Ms Cranz Galen
Dept. of Architecture, University of California, Berkeley, CA 94720, USA tel 510-6424942, fax 510-6435607

HOW PRINCIPLES OF SUSTAINABLE DEVELOPMENT CAN AND MUST SHAPE OUR CITIES AND PARKS: THE CASE OF RIVERSIDE SOUTH

The Riverside South Project

This paper is the first in a series of reports about the idea of sustainable development at work in a planning process in the heart of one of the world's great metropolises--New York City.

In June 1991, I was invited to join a group of 12 professionals assembled from around the nation to evaluate without pay the so-called compromise proposal for the redevelopment of the old Pennsylvania Railroad Yards on the upper west side of Manhattan between 59th and 72nd Street.[1] Donald Trump (and his bank) own the land and seek to develop it. Four years ago he had proposed the world's tallest building, a television studio and office space, and a density of 14.3 million square feet of residential and office space known as Trump City. This idea was vigorously opposed by community groups. These same civic organizations--the Municipal Arts Society, the Parks Council, the National Resources Defense Council, the New York Regional Plan Association, Westpride and Riverside Park Fund--approached the Trump organization with the suggestion that they work together and thereby come up with a responsible proposal so that the civic organizations would not have to waste their time and energy opposing the developer.

The key features of the compromise proposal include 1) a reduced density of 8.3 million square feet, 2) the reinstallation of the Manhattan city block grid (as opposed to the use of super blocks as in the adjacent cultural center, Lincoln Center), 3) the use of building massing to create an urban wall like that along Riverside above 72nd Street or like those facing Central Park along both Central Park West and Fifth Avenue, 4) relocation of the elevated highway that currently runs near the water's edge inboard between 72nd and 59th, creating a curve and a suppressed highway but, more importantly, creating what is perceived as direct access between land and the water, so that Manhattanites can have unimpeded access to the Hudson River, and 5) a 23-acre park. In exchange for the right to build at the density of 8.3 million square feet Trump has proposed to give to the City a 23 acre portion of the total site to be maintained by the City as an urban park.

As part of our four-plus day charette, the organizers had arranged for a large number of community groups to testify before members of the design charette. During this day of testimony, I was struck by the number of people who wanted no development on the site whatsoever. Their reasoning was that the upper West side was too crowded already and that the quality of life had already been substantially degraded. They reported that the recently completed the sewage filtration plant on the upper West side was already full to overflowing, estimated to be at 110% capacity. They cited the dangerous conditions at the 72nd Street subway station, with its narrow platforms and limited access in and out of the station. We heard complaints about shadows, air pollution and noise, about both traffic congestion and foot traffic congestion. Many people argued for a reduced density, somewhere closer to 6 million square feet, some argued for low income housing, while others argued for no building whatsoever. Some people cited the number of empty apartments in the luxury buildings near the site to argue that no new luxury housing was needed, and more than one group discussed the need for dormitory housing, that is, single rooms for students and medical staff at hospitals. As a sociologist specializing in semantic ethnography, I could not help but be struck by the number of cries against building on this site.[2] Density was often the code word, that the project is "too dense," that we can't live at such "high density." Some people wondered if the park would be adequate compensation for living at such high density.

Back in the convened workshop I felt obliged to represent these views faithfully, and I interpreted them in light of my knowledge of research in person-environment studies. I argued that density per se was not the issue, but rather the environmental stresses caused by such high density.[3] I knew from my colleagues at Berkeley, notably Sym Van der Ryn, that there were other ways to design communities along principles

which I knew only most generically as "sustainable development." So I put together the ideal of living at high densities without stress with the notion of sustainable development and concluded that sustainable development might offer a way out of the perceived conflicts around density, stress, and acceptable economic development. Helping the developer keep people on the island of Manhattan would have ultimate benefit for the region by keeping people from living up along the Hudson River valley and commuting into the city, and instead by having them use the already existing transportation infrastructure.[4] What was needed would be a way to integrate the additional population into the site without causing additional stress.

To this end, I argued in the written final report that the principles of sustainable development should be explored. As an outsider to the field, I could only vaguely imagine some possibilities for sustainable development on this site. Building massing and height, insulation, glazing, and construction materials could effect energy consumption, especially regarding air conditioning which would effect both indoor and outdoor air quality. Solid waste, sewerage, and traffic exhaust might be resources rather than pollution, if our culture could follow the principle inherent in my own homegrown adage that "There is no such thing as waste, only material out of place." Ideally, all these ideas, when integrated together, could produce a new model for architecture and building systems. I merely intuited all this from general architectural awareness, but I knew with certainty that no matter what the final configuration, it spelled out a new role for the urban park.

The Fifth Model for Park Usage

Traditionally, the urban park since the birth of industrialization in the mid-19th century has had the role of an idealized landscape, a utopian space. While the city itself, devoted to production, was accepted as ugly and polluting, the park and garden were supposed to provide an antidote or compensation for this unpleasantness.[5] In the U.S., public parks have had four distinct expressions: the pleasure ground (1850-1900), the reform park (1900-1930), the recreation facility (1930-1965), and the open space system (1965-present).[6] Despite this variation, all of these park types and ideals share the underlying mission of compensating for the stress of living in cities. If urban stress itself were reduced through a different mode of building, then the role of the park would be substantially changed. Rather than being the "mistress" for a few stolen hours, the park would become a full partner in a marriage between building and nature.

I could not then and I still do not now foresee in great detail what the new park will look like. First, we need to focus on an integrated model of building along the principles of sustainable development, which will necessarily involve biology in new ways. A new aesthetic will evolve from our new appreciation of the building as part of a living system. "Bioarchitecture" will make a different statement about its relation to nature and, therefore, many of the historical functions of parks, gardens, and open space will necessarily need to be rethought both scientifically, intellectually, philosophically and aesthetically.

The park on this site, for example, might become a restored marsh land and handle all the storm runoff for Manhattan that currently flows out from the center of Manhattan out to the shore at 59th Street. Plant life--water hyacinths and bullrushes--could mine heavy metals out of the water, and then in turn be harvested and possibly burned as a form of metal reclamation. Restoring the wetland at the water's edge would restore a breeding ground for myriad number of species; these wetlands could produce the fish and crustacea for which the Hudson bioregion was once famous. This kind of park would be providing entertainment and recreation by reintroducing fishing; it would provide the simple, pleasurable, kinesthetic experience of walking on water, and it would be an educational experience for children. In all these ways it would serve the city at large, not just the adjacent Riverside South community. This would be enough if the 23 acres only performed these functions. But there is room for much more.

For example, the integration of water recycling, solid waste recycling, and air scrubbing to eliminate carbon dioxide might point the way to a greenhouse where water, earth, and oxygen as plant by-product came together. Then each building might have its own greenhouse on the other side of the sunken highway, which would provide year-round education, entertainment and amenity for park users. In this case, a building, normally an anathema to pure park philosophy, would be no longer, because the old dualism between nature and architecture would have been transcended.

Four distinct aesthetic models that accompanied each of the programs established as appropriate for an urban park in a city in its time. Usually the park was an antidote to the ugliness of the city, but in the last period, the era of the open space system, park thinking introduced a more artistic vision of the city. The city itself was viewed as an art object, a cultural artifact. Shortly thereafter, sculptors and other gallery artists began to do more work in the public domain. Thus, landscape architects coming out of a park and open space perspective, sculptors coming from a fine art background, along with architects have come together in an uneasy alliance around the issue with a percent-for-art allocation. What has been missing is the integration of ecology with this new attitude of appreciation of landscape and cityscape as art. I predict that the fifth model of park programming and design will express principles of sustainable development and mark a fundamental change in the old counterpoint between park and city. With the introduction of principles of sustainability, the old dichotomy between biology and culture must soften. Therefore, a new aesthetic is necessarily on the horizon, whether in the realm of public art or public parks. Perhaps the category of art and park will continue to blur to the point of extinction. A water treatment plan will no longer be an ugly utility screened from view, but perhaps as a marsh would be simultaneously a work of art, a work of urban artifice, and a work of nature.

Sustainable Development Today

Considerable knowledge and publication exists at the scale of the individual house and that a substantial, although lesser amount, of work has been done at the scale of small planned communities outside large metropolitan areas. The idea of being "ecologically correct" at the level of intensity in cities like New York may have seemed heretofore an absurdity. The first group to consider seriously the possibility of an ecologically correct city met only recently in 1990 at Berkeley at the Ecocities conference.) As I said in my August 30th summary to S.O.M., ". . . substantial knowledge and significant talent is established in this area. What is needed is the vision and commitment to apply these principles at an unprecedented scale. . . .Some architects in Manhattan have retrofitted commercial office buildings in accordance with state-of-the-art standards for sustainable architecture. It is just a matter of time before entire sectors of large metropolitan areas like New York City are developed along these lines."

I have since come to see that it's more than a matter of time. Human agency and will are of paramount importance. However, the cliche of "It's just a matter of time" is partly meant to suggest that the idea has such force and logic, given the ever-increasing awareness of the finiteness of the earth's resources, that it is inevitable that humans be forced to face the need for a new way to dwell on the earth. That is not to say, however, that they do not have the option of deciding to accept gradual extinction. They do have that choice. We do have that choice. And no amount of "time" guarantees otherwise.

Sustainable development has been defined in a number of different ways and itself may be an ideal rather than an end state. It has been defined recently (Spring, 1991) at Harvard's Graduate School of Design Charette on Sustainability as providing for our present needs without imposing costs on the future or by Schumacher as design for permanence, i.e., principles of development that if pursued indefinitely do not lead to absurdity.[7] It means that buildings approach the model of plant life which sustains itself. It is partly an embryological metaphor suggesting stages, that one thing comes from another, that one thing cannot happen until another thing has happened.[8] I don't like the implication that building something is a higher stage than deciding not to build something. A virgin forest, today, represents probably a higher stage of "development" than agriculture or tract housing on the same site. Some see a tension between the no-growth implications of sustainability and the cultural imperative to keep expanding, growing, and changing. In this light sustainable development represents a compromise, a liberal middle ground. Sustainable development is trying to represent a moderate--not an anti-growth--position, in order to avoid the stagnation of traditional societies. Perhaps sustainable development is best interpreted as intensification. Thus, to develop a place like Manhattan systems should be laid on systems, so that the Hudson River Valley and Jersey farmland need not be "developed" any further.

In general, one can say that the principles of sustainable development fall into four or five basic areas, with strong cross-linkages between each of them: 1) solid waste management, including composting, 2) air quality, both indoor and outdoor, 3) energy conservation, and 4) water. Secondary topics include traffic, which is linked both to energy and to outdoor air quality. Work issues relate to indoor air quality and back to traffic. Work also has important connections to social issues of equity and workplace democracy.

Bioremediation uses biology to reverse pollution in earth, air, and water. Each of these major areas has a lot of sub-issues and detailed technology, for example--regarding indoor work quality--the kind of light bulbs that we use, the amount of energy that they consume, the quality of light that they give, the kind of fixture that they screw into, how expensive those fixtures are. Each such example generates its own voluminous literature. What is needed is a model for how all the four or more systems can be integrated, not only at the building scale, but also at the scale of community and high density metropolises. The opportunities for integration are not known in advance, so there must be opportunity for serendipitous discovery. A research team model of invention is appropriate. One specialist must hear the other specialist discussing his work at a detailed level. If we are to design building, land, and infrastructure as an integrated entity, we cannot rely on the conventional distinctions between architects, landscape architects, and civil engineers. In fact, we cannot even rely on the concept of master planner to integrate these three. We have to have a new way of working. (I am reluctant to entertain the possibility that perhaps we have to develop a new specialist, someone who specializes in the integration of systems.)

Implications for the Riverside South Planning Project

Both the field as I have discovered it, and the field as I would like to see it evolve have implications for the way the Penn Yards/Riverside South Project should proceed. 1) There should be a *team* involving architects, landscape architects, engineers, artists, biologists, and *the structure of that team should be horizontal*, with a coordinator, but with the actual work being done in teams. 2) *A new general model* could come out of this project. If the team is allowed to think through from first principles, some new standards could be set for building at extremely high densities to reduce air pollution, water pollution, solid waste problems. For example, moss can be used on the north face of buildings, and together with vines, these may provide more air cleaning than street trees. Water treatment within each building could be linked to a system of agriculture that could produce enough fresh produce for the entire population of Manhattan, making New Yorkers less dependent on California (and its droughts) and transcontinental transportation in refrigerated cars. The relocated highway offers an opportunity to integrate carbon dioxide with plant life, oxygen production, and agriculture. Solid waste can be linked to an agricultural system. Recycling of plastic, reduction of plastic use must become a reality. Each cycle has to be complete and integrated with one another.

3) This particular project could set an *international example* because it's visible and because it's in one of the world's largest cities. It can thus speak with authority to other large cities, both in overdeveloped and developing nations.

4) Finally, the Penn Yards/Riverside South Planning Project will set the stage for the *fifth model of park development*. Most of the models last somewhere between 30 to 50 years. And we are now in the 27th year of the open space system. The timing is right. Parc La Villette in Paris couldn't yet make that step into the 21st century even though the rhetoric of the park competition asked for it. Parc La Villette was extraordinary because of the program written for the competition. Some designers called it overly eclectic, because it required massage parlors, video parlors, macrame studios, meditation gardens, science museum, art museum, conventional athletics, so forth and so on. As a historian of parks, I was able to see that this program was attempting to overcome three of the major dichotomies that had plagued park programming since the mid-19th century: the dualism between mind and body, between art and science, and between elite and popular culture. The Parc La Villette program asked the designer to transcend all those dichotomies, which was apparently necessary as a developmental step to clear the way for an even higher order integration.

The canal district of Mexico City comes closer to being an example of sustainable development since the goal was to make the land more profitable for farming than if sold for residential development. Xochimileo is a historic canal site, used since the time of Montezuma, now a national park, with an initial subsidy to dredge the canals but the eventually intended to be self-sustaining economically. The idea is that by providing a marketplace and the infrastructure of roadways to and from that, the park planners are assuring the farmers that they will have enough business to make farming of their land more profitable than selling it. In this way, the planners stop the urban sprawl at the southern edge of Mexico City, preserve a historic site, stimulate the economy for a sector of the population, provide recreational amenities for tourists and residents alike, keep water and land open for biological processes, and improve water, land, and air quality and help mitigate Mexico City's notorious pollution.[9] Pursuing the project of Riverside South will allow us to unfold a new conception of nature in relation to human settlement. A new aesthetic will flow from this. For example, if the old dichotomy between work and play is transcended, then we can see Riverside

South as a great work space as much as it will be a great public space, just as Xochimilco is a great work space and a beautiful park, a historic public place, and a bountiful garden.

5) The Riverside South Project will also offer us firsthand experience of the behavioral, social, culture, and political impediments to pursuing sustainable development. Culture, society, behavior, and power are also the bases of achieving sustainable development. Whether impeding or facilitating, *social factors move to the forefront of sustainable development.* It is no longer a technocratic specialty. It's now moving to the stage where technological invention will be picked up and will spread like wildfire, will be evaluated by a thousand and one, a million and one, integrated or discarded in an ongoing stream of cultural development.

---

[1]I am the author of The Politics of Park Design: A History of Urban Parks in America (Cambridge, Mass: The MIT Press, 1982).

[2]Semantic ethnography is descriptions of a people using their own language. Sometimes called cognitive ethnography, it relies upon what people know about themselves.

[3]Galen Cranz, "Density: A Review of the Literature," Unpublished professional report for Edwards and Kelley, Newark, NJ, 1975. A. Rappoport, "Density," Design and Behavior, 1975, Ekistics, 1965.

[4]This belief stemmed from my very early review of Paolo Solen's Archology and ensuing readings mentioned in Note 3, Whyte, The Last Landscape, observation and high regard for the social movements typified by Trust for Public Land, those involved in saving farmland in California, and the general pro-urban stance of architects.

[5]See Chapter 8, Cranz, *The Politics of Park Design,* op. cit.

[6]Cranz, op. cit.

[7].Schumacher, *Small Is Beautiful: Economics As If People Mattered* (1973).

[8]It is not surprising that real estate interests have latched onto such a biological metaphor since our culture is overly fond of justifying its social and cultural arrangements in terms of nature; the class system, age, sex, and racial segregation are often justified in terms of biological metaphors.

[9]This project was planned in the late '80s, but when visited in the spring of 1991 only the first farmers had started and the marketplace was only now being constructed. Again, this suggests that it was premature in 1982 for the French to attempt to create a park for the 21st century. A decade later we have this new notion of a park.