Beyond the Adversarial: Conflict Resolution, Simulation, and Community Design

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The American Context for Urban Design

Fundamentally, urban design in the United States is grounded in the Constitution's evolving definition of property and the rights and obligations attendant to the ownership and use of real property. The realization of the American dream is directly related to the goal of universal private ownership and use of property in contradistinction to the practices of, for example, field enclosures in Great Britain resulting in a disenfranchised agricultural proletariat of tenant farmers and urban work force. The rearticulation of Jefferson's dictum "that individuals have certain inalienable rights, among them life, liberty, and the pursuit of happiness" in the *Declaration of Independence*, to "life, liberty, and property" in the 5th Amendment represents a pragmatic understanding of the relationship between property and the actualization of the individual in society.

In an effort to balance the Enlightenment ideals of Lockean individualism and Rosseauean communitarianism the Constitution recognizes both the need to "protect the public welfare" (the police power), and the protection of private property from capricious governmental action (the "takings" clause of the 5th Amendment), and mediated through other clauses dealing with due process values and the uniform application of the law. In other words, the ownership and use of property in the U.S. is a highly charged issue of almost mythic proportions where the rights and obligations of ownership are a matter of public debate. In terms of urban design, this means extensive public involvement and participation in not only the formulation of rules and regulations but of individual projects as well. It is in this context that Donald Appleyard, of the University of California at Berkeley wrote:

> „[T]echnical planning, and environmental decisions are not only value based [...] but [...] identity based [...] [P]hysical planning decisions can, and frequently do, threaten the identity and status of certain groups, while enlarging the powers of others ... The environment is divided into „ours,, and „theirs,,, the trees may be ours, the billboards theirs, the authentic ours, the phony theirs or ours. [...] The city and the natural environment are arenas of symbolic social conflicts and as such raise their own issues of social justice."

Anglo-American empiricism and legal system have tended to dominate planning and urban design decision making. The legal system's adversarial approach to adjudication is essentially a zero-sum game of winners and losers, and as most land-use lawyers will agree is not a good model for the planning and design of cities, while, the adversarial approach does resolve disputes, it rarely creates a positive and constructive consensus for change, nor has it clearly defined both the limits of the individual rights and the public's interest in the use of property. Because these, as noted earlier, are value laden and identity based, consensus building has emerged as a new paradigm for physical planning decision making as the broadest spectrum of a diverse society must relate to the urban design proposal if it is to have resonance and attract meaning. It is in this context that the representation of city form, and urban design concepts must communicate successfully to all the participants in the debate.

Simulation and Their Uses

Traditionally, planning and urban design issues have been conveyed in words, numbers, and static images. Environmental simulation, by contrast, is dynamic and highly interactive. In addition to generating moving images, modeling and simulation techniques allow the viewer to step into the images and experience alternative proposals from an infinite variety of perspectives. In simulation, as in the real world, time and movement are in constant flux, making the viewer not just an observer, but an active participant.

The *Environmental Simulation Center* employs two complementary techniques for environmental simulation: computer modeling and physical modeling, which can be used individually or in combination, Because it produces mathematically accurate images of data, computer simulation is principally applied to urban design issues that require quantitative analysis, such as zoning alternatives, micro-climate conditions, or growth management plans. Physical modeling, while not as mathematically precise as computer simulation, is photorealistic and perceptually accurate, and can convincingly depict building textures, landscaping, and streetscape details. It is best suited for specific sites, districts, and structures, and for conveying how the environment will look and feel, particularly at the pedestrian level. The power of simulation and visualization was strikingly evident in a workshop at the Simulation Center, which brought together regional planners and residents to study a "village center" proposed for a location adjacent to a regional rail station. The master plan called for a mixed-use development, with buildings no more than two stories high - a height limit strongly favored by the residents. But once the words and numbers used to describe the plan, was modeled on the computer, people saw immediately that what had seemed like an attractive

plan described in words had all the appeal of a blandly designed suburban mall, with little of the urban quality they sought. Working interactively with the Center's Lego-like computer kit-of-parts the participants were able, in a brief period of time, to begin to change it, to give it the feeling of Central Town Square. The computer was extremely effective in visually translating the words and numbers contained in the pages of the master plan, and it helped residents to overcome the opposition of their own mental images.

The Center's most ambitious undertaking is the development of a comprehensive, three-dimensional computer model and a data base for New York City, known as a three-dimensional Geographic Information System (3-D/GIS). At first glance, the model looks like an aerial view drawing. Upon closer inspection, however, it becomes evident that it is an enormously sophisticated resource, with unusual potential for enabling an understanding of the dynamics of New York. The 3-D/GIS includes layers of statistical, graphic, and numerical information, combining data such as census, land-use, zoning, landmarks and landmark districts, ownership, vacancies with corresponding three-dimensional images of the built environment. Like the real city, the three-dimensional model is constantly evolving: buildings are demolished, new parks are created, populations shift, and zoning, historic preservation, and urban design regulations change. The 3-D/GIS will be continually updated with new data to reflect growth and change, making it both an accurate document of New York today, and a permanent record of the city over time.

Beyond the Arrested Image: Representation in Urban Design

If as Appleyard noted, planning and environmental decisions are not only value-based but identity based then it also follows that the history of the representation of cities is deeply connected to the history and politics of the perception in which the representation of cities and places has been simultaneously liberating, constraining, and manipulative. Representations of the city have been used to communicate not only what is but also what could be. Typically two dimensional, images imagine the city as an idealized environment frozen in time (timeless?). While liberating in one sense (the world as seen from an individual singular point of view), perspective drawings and photographs, among others, represent the power of the static or arrested image to manipulate and control experience through the canonization of meaning in the images themselves. Their power, oddly, may lie in their defying both our experience and common sense that the world as we perceive it is dynamic and filled with movement.

Digital and related technologies have the potential to provide richer representational environments that are responsive to the contingent and existential

qualities of cities paralleling our own experience. Three dimensional digital models, such as the one the Center has created for Lower Manhattan, include visual and non-visual information, represent information as a flow where the relationships between information are shown simultaneously and dynamically and are randomly accessible, affording the viewer the ability to perceive and interactively query and engage the place on their own terms. There is a latent egalitarian potential in these digital technologies which to borrow from Burger King allows you "to have it your way".

One thing is certain, is that the emerging digital forms of representation will change the way we think about cities. The ability digitally to image and integrate visual and non-visual descriptions of cities and the form they take - simultaneously matching the qualitative and the quantitative/the experiential and the rational - is not merely a tool. Like Renaissance perspective it represents another way to think of the world - not only from the individuals point of view but as a flow of relationships which are dynamic. In many respects, the computer's facility to represent information dynamically is conducive to the recognition of patterns which otherwise might be opaque to the viewer, and recalls a passage from Kevin Lynch's *Images of the City* in which he defines his contingent view of urban design practice:

> "Not only is the city an object which is perceived (and perhaps enjoyed) by millions of people of widely diverse class and character, but it is the product of many builders who are constantly modifying the structure for reasons of their own. While it may be stable in general outlines for some time, it is ever changing in detail. Only partial control can be exercised over its growth and form. There is no final result, only a continuous succession of phases. No wonder, then, that the art of shaping cities for sensuous enjoyment is an art quite separate from architecture or music or literature. It may learn a great deal from these other arts, but it cannot imitate them."

Citizens who have had the unhappy lot of having to live through a built theory - "what a human being can adjust to nobody should have to live through" (Gussie Singer, 1962) - want an active voice in how their environments are shaped and a better understanding of the consequences of their individual and collective actions. If urban design representation is to move beyond the idealized static image and embrace the messiness of the city as described by Lynch, the computers capability to image dynamic relationships between information as well as the individual's ability to directly query, manipulate, and if need be - be in the information flow will become central to the inclusive design of cities. Their wants, desires, and perceptions are real and need to be communicated, understood, and ultimately realized in built form of the city.