the influential journal, *Arkitektur*. It showed that Boberg had in fact lost touch with his times. The project was ultimately abandoned, and Walton sympathizes with Boberg for the controversy over his design. In my opinion, however, it was fortunate for Boberg's historical reputation—in part now shaped by Walton's scholarly study—that the Nobel Foundation building was never built. ⚙



The Gävle fire station as it appears today; Ferdinand Boberg, 1889–91. (From Ferdinand Boberg.)

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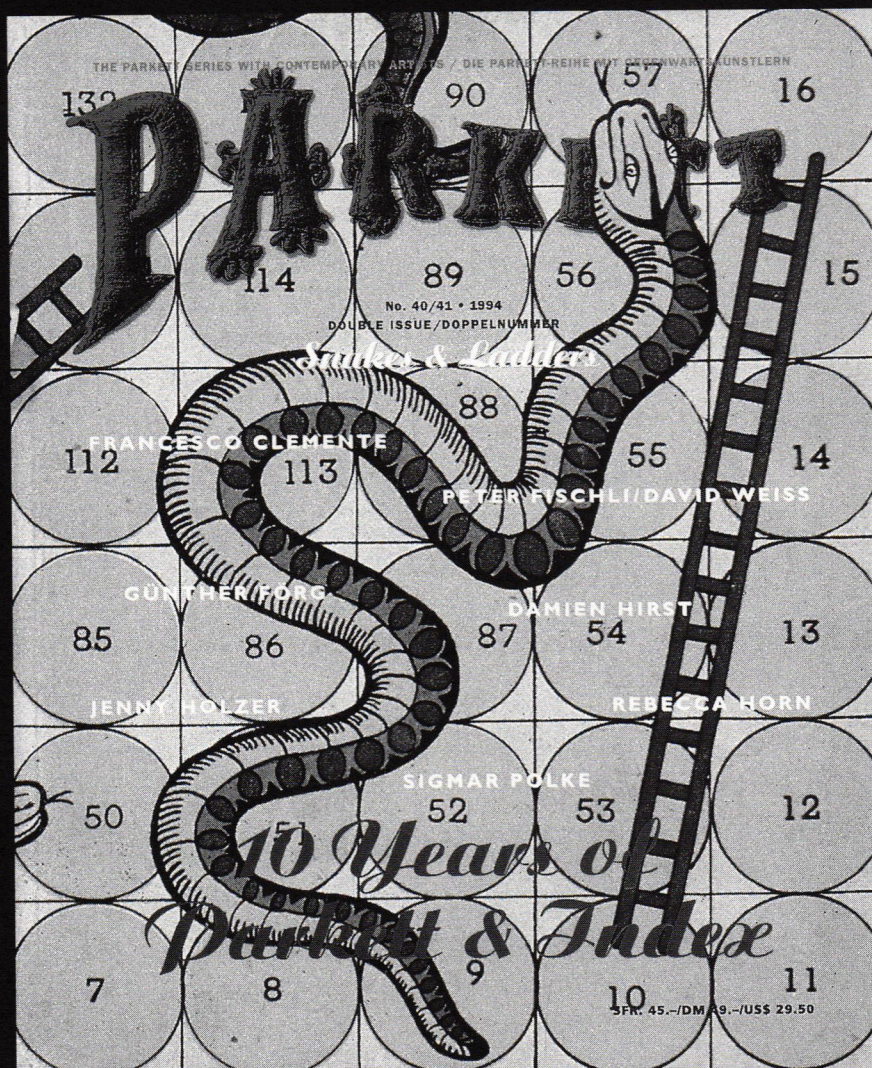
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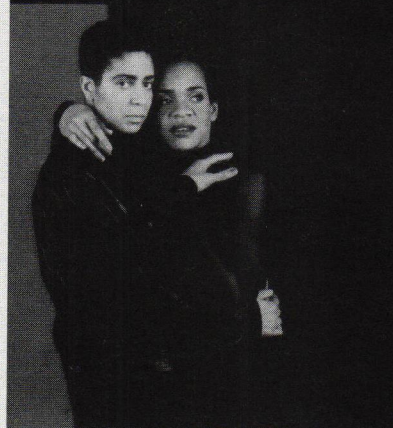
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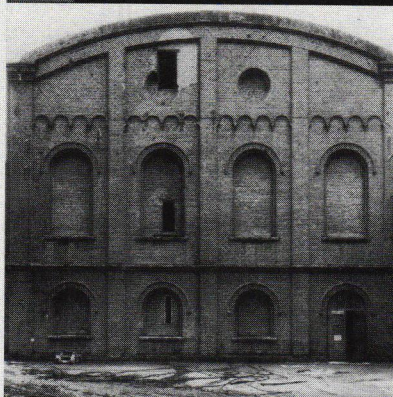
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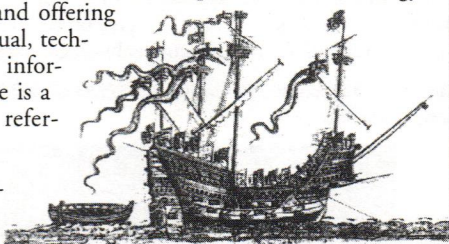
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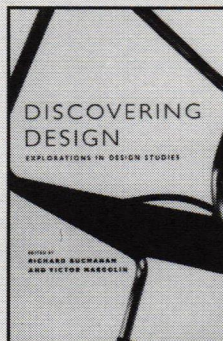
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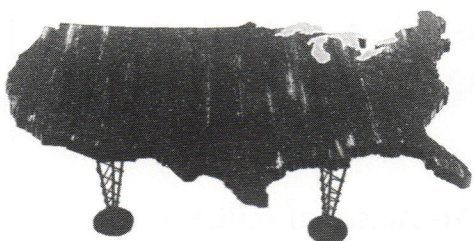
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