

THE MEDIATED CITY CONFERENCE

Architecture_MPS; Ravensbourne; Woodbury University
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THE MEDIATING CITY: A NEW INFRASTRUCTURAL ECOLOGY.

Gregory J Haley

Grimshaw Architects

INTRODUCTION

“Shared infrastructures shape our lives, our relationships with each other, the opportunities we enjoy, and the environment we share. Infrastructure commons are ubiquitous and essential to our social and economic systems.” - Brett Frischmann

“To live together in the world means essentially that a world of things is between those who have it in common, as a table is located between those who sit around it; the world, like every in-between, relates and separates men at the same time.” - Hannah Arendt

“Technology has the knack of so arranging the world that we don’t have to experience it” - Max Frisch

“The use of any kind of medium or extension of man alters the patterns of interdependence among people, as it alters the ratios among our sense” - Marshall McLuhan

Infrastructure and Civilization: the Long Mediation

Since the beginning of city development, infrastructure in its various forms has been the mediating technology par excellence, allowing for collective urban life by mediating the vicissitudes of nature. Cities and infrastructure have always been, as posited by Michael Neuman and Sheri Smith in their study of city planning and infrastructure, “mutually interdependent and co-evolutionary” to the degree that “cities could not exist without infrastructure.”¹ In addition to mediating between humans and the natural environment, infrastructure has also historically played a civic and political function in mediating between people: as a civic armature or public works that gathers and bounds a community around a commons, defined by the elements that facilitate their living together. However, while infrastructure facilitates relations and interchange between humans and between humans and their environment, it has also been often an instrument of separation and disconnection, severing relations rather than bringing together. It is this dual potential for gathering and fragmentation that is critical to understand in defining the future role of infrastructure in our cities.

In early bounded city settlements, city walls acting as a primary infrastructure of containment and defense, clearly defined a distinct boundary between human settlement and nature inscribe in the very form of the settlement itself as well as distinction between people within and without. The form and infrastructure of the city were to a degree one and the same and together defined literal and figurative political boundaries. The siting and extent of such settlements were to a large degree predicated on the characteristic of its environment: its geography, connections to and access from other places (rivers, harbors, cross roads, etc.), and the availability of resources such as food and clean water.

These early settlements, such as the Greek city-states were in McLuhan words “a tribal form of an inclusive integral community, quite unlike the specialist cities that grew up as extensions of the Roman military expansion...”² With the onset of the modern industrial city however,

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Infrastructure as a strategic means of directing urban development came to the fore. Urban *form* and the particularities of place were traded for an abstract *process* of urbanization overlaid universally and to a large degree, regardless of setting. As a result many of the interdependencies of human and natural ecologies were obscured and replaced with a mechanical ideology predicated on limitless growth brought about by a technological subjugation of nature. This mode of infrastructural urbanization, brought about through the development of first long distance canal and rail networks, followed by extensive public services including waterworks and sanitation systems facilitated the extension of human settlement beyond the capacity of the natural environment.

While maintaining an illusion of stasis and mastery over nature, the specialization and partitioning of urban engineering functions that characterized this approach to city planning, continued to expand and differentiate through the balance of the 19th and 20th century, in particular with the onset first, of streetcar suburbs followed by the ascendancy of the automobile and the decentralization of urban patterns that it engendered. The resultant urban experience was characterized by a fragmentation, where, as McLuhan – following Mumford, describes, older center-margin structures were exploded and the centers replicated everywhere without margins.³ Through this process infrastructure become the dominant form of city organization to the point where as McLuhan argues the highway itself became “a city stretching continuously across the continent, dissolving all earlier cities into the sprawling aggregates that desolate their populations today.”⁴ Parallel to this decentralization was a slow bureaucratization of city planning that focused on policy and zoning as a primary means of defining our cities, and the markedly diminishing influence of designers and planner on the form and structure of the physical city.

Civil Society, Nature, and Co-Existence

Cities and their infrastructural networks have often been used to express and extend power. The historical dependency of empire on lines of communication and transportation for example is clearly evident in the adage that “all *roads* lead to Rome”. However, the trajectory of infrastructural development, as sketchily outlined above, also has an implication for our understanding of the civic value of infrastructure and the role that it has to play in human politics. Infrastructure as a backbone of resource distribution and definer of a “commons” holds political implications, both for conceptions of a civil society, and for any sense of democracy and distributive justice amongst both living and future generations.

Cities and infrastructure by extension have always had an important place in discussions of what constitutes the “Good life”. In his study of water infrastructure in turn of the century Chicago, Boston and Philadelphia, Carl Smith proposes that the city is “as much an *infrastructure of ideas*, as it is a gathering of people, a layout of streets, and arrangement of buildings, or a collection of political, economic, and social institutions. The infrastructure of ideas neither precedes nor follows the building of a physical and social infrastructure, but is inseparable from them.” and that civic infrastructure he claims can “express the beliefs, values, and aspirations of the city that created it.”⁵

During the later 19th and early 20th century, attempts were made to integrate and humanize the new large-scale engineering works that had emerged from the industrial revolution, into the fabric of the city and so to mediate between the scale of city-wide and regional infrastructure and that of the individual citizen. In practice it often resulted in a sort grafting of architecture onto large scale infrastructural engineering as in Otto Wagner’s integration of the U bahn into the cityscape of Vienna, or as in the case of the Philadelphia waterworks where classical monuments announced the presence and importance of the civic infrastructure it enclosed. In other cases however, combinations of private development, service functions, and public amenities, were superimposed as a result of real estate pressure such as the decking

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over of the loop and the development of the Chicago River promenade. With the general dispersal of population from cities in the latter half of the twentieth century and the more recent neo-liberal turn, the momentum of civic oriented infrastructure has slowed considerably and the majority of projects during these decades have been treated either solely as mono-functional engineering works such as multi-lane highways or as civil engineering services that are buried and kept out of sight and mind.

Crisis and Transition: Over Extension, and Reintegration

As we enter the 21st century the illusion of our technological mastery over nature and the feasibility of unlimited growth, is breaking down in the face of climate change, deteriorating infrastructure and disinvestment in developed countries such as the United States, and the rapid urbanization of developing countries which far outpaces the provision of adequate infrastructure to serve and direct its growth. The over extension of our modern development and consumption patterns have begun to place the ecological infrastructure of our planet in great peril.

Simultaneously, Utility providers faced with emerging pressures from the liberalization of service utility markets, tightening environmental standards, the high cost of modernization, and the uncertainty of future consumption patterns have in the last decades begun to change the way infrastructure is planned, implemented, and maintained, in an comprehensive effort to rethink the way in which “technical networks shape material and energy flows in an urban region”. The old model “public service ethos” of supply management driven solely by economic considerations and technical limitations are being replaced by a combination of supply and demand strategies that allow for social or spatial differentiation.⁶ Given this rethinking of utility infrastructure, the design and public interface of power stations, water works, sewage treatment plants, and other “key transformation and distribution nodes”⁷ within these larger material and energy flow networks is a key opportunity for designers to add social value and resilience to our urban systems, by reintegrating the physicality of these node points into the experience of the city.

Ecology and Politics

The future challenges of infrastructure are as much questions of collective values and ecological co-existence as they are of efficiencies and sustainability. In a world of finite resources and an ever increasing pressures, our future as a species will depend on how we distribute our resources, and how in the process we reimagine our place in this world and reconfigure both our concept of urban growth, the organization of our society, and our relation to and within nature vis a vi environmental resource flows.

To Ranciere Aesthetics acts defined as “configurations of experience” have the ability to “create new modes of sense perception” and induce “novel forms of political subjectivity”.⁸ If this is related to the function of infrastructure as an armature that mediates our existence, there must be potential for the design of infrastructure, both as a network, and as a series nodes points of human interactions within this network, to “configure” our individual and collective urban experience in such a way as to raise an awareness of the larger ecologies within which we exist, and through this situating of our collective consciousness to open up opportunities for the development of new modes of thinking and living, and new “subjectivities” that have the potential to alter our worldview. In other words the media of infrastructure through its ubiquity and pervasive influence on the configuration of our way of life is of critical importance, if we agree that a movement in our global collective values and way of existence is required.

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Through his discussion of the relation of art and ecology in the 1960's and 70's, James Nisbit points out that while ecological relationships cannot usually be observed directly due to the time scale at which they operate," one can see its influence within works of art", and that "such artworks provide an empirical interface for grasping both ecological processes and ways of thinking about them." ⁹ The challenge and opportunity for design then is to seek out engaging points of interaction between ecology and culture, and to present evidence of these processes and relations as experienced in time and space.

In arguing that our mechanical technologies have put us out of touch with ourselves, McLuhan postulates that "Perhaps *touch* is not just skin contact with things, but the very life of things in the mind?" ¹⁰ Thus perhaps is it through a tactile engagement with our environment as framed by design that new modes of thinking and existing might be made available.

Conclusion: Toward a New Infrastructure of Civic Ecology

Our contemporary world view is characterized more and more by complexity, dynamism, fluidity, and interdependence rather than the assumptions of regularity and predictability upon which the infrastructure of the last century was built. Are there now opportunities for a new infrastructure which is more flexible, adaptive and interactive, and which has the ability to make more apparent and legible our ties to each other and to nature? Could a new conception of infrastructure encourage a sense of interconnectedness within the larger ecologies within which we exist, and begin to breakdown human/natural dichotomies? Do possible synergies of infrastructure and ecology present conceptual opportunities for infrastructure reconceived of as public space, to become a mediating armature for the emergence of a new civic imageability at the scale of the metropolis and of the region?

Given the dynamics of urbanization today, the answer to these propositions is I believe, yes, but a qualified yes dependent upon the agency of designers, planners, and engineers to define a new and progressive ecology of urban infrastructure that is legible and supportive of urban form; inclusive and civic; regional in perspective; resilient and above all, broadly ecological in the way that it structures our "coexistence", and as Timothy Morton defines the scope of ecology, "all the ways we imagine how we live together." ¹¹ (Morton, 2010, p. 8)

¹ Neuman, Michael, and Smith, Sheri, "City Planning and Infrastructure: Once and Future Partners" *The Journal of Planning History* (2010):22.

² McLuhan, Marshall, *Understanding Media: The Extensions of Man*, Cambridge:(The MIT Press, 1994): 95

³ McLuhan, Marshall, *Understanding Media: The Extensions of Man*, Cambridge:(The MIT Press, 1994): 91

⁴ McLuhan, Marshall, *Understanding Media: The Extensions of Man*, Cambridge:(The MIT Press, 1994): 94

⁵ Smith, Carl, *City Water, City Life: Water and the Infrastructure of Ideas in Urbanizing Philadelphia, Boston, and Chicago*, Chicago and London (University of Chicago Press, 2013): 4

⁶ Guy, Simon, Marvin, Simon, & Moss, Timothy, *Urban Infrastructure in Transition: Networks, Buildings, Plans*, London (Earthscan Press, 2001): 4-7

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⁷ Guy, Simon, Marvin, Simon, & Moss, Timothy, *Urban Infrastructure in Transition: Networks, Buildings, Plans*, London (Earthscan Press, 2001): 4

⁸ Ranciere, Jacques, *The Politics of Aesthetics*, London and New York (Bloomsburys Press, 2013)

⁹ Nisbet, James, *Ecologies, Environments, and Energy Systems in Art of the 1960s and 1970s*, Cambridge (The MIT Press, 2014): 3

¹⁰ McLuhan, Marshall, *Understanding Media: The Extensions of Man*, Cambridge:(The MIT Press, 1994): 108

¹¹ Morton, Timothy, *The Ecological Thought*, Cambridge:(Harvard University Press, 2010): 8

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