Working the Urban Net Into a Safety Web

JUNE WILLIAMSON
Boston Architectural Center

INTRODUCTION

> A settlement is a valued arrangement, consciously changed and stabilized. Its elements are connected through an immense and intricate network, which can be understood only as a series of overlapping local systems, never rigidly or instantaneously linked, and yet part of a fabric without edges. ... [A] settlement is good which enhances the continuity of a culture and the survival of its people, increases a sense of connection in time and space, and permits or spurs individual growth: development, within continuity, via openness and connection.
>
> - Kevin Lynch[1]

Urban form results from the accumulated elements of a series of human acts; these acts include the making of conscious decisions about the allocation of limited resources, the use of buildings, places, and transportation systems, the incorporation of new technologies, and the hundreds of small decisions and choices that inhabitants make daily. These human acts result in patterns and cycles that are quantified, qualified, mapped and analyzed to provide data for planners, developers and architects. Examples of cycles of daily life are nine to five workdays, the exchanges of goods and services in markets of various kinds, and the social contact they engender. The structures that have evolved to support these cycles include public school districts, zoning laws, and commuter highways.

Current evidence suggests that the cycles of daily life that have profoundly influenced urban and suburban form in North America and the accompanying physical and institutional structures may be partially supplanted by the Internet and other new technologies that render physical mobility and proximity obsolete. In other words, the networks of transportation connecting separate nodes of use that have ordered urban form by providing rationale for building programs and location decision-making are becoming less stable. This is due to the widespread introduction and exploitation of a revolution in the application of telecommunications technology.

The telecommunications revolution is enabling concentrated spaces of work to disintegrate and spin centrifugally outward from downtowns, main streets and office parks. This dispersal of commerce and production results in a new, less visible network of use overlaid on the rigid Cartesian blocks of time and place that currently order quotidian existence. What are the potential effects of this phenomenon on the design and building of urban form in both the private and public sectors? How can architects and planners respond in a manner that fosters community and facilitates liberating forms of work?

A NETWORK OF NETWORKS

Before tackling these questions, I wish to consider various manifestations of the metaphors of "network" and "web" which have become ubiquitous in contemporary North American culture. First, these complicated terms must be defined. In Webster's New Collegiate Dictionary, a network is defined as "a fabric or structure of cords or wires that cross at regular intervals and are knotted or secured at the crossings."[2] Web is first defined as "a fabric on a loom or in the process of being removed from a loom." The second definition is "cobweb."[3] Turning to the definition of cobweb, I learned that it is "the network spread by a spider."[4]

The term network is aptly applied to telephone and electric systems, both of which literally consist of a structure of crossing wires. Network takes on a more metaphoric cast when applied to radio and television systems. In effect, the lower atmosphere is bombarded with electronic waves. Consumers have the capacity to tap into these ever present signals via personal receivers that transform the waves into perceptible aural and visual patterns. Transportation systems are also conceived of and portrayed as network structures; think of the air route maps that grace the back pages of every airline's in-flight magazine. The metaphor can be extended, as in the phrase "urban fabric," to suggest that land which has been built upon is like a woven fabric—a thing which has been fabricated to form a designed pattern.

At this point I would like to pause in the consideration of

the network metaphor to examine how the web metaphor is different. A third definition for the word stands somewhat apart from those previously discussed: a web is "a tissue or membrane of an animal or plant."[5] In particular, it is the tissue uniting fingers, toes, or other digits. This definition imbues the metaphor of web with biology; biological notions such as "connecting tissue" are often referenced when discussing urban fabric.

To return to the network metaphor, the final application I'd like to discuss is the so-called sociological and economic "safety net" for the poor and disadvantaged in our society. In this application, the network consists of a nodal system of public and private agencies that administer assistance programs to those who are considered to have fallen through the gaps because they are undereducated or unemployed. Attendant to this use of the metaphor is the notion that those needing assistance have "fallen" and simply need a little help climbing back up with the rest of us.

I disagree with this common interpretation. Missing, I think, is the nuance of the intuitive agency required of a spider in spinning a web and the conscious agency of a weaver on a loom; nuances embraced by the web metaphor. Perhaps the notion should be re-termed "the safety web" which—as opposed to a "net" or "network"—would require an explicit acknowledgment of the interconnectedness and continuity of the economic fortune and misfortune of all individuals.

THE TELECOMMUNICATIONS REVOLUTION

This distinction between network and web in terms of the issue of agency is crucial to my argument. The distinction is similar to that described by Leo Marx between two other terms. Namely the distinction which occurred in the late nineteenth century as the term "technology" shifted in meaning to substitute for the phrase "mechanical arts." Marx has discussed the emergence at that time of a belief in technological determinism and a myth of progress through science bound up with this shift in meaning.[6] The term mechanical arts referred to discreet artifactual elements that were clearly understood to have been invented as a result of human agency and ingenuity as was, for example, the steam engine.

The more abstract term technology, on the other hand, which from the seventeenth century had meant a kind of book, came to stand for the amazing new systems of mechanical and electrical manipulation that were rapidly being developed. To continue the previous example, the railroad system was considered a technology. The term took on a paradoxical deterministic character, which was perceived as independent from human agency or control. As Marx describes the continuing paradox, "this thing [technology] which is now deeply embedded in large structures of meaning and power and social life is still seen as a magical object."[7]

Against this semantic background of metaphor and meaning, I will now return to the central question of how architects and planners can respond to the advances in telecommunications technology. One might argue that these advances exist in a realm separate from urban form, or that the transformations are alien to the everyday lives of all but the privileged few. I would respond that for the present that may be true but the rhetoric surrounding the changes is compelling and reverberations may already be felt in many strongholds of power. For example, Vice President Gore is pinning his political future on the glories of the still ill-defined information superhighway, as do many educators, from advocates of charter schools to Dean William Mitchell of the School of Architecture and Planning at MIT with his vision for the "Studio of the Future."

As suggested by Marx's analysis, we are undergoing yet another great wave of technological determinism—this time of the virtual variety—that may sweep away decades of real, agonizing effort in many arenas of recalcitrant malaise, both social and physical. It seems to be a situation similar to that portrayed in the recent French film *Ridicule* where at the Court of Versailles wit is the only available means, short of wholesale revolution, of gaining the influence necessary to address the problems of disease plaguing the peasantry. But by engaging in the witty banter, the hero courts corruption and the blurring of his original noble goals.[8]

THE DIGITAL HALL AS WORKSPACE

And so, to recap, I have contended that a profound change, albeit partly one of perception, is taking place in the understanding of quotidian cycles. This change has at its source the American home, from which members of the middle and upper classes may gain access to the world without venturing out the front door. This is made possible by the development of what I have previously termed the "Digital Hall," which is a threshold space within the home that ostensibly houses a new generation of household appliances and automated systems utilizing digital technology.[9] These products and services may be classed into two groups: services focused on the regulation and protection of the internal home environment, and products that provide dynamic, transactive connections to the external world from within this now protected environment.

Products in the first category include devices that monitor and regulate temperature and lighting. The second category, systems that provide external connections, is a booming business. From beginnings in radio and telephone networks, we now have the vast and growing entity of the Internet with its highly popular e-mail and World Wide Web features. Home computers equipped with modems are permitting access from the home cocoon to most of the necessary accouterments of a productive white-collar working life. As a result, more and more Americans who are not artists or sole practitioners have the capacity to work at home via a burgeoning network of telecommunications services.

CORPORATE VIRTUAL WORKSPACES

Answers to the question of how the work-at-home trend might develop have been proposed by many. One conceptualization by software engineer Steve Pruitt and self-described "technology evangelist" Tom Barrett concerns the future Corporate Virtual Workplace, abbreviated as CVW. They proffer the following description:

> Within 60 seconds of crossing the study's threshold, Austin is at work. By donning his customized computer clothing and logging in to the fiber optic network via his home reality engine, he has attached his Personal Virtual Workspace (PVW) to his current employer's CVW . . . As he steps into the CVW, he enters a vast network of interconnected hallways in a bustling virtual corporation.[10]

In this scenario, the Digital Hall is the study, where the "home reality engine" is located, permitting access to the PVW. The PVW is an employee-supplied "room" in a vast electronic infrastructure of "hallways" and "conference rooms" that is the corporate workplace. It is interesting to note the dependence on architectural metaphor to describe these new and as yet undeveloped experiences. The description goes on to describe the ramifications of these developments on the individual worker:

> The PVW will become a cyberspace worker's most valuable economic asset . . . More than a personal workspace, each PVW will house a cyberspace worker's accumulated tools, references, and productivity artifacts. Indeed, the value of a new prospective team member will be measured by the richness of his PVW in addition to the knowledge and experience he has garnered on past projects.[11]

In other words, the home-bound individual is part and parcel of a mobile worker package, bringing to each new job a collection of customized electronic tools.

The icing on the cake of this rosy scenario is the assertion that these workers are free to live wherever they desire:

> Areas once deemed strictly vacation spots or resorts will be available for permanent habitat. Separated from the stress caused by crowded and polluted urban areas and able to instantly turn to their real environments for recreation and exercise, cyberspace workers will lead highly productive and healthy lives.[12]

This assertion is highly problematic. Firstly, it ignores the economics of desirable, and therefore exclusive, places to live and visit. Secondly, it ignores the probability that—economics aside—once remote resorts become popular places to live rather than just visit, they too may become crowded urban or sprawling suburban places. Thirdly, it presupposes no conflict in asserting that sedentary cyberspace work will somehow make people more physically active. This last assertion is especially problematic because in all probability the cyberspace workers are busily producing new entertainment and information manipulation applications for consumption by people just like themselves. In order to keep up the cycle of consumption, real wilderness retreats should be discouraged.

CELEBRATION

Another conceptualization of a Prototype Community of the Future, one that is already under realization, is the new Disney town of Celebration, near Orlando. The houses in the town exhibit state-of-the-art security and environmental controls technology, as well as fiber-to-the-curb telecommunications services that are networked to schools and other institutions. But this technological framework is clothed in an outfit assimilated from the tenets of New Urbanism, designed to provide residents with a soothing sense of seamless Community and Place without giving up access to the promises of progress embedded in twentieth century technological determinism.

Opinions vary as to the desirability of pairing Disney with New Urbanism and pairing futurism with a nostalgia for a prewar past. Writers cite the great market appeal of the Disney name, which Philip Langdon of *The American Enterprise* thinks "elevates traditionalism from the province of mostly small, local, and often contrarian developers to the realm of the amply financed mainstream corporations."[13] Similarly, Robert Stern, one of the master planners of the town, says:

> People love to come to Disney because the very word Disney means a certain authoritative standard that they will succumb to. We're not saying anybody has to live in Celebration. ...This is a place you want to live in. And to live in a community, you have to give up some of your freedoms. You cannot pile all your automobiles in the front yard. This is what being in a community is.[14]

Fig. 1. Logo of the Celebration Company.

In effect, Stern is saying that if you don't like it, you can go somewhere else where the prepackaged image suits you better. Perhaps this is the direction towards which we are headed. Statistics show that only one in five relocations in the U.S. is employment related while about half are due to the search of families to find "a house that fits them better."[15]

Some, myself included, would beg to disagree with Stern about the nature of real community. I believe, with Chantal Mouffe and other proponents of radical democracy, that the challenge is to make social plurality "compatible with our common belonging to a political community whose rules we have to accept."[16] This viewpoint does not accept disintegration of community into mutually exclusive identity groups. Nor does it support the self-balkanization of populations that both scenarios I've presented thus far begin to suggest. Russ Rymer, writing in *Harper's Magazine*, contends that Celebration "isn't neo-1940s or neo-traditional or, for that matter, neo-anything." He continues:

> maybe it is instead proto-corporate and quintessentially contemporary, a town off the shelf, meant not to be built but to be consumed by its residents, residents who understood perfectly the equation that had eluded me: that in this new corporate city, history and tradition were needed as aesthetics to permit their absence in fact.[17]

THE GENERIC CITY AND THE ALTERNATING NET

Rem Koolhaas would agree with this assessment that history and tradition are absent in the corporate city, but he would not be perturbed. In his conceptualization of the near future, Koolhaas has given the label "the Generic City" to homogenized urban form—the origin of which he locates in America. He contends that global culture has erased the significance of place and has rendered considerations of program hopelessly obsolete.[18] Uses are interchangeable. Of the work-at-home trend in the Generic City he writes, "Offices are still there, in ever greater numbers, in fact. People say they are no longer necessary. In five to ten years we will all work at home. But then we will need bigger homes, big enough to use for meetings. Offices will have to be converted to homes."[19]

This vision seeks to strip away the pretensions of authenticity that permeate projects like Celebration. He also seeks to avoid the utopian yearnings of cyberspace boosters. He simply states the conditions he observes, makes projections for what will happen, and refuses to mourn that which is lost. This nihilistic approach is seductive in its particulars. But I find it ultimately disappointing and hollow; the responsibilities of agency are completely sidestepped.

It is my contention in this paper that changes in the conceptualizing of the workplace will enable transformations in the urban realm, and that opportunities exist for architects and planners to respond. One promising way is by rethinking the traditional one-to-one mapping of building types to distinct areas, as in zoning, as well as of building types to highly specific uses, as in conventional architectural programming methodology. Koolhaas presents provocative methods for analysis, but little of a proscriptive nature except the notion that design can be a kind of free-wheeling game.

The urban theorist Kevin Lynch, on the other hand, attempts to answer the seemingly naive question of "What makes a good city?" In the book *Good City Form*, published in 1981, he imagines a new model of urban form which is called an "alternating net:"

> The basic pattern is one in which the major arterials form an open, irregular grid, sufficiently widely spaced that there is ample open space within the interstices. The arterial frontage is occupied by a relatively dense and continuous set of land uses. Orthogonal to the arterial grid, and offset half an interval from it, is a grid of similar pattern which is restricted to pedestrians, cyclists, [etc.]... The arterial "fast" grid system is owned, and its immediate frontage is controlled, by a public body, while the fronting uses are individually held. The "slow" grid, while open to the public, is managed by local frontage associations. Both rights-of-way are permanent, although their structures and management are not... This concocted model refers at once to map pattern, flow pattern, the grain of use and density, the distribution of control, and a cyclical pattern of change and how it is implemented.[20]

The writing is somewhat dry, but the idea is provocative. The alternating net could operate like the safety web for which I have been searching. There is a tension between the slow and fast grids that, like the web between fingers, permits movement and change within a flexible structure, enhancing continuity in both space and time.

On possible example of an operational alternating net is to be found in Los Angeles, where the major boulevards form a fast grid—a sort of hyperspace—connecting individual and local communities to the dispersed globalized city.[22] This model of a web fabric without edges is realizable. Zoning restrictions can be abandoned. Architects and planners can

Fig. 2. Diagram of the alternating net, Kevin Lynch.[21]

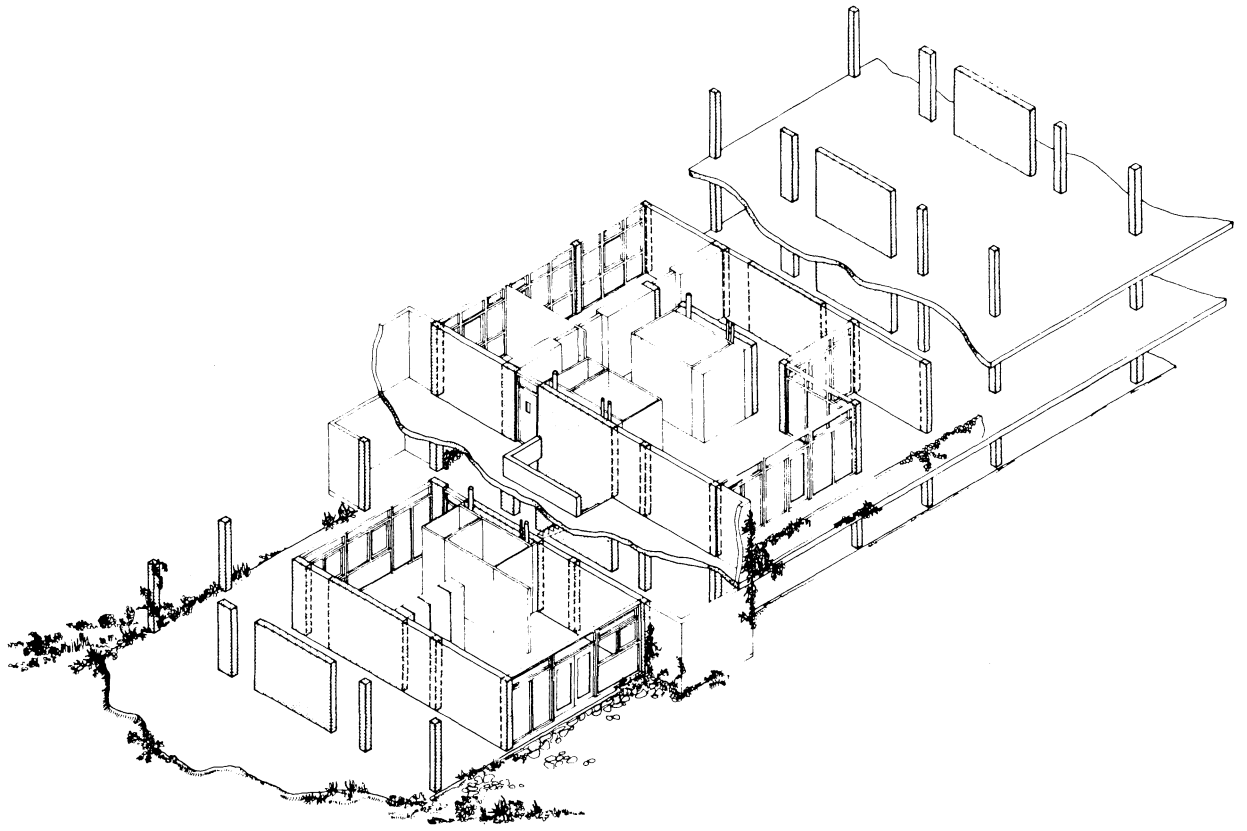

Fig. 3. Bijlmer support system, City of Amsterdam, 1970, illustrating Habraken's theory of supports.[23]

concentrate on guiding an evolving physical web structure that is conceived, in Lynch's words, as "a series of overlapping local systems." Developers can implement highly flexible and adaptable building forms and infrastructures, such as the supports and infill systems of N.J. Habraken. This can be accomplished without resorting to the production of simplified container buildings.

CONCLUSION

I would like to conclude with my own mini-scenario for the virtual workspace:

> After breakfast at home, Eunice dresses the kids and walks with them to her work center at the old strip mall. She drops the kids off at the daycare and dons her portable customized computer clothing, powered by the energy of her short walk, to start her workday. Periodically she logs off to visit with others at the center who all live in her neighborhood but whose occupations vary greatly from her own. Some of these people have become good friends, with some she doesn't get along, while others have provided useful advice and services. Some days, when she doesn't need the advanced equipment at the work center, for which her company pays a fee which is the least it could do because she doesn't get health benefits or free coffee, she stays and works at home.

I could go on with this story, but I think that the lines along which I am thinking are clear. By applying models like the alternating net, developing new models, and confronting outdated logic in the systems that govern current developemnt of urban form in such areas as zoning, transportation, and the design of single family homes, architects and planners may facilitate the realization of real community in our cities and towns. Rather than the escapist fantasy of sending faxes from a deserted beach, we may have a vibrant web of streets that supports all day activity, thus reducing the infrastructural burden of commuting and reinstating the sociality and collegiality lost when the head office disappears.

NOTES

1 Kevin Lynch, *Good City Form* (Cambridge, MA: MIT Press, 1981) pp. 116-117.
2 Webster's New Collegiate Dictionary (Springfield, MA: G. & C. Merriam Co., 1974) p. 771.
3 Ibid., p. 1327.
4 Ibid., p. 215.
5 Ibid., p. 1327.
6 Leo Marx, "The Critical and Historical Perspective" from "The Social Effects of Cyberspace: A 12-Week Colloquium on Advanced Information Technology, Low-Income Communities, and the City" (MIT Department of Architecture and Planning, Spring 1996) a partial transcript of which is available on the web site of *Plan* #45 (summer 1996) at <http://sap.mit.edu>.
7 Ibid.

[8] Patrice Laconte, director, *Ridicule* (France, 1996).
[9] June Williamson, "The Digital Hall: A Search for Intelligent Space in the American Home," *Proceedings of the 1996 ASCA European Conference* (Washington, D.C.: Association of Collegiate Schools of Architecture, forthcoming).
[10] Steve Pruitt and Tom Barrett, "Corporate Virtual Workspace," Michael Benedikt, ed., *Cyberspace. First Steps* (Cambridge, MA: MIT Press, 1991) pp. 384-385.
[11] Ibid., pp. 401.
[12] Ibid., pp. 403.
[13] Philip Langdon, *The American Enterprise* (Volume 7, Number 6, November/December 1996) p. 45.
[14] Robert Stern, quoted by Russ Rymer, "Back to the Future: Disney reinvents the company town,"*Harper's Magazine* (October 1996) p. 76.
[15] Jeanne Woodward of the U.S. Census Bureau, quoted by Karl Zinsmeister, "Are Today's Suburbs Really Family Friendly?" *The American Enterprise* (Vol 7, No 6, Nov/Dec 1996) p. 16.
[16] Chantal Mouffe, "Citizenship and Political Identity," *October* (Number 61, summer 1992).
[17] Russ Rymer, "Back to the Future: Disney reinvents the company town,"*Harper's Magazine* (October 1996) pp. 76-77.
[18] Comments at final studio review at the Graduate School of Design, Harvard University (9 January 1996).
[19] Rem Koolhaas, "The Generic City" in O.M.A., Rem Koolhaas and Bruce Mau, *S,M,L,XL* (New York: The Monacelli Press, 1995) p. 1260.
[20] Kevin Lynch, *Good City Form* pp. 286-288.
[21] Ibid., p. 286.
[22] John Kaliski, "The Form of Los Angeles's Quotidian Millennium" in Susan Yelavich, ed., *The Edge of the Millennium* (New York: Whitney Library of Design, 1993) p.116.
[23] N.J. Habraken, et. al., *Variations: The Systematic Design of Supports* (Cambridge, MA: MIT Laboratory of Architecture and Planning, distributed by MIT Press, 1976) p. 126.