

Me++

THE CYBORG SELF AND THE NETWORKED CITY

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AGAINST PROGRAM

As continuous fields of presence are overlaid on architectural and urban space, the ancient distinction between settlers and nomads—long the bedrock of our thinking about cities—is eroding in subtle but important ways. In the emerging wireless era, our buildings and urban environments need fewer specialized spaces built around sites of accumulation and resource availability and more versatile, hospitable, accommodating spaces that simply attract occupation and can serve diverse purposes as required. A café table can serve as a library reading room. A quiet place under a tree can become a design studio. A subway car can become a place for watching movies.

ELECTRONOMADIC SPATIAL PRACTICES

The relationships of mobile bodies to sedentary structures have loosened and destabilized; inhabitation is less about doing what some designer or manager explicitly intended in a space and more about imaginative, ad hoc appropriation for unanticipated purposes. We are becoming less like Saint Jerome, immobilized in his study among his accumulated possessions, less like Dilbert stuck at his computer in his cubicle, and more like cyborg foragers navigating through electronically mediated resource fields. We are relying less upon things (or people) being at fixed locations, or available on regular schedules, and more upon electronic tracking and navigation to locate what we want and take us to it. Our mental maps of buildings and cities are

becoming less static records of fixed features and more dynamic representations of current conditions.

This condition, understood in the most optimistic way, offers liberation from the rigidities and interdictions of the predefined program and the zone—a release from ways of using spaces produced and enforced by dominant social orders.¹ It opens up the possibility of new, as yet unimagined spatial practices, and the opportunity (in the words of Michel de Certeau) “to rediscover, within an electronized and computerized megalopolis, the ‘art’ of the hunters and rural folk of earlier days.”² Or, if you don’t like the pseudo-primitivism of this formulation, you might imagine rediscovering Baudelaire’s *flânerie*,³ situationist “drift,”⁴ or whatever it was that Deleuze and Guattari were recommending in *A Thousand Plateaus*.⁵

Conversely, for those who would exert state or corporate power, it offers anonymity and the possibility of avoiding resistance. Today, such power may flow as easily from a fluidly and ambiguously located constellation of cellphones as it traditionally has from a throne room in a palace, a boardroom in a corporate headquarters, or a courtroom in a national capital. As resistance movements have quickly realized, sites for effective confrontation of power are becoming harder to identify.⁶ How do you determine a time and locate a place for resistance? Where do you demonstrate? What do you occupy?

The evolution of taxi fleets has dramatized these transformations in the use and control of space. In the past, where urban densities were too low for drivers to rely upon customers hailing them in the street, centralized wireless dispatchers fielded telephone calls and assigned jobs. Now cabbies carry cellphones as well, and rely upon their mobile, distributed, peer-to-peer networks for intelligence about traffic conditions and tips about concentrations of potential customers. In more advanced systems, customers make location-coded cellphone calls, cabs have GPS navigation systems, and software assigns jobs based upon proximity. There is a shift from centralized coordination and control to electronically mediated swarming.

While their elders were trying to figure all this out, kids—employing the short text messaging capabilities of cellphones—imaginatively pioneered the new spatial tactics of ad hoc occupation and electronic appropriation. They quickly learned to fan out through city

streets in fluid packs, electronically negotiating and specifying sites for assignations, raves, and street demonstrations. Those who wanted to repress these practices soon came up with the countermeasure (at least for the moment)—have the cops confiscate the phones. And the kids, in response, are discovering how to immobilize opponents by unleashing worms and viruses that clog channels of communication. Control of space—particularly in real time—now requires control of the airwaves.

In many ways, the dynamic ebbs and flows of the basketball court and the soccer field provide compelling models for these new spatial practices. The players are mobile, autonomous actors, but they are in constant visual and auditory communication with one another, and they adjust their actions in response to evolving situations. Over larger chunks of terrain, the wirelessly communicating units of a military operation act in similarly coordinated fashion. Now, spatially dispersed yet coordinated, fluid collections of wirelessly interconnecting individuals—perhaps assembled, from the beginning, in cyberspace rather than at any physical location—are becoming a crucial fact of urban life. They constitute a new category of human assemblage—one to add to our traditional conceptions of the gathering, the throng, the crowd, the masses, the mob, the cadre, the cell, the ensemble, the battalion, and the team.⁷

The connected masses also create problems of differential mobility. Traditional nomads understood these problems well and often dealt with them brutally; they left behind the aged, infirm, and otherwise immobilized. In the context of electronomads, it is often a matter of relative reliance on bits and atoms, and the consequences tend to be economic. Scholars who can rely upon online resources are highly mobile and can work effectively on the road, but their colleagues who need access to undigitized print material or precious original manuscripts are still tied to traditional scholarly sites and practices. Telephone call centers can readily relocate and may want the flexibility to do so when it becomes economically advantageous, so they may be reluctant to invest in surrounding communities. Financial firms that had their premises destroyed in the World Trade Center attacks could instantly activate backup sites and send their employees into telecommuter mode, but restaurants and other small

establishments that serviced those firms in Lower Manhattan were stuck at their sites, lost clientele, and suffered disproportionately badly. The new mobility divide may turn out to be more important than the digital divide.

THE DECLINE AND FALL OF THE ARCHITECTURAL PROGRAM

For architects, continuous fields of presence and the destabilization of person-to-place relationships demand some radical rethinking of the fundamentals. The standard procedure of twentieth-century modernism was to start by distinguishing and separating functions—the better to optimize spaces for particular functions and to announce those functions visually. (Communication engineers might think of it as space-division multiplexing of activities.) At an urban scale, housing areas were to be distinguished from industrial and commercial zones. At building scale, there were to be specialized spaces, with associated equipment, for the activities that were to be accommodated. And the physical fabric of a building was to be articulated functionally—for example, by separating the supporting and enclosing functions of a wall by substituting columns for support and a nonbearing curtain wall for enclosure. But this strategy makes little sense when wireless electronic devices can support many different activities at a single location or the same activity at many different locations, and when running different software can radically alter the functions provided by a device without changing its form at all. Time division multiplexing of activities is starting to look smarter than space division.

The key instrument of the traditional spatial organization strategy was the written *architectural program*—a detailed list of required spaces, specifying floor areas, technical requirements, and adjacency needs.⁸ Built space made the provisions of the program concrete, and construction bureaucrats compared plans to checklists just to make sure. But the architecture of the twenty-first century can (if we choose to take the opportunity) be far less about responding to such rigid programs and much more about creating flexible, diverse, humane habitats for electronically supported nomadic occupation. It can be an architecture not of stable routines and spatial patterns, but, as Michael

Batty has suggested, of continually reconfiguring clusters of spatial events characterized by their duration, intensity, volatility, and location.⁹

This architecture will pursue the benefits of loose binding. Consider these in the context of office space, for example. When office workers have cubicles filled with files and bookshelves, it is relatively difficult and expensive to move them around; churn takes time and costs money, so managers have traditionally tried to minimize it—with the result that organizations are slow to adapt to change, and workers are often left in locations that no longer serve them well. But if the personal information environments of office workers automatically and instantaneously follow them around, they can sit down and work anywhere. The cost of regrouping to meet new needs drops almost to zero.

You can also look at this from a long-term space management perspective. When organizations move into new buildings, they usually have carefully worked out space plans. Then, over time, they make incremental changes in response to emerging demands, with the result that the space becomes fragmented and inefficient, much as the disk space does on your computer. Defragmentation is difficult and expensive when move costs are high, but it is easy when move costs become negligible. It is just like running Norton Utilities to clean up your disk.

Furthermore, physical enclosure for information security purposes now matters less, while electronic security matters more. It was once essential to ring cities with defensive walls, but that is irrelevant now. And it was once crucial to lock office doors, so that the papers and files inside could be protected against dispersal or destruction, and so that their confidentiality could be preserved. (In fact that was one of the main reasons for the very existence of private offices.) Espionage was a matter of clandestinely breaking in and stealing papers or making illicit copies. If your files are online, though, and accessible to you anywhere you log in, you do not have to work in a physically secure space. You *do* want to be sure that those files are regularly backed up and electronically protected against unauthorized access, and you probably want to sit so that your laptop screen is protected from prying eyes.¹⁰ In other words, information security has been

deterritorialized and shifted to a domain of abstract symbol manipulation.

Selectively (though certainly not universally), space-to-space relationships are loosening. For convenience and security, old-fashioned library reading rooms had to be adjacent to book stacks, but that constraint disappears when stacks become servers and carrels become wireless reception points. To make most efficient use of an expensive resource, office staff once needed convenient access to a central copying machine, but that imperative evaporates when making a copy becomes a matter of sending a file through a network rather than carrying an original to a machine, and when inexpensive, networked laser printers are widely distributed. As connectivity matters more, in many contexts, adjacency matters less, and architectural form is less tightly determined by the need to satisfy adjacency requirements.

Even established ideas of flexibility and adaptability require reconsideration. In the past, architects provided these qualities by introducing modular, demountable partitions and furniture, movable components, plug-in devices, and the like. Now the focus is shifting to self-configuring electronic environments—enabled by electronic devices that can immediately begin to communicate wirelessly with one another when they are brought into proximity and that can work together to support whatever activities are taking place.¹¹ Laptops are beginning to talk wirelessly to video projectors, projectors and cameras to printers, telephones to speaker systems, video cameras to monitors, PDAs to other PDAs, automobiles to gas pumps, and so on.

In some ways, then, we are returning to strategies and practices of preliterate, precapitalist times. Ancient Greek philosophers, for example, did not have offices and classrooms; they strolled with their students through the groves of academe. Then the Hellenistic Library of Alexandria became a site of immobile accumulation, the fixed focus of a unique community, and a place where scholars had to be. Today, the Web is our Library of Alexandria, and mobile wireless connection allows scholars to stroll once more—but without losing access to the resources they need. This does sit uneasily, of course, with some large, petrified chunks of the Western philosophical tradition. If you are a Heideggerian, you will probably fret about “wandering” versus

“dwelling.” And, if you take the Hegelian position that surrounding oneself with tangible property is a way of imprinting your presence on the world (Jerome’s books did not just serve his needs, they defined him), then you will be dispirited by digital dematerialization and networked server access. Perhaps, though, this just means that giants of thought are still creatures of their time—and maybe, in these cases, too prone to generalize from the stability and clutter of the bourgeois drawing room.¹²

ELECTRONIC NON-PLAN

At a larger scale, the instrument for distinguishing and separating functions has long been land-use *zoning*. This sometimes has a commonsense and unobjectionable function, as for example in mandating the separation of residential areas from noxious industry. But it has frequently been used to enforce far less benign forms of segregation. And there are far fewer good reasons to separate activities—such as working, being entertained, and pursuing your social life—when they are all supported by the same wireless, portable devices, and when, unobtrusively handled in this way, they do not interfere with the activities of others. There is, then, a new kind of opportunity to recoup the “right to the city,” which Henri Lefebvre powerfully characterized in terms of heterogeneity rather than monoculture, encounter rather than separation, and simultaneity instead of sequence, and which he saw as threatened by “discriminatory and segregative organization.”¹³ Land use planners might move toward Lefebvre’s “diversification of space,” in which “the (relative) importance attached to functional distinctions would disappear.”

The sixties Anglo-American counterpart to Lefebvre’s insistence on the right to the city was a provocative call for “non-plan,” set forth in a notorious *New Society* article by Reyner Banham, Paul Barker, Peter Hall, and Cedric Price.¹⁴ In it, the authors bluntly claimed that “the most rigorously planned cities—like Haussmann’s and Napoleon III’s Paris—have nearly always been the least democratic,” and asked “What would happen if there were no plan? What would people prefer to do, if their choice were untrammelled?” This comported with contemporary architectural interest in combining serviced megastructures

with plug-in and disposable architectural elements that could be configured by inhabitants themselves—theoretical propositions such as John Habraken’s “supports,”¹⁵ Yona Friedman’s *architecture mobile*,¹⁶ and Peter Cook’s Plug-in City. It also resonated with more pragmatic architectural experimentation focused on flexible “mat” buildings,¹⁷ extensible structures, and “long life, loose fit”¹⁸ design strategies.

These proposals vividly expressed the possibility of flexibility and freedom of choice, but they mostly didn’t deliver. Large-scale physical reconfiguration of architectural space in response to changing needs has remained a slow, cumbersome, and expensive process. Furthermore, occupiable space is still a scarce resource, and physical reconfigurability does little to diminish problems of space allocation and coordination. But the proponents of non-plan had glimpsed another possibility in what was then known as the “cybernetic revolution.” They wrote: “The essence of the new situation is that we can master vastly greater amounts of information than was hitherto thought possible—information essentially about the effect of certain defined actions upon the operation of a system.” Planning had depended upon “simple, rule-of-thumb value judgments” that were held to have “perpetual validity, like tablets of the law.” Today, they concluded: “Physical planning, like anything else, should consist *at most* of setting up frameworks for decision, within which as much objective information as possible can be fitted.” In other words, information infrastructure that provides a framework for dynamic decision making is more powerful than physical megastructure. If you want adaptability, responsive software beats reconfigurable hardware.

Several decades later, of course, the non-plan group’s faith in “objective information” and “scientific management” seems uncritically naive. (The remaining members would, no doubt, be the first to say so.) But mobile connectivity, combined with reduced reliance upon immobile resources, has heightened the need, which they so presciently identified, to replace predetermined space programs and rigid plans with swiftly and sensitively responsive, electronically implemented space management strategies. By the early 2000s, we could see the beginnings of this in the combination of electronic road pricing and electronic navigation systems for managing road real estate, the combination of electronic tracking of parking space occupancy and

automatic direction to vacant spaces, and flexible assignment of office cubicles to mobile, laptop-equipped workers. It is no longer the architectural programmer who controls space use, and thereby expresses power; it is now the software programmer.

EXTREME ELECTRONOMADICS

What if we could go all the way with shaking ourselves loose, shuck the last few atoms from our souls, and simply live on server farms somewhere? The gonzo endpoint of these trajectories of dematerialization and hypermobilization is the suggestion that mental life is just an affair of bits in the brain; you might strip them from this squishy substrate (much as one rips a CD) and download yourself onto disk. You are, on this view, just software—and as device-independent as a Java applet. You don't have to run on a high-maintenance meat machine. You no longer have to be, as Yeats so famously lamented, "fastened to a dying animal." Like saints and shamans in ecstasis, you loosen, to the ultimate, the binding of your persona to materiality and place.

Hans Moravec has speculatively described the necessary operation:

Layer after layer, the brain is simulated, then excavated. Eventually your skull is empty, and the surgeon's hand rests deep in your brainstem. Though you have not lost consciousness, or even your train of thought, your mind has been removed from the brain and transferred to a machine.¹⁹

I'm not too sure about the brain science of all this; no doubt the inscription of information into organic neural networks is rather more complex than that of magnetic bits onto thinly spread iron oxide.²⁰ And I would be surprised (to say the least) if the continuity of personal identity turned out to be such a straightforward matter, or if the mind/body distinction reduced so neatly to software/hardware.²¹ (Belief in this possibility is, of course, the extreme form of the digitalist dogma that "content" can always be cleanly separated from its current material embodiment.) But let us assume we can successfully

read, decode, and copy all our brain files—the equivalents of WORD files of memorized text, JPG files of visual memory, MP3 files of unforgettable tunes, EXE files that specify how to get things done, and so on. Let us imagine a “postbiological future” in which “we will think of ourselves as software, not hardware.”²² What then?

It would put land use and transportation planners out of work; real estate requirements would now be measured in megabytes rather than square feet, mobility in terms of bits per second rather than miles per hour, and accessibility in terms of wireless network coverage. But the result is not disembodiment, in the sense of complete erasure of materiality. Nor is it reincarnation in humanoid avatar form. It is a more complex, spatially distributed, fluid, hybrid form of embodiment enacted with new hardware—one in which silicon, copper, and magnetic subsystems play a vastly increased role, while carbon-based subsystems play a diminished and no longer so privileged one.²³ Mortality reappears as a server crash. (There are some work-arounds, perhaps; you could implement reincarnation as restoration from backup, and transmigration of the soul as a hardware replacement strategy.)²⁴ So, why bother with the messy and problematic brain operation? By other means, anyway, we are already asymptotically approaching that networked cyborg state. Why insist on taking the carbon completely to zero?²⁵

We are at the endgame of a process that began when our distant ancestors started to clothe themselves with second skins stripped from other creatures, to extend and harden their hands with simple tools and weapons, and to record information by scratching marks on surfaces. It picked up speed when our more recent forebears began to wire up telegraph, telephone, and packet-switching networks, to place calls, to log in, and to download dematerialized information to wireless portable devices. It is repeated whenever a child learns to do these things; for the cyborg, ontogeny recapitulates phylogeny. It is not that we have become posthuman in the wireless network era; since Neanderthal early-adapters first picked up sticks and stones, we have never been human.²⁶

(August 2002), <www.wired.com/wired/archive/10.08/korea.html> (accessed December 2002). See also Howard W. French, "Korea's Real Rage for Virtual Games," *New York Times*, 9 October 2002, p. A8.

16. This creates a demand for software to help arrange ad hoc meetings among mobile participants and to perform meeting follow-up functions. See, for example, Mikael Wiberg, "RoamWare: An Integrated Architecture for Seamless Interaction in between Mobile Meetings," *ACM Group '01* (Boulder, September 2001).

CHAPTER 10 AGAINST PROGRAM

1. Michel de Certeau, *The Practice of Everyday Life* (Berkeley: University of California Press, 1984).
2. *Ibid.*, p. xxiv.
3. Walter Benjamin, "On Some Motifs in Baudelaire," in *Illuminations*, trans. Harry Zohn (New York: Schocken, 1969), pp. 155–200. See also Chris Jenks, "Watching Your Step: The History and Practice of the *Flâneur*," in Chris Jenks, ed., *Visual Culture* (London: Routledge, 1995), pp. 142–60.
4. This idea was given architectural expression in the "New Babylon" project by the Dutch artist Constant Nieuwenhuys, 1956–74. See Catherine de Zegher and Mark Wigley, eds., *The Activist Drawing: Retracing Situationist Architectures from Constant's New Babylon to Beyond* (Cambridge: MIT Press, 2001).
5. Gilles Deleuze and Félix Guattari, "Treatise on Nomadology:—The War Machine," in *A Thousand Plateaus*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), pp. 351–423.
6. See, for example, Critical Art Ensemble, "Nomadic Power and Cultural Resistance," in *The Electronic Disturbance* (Brooklyn, N.Y.: Autonomedia, 1994), pp. 11–34.
7. One might extend Canetti's well known analysis to the digital wireless era. See Elias Canetti, *Crowds and Power* (New York: Seabury Press, 1982).
8. John Summerson, "The Case for a Theory of Modern Architecture," *Royal Institute of British Architects Journal* 64 (1957): 307–10, reprinted in John Summerson, *The Unromantic Castle and Other Essays* (London: Thames and Hudson, 1990), pp. 257–66. Summerson's definition runs as follows: "A program is a description of the spatial dimensions, spatial relationships and other physical conditions required for the convenient performance of specific functions . . . It is difficult to imagine any program in which there is not some rhythmically repetitive pattern—whether it is a manufacturing process, the curriculum of a school, the domestic routine of a house, or simply the sense of repeated movement in a circulation pattern."
9. Michael Batty, "Editorial: Thinking about Cities as Spatial Events," *Environment and Planning B*, 29 (2002): 1–2.

10. In the period of transition from physical security of paper to electronic security of online files, the question of when and where you could download, and where you could keep electronic copies, suddenly became critical in high security settings. The cases of Wen Ho Lee and John Deutch turned on this point.
11. For an overview of the technical issues involved in this see “Self-configuration and Adaptive Coordination,” in National Research Council, *Embedded Everywhere: A Research Agenda for Networked Systems of Embedded Computers* (Washington, D.C.: National Academy Press, 2001), pp. 76–118.
12. The nineteenth-century bourgeois were the inverse of the twenty-first century’s emerging electronomads. In *History of Bourgeois Perception* (Chicago: University of Chicago Press, 1982), p. 71, Donald M. Lowe noted that “the bourgeoisie had a compulsion to fill up the visible space of the home with excessive furniture and intricate decoration. They cluttered every room in the house with objects. The eye seemed to abhor any visible, empty space.”
13. Henri Lefebvre, *Writings on Cities*, ed. Eleonore Kofman and Elizabeth Lebas (London: Blackwell, 1996), p. 195. See also Henri Lefebvre, “The Monument” and “The Space of Architects,” in *The Production of Space*, trans. Donald Nicholson-Smith (London: Blackwell, 1991).
14. Reyner Banham, Paul Barker, Peter Hall, and Cedric Price, “Non-Plan: An Experiment in Freedom,” *New Society* 13, no. 338 (20 March, 1969): 435–43. For a reprint and commentaries, see Jonathan Hughes and Simon Sadler, eds., *Non-Plan: Essays on Freedom Participation and Change in Modern Architecture and Urbanism* (Oxford: Architectural Press, 2000).
15. N. J. Habraken, *Supports* (1961; Urban International Press, 1999).
16. Yona Friedman, *Toward a Scientific Architecture* (Cambridge: MIT Press, 1975).
17. Hashim Sarkis, ed., *Le Corbusier’s Venice Hospital and the Mat Building Revival* (New York: Prestel, 2001).
18. Alex Gordon, “Architects and Resource Conservation,” *RIBA Journal* (January 1974), pp. 9–12.
19. Hans Moravec, *Mind Children: The Future of Robot and Human Intelligence* (Cambridge: Harvard University Press, 1988). For a return to the theme, see Hans Moravec, *Robot: Mere Machine to Transcendent Mind* (New York: Oxford University Press, 1999).
20. For a stab at the brain science, see Joseph LeDoux, *Synaptic Self: How Our Brains Become Who We Are* (New York: Viking, 2002).
21. As Mark C. Taylor has pointed out, such self-as-software speculations “revise ancient philosophical and theological visions for the twenty-first century.” Proponents of this view are “contemporary Gnostics, Platonists, and Cartesians” who espouse “a thoroughgoing dualism between mind and body, form and matter, immateriality and materiality, pattern and substance, etc.” *The Moment of Complexity: Emerging Network Culture* (Chicago: University of Chicago Press, 2002), p. 223.

22. The phrases are Ray Kurzweil's, from *The Age of Spiritual Machines: When Computers Exceed Human Intelligence* (New York: Viking, 1999).
23. There is an extensive literature of shedding flesh and virtual bodies. The fictional locus, in the 1980s and 1990s, was established by Vernor Vinge's novella *True Names* (1981; reprinted in James Frenkel, ed., *True Names and the Opening of the Cyberspace Frontier* [New York: Tor Books, 2001]) and the novels of William Gibson, particularly *Neuromancer* (New York: Ace Books, 1984). N. Katherine Hayles provides a critical introduction in *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999).
24. Ray Kurzweil has pursued this point: "There won't be mortality by the end of the twenty-first century. Not in the sense that we have known it. Not if you take advantage of the twenty-first century's brain-porting technology. Up until now, our mortality was tied to the longevity of our *hardware*. When the hardware crashed, that was it." *Age of Spiritual Machines*, pp. 128–29.
25. Freudians will be quick to point out one potentially good reason; you may not *like* your nature-and-nurture-given body very much, and Moravec's brain operation may belong in some murky category with cross-dressing, anorexia, body-piercing, and teenage suicide. But I shall not pursue this fascinating diversion here.
26. Here I paraphrase Bruno Latour. His short and provocative text, *We Have Never Been Modern* (Cambridge: Harvard University Press, 1993), was a witty riposte to the afflatus of postmodernism in French intellectual life.

CHAPTER 11 CYBORG AGONISTES

1. Construction of Palma Nova commenced in 1593. It was intended to serve as a fortified garrison outpost of Venice. The design is usually credited to the Venetian architect and urban theorist Vincenzo Scamozzi—author of the treatise *L'idea dell'architettura universale*, which deals extensively with fortified cities. Today, Palma Nova is a sleepy country town and one of the best surviving examples of what Lewis Mumford sardonically called the "asterisk plan."
2. Lewis Mumford, "Protection and Medieval Town," chapter 1 of *The Culture of Cities* (New York: Harcourt, Brace, 1938), pp. 13–64.
3. Lewis Mumford, *The City in History* (London: Secker, and Warburg, 1961), p. 410.
4. On the vulnerabilities of the oil and gas supply infrastructure—which, in the United States, consists of more than one million miles of natural gas pipeline and more than two hundred thousand miles of oil pipe—see Kathleen McFall, "Post-9/11 Investigations Reveal Oil, Gas Achilles Heel," in *Building for a Secure Future*, special editorial supplement to *Engineering News-Record* and *Architectural Record* magazines, Spring 2003, pp. 11–13. For a