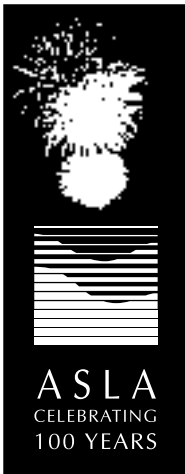


1999

ASLA/LAF SUMMIT  
WHITE PAPERS



LANDSCAPE  
ARCHITECTURE  
FOUNDATION



AMERICAN SOCIETY OF  
LANDSCAPE ARCHITECTS

WASHINGTON, DC

The four Summit White papers can be found in their entirety at: [www.asla.org](http://www.asla.org)



Printed on recycled paper

©1999 by the American Society  
of Landscape Architects

All rights reserved.

Printed in the United States of America

# C O N T E N T S

---

<b>Foreword</b> .....	<b>ii</b>
<i>Donald W. Leslie, FASLA</i>	
<b>Introduction</b> .....	<b>iii</b>
<i>L. Susan Everett, FASLA</i>	
<b>1. Social Challenges for Landscape Architects in the 21st Century</b> .....	<b>1</b>
<i>Joanne M. Westphal, ASLA, AOA</i>	
<b>2. Designing as if the Earth Really Matters</b> .....	<b>15</b>
<i>Carol Franklin, FASLA</i>	
<b>3. Creativity and Education</b> .....	<b>25</b>
<i>Ignacio F. Bunster-Ossa, ASLA</i>	
<b>4. The Unfulfilled Leadership Promise</b> .....	<b>39</b>
<i>Joseph E. Brown, FASLA</i>	
<b>Biographies</b> .....	<b>47</b>

## S U M M I T I N B O S T O N

The concept of a “summit on the profession” was an idea first advanced during my tenure as the President of the American Society of Landscape Architects. I believed that the 100th Anniversary of ASLA was more than a celebration, it was an opportunity to describe and define the critical issues facing the profession of landscape architecture. Also, I believed that the summit should be a process and not an event. Therefore a series of open forums were developed, beginning with the Atlanta Annual Meeting in 1997 to define and explore some of those issues. In the subsequent years, a number of open discussions were held in conjunction with Chapter meetings, the Board of Trustees meetings, and the CEO Roundtable meetings. In late 1998, the Landscape Architecture Foundation, in conjunction with ASLA, agreed to sponsor a series of white papers, around four central themes including learning and creativity, professional leadership, social/psychological benefits and sustainable/regenerative issues.

These white papers will be presented in Boston by four notable leaders of the profession and will become “the seeds of change” for a major initiative/study on the profession of landscape architecture sponsored by the landscape architecture profession. As I envisioned, the summit is a process where the profession begins to control its own destiny and prepares the comprehensive report that will define the strategy for the future of advancing the profession.

Donald W. Leslie, FASLA  
Past President

# INTRODUCTION

---

L. Susan Everett, FASLA  
Executive Director, LAF

*There is a profound need for professional self evaluation, a current statement of purpose and potential scope.*

M. Paul Friedberg, FASLA

For landscape architects, the process of looking comprehensively at a site or a region, compiling information on its component parts, analyzing the information, developing alternative concepts that project ideas into the future, and engaging citizens in this process is both an article of faith and a daily practice. The value of planning and design is accepted and assumed.

Yet, in 1999, as the American Society of Landscape Architects commemorates its centenary and Harvard University, home to the first landscape architecture degree program, prepares to observe its centennial anniversary next year, there is no plan for the profession and no forum for dialogue that would look at the profession from a *comprehensive* perspective.

The Landscape Architecture Foundation, building on the open forums initiated by Don Leslie when he was ASLA President in 1997, plans to address this significant need through a major study of and plan for the profession called the Landscape Architecture Futures Initiative.

The ASLA-LAF Summit on the Profession is one of the initial steps that will help advance the Futures Initiative. The purpose of this initiative is, first, to explore the opportunities and challenges facing landscape architecture and second, to provide a vision and a plan for the landscape architecture profession in the twenty-first century.

*The inconsistency in our education, interests, training, approaches, and specialized knowledge, together with our lack of expertise in vast areas, leave us unable to adequately communicate with each other, much less with the outside world.*

Lawrence Halprin, FASLA

Since the profession was created well over 100 years ago, only one major study and evaluation of the profession of landscape architecture has been undertaken—the Fein Report commissioned by LAF and published in 1972.

Since 1972, the rate of societal, professional and technological change has been rapid, with the result that the challenges facing the profession are more complex, the development of solutions more difficult, and the need for landscape architects greater.

It is imperative that the education, skills and tools that landscape architects need to meet these increased challenges are adequate to the task. Even more important is that architects have the capability to meet challenges, which means that they must assume greater leadership and responsibility, and be willing to take risks.

LAF is committed to ensuring a strong profession in which landscape architects: 1) provide leadership and solutions, 2) apply high standards of design and planning to create safe, healthy and beautiful environments, 3) contribute to decisions about the use of land and the development of our communities, 4) use technology to its full capacity, 5) engage in solving complex problems and 6) influence public policy.

The Futures Initiative, a two- to three-year effort, will seek to redefine and redirect both the profession and discipline of landscape architecture.

The study process and the resulting recommendations will provide resolution to questions for which there are currently no answers or for which there would be multiple responses rather than consensus. Some representative questions, from an LAF report on the Futures Initiative, include:

“Where is landscape architecture going and what is its strategic future?”

“How will global population and environmental trends influence those futures?”

“What is the full scope of the profession and where should the emphasis be placed?”

“What emphasis would provide the most stature for the profession and the greatest impact on society?”

“What will the world need from our profession?”

“How does landscape architecture contribute to public health, safety and welfare?”

“How will the profession provide the place-based planning and design leadership to facilitate between disciplines: government, private, academic, and non-profit?”

“How will growing interest in sustainability, livability, safety and health influence the profession?”

“What trends and issues can landscape architects take a leadership role in defining?”

“What urban and social issues can be viewed in terms of environment or behavior?”

“What other disciplines are in competition for these lead issues?”

“What is our relationship to other professionals and what is the role of collaboration?”

“What are the research, teaching, and service challenges and opportunities facing university professors?”

“What are the optimum situations for interaction between practitioners and scholars?”

“Where is innovation occurring: in practice, in the academia, in both, in neither?”

“What is the quality of individuals currently entering the profession and how can the best and the brightest students be attracted to landscape architecture?”

“How well are students prepared for practice?”

“What are the possibilities and challenges of doctoral programs in landscape architecture?”

“What is fundamental to landscape architecture: design, ecology, community, all of these, none of these?”

“What must one know to be a landscape architect? What should one know upon graduation from school and what should be learned in practice?”

The four landscape architectural leaders whose papers follow have addressed some of these questions through their focus on specific and important professional issues.

The LAF Futures Initiative will ensure that this dialogue is continued and that it is used to develop a plan for the profession and to provide change leadership. The Summit on the Profession serves as a significant step in the important process of conducting research on the profession, developing alternative futures, and selecting those that best address the needs of the profession, its practitioners and students, and most creatively and effectively address the growing needs of the public.

*Landscape architecture programs have always maintained a fragile existence within the context of the university community. We must face the possibility that our future may well depend on our willingness to make some very dramatic changes in how we do business.*

Lane Marshall, FASLA

# ARTICLE ONE

---

## SOCIAL CHALLENGES FOR LANDSCAPE ARCHITECTS IN THE 21ST CENTURY

by Joanne M. Westphal, ASLA, AOA

This paper is based on the premise that *human health is dependent on, and can be improved in, well-designed, well-organized environments that capture the inherent natural bio-rhythms of the indigenous landscape while acknowledging the cultural and spiritual significance of place.*

Well-designed, well-organized environments have inherent stress reducing capacities. These stress reducing capabilities work because they are in tune with natural bodily functions that support homeostasis<sup>1</sup> in an organism while permitting the human sensory system to function optimally in an increasingly complex physical & social environment.

Simply put, good design contributes to good human health.

In this paper, I would like to address some of the social challenges that landscape architects are likely to face as we enter the new millennium. Because I am a physician, the paper will take a slightly more focused approach to some of the social-medical issues that will confound society in the 21st century and create new opportunities for designers, particularly landscape architects.

I have organized the paper in the following manner. To begin with, I will discuss general societal conditions and “change”, as they affected the profession at the turn of the 20th century, and how they are defining what we address as problems today. Then I would like to talk about human health and its relation to change, the environment, stress, and disease. In this section, I discuss the capacity of natural areas and garden spaces to heal and maintain physical and psychological well-being and why they have the capacity to do so. Lastly, I would like to conclude by discussing priorities for the profession in terms of establishing the relationship between medicine, design, and public health. In outlining the paper in such a manner, this gives you, the reader, the opportunity to pick and choose among the subject areas that are most important to you. I hope that you find the information valuable as you enter the challenging domain of the 21st century.

<sup>1</sup> A tendency toward a stable of equilibrium between interrelated physiological, psychological, or social factors characteristic of an individual or group (Mish, 1998).

### TECHNOLOGICAL CHANGE, SOCIAL CHANGE, AND ENVIRONMENTAL CHANGE OF THE 20TH CENTURY

---

*“Prior to 1870 nearly 75 percent of the population lived in rural areas. By 1916 only half did. The trend continued, until by the late 1980’s the nation’s entire farm population was just 5 million, or approximately 2 percent of the total. The number of urban areas increased dramatically as a result. The U.S. government defines an urban area as having at least 2,500 people. When the first census was taken in 1790, there were only 24 such areas. By 1890 there 1,341 and by 1990 there were 8,510. The growth in population changed the character of American’s big cities. Places that were once distinct soon merged with their neighbors to create sprawling metropolitan regions. The small-town way of life that characterized America for much of its history eventually gave way to a complex social system that brought with it a host of opportunities as well as problems. Economic inequality, racial strife, overburdened social services, and job-related stress are just a few of the costs of America’s industrialized economy.*

*Innovations were made and machines were invented that completely changed the way American lived. The typewriter was invented in 1867. In 1876 Alexander Graham Bell patented the telephone. By 1878 Western Union had strung nearly 200,000 miles of telegraph lines across the country. Thomas A. Edison perfected the incandescent lightbulb in 1879; three years later he built the nation’s first central electric power station. And in the 1890’s America began to manufacture its first automobiles. The industrial boom continued*

*throughout the 20th century. Small factories gave way to corporate enterprises that made many different products at various locations. Corporations hired workers by the thousands. Assembly-line work enable factories to produce goods cheaply and quickly. Faster and cheaper meant lower prices; lower prices meant more buyers; and more buyers meant higher sales.*

*...Later in the century computers and biotechnology came to the fore of American industry. [Today,] the United States has more computers than any other country." (Atlas of America, 1998)*

This short excerpt from the Atlas of America (1998) illustrates a nation on the cusp of change for most of its existence. In the 1800's, advances in technology created demands for unskilled labor and unprecedented opportunities to expand westward. In response to the opportunity to work and/or own land, immigrants migrated to the United States in such great numbers that Ellis Island was created in 1893 to handle the flow and stymie the ingress of undesirable diseases and maladies. With growth, came resource extraction. The "lumber baron" period of the Great Lakes region devastated the virgin forest lands of the Midwest during the 1870-1890's, but permitted the building of large urban areas around the region like Chicago and Milwaukee. Coal removal in the Appalachians created tremendous overburden areas with little hope of revegetation and great potential for soil erosion; it also fueled the industrial transformation of cities like Pittsburgh, Cleveland, and Harrisburg. In 1892, Fredrick Jackson Turner declared the American frontier closed in an article entitled "The significance of the Frontier in American History" which was presented at a meeting of the American Historical Association (Brown, 1994); with this declaration came the end to the philosophy of "manifest destiny" although other resource extractive activities and social change continued throughout the nation. These activities made a few individuals excessively wealthy and plagued millions of Americans that occupied the land in the aftermath.

All of these changes in the 1800's set up the challenges before landscape architects at the end of the last century. These problems were so widespread and pervasive that in 1899, "eleven individuals met in the New York offices of Parsons and Parsons to form a professional organization...the creation of ASLA... to [develop] new theories and practices that distinctly addressed both twentieth century environmental problems and artistic

trends" (Carr, 1998). Among the distinct environmental problems identified by the group in the late 1890's were: **urban sprawl, natural resource depletion, urban decay, and social injustice.**

Work by the group in the early 1900's made major contributions to improving the health and safety of an increasingly urbanized America. With the help of park commissions and writers like Upton Sinclair (1905) and other urban reformers, small parks and playground began to appear in dense, older neighborhoods where large parks had never been feasible. This set the stage for the creation of forest and park preserves in many urban areas (a prime example in the Cook County Forest Preserve in Chicago, IL), national and state parks and forests, and regional parkways and recreation systems that crossed county and state boundaries. Better housing standards were recommended for many older, urban areas that had fallen into decay, and the first university courses on city planning became a reality under professor James Sturgis Pray at Harvard.

The resource extractors of the 1800's (e.g., the lumber barons, mine operators, railroad magnates, etc.) had left a land resource legacy in shambles. The landscape architects of the late 1800's and early 1900's were challenged by the regional magnitude of destruction that many of these short-sighted, poor stewardship practices and policies portended for a nation entering only its second century of existence. Individuals like Warren Manning and John Nolen began to expand the art and science of "planning"; and while much of their work focused on city plans, the incorporation of statistical surveys, land-use law, and social science into planning that affected large geographic areas, set the precedent for expanding these sciences into regional landscape design later on.

#### **WHAT ARE THE CHALLENGES OF THE 21ST CENTURY FOR THE PROFESSION?**

Interestingly, the challenges of a century ago, are still with us today. It is not because the forefathers of the profession failed at their attempts to address and remediate them, but it is because the issues surrounding urban sprawl, urban decay, resource depletion, and social injustice are much more complex, insidious, and global than ever imagined. It will take legions of professionals, from architects to sociologists, to adequately address these problems, and probably a major global event similar to the Great Depression to permit us to focus on them long enough to make real progress.

With advances in technology, we also are much more aware of the depth and breath of the problems...and to some degree, how much more we need to learn about them before we can get at the roots. All of this comes at a time when we are somewhat overwhelmed at the magnitude of information that is available to us as a highly technological and scientifically advantaged society. It also comes at a time when we are capable of creating artificial realities--through genetic manipulations, the creation of virtual realities, and the availability of cyberspace. How can one profession...or even a host of professions...begin to address the magnitude of the problems given the daily demands that we see in our homes and offices?

As a physician and landscape architect, I see several changes in the natural environment, social climate of our communities, and spiritual fortitude of the nation that have the potential to create real threats to us as individuals, a society, as well as a profession. The first thing that we need to do as a nation is decide what is a real threat to our existence and what is merely an irritant, a temporary problem, or an issue that can be addressed as time provides additional information on the subject. For ease of discussion, I will focus on issues that I think have real potential to threaten our existence as a species, a nation, or profession; I will highlight and briefly address each.

**Uncontrolled population growth globally.** The world has experienced a six fold increase in human occupants since 1804 when global statistics began; at that time the earth's human population was estimated to be one billion people. In 1999, the estimate rests at six billion with annual increases projected at 1.33%/year (United Nations, 1999). By 2050, it is estimated that between 7.3-10.7 billion humans will occupy the earth. To compound the issue, this occupancy is not evenly distributed globally, with the greatest growth often occurring in areas of the earth that are least likely to absorb the population pressures. Such unprecedented growth has caused, and will continue to produce, dramatic strains on the indigenous wildlife and domestic animal populations, energy and fresh water resources, and native and domestic plant systems. Many of these systems and non-human populations hold the genetic key to disease processes and preventions that are heretofore unknown and/or unappreciated. Can we afford to strain these systems beyond their reproductive capacities to provide the basic necessities of life for a burgeoning human population?

As we advance modern medicine into many of these areas, and thus reduce mortality and morbidity, new reproductive capacities will result allowing present-day generations to exasperate the problem further in the future. Natural disease processes--e.g., HIV/AIDS--will arise periodically (and in all likelihood more frequently as population density factors come into play) and affect population growth in certain regions of the world...but those disease processes are no longer isolated by distance as they once were. Likewise natural disasters--e.g., floods, hurricane, etc.--will take increasingly larger tolls of human life and personal resources, simply because more humans are occupying disaster-prone areas (e.g., the San Andreas fault line).

*Failure to address resource needs in a sustainable/regenerative manner.* Carol Franklin in her chapter "Fostering Living Landscape" (Thompson and Steiner, 1997) speaks to the need of going beyond traditional design paradigms to embrace a new approach in landscape architecture. She calls it "ecological design", which sounds faintly like the material of the late 1960's and early 1970's. In reality, it is not. Ecological design, as it is defined by Carol and others who are proponents of this new paradigm, is really about holistic design--i.e., design that considers saving the whole system. As she discusses this approach in her paper entitled "Designing as if the earth really mattered" (Franklin, 1999), it entails "...making it a rule to 'preserve the best, repair the damaged and replace the destroyed'". Central to the process are the issues of ecosystem integrity and the site's functional capacity to absorb change and perhaps even be enhanced by it. Reduced fragmentation of natural systems, improved habitat management to restore appropriate species diversity to an area, sensitivity to human patterns of occupancy, land use, and place identity are essential ingredients to creating and/or restoring the regenerative capacity of the land. Resource extraction does not mean that natural and social systems of occupancy must be disrupted; it simply means that removal or alteration of needed resources should be compensated or brought back into balance by building a strategy into the design that regains the homeostasis of the system.

*Increased complexity of man-made systems.* Unlike most natural systems that have evolved checks and balances (and thus, are somewhat predictable in process and products), in the United States we are creating technological systems of communication, and sociological

systems of law and public policy, that are becoming unpredictable in their outcomes and unwieldy in their management. At the same time, many of the checks and balances that were once built into traditional social structures (e.g., two parent families, parental supervision during non-school hours [as opposed to day care with unrelated, remunerated supervisors], extended family situations, etc.) are disappearing in American society. With this disappearance, the opportunities to insure that man-made products are not harmful to our children are disappearing as well. Many communication systems (particularly in the entertainment and marketing areas) are being created without a strong ethical commitment to the public good. Many lack intelligent “breaking points” in their operation that insure positive, beneficial, or more importantly, harmless outcomes to our society. World wide web pages allow Americans the opportunity to investigate millions of products, thousands of places, and hundreds of vicarious experiences that would never have been accessible to our grandparents’ generation. This is a tremendous opportunity for educational expansion; but we must guard against the abuse of these systems to relay erroneous, even dangerous, information. (Are we on the verge of George Orwell’s portrayal of society in 1984?)

Along with communication changes, we have experienced an era in American history that defies basic premises upon which a democracy operates. Our legal system has moved from the creation of document like the Constitution and Bill of Rights (magnificent statements of intent for a nation that was pioneering the concept of a democracy) to practicing the “letter of the law” which essentially ignores the fundamental reasons for the creation of a law in a democracy. In his book, *The Death of Common Sense*, Philip Howard (1996) discusses the current practice of law and politics in this country, and offers some invaluable insights as to how this will affect our ability to conduct business and maintain social responsibility in the future. For landscape architects the implications of this shift from intent to letter of the law is having, and will continue to have, a tremendous impact on how we plan, design, and construct projects. Needless to say, issues of liability will become increasingly exasperated unless some reversal in policy and legal practice occurs. At some point in time, it may become too expensive to design due to potential liability issues. While this may sound like a threat to our professional existence, we need to keep in mind that respect for law and public policy is the “glue” of a democracy. Without it, anarchy results;

and with anarchy, vulnerability. As a society, we are not removed from basic principles of survival that affect all organisms. In nature vulnerability often equates to death.

**Decreased stability of our social systems.** A democracy depends on individuals assuming and carrying out roles and responsibilities that protect and enhance the public good. It also depends on laws that protect the rights of individual members while insuring the safety and welfare of society in general. Social roles that are defined by a community foster a predictability in daily routine and responsibility. Without laws, safety concerns and personal rights may be jeopardized. Today American society is at a crossroads concerning individual rights and the rights of society as a whole to insure healthful existence in natural and man-made environments. Which will predominate? Or can they both exist in a mutually beneficial relationship? We need to redefine what our top priorities are as a nation so that all Americans can benefit from the freedoms that a democracy envisions? And then we must individually commit ourselves to carrying out those priorities in both the workplace and the home. As landscape architects we are mandated by law to protect the health, safety, and welfare of the general public. As a profession, we need to conduct dialogues that help us redefine what this means in a rapidly changing, technological society. How can our work restore the social as well as natural fabric of the nation? What specifics of design can enhance the public good for all Americans? These should not be hollow words by which we aspire to conduct ourselves, but actual goals with tangible examples of standards and criteria for design that truly improves the public good.

**Increased separation from the landscape.** Lastly, I am concerned that we are becoming a nation that has severed its roots from the landscape and will soon be floating somewhere in cyberspace. Presently, only 2% of the American people derive their livelihood from farming; the other 98% of us depend on their good judgment and land stewardship capabilities for a continuous supply of food, fiber, and shelter materials. In a recent newscast (Jennings, 1999), it was stated that since 1980, as a nation we have lost one family farm in five due to foreclosure. What will happen to our land resource as these individuals are slowly replaced by corporate farming operations or foreign agricultural imports? Research tells us that farmers who intend to pass the farm on to future generations in their families will practice superior soil erosion, fertility

enhancement, and rotation strategies, even in hard economic times. This is not true for the large corporate farming establishment. Their goal is to generate revenue based on the economies of scale. In corporate farming, the land is nothing more than a stage for production. The family farmer, on the other hand, usually is a part of a series of generations on the landscape. They know the capabilities and limitations of their land through many years of trial and error. This knowledge base serves to perpetuate a commitment to the land and its well-being; it also serves as a repository of information on the land, its absorptive capacities, and its inherent productivity. A second benefit is that good land stewardship generally means safer, higher quality products for the rest of us in the marketplace. If the family farm is removed from the American scene because it cannot compete with less expensive foreign imports, as a nation we have to ask ourselves if this is really in our best interest? Foreign competitors do not have the strict environmental regulations on spray materials and product handling that our domestic farmers do. This protection costs money, but it also means a safer, higher standard for products that we consume. So the question is whether this form of land use (i.e., the family farm) can be sustained in the American landscape over time. At the present attrition rate, by the year 2080, the family farm may be extinct, and with it, a way of life that maintained strong social and physical ties with the landscape.

As professionals, we need to work toward public policy that protects those that maintain our land resources. Whether it is the family farmer or the public resource manager, we need to understand the issues affecting good land stewardship practices, and then we must mobilize our professional resources at the local, state, and national level to become advocates for policy that protects farmland and open space. We also must work towards educating others on the importance of land resources. The conservation movements of the 1930's (i.e., CCC era) and the 1960's (i.e., the earth day movement) need to be revitalized and re-formatted to address the issues of today. Many children (and their parents) have no idea where or how food is produced, nor value the natural products from a woodlot. They lack basic knowledge and skills that would afford self-sufficiency at a time of domestic crisis. Furthermore, without a tie to the landscape and the wisdom to draw from its complexity and balance, it is difficult to muster the energy to protect and nurture it. As a profession based on the land resource, we need to educate others

as to our inherent responsibility that comes with occupancy of the land resource. Let us teach our children and other adults about the value of nurturing the living landscape, so that we do not become cavalier in about our own organic existence. Without an appreciation of the earth's natural processes (i.e., birth, death, reproduction, competition, and aging), we may be tricking ourselves into believing that we are capable of defying our own mortality and basic dependency on mother earth!

#### **CHANGE AS IT AFFECTS PERSONAL HEALTH**

The human body is constantly undergoing change and responding to its environment. At conception, cell growth is the dominant physiologic and anatomic change. At birth, heretofore, developed but unused organ systems (e.g., lungs in the respiratory system, the immune system, etc.) are put to work which subsequently results in further growth and/or protection. In youth, external forces (some experiential, others physical) cause us to build up some organ systems and contract others. Continued aging (beyond 25 years of age) shifts the body into a maintenance mode, although some systems (e.g., the nervous system) retain their regenerative capacities should injury occur. In western society after the age of 40, the maintenance capacity of most organ systems begins to diminish, but is unclear why this change in bodily function occurs. Some scientists believe that biochemical phenomenon (e.g., oxidative free radicals) largely account for molecular changes that result in the body's inability to withstand change; while others believe that genetic predisposition is the determining factor. Obviously, the importance of external factors cannot be ignored--especially the introduction of unnatural stress events. Traumatic events (e.g., motor vehicle accidents) that severely impair certain organ systems can result in instantaneous death or can cause permanent impairment for a lifetime; chronic exposure to environmental contaminants (e.g., asbestos, silica, CO, etc.) can produce more insidious changes in cell morphology and physiology that may display themselves as tumors or blood dyscrasias later in the life cycle. Abusive environmental situations (physical and social) can dramatically alter one's psychological, anatomical, and physiological compositions. In all cases, the body's genetic make-up is programmed to adapt to reasonable external stimuli through internal mechanisms that alter organ system function.

When a change occurs physically or socially in an organisms immediate environment, an amazing set of

psychological and physiological back-up responses are brought into play. These stimuli may be pleasant or negative. Scientists often call them “stressors” or “irritants” not because they are bad but because they represent a factor that induces bodily or mental tension or imbalance. This tension heightens awareness about events going on in our environment; it also hormonally prepares our organ systems for response to the stimulus. Changes in the various stimuli impinging on own sensory systems as an organism, helps us avoid compromising situations--especially to our own existence or human health. For example, failure to respond to visual and auditory stimuli that tell us that we are being approached by a tiger, can result in death. Therefore, stressors are essential to maintaining optimal body function. Only when an organism is bombarded by stressors in its environment or from within due to internal changes in one’s body chemistry, do unhealthy situations develop. These unhealthy imbalances affect what scientists call the “homeostasis” of the organism.

Homeostasis is the concept that is used to describe optimum functional capacity of an organism’s systems. Under such conditions, energy consumption and the balance between one’s capacity to perform work and one’s ability to repair tissues is in a steady-state relationship. As stressors (internal or external) impinge on an organism, imbalances begin to occur biochemically and/or physically in response to the stimuli. Because of genetic programming, every organism has its own set of voluntary and involuntary internal mechanisms that are put into action to correct the imbalance. Ultimately, the goal is to return the organism to its steady state.

If stressors become too numerous or too intense, an organism is unable to address all the stimuli affecting its well-being. Initially, a voluntary screening-out of the least life-threatening stimuli occurs; if this is still inadequate, a “fight or flight” involuntary response will occur involving catecholamine (sympathetic and parasympathetic hormones) changes in the body. If undesirable stimuli continue on a long-term and/or intense basis, other biochemical transformations will occur which in turn will affect the function of various organ systems (e.g., the immune system). Because there are finite limits on each organ system in terms of its capacity to respond to the biochemical changes, eventually cellular break-down of one or more systems will result. When this occurs, a state of disease is said to be present. Webster (1989) defines disease as “an abnormal bodily condition that impairs functioning and can usually be recognized by signs and symptoms”.

Some disease states are short term (or acute) and last only as long as it takes the body to regain its homeostasis through other systems. When disease leads to terminal illness, it is believed that normal internal mechanisms (either genetic or physiological) are unable to regain the steady state. Progressively, the organism loses its ability to expend energy efficiently to repair and maintain vital organ systems; ultimately, death results.

Some of the signs and symptoms that mark an organism in a stressed, pre-diseased or diseased state are:

- 1) aggressive behavior toward and intolerance of other organisms in one’s immediate environment;
  - 2) loss of personal identity and with that a loss of social responsibility and civility;
  - 3) loss of nurturing capacities (the organism focuses inward, on self, in order to conserve energy and protect remaining organ systems);
  - 4) indifference to social and community needs (again, a response to conserving energy to sustain oneself);
  - 5) loss of adaptability and adjustment (i.e., inability of the body systems to move away from, respond to, and/or regain homeostasis without external intervention);
  - and 6) increased aging and decreased longevity.
- Depending on the genetic make-up of the organism (and its learned behavioral tendencies to cope with stress) these signs and symptoms will be displayed to varying degrees in an individual.

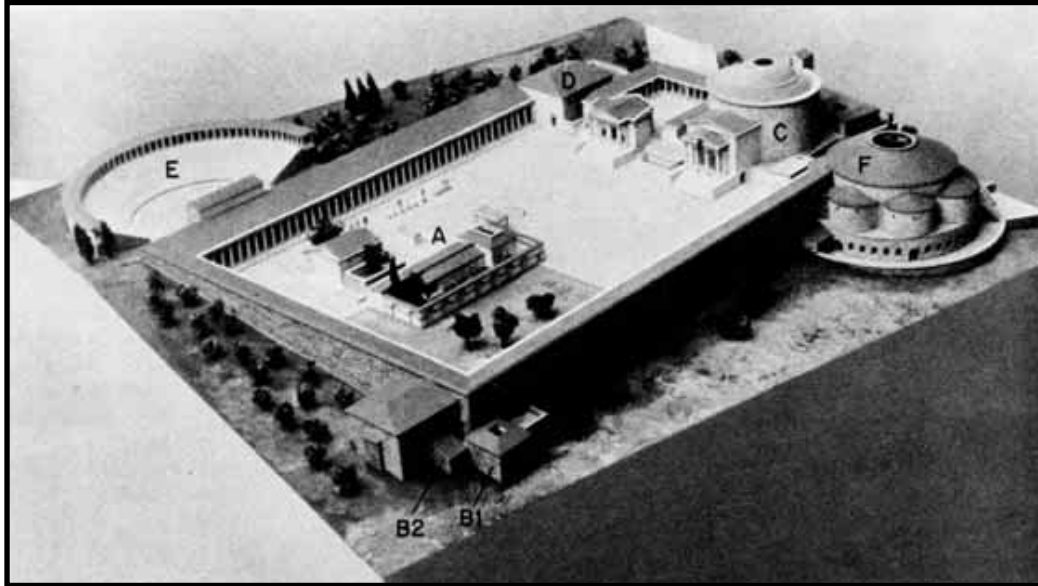
In terms of designed environments, even small incremental improvements in site layout that improve legibility, soothe over-stimulated sensory pathways, and/or reconnect human beings to the inherent rhythms of the natural landscape have been found to make a tremendous difference between disease and recovery (Brawley, 1997; Covington and Hannah, 1997; Gerlich-Spriggs, 1998; Archer, 1998).

#### **MEDICINE, PUBLIC HEALTH, AND DESIGN**

One of the best summaries of the relationship between architecture, landscape architecture, and health can be found in John D. Thompson and Grace Goldin’s (1975) book entitled The Hospital: A Social and Architectural History. All of the figures and much of the information on garden history and medicine that accompanies this section of the paper comes from this reference and several of the references that it cites.

Therapeutic garden design goes back to the ancient Greeks. As early as 500 BC, they supported the creation of “asklepieions” or “dream palaces” for those who sought cures for their maladies.

FIGURE 3



Asklepieions were built on a rectangular floor plan with three sides of the building enclosed and a 4th side open to a south facing courtyard (Figure labeled 3). This courtyard usually contained a temple which tended to be located on its eastern edge. Whatever was dreamt by the patient was the treatment regime to be administered in order to regain health. If a patient was too ill to travel to an asklepieion, he/she would send a trusted relative or friend to dream for him. The extreme to which Greek society believed in the capacity of asklepieions to heal is exemplified in the following case study from Rosen (19 ).

A gentleman, suffering from a testicular tumor, was too ill to travel to the nearest asklepieion. Sending a relative, the cousin dreamt that the man should journey by horseback to a distant town; upon return from the journey, the tumor would be gone.

Now, anyone familiar with today's standards of medical treatment for testicular tumors could tell you that such an unorthodox treatment strategy would border on malpractice (not to mention that the pain would be excruciating!) The lesson to be learned here is that:

“the patient receiving this information from his cousin followed the dreamt treatment regime to the letter; miraculously he returned to his home cured of the ailment.”

Throughout history, natural open spaces and garden areas have been a part of medical facilities. The Romans were the first to build hospitals, which were

intended to treat military personnel injured in battle. These early hospitals were designed around central courtyards, which facilitated recovery through ambulation and provided fresh air (Figure labeled 4).

FIGURE 4

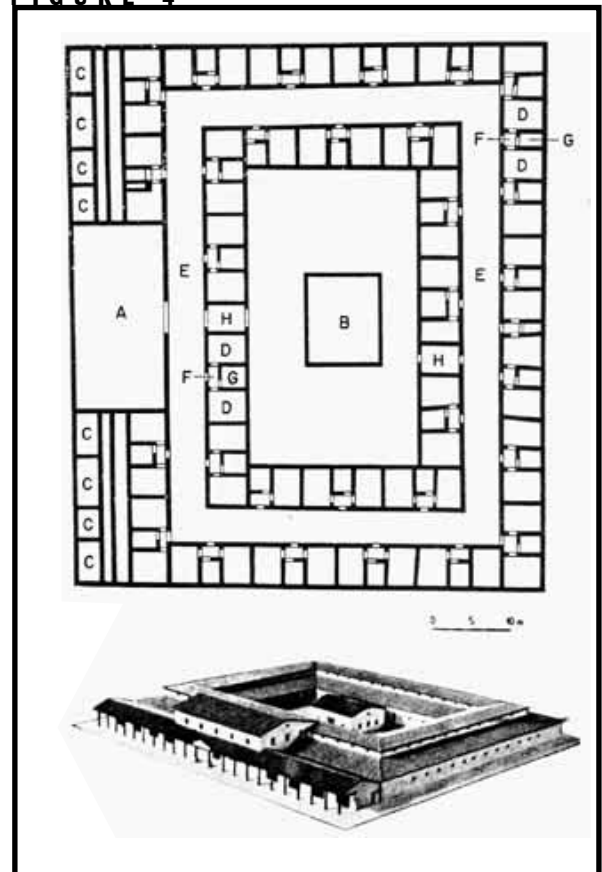


FIGURE 5



FIGURE 6



Medieval Europe saw the creation of hospices, which were large building and internal courtyard complexes designed to care for pilgrims (Figure labeled 5 & 6). The terms “hospital” is actually derived from the concept of hospice. Since many people making pilgrimages to holy sites were doing so for health-related illnesses (thought to be tied to spiritual maladies), many hospices

were operated by religious orders who sought their own spiritual retribution by caring for the sick and/or weary traveler. Economic differences among pilgrims found significant differences in accommodations at the hospices; and poorer pilgrims were actually expected to work at gardening or husbandry chores to pay for their room and board.

FIGURE 7



In the Dark Ages, monasteries provided shelter for the poor and advanced the knowledge of the medicinal benefits of plant materials. Garden areas also provided sustenance for the occupants of the cloister, and a ready source of financial support for indigents unable to pay directly for their rooms.

In the 17th and 18th centuries, hospital design saw a relatively standard floor design and facility layout throughout Europe (Figure labeled 7). Most hospitals were 2-3 stories in height; the building generally enclosed one or more central courtyards which were used for ambulation. For those mentally disturbed, insane asylums afforded central courtyard areas, often with formal parterres, which were thought to be essential in helping patients reorganize their confused mental states.

Even some of the most famous early American teaching hospitals--i.e., John Hopkins and Yale University hospitals--called for site and floorplan designs that were marked by extensive garden areas and courtyards. This practice continued until the late 1880's, when the advent of technological advances in medicine and theories relating to disease made traditional hospital design obsolete. Only in a few cases, did American hospital design defy this trend (See Gerlach-Spriggs, et al, *Restorative Gardens* (1997) for a descriptions of these exceptions). For the vast majority of the hospital built during the 20th century, increasingly valuable urban land resources caused hospitals to go up instead of out; where interior courtyard space existed, it was filled with equipment and specialty areas. Organic materials (both within and outside hospital areas) were forsaken for easily cleaned and sterilized surface areas. Landscape became an embellishment at the front door of many hospitals.

Only in the latter part of the 20th century, did Americans experience a reversal of this phenomenon. A seminal piece of research by Roger Ulrich (1984) was published in the widely read and highly respected *Science* magazine. In this article, Ulrich compared four variables profiling hospital stays with a patient's ability to visually access natural space adjacent to his/her room. All patients were recovering from gallbladder surgery; they were matched in terms of attending physician, socio-economic variables, and prior medical histories. Significant reductions in the length of hospital stay, number and strength of analgesics administered, number of complaints experienced by hospital staff, and blood pressure readings were found in patients with a view of a natural setting versus those

with a view of roof-top mechanicals or brick walls. Because these findings represented substantial cost savings to the health care delivery system, managed care industries became intensely interested in how natural settings might be integrated into hospital, extended care, and nursing facilities. Thus the dawn of modern-day therapeutic garden design was created.

#### **PRESENT-DAY PRIORITIES AND HEALTH ISSUES**

While it may seem that a great distance exists between the professions of landscape architecture and medicine, there is one common goal that drives both professions--i.e., protection of the health, safety, and welfare of the general public. This common goal affects the educational training of aspiring professionals, determines accreditation standards, influences the content and rigor of national board exams, outlines internship requirements, and finally, awards licensure status for professional practice. As two apparently disparate professions, we have a lot in common when it comes to training young professionals; we also have a mutual interest in protecting mankind and promoting wellness among our constituencies. Finally, we share the liability and censorship repercussions that mark a poor professional performance in the workplace.

In the years before Medicare (mid-1960's), both professions also performed their work in a preventative capacity. In other words, the fee-simple payment system that marked most physicians' offices made payment for services attainable by most citizens. Those too poor to pay the modest fees that most family practitioners charged, often provided services or products in exchange for their physician's services (Keep in mind that physicians worked directly with their patients on a one-to-one basis in those days--much like the landscapes architects do with their clients today.) Such direct and personal interaction fostered loyalty, mutual respect, and long term commitments to the relationship. Familiarity with the patient's circumstances permitted physicians to take proactive, preventive care, postures with their clients that often proved to be very cost effective.

*Managed care.* Today, much of this personal knowledge and interaction with the patient has been lost in the managed care system. In exchange for larger salaries, the medical profession has allowed outside administrative agencies, like insurance companies, or inside administrative groups, like HMO's, to dictate the amount of time, number of patients seen/day, and types/frequencies

of medical interventions that can be deployed. To make matters worse, physicians often consolidated resources to build “not for profit” hospitals in their communities that were typically managed by religious orders. Today, giant “for profit” HMO and hospital corporations have bought out smaller community hospitals, making the physician further dependent on the managed care system because “admission privileges” for his/her patients must awarded by these organizations. These changes have created a layered and fragmented system in health care that distances the physician from the patient groups that he/she is trained to serve. It also has caused medicine to be practiced (and remunerated) in a reactive, acute care format, rather than a proactive, preventative basis. While I have presented the essence of the health care delivery system in a somewhat simplistic synopsis of the industry, this information has great implications for the work we do as landscape architects in managed care settings. Why? Because doctors no longer make the final decisions affecting patient care; managed care does. And managed care is primarily interested in keeping stockholders happy by making profits annually. Therefore, if the practice of medicine is to managing wellness instead of illness (which in my opinion is more cost saving and efficient), or if we hope to see the re-introduction of garden areas into health care facilities (beyond front door embellishments) then studies like the Roger Ulrich effort will need to be undertaken by the profession. His study clearly showed the cost savings that softscapes (in a passive situation) can introduce in medical settings by affecting patient needs for various services. It is an exciting think about the potential cost savings to managed care that we could create in designed spaces that actively facilitated patient rehabilitation and sped recovery through the thoughtful reintroduction of natural areas in hospital settings!

*Unconscious contributions to well-being and personal/public health by the profession.*

I began this paper with a basic premise.

*human health is dependent on, and can be improved in, well-designed, well-organized environments that capture the inherent natural bio-rhythms of the indigenous landscape while acknowledging the cultural and spiritual significance of place.*

I would like to revisit this premise and discuss how I think we, as a design profession, have unconsciously contributed to personal and public health. As landscape

architects, we unconsciously contribute to the social and medical well-being of millions of Americans every day; we do this through the creation of functional, aesthetically pleasing urban spaces, work environments, leisure and recreation facilities, and transportation systems. Our work saves the health care delivery system in this country billions of dollars each year; these savings are secondary to the stress reducing nature of the products that we produce. If we considered our primary mandate as a profession, that is, to protect the health, safety, and well-being of the American public through our design efforts, than we probably save this country trillions of dollars in terms of reduced hospital admissions, lost days at work, and physical and psychological impairments to productivity caused by accidents occurring in the work place, our homes, or public places.

These savings are not “pie-in-the-sky”, over-inflated measures of our value to society as a profession, but rather, a relatively conservative estimate of our worth in terms of health maintenance and public safety. As a physician that has seen the bills submitted to insurance companies for health care services delivered in behalf of their clients, I assure you that the charges are bordering on the absurd. If as landscape architects, we could show clear benefit-cost relationships of our services and products to reducing medical costs, we could open tremendous opportunities for work in public health while saving this country a significant amount of money. Unfortunately, we have not taken the time to document these cost-savings through research and post-construction evaluations. And so, we have to base our estimates on conventional wisdom and some rather cursory economic projections.

*Establishing the value of the profession to the maintenance of public health.* How can we establish the true value of the profession to the maintenance of public health? First, and foremost, we must begin to build **research** into the work that we do as design professionals. Two avenues come to my mind immediately (but I am sure that others exist). One way would be to train young professionals, who are interested in post-baccalaureate degrees, in the basic language and protocols of medical practice; couple this with basic business management and research skills. This would create a cadre of young designers that could “talk-the-talk”, and “walk-the-walk” that constitutes both sides of health care delivery--i.e., practice and management. It also would sensitize them to the need to look at design problems with a research mentality--i.e., every

office project could have the potential to become a field experiment. Pre-and post-construction evaluation would be the standard *modus operandi* of their practice. Advances in knowledge relating to the impacts of therapeutically designed environments could then be advanced to concerned entities involved with managed care, and to other practicing professionals, both within and outside, our discipline.

A second way would be to employ members of the academic side of the profession to conduct research activities that evaluate the benefits of therapeutic gardens to receiving patient populations and the health care provider. Again, the idea would be to conduct pre-and post-construction evaluations on various sites purporting to have therapeutic benefits as a primary outcome of the design. This could occur in a blind review of site construction documents followed by on-site evaluation. Careful review of program elements, staffing concerns, site evaluation, patient characteristics (both pre- and post-construction), and standard medical protocols for treating the projected patient populations served by the designed facility would be a part of the evaluation process. This information, when combined with the costs of construction, should provide valuable data on the benefit-costs derived from each facility. Post-construction evaluation should focus on whether original goals and objectives for patient care had been met; whether safety concerns had been overlooked; and what alterations could be made to the original design to further improve therapeutic outcomes for a given patient population. I firmly believe that this type of good research can contribute enormously to a faculty member's teaching ability in the classroom, and benefit the profession immensely in the data that is generated and published. LAF and ASLA need to take leadership roles in creating opportunities for faculty in our academic institutions to begin evolving the art and science of therapeutic site design; a modest grant program to support such research would be an important first step in establishing the significance of the profession to public health issues in managed care settings.

*Contracting with post-construction evaluations.* The lack of post-construction evaluations in the contracting and build-out phase of our work continues to plague the profession in every specialty area of design. This profession needs to accept the fact that post-construction evaluations are one of the few ways in which the products of the profession will actually improve! We also need to educate our clients as to the necessity of incorporating

post-construction evaluation into the contract as a phase that precedes the final payment for a project. We may have to justify post-construction evaluations on the basis of public safety; certainly, this is an area that every hospital administrator or public land manager is concerned about. But we should really be worried about whether our areas promote health and well-being; do they foster an appreciation for good land stewardship practices; are users less stressed after they experience our designed spaces? This type of evaluation should be mandated in everything that we do! Post-construction evaluations would allow the designer to fine-tune or correct imperfections in either the design concept or the construction phase; it would promote our profession as a guardian of public health and good land stewardship...and it would give the client a better product! It also would allow us to develop principles of design that evolve into theories of design, based on social, environmental, economic and political conditions. Without post-construction evaluations, comparisons between "what we said was important and should be built into the design" and "what actually was constructed on the site and how users experience it", is impossible to make. No comparisons...no improvements.

*National and state forums on medicine, public health, and design.* Because I am a physician and a landscape architect, I am interested in opening a dialogue that would discuss the relationship between medicine, design, and public health. Recently, the New York Academy of Medicine sponsored a set of national and regional meetings between professionals in public health and medicine; the goal for the forum (which was sponsored by a million dollar grant from the Robert Wood Johnson Foundation) was to discuss mutual concerns and projects that have affected the daily work of individuals within each profession over the past decade. The end product was a compilation of over 400 case studies that illustrated the benefits derived from cooperative efforts between the two groups; it also outlined issues of significance that are likely to affect the two fields in the future and possibly courses in action. This information was distributed to every physician and public health official in the country; the hope was that a common, united front could be mobilized to address the issues of mutual concern and more expansive efforts could be pursued to help reunite the two professions (New York Academy of Medicine, 1997).

I believe that a similar dialogue is necessary to expose historic relationships, mutual concerns, and opportunities

for creative enterprise between design, medicine, and public health. Such a forum would raise public awareness of the relationship between good design and health, and it could forge a new cooperative relationship with the professions of medicine and public health. Additional research data and case study materials to support this connection would give ASLA the impetus to advance state and national legislation that mandates research on the impacts of designed space to public health.

*Reconnecting the average American to the land.*

Finally, as landscape architects, we need to be comfortable promoting the value of the land to human health; we also need to take public stands on the importance of land stewardship in promoting public safety and well-being. Reconnecting urban America to the natural processes that mark rural landscapes is one of the activities that landscape architects are well-suited to do. The "100 projects" that are a part of this year's 100th ASLA anniversary celebration is an excellent start to promoting our contributions to community and public health. But we need to continue with this effort year after year until "landscape architecture" becomes a household term on the lips of all community members (much like the term "ecology" was in the 1960's).

In our efforts to promote the profession, we must guard against becoming a superficial society which places priority on external, glossy appearances without maintaining a strong and resilient infrastructure. This means that each of us need to make a personal commitment to continuing education, whether we consider ourselves specialists or generalists in the field. It also means that we must be willing to become involved in community service and public education. Statewide environmental education programs should have at least one landscape architect on their planning boards; outdoor classrooms should see local landscape architecture firms sponsoring (and perhaps teaching) a part of the 3-5th education encampments that mark most state environmental education programs. High school campuses, woodlots, and/or "Trees for Tomorrow" camps should have the guiding hand of a landscape architect to assist teachers and school administrators in decisions affecting the management of these areas. In short, we need to promote ourselves through education systems that presently exist in society, but are underutilized to date. If we can educate the public as to value of landscape architecture in the creation or maintenance of environments with the capacity to restore, maintain, and/or promote public health (while

we education ourselves), than many of the social challenges that we face today as a profession will dissipate...and a second century of unprecedented public good will become the legacy of this profession.

**LITERATURE CITED**

- Aicher, J. 1998. *Designing Healthy Cities: Prescriptions, Principles, and Practice*. Kreiger Publishing Company: Malabar, FL.
- Brown, D. 1994. *The American West*. Touchstone Publications: New York, New York.
- Brawley, E.C. 1997. *Designing for Alzheimer's Disease*. John Wiley & sons, Inc.: New York, NY.
- Carr, E. 1998. *Wilderness by Design: Landscape Architecture and the National Park Service*. University of Nebraska Press: Lincoln, NB.
- Covington, G.A., and B. Hannah. 1998. *Access by Design*. Van Nostrand Reinhold: New York, NY.
- Gerlach-Spriggs, N., R. Kaufman. and S. Warner, Jr. 1997. *Restorative Gardens: The Healing Landscape*. Yale University Press: New Haven, CT.
- Jennings, P. 1999. "Crisis in America: The American Farm". News special feature report. NBC Evening News Report, August 17, 1999.
- Mish, F.C. [ed.]. 1998. *The New Merriam-Webster Dictionary*. Merriam-Webster, Inc., Springfield, MA.
- New York Academy of Medicine. 1997. "Summary report of the forum on Medicine and Public Health". New York Academy of Medicine: New York, NY.
- Orwell, G. 1999 (reprint). 1984. *Penquin Books*: New York, NY.
- Rosen, G. 1968. *Madness in Society: Chapters in the Historical Society of Mental Illness*. University of Chicago Press: Chicago, IL. pp116-17.
- Thompson, J.D. and G. Goldin. 1975. *The Hospital: A Social and Architectural History*. Yale University Press: New Haven, CT.
- Ulrich, R.S. 1984. "View Through a Window May Influence Recovery from Surgery." *Science* 224:420-421.
- United Nations. 1999. "World population statistics". Population Division, Department of Economics and Social Affairs. Web page: <http://www.popin.org/pop1998>



# ARTICLE TWO

---

## DESIGNING AS IF THE EARTH REALLY MATTERED

Carol Franklin, FASLA, Principal, Andropogon Associates, Ltd.

### **PROBLEM DEFINITION — ECOLOGICAL DESIGN AND THE FUTURE OF THE PROFESSION**

*“I have been privileged to live and practice in one of the most dynamic times for our profession. We have become a necessity instead of a luxury. In order to preserve our current emerging role and enhance its value we (to use a landscape metaphor) must have “deep roots.” This requires a profound philosophic base to work from. We require critics, a dialogue, a philosophical position and a system of discrimination. Without this we are not much more than a collection of individuals, with specific personal points of view and style and not a profession.”*

[M. Paul Friedberg, FASLA, *Issues from Fellows*, July 1999]

*“Our profession has developed into a very wide and complex field that has an overview of commonalities, but great diversity when it comes to specific interests, expertise and practice...What we most lack as a profession are great generalists, people of stature with a broad view of the world and its major problems. We need generalists whose worldview includes psychology, anthropology, politics and communications. And perhaps, most importantly, we need the leadership ability to make socially important decisions. We need landscape architects whose knowledge and abilities induce people outside the profession to listen to their advice. We need sages.”*

[Lawrence Halprin, FASLA, *Issues from Fellows*, July 1999]

These two quotes, from distinguished members of our profession, have put their finger right on the problem. As landscape architects, we are mediators between people and their environment—natural, social and cultural—because of the nature of our work. We can remain on the surface of the many issues raised by our complex times—or we can recognize these issues, grab those best suited to the character of our profession by the throat, and expand our historical skill base, acquire the new skills needed to solve real problems and move into a new, interconnected sphere of action. This sphere of action, as we have learned from the popular, sustainable press, must be valid at both the local and global level.

Ecological design is the new paradigm. Whether we like it or not it is the only philosophic base large enough to reflect the latest and best understanding of our world and embrace the range of what we presently do as landscape architects. It acknowledges the world as a series of dynamic, interacting systems and human beings and their social and cultural life as part of nature. As the latest paradigm, it incorporates the approaches of the past—what is valid remains. When the world accepted and generally understood the theory of relativity, it did not negate the theory of gravity, but deepened our understanding and opened unexplored worlds.

Ecological design in its largest and best sense is the only philosophic approach encompassing enough to energize the profession and give it relevance. It can bring together plantspersons, social anthropologists, political activists, business people, scientists and designers, and those concerned with moral and spiritual values. Have we forgotten that the giants of our profession, such as Frederick law Olmsted, incorporated all of the concerns in his practice? We need to aspire to be modern Leonardo da Vincis—where the notion of “renaissance person” is transformed into “ecological person.” Ecological design provides a vigorous philosophic, scientific, social and aesthetic framework for a world that has finally seen itself as a ball in space—surprisingly blue, small, alone, and vulnerable. It allows us to answer

with a certain amount of confidence the question, “How will the world be different as a result of our being in business?” (*Boards That Make a Difference*, John Carver Jossey-Bass Publishers, San Francisco, 1997.) It allows us to test ourselves against measurable parameters, and to place ourselves in the arena where we believe that we are contributing to the solution and not to the problems, and are, at least in some small part, serving the “well-being of the world.”

#### TIME AND HERESY.

“Every truth passes through three stages before it is recognized. In the first it is ridiculed, in the second it is opposed, and in the third it is regarded as self evident.” (Source unknown.) With time, many heresies become something we seriously consider, even embrace. Ecological design is, in fact, in stage three. Participatory design, for example, is taken largely for granted by a younger generation of landscape architects, and, yes, even architects. There is some level of recognition of the role that restoration must play in our profession and we scramble to take courses in wetland mitigation and bioengineering. The ASLA Presidents Award was given this year (1999) to the restoration of a 4,000-acre marsh, a watershed study, and a manual on restoring streams and riparian corridors.

#### THE FALSE DICHOTOMY.

The problems of “false dichotomies” run through the thinking in the profession to confuse and poison us. For example, some in our profession have felt that there is an unbridgeable division between artistic skills, and the skills needed to rebuild a healthy, functioning, world. One reason that a so-called split between a design sensibility and an environmental one has developed is because of a gross over-simplification of the ideas of design and environment. Design has been reduced to manipulating Euclidean geometry (axes, obvious symmetries, and forms like circles and squares called “geometric,” because we are uneducated in modern mathematics and other geometries). The perception of the environment has also been simplified to scientific descriptions—lists, formulae and models.

In understanding that, in reality, there is almost never a black and white choice between two opposing alternatives, the ecological approach frequently reflects aspects of eastern philosophy. For instance, the “Ying” and the “Yang” are different, but intertwined. This is the unity of opposites and with this approach, environmental correctness and aesthetics are interlocking aspects of a larger entity. As the plumage of a bird reveals its health and desirability to a mate, so the beauty of the landscape also reveals its

health. While medieval people called marshlands “wastelands,” the science of ecology educates us as to what “health” in a landscape really looks like. We can then make appropriate choices that will enhance our survival.

A basic premise of the ecological point of view is that beauty is fundamental; “beauty is truth and truth is beauty”

(John Keats, *Ode to a Grecian Urn*.) The incredible arrangement of scales on a butterfly’s wing, is the truth of its existence. The butterfly’s wing isn’t just something that is there—a pretty object; it is the representation of an incredibly complex series of events which are to do with the evolution of the animal, the structural problems of creating a functional wing with the materials available, and the present relationship of the butterfly to its environment.

Truth is truth, at any scale, no matter how small or modest—whether it is the design of a backyard garden, or a plan for the renewal of a large city. This is why Bernadette Cozart’s vacant lot gardens in Harlem are so important and so beautiful and moving. Our firm, like a number of others, routinely moves in and out of many different scales.

However, to make great art requires a great depth of understanding, the highest craftsmanship and technical competence, a large, untrammled imagination, an unstinting commitment and excruciating hard work. Recognizing and expressing the complexity of the natural and the social world—of both animals and humans—opens up infinite possibilities for organization, for pattern, for form, and for expression—the materials of art.

Often landscape architects are surprisingly ignorant of knowledge considered basic for a generally literate human being, never mind an ecologically literate human being. One of the areas where landscape architects should be better informed is in the study of the world and how it works. This study should include a wide knowledge of structures and materials, a knowledge of history, art history, poetry, anthropology, natural science, especially ecology, and many other disciplines. Ian McHarg’s fabled “Man and Environment” course at the University of Pennsylvania in the 1960s and 1970s, where students were taught by a minimum of 10-15 Nobel prize winners per season, provided a grand philosophic framework for the literate and responsible landscape architect.

The more expertise we have under our belts, either by knowing it all ourselves, or by assembling appropriate teams, the more profoundly what we make will reflect reality (and reality is not only what is there but also what can be). We cannot build landscapes that will last without understanding and responding to global warming, soil

nitrification, fragmentation of habitats, and the infiltration of water as a critical component of the hydrologic system. Since we are people and we design largely for people, we must also understand local cultures, global cultures, the larger economic and social pressures of the world, how to run a successful business, and how to create consensus among opposing points of view. All these things are part of the ecology, or household, of the world as it is today.

## **ECOLOGICAL LANDSCAPE DESIGN — A DEFINITION**

*“A land ethic, then, reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility for the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve this capacity.”*

[Aldo Leopold, *A Sand County Almanac*, p. 221,  
Oxford University Press, NY, 1949]

Ecological Landscape Design has been recently renamed “sustainable design” and, after John Lyle, “regenerative design.” “Sustainable Development” was a term made popular by the United Nations Commission on Environment and Development (the Brundtland Commission, 1987). It is defined as “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Sustainable design was considered the tool with which to achieve “Sustainable Development.” I believe that one reason that the name “sustainable design” is so acceptable is that it suggests that if we just develop carefully and responsibly we can continue to over-populate the earth and to build what we like. The notion of “oikos,” or interrelated and interdependent household, is a more difficult concept to grasp in all its implications.

At its broadest, sustainable landscape design was defined as a design approach that allows the ongoing processes that sustain all life to remain intact and to continue to function along with development. The first tenet of such a definition, and one that is actually often ignored, is “don’t destroy the site.” We frequently give lip service to this idea as a profession, but we are often the agents of considerable destruction, much of it simply unnecessary or in service of a highly overblown notion that we are great artists, providing eternal delight to a beauty-starved world.

This definition and (as many have complained) even the word “sustainable” is far too limited. In reality, too much of the natural and social systems around us have already

been destroyed, and we can no longer measure the sustainability of a design by its minimal impact on a site and its surrounding communities.

Today almost every site on which we, as landscape architects, will work, has been abused. We need a broader and more pro-active definition of sustainable design and this is why it may be preferable to call the new paradigm “Ecological Design.” This is design approach that should go beyond the modest goal of minimizing site destruction to facilitating community recovery by reestablishing the processes necessary to sustain natural, social and cultural systems. This approach is not “naturalistic landscaping” or “preserving endangered species” or “cultural anthropology,” but the preservation, restoration and creation of self-sustaining, living environments and a new, mutually beneficial, integration of human beings into the larger natural and social world.

Ecological design is not a unified system for which there is one accepted rigorous method. Perhaps most important, it is a process of raising consciousness, and changing basic attitudes—attitudes so ingrained that we are often unaware that they shape our design and management of the land. These changes require that we actually see the present deterioration of the landscape, that we recognize the impacts of our interventions and that we understand each site and each piece of a site as parts of a larger system.

## **THE ECOLOGICAL DESIGN PROCESS**

Ecological design is not a reworking of conventional design approaches and technologies, but a fundamental revision of thinking and operation—you can’t put spots on an elephant and call it a cheetah. With ecological/sustainable design the presumptions of how we deal with a site are different, the kind of data gathered and the way we interpret this data are also different. Perhaps, most unexpectedly, even the methods by which we design are also different. It is the sum of these changes that results in a different design.

The key to ecological design is the systems approach—sometimes called a holistic view. Most of us are aware that nothing exists in isolation and that everything is interconnected. Many of the skills of the design professions (which includes engineering), are geared to solving arbitrarily defined problems and providing single-focus solutions that may appear reasonable from the point of view of a single professional discipline or a single client, but cannot resolve the multidimensional problems of the land. With ecological/sustainable design, we are not looking at

single-focus solutions to single-focus problems; for example, drainage, sewage disposal, or erosion control, but rather, at the management of a whole set of resources.

A second premise on which ecological design is based is that product and process are one. The process by which an end is achieved is often given as much, or nearly as much, weight as the product because it is recognized that only by changing the design process is it possible to change the design result. In other words, the process by which one works as an ecological designer must be also be ecological and sustainable. These changes in the design process affect who participates, how they participate, and, ultimately, how the project is defined or redefined.

Who participates and how do they participate? The ecological design process is inclusive and basically democratic, a relationship of consenting equals that builds consensus as a project proceeds. In traditional design relationships, we successfully divorce many of the obvious partners from the design process. Redefining the players and their roles, breaking down old boundaries, and empowering new parties in new partnerships is critical to a sustainable design process, which is inherently representative, interactive, and consensual. The traditional design process, even with modifications, is too exclusive, linear and compartmentalized, with little real communication or coordination among team members and many potential team members unrepresented or participating only in subordinate roles. The ecological/sustainable design process requires inclusive partnerships which will be, by definition, new and unexpected partnerships, where all concerned parties are empowered to advocate for their needs and desires.

With an ecological design process, team members interact as equally empowered partners. The client becomes a “partner” in the design and its realization, rather than patronized as a necessary inconvenience to be told what to do by the experts or “master builders.” The design professional is also an equal participant, not a “hired gun,” subservient to the client. Most importantly, the land and the people living and working on it and those who will be using the project are full participants. And to ensure sustainability, “the unseen users, who are the other players at the table, are the future generations.” (Susan Maxman, President of the American Institute of Architects, Principal Susan Maxman Architects (unpublished speech).) With this inclusive participation in the design process, there can be recognition that all site values are important and must be respected, understood, and represented. While often there is considerable fear on the part of both designer and client that the inclusion of so many people will be unwieldy and delay a tight schedule, structured participation of the

stakeholders, allows this process to proceed smoothly. If there is an appropriate level of involvement, there will be real consensus, as unrealized connections and unexpected allies are brought to light.

For participation to be more than window dressing, continuity is a critical factor. To ensure the truth of the vision to the end, sustainable design requires stakeholder participation from “soup to nuts”—from the development of the program, through the design of the building and site facilities to construction review, and beyond, to a program of assessment and repair which is built into a completed project.

In addition to the type of participation, the structure of the work process is also different. In contrast to traditional design methods, the sustainable design process is rarely linear. Instead, the work is characterized by a focus on the whole project and by feedback loops, which create changes in the structure of the work process throughout the lifetime of a project. For example, the methods of installation and the resources of the contractor or volunteer work force may be explored at the very beginning of the design process and this knowledge used in crafting the design.

Lastly, the ecological design process affects how the project is defined or redefined. There are few sites that are self-contained packages where planning and design simply entail designing the required building and landscape for the proposed client. Site programs and clients come and go, but the land remains. Providing long-term solutions to site problems can require looking outward to the larger context and confronting impacts to the site that occur beyond site boundaries. Solutions may include the redefinition of the project scope, a change in the physical boundaries of a site, or the recognition of larger jurisdictional boundaries and the involvement of wider groups of people, such as owners of adjacent properties or multiple agencies.

#### KEY COMPONENTS OF AN HOLISTIC APPROACH

Perhaps the most difficult aspect of the ecological view and the part most difficult to learn is to design in a truly holistic way. While a number of professional architects and landscape architects are providing conventional designs plentifully sprinkled with “green gimmicks” (for the architects, photo voltaics and super windows, for the engineers, solar aquatic sewage treatment, for the landscape architects, bio-engineering and porous paving parking lots), an organic site design which integrates all values is rarely achieved in this fashion. These components are only a means to an

end. When more effective means are invented, they will be superceded. Instead, what is so subtle and difficult is to design a beautiful and organic landscape, regardless of whether it is presently a wasteland, thriving city, suburbia or wilderness, that reflects a series of interacting relationships and is an integral whole. Since it is easy to become lost in generalities, the following are some specific design strategies that can help keep the designer's nose glued to the holistic wheel. While these strategies are no guarantee that we will all become great designers, using them will at least make us more thoughtful and less destructive ones. If to "do no harm" is required of physicians, surely it should be required, as well, of landscape architects who minister to the body of the earth.

#### **DEFINING SITE VALUES AND FRAMING APPROPRIATE SITE GOALS.**

Today we are seeing, on almost every site, accelerating and destructive environmental trends such as erosion, compaction, soil nitrification, excess stormwater runoff, disease, loss of biodiversity and takeover by invasive exotic plants and animals. Every project design is an opportunity to resolve these critical issues. The goal of every project should be to leave the site in a better condition than it was found. The science of ecology teaches us that to dismantle any critical piece of a system is to unravel the integrity of the whole. The ecological/sustainable designer approaching a project, no matter how large or how small, how urban or natural, must choose appropriate site goals. A critical first goal should be to save whole systems, insofar as is possible; making it a rule to "preserve the best, repair the damaged and replace the destroyed." To accomplish this goal, the designer must ask, "What values are critical to the integrity and function of this site and how can they be protected and even enhanced by site development?"

Conventional development at every scale increasingly fragments natural systems. Today the natural landscape remains only as small islands surrounded by a fabric of development. These islands gradually lose their ability to support a variety of plant communities and habitats, and they are extremely vulnerable to invasions by exotic plants and animals. Ecological/sustainable design must involve serious efforts to reverse this scenario by (1) creating strategies to reconnect fragmented landscapes and establish contiguous networks with other natural systems—both within a site and beyond the site boundaries, and (2) reestablishing the widest possible range of indigenous plant and animal communities, in appropriate habitats, to restore to the site its potential diversity of species. Almost everything that has been said about natural systems applies to human social systems as well.

No matter how simple the plan, clearly stating the goals and principles of a project can guide overall development and focus everyone involved. The result is a cumulative building of the plan even where there is a wide range of disciplines or stakeholder interests. These guiding principles evolve out of what is learned during the design process and should be revisited and reevaluated as the project proceeds.

#### **RECOGNIZING THE INHERENT NATURAL STRUCTURE AND THE PRESENT SOCIAL STRUCTURE.**

The way you look at the landscape determines what you see. This explains why, despite the fact that site evaluation and review have been an important part of the design and planning processes for a long time, conventional evaluations have not led to responsive, ecologically sound plans or designs.

The phrase "a sense of place," although deceptively simple, is, in fact, a non-technical way of summing up the totality of a place and all the processes that shape it. When we talk about English village or the Serengeti Plains, we are summing up thousands of years of cultural history and eons of geological and biological evolution that created the places that these names represent. Our sense of place, although sometimes experienced as a single moment or image, is actually derived from a complex living community that is continuously responding to the forces that act on it—recognized as pattern. In nature, pattern is the result of process. As Frank Lloyd Wright said, "The pebble is a diagram of the forces that have acted upon it." That diagram is a pattern and these patterns are the "end products" of all the forces that have shaped a landscape to this moment. Landscapes are very complex patterns and, like metaphors in poetry, they bring together and express an enormous amount of complex information about natural processes and the experience of human culture in that place. When this complex sense of place and the natural and social information that it embodies is reduced to data collection—lists and descriptions of isolated phenomena, such as climatological data, soil types, and lists of endangered species—the picture of the living landscape with its inhabitants, which is dynamic and interactive, is lost.

As designers, we are trained to see and work with forms and patterns. For the sustainable designer, pattern is the link between natural and social process and design. Sustainable design requires the designer to interpret the forms and patterns of a place and to tell its story—what the site was, how it has changed, and the directions in which it is likely to go. It is important to frame this story simply, accurately, dramatically and without jargon. The

more coherently the story portrays the place, the more deeply it uncovers connections, the more vividly it portrays site character and the more dramatically it juxtaposes site themes, the better the finished design that will grow from it.

A useful way of summing up the knowledge revealed by an environmental analysis for a sustainable design may be expressed as a drawing of the “inherent natural structure” of a site, which is a representation of the intrinsic natural patterns of the place and includes the human modifications of these patterns. Such a drawing is shorthand for very complex information and reveals the dynamic equilibrium, which is the resolution of the interacting natural, as well as the social and cultural, forces of a site.

**CRAFTING ADAPTIVE STRATEGIES—  
HOLDING SOLUTIONS TO  
DIFFERENT CRITERIA.**

An adaptive strategy is a design solution that is tailored to a specific context and a specific problem. By definition, adaptive strategies are developed out of local contexts and local conditions but, while they are the opposite of the “universal solution,” they are based on universal concepts.

Ecological strategies share with the entire ecological/sustainable design processes a holistic, synergistic and interactive approach. The sustainable designer reexamines conventional solutions in the light of environmental imperatives and asks, “Is there a better way of doing this task?” Adaptive strategies must solve more than one problem at a time, in an integrated way, using the most appropriate technology currently available. Single focus solutions are, by definition, not strategic because they do not look at the big picture and only synergistic solutions can realize the efficiencies needed to resolve problems that are increasing exponentially. Designing new towns in the arid Middle East, for example, requires creating long linear towns connected by boulevards rather than square towns connected by expressways. Sand dunes that have been bulldozed away are reconstructed to provide protection from the wind, and shading devices, made from plastics and held up on recycled oil drills, shade the long thin towns mimicking the spaces of a bazaar. Pleasanter, water and energy efficient, deeply rooted in the adaptive strategies of the culture and its social life, these “new towns” are far more beautiful and humane than the present grandiose copies of western cities with a few minarets to provide an Islamic flavor.

Respecting and working with the forms and patterns of a place is fundamental to preserving its integrity. Civil engineers, architects and landscape architects who model their work on the “great gardens of the past,” often consider

their creations “improvements on nature,” and often call them just that. In fact, most engineering solutions rarely approach the efficiency of biological systems, and are sustainable only for short periods of time. However, maintaining natural processes does not always mean keeping or reestablishing natural conditions throughout the site but includes finding solutions to providing site infrastructure that are based on natural models. Although there is no single magic technology that can solve environmental problems, there are many ways in which conditions can be improved when the principle of using natural models is applied.

**A CLOSER LOOK AT THREE  
INTERRELATED NATURAL PROCESSES—  
WATER, SOIL AND VEGETATION—AND  
THE IMPLICATIONS FOR DESIGN.**

Although there are many ways to describe the land and the critical natural processes that sustain it, we can begin by examining three interrelated processes and looking at how the patterns of these systems can be reflected in design. Looking more closely at water, soil, and vegetation, we can examine our current treatment of them, identify trends, and review the specific implications—moral, practical, and aesthetic—for ecological design.

**WATER—THE HYDROLOGIC REGIMEN**

Increased runoff from impervious surfaces associated with development is one of the most pervasive problems in the landscape today. The engineering paradigm for drainage is to concentrate flow and velocity and carry water away from the place where it falls as quickly as possible. Conventional stormwater management relies heavily on curbs, pipes, inlets, dams, riprap, detention basins, and other “hard” engineering solutions, in order to convey runoff away from buildings and road surfaces as quickly as possible. In most urbanized areas, we have created an extensive, artificial, drainage network, superimposed on the remaining elements of the natural flow pathways of water.

One of the major problems created by the increase in impervious surface and the drainage infra-structure that carries the water from these surfaces, is the “short-circuiting” of the natural hydrologic cycle where water moves from the ocean, into the air, through the land and back into ocean again. The net result of increased impervious surface and the extensive man-made plumbing networks is the increase in stormwater runoff and the decrease in recharge to the groundwater.

In eastern United States, where it only rains with sufficient intensity to produce runoff approximately 30 days in a

given year, water seeping out of the ground into the stream channel (base flow) keeps surface streams flowing, creating more than 60% of the water in most stream systems. In fact, when it has not rained in 2 days, all of the water flowing in our streams comes from the ground as base flow.

The impervious surfaces of our urbanized areas turn rainfall into runoff (each square foot of impervious surface produces as much as 3 additional feet of runoff per year). The most visible effect of this runoff is flooding. Not so obvious, is that there is less infiltration of water into the ground and the source of stream baseflow is lost. In a dry year, the stream has no resiliency and dries up and no longer functions as a living system.

Where the natural hydrologic cycle is sufficiently altered by development, only solutions that replicate the predevelopment water balance can solve the broad range of stormwater issues. These issues include diminishing flood and drought peaks, reducing non-point source pollution and sustaining the complex relationships between water, plants, animals, and soil.

Traditionally roads and parking devour land and are often bleak, unaesthetic and insensitive to the landscapes they pass through. Instead of contributing to the solution of environmental problems, such as stormwater runoff, new construction usually exacerbates them. Drainage solutions should reduce runoff and maximize infiltration in the uplands, restore or maintain stream baseflow, provide groundwater recharge, and reestablish channel stability, regardless of the strength of the storm event. Vegetated swales slow water, trap sediment, and increase infiltration by using the natural system to accomplish these goals. Sustainable technologies, such as “porous paving,” foster infiltration and the reduction of contaminants, reinforcing natural functions. Parking bays can be designed to incorporate groundwater recharge beds underneath porous asphalt paving. Because of their role as water collectors, such parking areas are designed as a series of nearly level terraces, which gives them an elegant and formal quality. During a rainstorm, water in the parking bays disappears into the porous paving and the process of water recharging into the ground is made part of the aesthetic of the landscape.

The parks and wildlands adjacent to our urban areas also suffer. Frequently these wildlands are preserved stream valleys. Where water from the developed uplands is collected in pipes that outlet onto valley slopes, the result is gully formation. The gullies that form below outlet pipes not only prevent water from infiltrating into the ground to recharge groundwater, but also act as French-drains, pulling water

out of the adjacent slopes. At the valley bottom, stream channels are recut in an effort to handle the increased sediment load, water volume and velocity. The result of our conventional “management” of stormwater on our parks and preserves, is tree toppling, delta formation, and a stream where the channel is migrating rapidly and undercutting and eroding its banks.

Most regulation today, despite some wetlands restrictions, permits the destruction of nearly all the existing upland terrain, soils, and plant communities on a site and the resulting severe disruption of hydrologic patterns. Both soil and water regulation in the United States have concentrated on “control” of problems, such as flood control, erosion control, “point,” and now “non-point” pollution control. Conventional site design has been very timid; landscape architects have tended to follow regulations, rather than to design landscapes that maintain whole systems.

The ecological landscape architecture does not design for single-focus goals, such as flood control or erosion control, but rather looks at the management of the whole resource. For example, all water, including wastewater, is treated as a resource—not as a problem—and is managed as a crucial component of the larger water system. This approach allows one to find solutions based on models, which replicate the natural hydrology. Biological treatment of wastewater would not only allow wastewater to be reabsorbed into the water system of the watershed but can also provide the opportunity to expand and replace diminished wetland systems.

#### **SOIL-THE CYCLING OF MINERAL AND ORGANIC NUTRIENTS.**

Soil is the most hidden landscape problem of all. Soils are far more damageable than we realize. The function of soil in the biotic system is to recycle nutrients. Most of this work is done by plant roots and their associates, and by the animal life and fungi in the soil, which depend on a permeable soil crust, stratified soil layers, and appropriate amounts of organic matter. Much of what we do during the design and construction phase destroys the life of the soil. Terrain modification, most of it unnecessary, is the greatest culprit. Grading destroys soil stratification and compacts soil which limits root penetration, mycorrhizal growth, infiltration of water and the exchange of atmospheric gases, chiefly oxygen and carbon dioxide. Parks and natural areas are especially vulnerable to intrusion by rights of way and destruction of habitat due to the construction of utility lines and roads.

Sustainable design must involve serious efforts to preserve and rebuild soil resources, including the development of

strict soil protection measures during construction, limits on the zone of disturbance, minimum-impact construction techniques, as well as innovative restoration measures that include making new soils from waste products, restoring soil tilth, and adding micro-nutrients and mycorrhizae to repair soil deficits.

Where the construction process has unavoidably damaged soil, the goal should be to reestablish as closely as possible the actual soil layers. This is particularly important in a forest where the soil structure and its reservoir of life and its capacity to reproduce the future plant community should remain intact. Regulatory agencies in charge of soil protection mandate only minimal restoration, concentrating primarily on separating topsoil from subsoil and stabilizing the bare ground with turf grasses after the soil is replaced. Harvesting the upper soil layers in blocks to preserve their existing stratification is one technique that can be used to ensure the continuity of soil microorganisms, woody rootstocks, bulbs, corms and seeds.

**VEGETATION—THE STRUCTURE,  
ORGANIZATION AND DEVELOPMENT  
OF PLANT COMMUNITIES.**

Native plant communities are the most essential expression of a place and they support the richness of the wildlife with whom they have co-evolved. What we are losing is not simply individual plant species, but the complex relationships of plants to other plants, to wildlife and to place.

Plants, like people, live and develop as communities with characteristic companions. These communities can be described as “a distinctive group of plant species, which may be expected to grow naturally together in more or less the same population proportions under similar habitat conditions.” (Beryl Robichaud and Murray Buell, *Vegetation of New Jersey*, p. 98, Rutgers University Press, 1973.) The location of these communities, such as an oak-hickory forest, is largely determined by climate. If the earth were completely uniform there could perhaps be uniform bands of vegetation. Since the earth is broken into continents and oceans there is, instead, a variation of vegetation within these climatic zones that responds to variations in landforms and there are also all sorts of local variations that respond to variations in topography and soils.

Vegetation is, in fact, an exquisitely sensitive indicator of all these conditions, growing in an almost infinite variety of recognizable patterns. For example, where there is a distinctive gradient of any sort—from dry to wet or from cold to warm or from toxic to normal conditions—we have all seen plant species forming a series of concentric bands.

As we become sensitive to patterns in vegetation, the relationship between form and function is underscored. To create patterns, at any scale, that are not representative of the patterns of a place “goes against the flow” and requires an additional input of energy in direct proportion to the movement away from the patterns of the place. In the northeastern United States, weekly summer mowings are required to maintain our lawns and beat back the forest that would otherwise grow in this region. This energy input is required because a forest and not English turf grasses is nature’s expression of the fullest and most effective use of the resources available in this landscape.

The basic building block of ecological planting design is the plant community type, assembled in the patterns on and above the ground, that express plant life in that place. Planting plans, which show plants, simply as idealized circles with a dot in the center, placed in geometric relationships, cannot begin to capture the complexity of ecological relationships. For example, to represent the structure of a mature forest, the design drawings should reflect both the vertical layers (canopy trees, understory trees, shrubs, and ground layer) and the horizontal mosaics, distinguishing between growth forms of every species so that the canopy trees, often the largest plants, can be shown to occur in every layer and at every size somewhere within these mosaics. Variety in the size and in the shapes used to show plants will help to express the fact that the form of each plant is partially determined by its plant companions and partially by its response to local environmental conditions, such as its place within a gap in the canopy or along a forest edge.

Succession is the name given to the process of change and development in plant and animal communities, “the gradual replacement of one community by another,” where “a succession of plant communities always is accompanied by a succession of animal associations. Plant succession leads the way because plants are the foundation of every food chain.” (Jack McCormick, *The Life of the Forest*, p. 59, Our Living World of Nature Series, McGraw-Hill, NY, 1966.) The process of succession tends to proceed towards more complexly interrelated communities of living things.

Today, however, the impacts from development on our remaining native landscapes have inevitably meant environmental degradation. One of the most visible signs of environmental damage is the displacement of complex native ecosystems by a few invasive exotic plant species, which often form almost monospecific and nearly “static” plant communities. Takeover of a site by invasive exotic plant species disrupts the structure of the native ecosystems and interrupts the natural sequence of succession on a site,

seriously diminishing both the health and diversity of native plant communities and the animals dependent on them.

Individual native plant specimens are frequently planted in traditional horticultural patterns. Ecological planting should reflect plant community structure and must go beyond establishing native plants to placing them in ecological patterns. New plantings are treated as plant communities not as individual specimens and they are displayed in the habitats in which they actually occur, with characteristic companions, in representative organic patterns. These natural patterns set the stage for nature to re-establish the functional relationships between plant and plant and between plant and place. Ecological planting design offers a new vocabulary based on the language of landscapes—forest, woodland, prairie, desert, and tundra. It is a celebration of both the unique qualities of each individual place as well as the qualities that place may share with others similar to it. The attitude of the designer becomes one of continuous observation and increasing appreciation of the richness and complexity of these patterns within patterns—“world within worlds.”

Solving our biodiversity crisis also involves the way we maintain our landscapes as well as the way we plant them. Understanding the processes of plant community development is the key to long-term vegetation management and to creating and repairing native landscapes with minimal intervention. Habitat management techniques include species introduction, and the removal of competing species by a number of means from mowing to burning.

For the ecological artist, the goal of the design and management of each landscape is to transform the latest, best scientific understanding into compelling visual images. Everything, from educational programs to vegetation management, can be designed to reveal and express the unique qualities of the site. Exploring new techniques can provide opportunities for research into sophisticated habitat management which includes both aesthetics and biodiversity as important goals.

*“Art is the creation of forms symbolic of human feeling. The making of this expressive form is the creative process that enlists our utmost technical skill in the service of our utmost conceptual power—imagination.”*

[Suzanne Langer, *Feeling and Form*, Charles Scribner's & Sons, NY, 1953]

## THE ECOLOGICAL AESTHETIC

Making art that is “expressive form,” which reveals and celebrates the patterns and processes of the landscape, requires only that the ecological sensibility be married to an artistic one and that both sensibilities recognize the intrinsic design of the site as the highest value.

*“Again Lou Kahn has made clear to us the distinction between form and design. Cup is form and begins from the cupped hand. Design is the creation of the cup transmuted by the artist, but never denying its formal origins. As a profession, landscape architecture has exploited a pliant earth, tractable and docile plants to make much that was arbitrary, capricious, and inconsequential. We could not see the cupped hand as giving form to the cup, the earth, and its processes as giving form to our works.”*

[Ian McHarg, “An Ecological Method for Landscape Architecture,” Reprinted in *The Subversive Science, Essays Towards An Ecology of Man*, p. 332, Paul Shepherd and Daniel Mckinley, Eds., Houghton Mifflin, Boston, 1969.]

The sustainable designer accepts and respects the primacy of the natural patterns and processes of the landscape. The stream and wetland systems, the natural terrain, the plant and animal communities are the given forms of a place. The sustainable designer works with them, does not violate them, and does not assume, for example, that a stream channel can be relocated or put into a pipe. With this approach, site resources are used to solve site problems. There is an economy of intervention and a minimization of destruction. In addition, there is respect for the integrity of patterns everywhere—ecological, historical, and cultural. The functional areas of a site—buildings, roads, and parking lots—adapt to the patterns of the place rather than obliterating them. Diminishing gradients of intervention allows as much of the site as possible to succeed to more complex ecosystems. No longer locked in the repetitive conventions of “bed, bosque, border and allee,” the designer discovers that natural patterns and the vocabulary of our indigenous landscapes are, like the natural world itself, infinite sources of form.

**MONITORING, ASSESSMENT  
AND REPAIR.**

While sustainability is a goal, no one yet knows how to achieve it. The act of sustainable planning and design is a heuristic process; that is, one in which we learn by doing, by carefully observing and recording the changing conditions and consequences of our actions while focusing on the long-term goals.

To be fully realized, sustainability is ultimately dependent on monitoring, assessment and repair. A major hurdle in designing sustainability is often our limited understanding of how landscape systems function. Without monitoring we often base our designs and policy decisions on landscape “myths,” such as that “the creation of edge will benefit wildlife” or that “opening the forest canopy will stimulate reproduction.”

The creation of a site database through monitoring helps us to understand the local mechanisms that govern a site, to see long-term trends and to determine the consequences of intervention—both past and present. For the sustainable designer, site monitoring feeds the continuous adaptation of the plan and management program, as information about the site is recorded and analyzed and trends are observed. The plan then is not simply the initial design document but, as Allan Savory says of his holistic resource management model, “the word plan must become a twenty-four-letter word: plan-monitor-repair-replan.” (Allan Savory, *Holistic Resource Management*, p. 4, Island Press, CA, 1988.) Monitoring, assessing the site and modifying our actions, or our non-actions, are ongoing activities without which a plan or management program cannot be truly sustainable.

The role of monitoring then, is to tell the story of how the site has changed, is changing and is likely to change. It continuously records and informs our actions and is the major vehicle by which the site speaks to us, providing the information that allows the sustainable designer to work with the natural regenerative processes inherent in the patterns of each landscape.

**SUMMARY AND EXHORTATION—EVERY  
ACTION IS SIGNIFICANT—EVERY PLACE  
IS IMPORTANT**

A design ethic which accepts the preeminence of the patterns of a place—created by the interaction of climate, geology, topography, water, soil, vegetation, wildlife and the human communities—may not solve all of our problems, but it will go a long way toward changing current trends.

No landscape, no matter how apparently pristine, is beyond the reach of human impact, so all of us are ultimately responsible for the health and well being of all the landscapes on the planet. Religions, are recently recognizing that human beings are part of the ecology and that everywhere the landscape is deteriorating, and are now beginning to take for granted that preservation and responsibility to environment are a part of their spirituality and morality. Modern consciousness has “greened” religion and brings together spirituality and morality, aesthetics and practicality. The process of sustainable design is the process of integrating all these factors.

The sustainable integration of natural and cultural systems is appropriate to the entire spectrum of landscapes at every scale and in every place. Sustainable design must embrace sustainable agriculture, sustainable industry, sustainable cities, and sustainable wildlands. There are models: fish can be caught and eaten in the river flowing by City Hall in Stockholm, Sweden, and the water is good enough for a four-kilometer downtown swimming course. In Providence Rhode Island, William Warner, an architect who now proudly calls himself a landscape architect, has recently uncovered the Providence River, designed splendid pedestrian promenades along it and crossed it with boat-friendly bridges. In this project he has re-created the historical confluence of the Mosshasuk and Providence Rivers and celebrated this confluence with a water-park. Most recently, this project has included removing the expressway ramp from the historic district in the center of the city and relocating it on top of the present hurricane barrier.

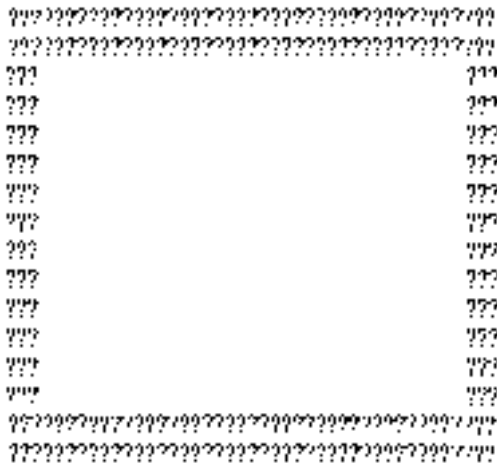
It is the growing realization of the interconnectedness of development and environmental processes worldwide and within our communities that is driving the evolution of sustainable design. At every scale, sustainable design is fundamentally about integrating the natural structure of the site with the built environment. It provides a design framework that can address all ecological values. and seeks to create an on-going partnership with the living landscape and to reverse the trend of needless destruction of our landscape. Where a place is understood, preserved, repaired and celebrated as an integrated whole, it can be experienced as powerful and memorable.

# ARTICLE THREE

---

## CREATIVITY AND EDUCATION

Ignacio F. Bunster-Ossa, ASLA, Partner, Wallace, Roberts and Todd  
Sylvia T. Palms, consulting editor



My assignment for ASLA-LAF Summit on the Profession was to discuss creativity and education. After going through these pages some in the audience may feel that I've succeeded in responding to these topics. But perhaps this essay is more about the *ever-creation* of this profession as a relevant voice in our society, with a personal note on how creativity and education might play their role.

### PROPOSITION

For the better part of a century, the profession of landscape architecture has enjoyed remarkable relevance in our society. By relevance I mean utility, or the ability of the profession to supply a needed service that positively touches the population far and wide.

With the growth of cities in the latter part of the nineteenth century and the earlier decades of the twentieth, the profession established its relevance by designing urban parks, tree-lined boulevards and other green areas which soothed the hardened urban psyche. Following the Second World War, landscape architects proved instrumental in paving the way for the suburban steamroller and dressing the land it in its wake. With the rise of the environmental movement in the late sixties and early seventies, a whole new territory opened up: "nature," and all it meant in terms of protecting, rehabilitating, and conserving sensitive habitats in the face of development pressures. And there has always existed the need for gardens.

These are the broad areas of practice by which the profession has sustained its place in society for much of the twentieth century. Throughout this period, academic institutions have endeavored, and succeeded, in delivering the training necessary for landscape architects to prove and advance the profession's worth. Clearly, the teaching of landscape architecture and the practice of it should coexist like a firm handshake. Development of academic curricula should directly respond to the knowledge and skill base needed within professional practices. Conversely, schools should advance theoretical positions and ideas that enrich the practices. Today, however, there are forces at work that are straining the link between what we learn and what we need to do. Information technologies, computerization, mobility, increased longevity, and global regionalization, to name a few, are demanding

a constant updating in professional skills and approaches to practice. Often times it seems as if we are reinventing ourselves from project to project. The sources of our relevance appear to be in constant flux. Under such fluidity, what should future landscape architects be learning?

In this essay I discuss three societal factors that, over the foreseeable future, are likely to have a great impact upon the profession: population density, sustainability, and cultural identity. Unless practitioners and educators jointly address these and other emerging conditions, the handshake between what we learn and what we do will, over the long haul, grow limp. At a minimum the problem may require a re-tooling of academic curricula (and, by consequence, the overhauling of the accreditation exam). At a maximum, it may require a redefinition of the profession's mission.

Landscape Architecture? History could well view it as a flash in the pan, one more odd spark in this oddest and flashiest of centuries.

#### ON CREATIVITY...

Carlos, a lawyer friend of mine, decided one day to take up painting. Now, this guy had been in all respects a successful lawyer. He facilitated corporate mergers, acquisitions and other transactions that helped various corporations amass and sustain a great deal of wealth. And he dressed the part too, with conservative blue suits, starched white shirts and striped ties. So, the day he announced that he was going to start painting, his family and friends took it with predictable lightness. After all, many successful business people are known to amuse themselves with esoteric hobbies once they put the rat race into cruise control.

But, as they say, a funny thing happened on the way to the forum. Carlos left his very comfortable house to ensconce himself in a small flat in the center of town and to begin spending days on end painting. Portraits. He hired models, and using oil sticks in furious strokes began to recast their stares into wildly colorful, rather abstract compositions. Looking at the paintings one feels as if pure thought has inadvertently collided with a blank canvas and spewed forth layers of resinous confetti. They are impossible to ignore. Any one of them appears at first like, well, confetti, but after staring at them for a while they begin to sprout an eye, a nose, a frown, a cussing mouth, an ear that doesn't want to hear.

Soon Carlos' apartment became filled with canvases, every inch of wall area occupied by one of his portraits. Friends began to show up. No one giggled or laughed. Arguments ensued about the colors, the expressions, about whether the stuff was any good or not. There was disagreement on all counts, although everyone agreed on one thing: the work was uniquely creative. Unmoved by the opinions of others, Carlos kept at it—he is still at it. This is virtually all he does these days. He still maintains one or two corporate clients, but this he does out of personal loyalty rather than a need for income. Recently he convinced an art gallery to run an exhibition of his work. Several of the paintings sold.

Knowing this man, I cannot but be in awe of the whole phenomenon. Without ever studying the craft of painting, nor having painted or drawn anything before in his life Carlos, the lawyer, had seemingly overnight and without warning turned into an artist. The awe I feel is not obtained from the painting themselves, although I am quite fond of a few of them. It is obtained, rather, from the clarity of his purpose and the sense of urgency with which he has pursued the whole thing. It's as if some force had whacked him in the head and shaken the core of his soul. He simply cannot overcome the need to grab a stick of oil and drag it across a canvas. In his case creativity coexists with a great deal of urgency. It is perhaps this very thing—urgency—that most profoundly triggers the creative act.

#### ON EDUCATION...

When one is about to meet a living legend, the bladder tightens, the heart races, and all possible coherence becomes mush. Such was the case when I first met Ian L. McHarg as a prospective student in the spring of 1977. Combining overflowing charisma, ego, and a thick Scottish accent that gets tangled with his even thicker mustache, McHarg cuts a formidable, if at times incomprehensible, figure.

I had first caught sight of him on a PBS special about the environment while attending architecture school a few years earlier. One scene to this day clearly stands out: under a bright sky McHarg was standing proudly amid a boundless, wind-combed meadow extolling the virtues of designing with nature. He appeared tall, commanding and righteous, rising out of the grass like the very voice of the earth. The scene left no doubt in my mind that this man was on an urgent mission.

To McHarg, the world must be saved, no less, no more, and landscape architecture is the profession to do it. Back in the seventies, the signs of doom were all around: Love Canal, Three Mile Island, and the relentless destruction of rainforests. Something simply had to be done and McHarg, along with his brilliant colleague Narendra Juneja, seemed to know what, where, and how to do it.

McHarg's sense of urgency did not meet a canvas, but rather an academic program—a masters degree program in landscape architecture and regional planning at the University of Pennsylvania. A brand new curriculum had to be devised from the ground up. Multiple subjects had to be taught and integrated into a cohesive whole. Many apostles had to be enlisted to watch over the academic flock: a geologist, an ecologist, a hydrologist and soil scientist, a forester, experts in native plants, and a cadre of reputable designers such as Laurie Olin, Bob Hanna and Peter Shepherd (who later would be knighted). And to these were added a legion of visiting scholars, lecturers and allied academics who rounded up the tenets of the new ecological world. The onslaught worked, for few students left the program without a clear sense that they, too, had become apostles of the faith.

For me the coup-de-grace came in the form of Yehudi Cohen, a Princeton Anthropologist who had been summoned by McHarg to teach us, over the course of a semester, about human settlements. One day he professed to being a “brittle diabetic”; one who faced daily the prospects of a permanent disability, or worse. But he urged us not to worry. Nature, he went on to say, is all about imperfection, and for humans it is the struggle to live with and overcome imperfection that leads to genius, beauty, mystery and sublimation. Up to that point in my education, “design with nature” had acquired only an ethical imperative. Cohen gave it equal standing as an aesthetic: the search for design sublimation in the face of an imperfect society, an imperfect environment, an imperfect client, and even an imperfect design talent.

McHarg never taught this lesson to his students. As for Cohen, his candid observations about health in no way intended to elicit a linkage with design. For all practical purposes the lesson was an accident, a fleeting connection of ideas that somehow lit-up the brain and left a transcendental imprint. Yet without nature as an underlying academic focus, such a connection would not have been made. Looking back at this episode

I am reminded that the greatest value of an education lies in its ability not to impart but to trigger thought. All the better if such thought is prodded by trail-blazing intellects for whom every waking minute is a precious opportunity to improve upon the state of humanity.

From what imperatives, then, will future ideas about land-scape architecture come? And will they become missions of urgency? Any answers to these questions by necessity involve speculation on society's future needs. It is by the understanding of such needs that any measure of professional relevance can be derived. But before proceeding on speculation, a brief look back is appropriate, specifically at the sources of relevance that have given the profession of landscape architecture its present status.

What I offer below is personal and selective, and in no way is meant to exclude the many aspects of our profession that have a positive impact on our society. Within the universe of academic and practiced landscape planning and design, however, three missions clearly stand out:

- 1) to mitigate through landscape the ills of urban life;
- 2) to reshape the rural landscape into suburbs; and
- 3) to protect valuable habitat in the face of human development.

#### **OLMSTED'S LEGACY (HOW GREEN WAS MY CITY)**

I wonder if Olmsted imagined to what heights the city of New York would rise around Central Park. In 1873, when the park was completed, the tallest structures in the city were the fast-rising towers of the Brooklyn Bridge, which two years later would top at 275 feet (a mere 25-story building). Today, of course, much of Manhattan dwarfs the bridge towers, as do many of the apartment houses and commercial buildings that face the park. With so much stone and concrete around it, the park stands out like a dramatic oasis within the city fabric. I wonder, too, whether Olmsted imagined the degree to which the park would become such a striking oasis. As one crosses Fifth Avenue and enters the park, a whole different world is encountered. Honks become children's joyful cries, the sound of rushing buses become the sound of rustling foliage, the ambient temperature drops and the sunlight is filtered, drawing filigreed shadows instead of hard-edged lines. The contraposition between the park and the urban environments is grand and decisive; it is for many New Yorkers the critical difference that makes urban life tolerable, even desirable.

Olmsted and Calvert Vaux dubbed their scheme for Central Park the “Greensward Plan.” Swampy Lowlands were drained and made into lakes and five million tons of earth were moved to create the undulating terrain that today supports about half-a-million trees. With this project, as with the Fens of Boston, Olmsted established the value to society of his vocation and craft. In time his work would define the profession that today binds us all.

Many of us devote a large part of our practices to the planning and design of urban parks and other open areas intended to relieve the pressures of urban living. I’d be curious to know what percentage of the nation’s landscape architecture practice is devoted to this genre. In our office it accounts for about half of the landscape business. Few areas of practice seem more relevant. Fewer still seem to generate as much prestige and accolades. Two of this decade’s three recipients of the ASLA’s President’s Award for built work have been urban open space projects: Parque El Cedazo in Mexico City (designed by Grupo de Diseño Urbano) and the Village of Yorkville Park (designed by Ken Smith). And look at Paris: within a single decade the city has managed to construct three major urban parks deserving of worldwide recognition. These are, of course, Parc de la Villette, Parc Bercy, and Parc Citroen. Like Central Park, these parks were designed to serve as catalytic anchors to urban development efforts. Each of them contribute to establishing a “green” difference from the otherwise “gray” urban environment. Even accounting for any stylistic differences, each one is a chip off the old Olmstedian block.

It is fair to say that the utility of our profession has been greatly enhanced by the ills commonly associated with urban environments: contamination, pestilence, noise, grime, heat and traffic, to name a few. As argued further on, the profession is likely to retain such utility well into the future. However the typologies and content of the open space will evolve along with the prediction and material-ization of significant and widespread societal change.

#### **SUBURBAN CREEP (LANDSCAPE AS MESSAGE)**

If it were possible to simulate suburban growth since the Second World War in fast-forward mode, it would probably look like wildfire or the spread of an insidious cancer. Some numbers are appropriate here. In 1950, Los Angeles had both an urban and suburban population of about 2 million apiece, a 1:1 ratio. In

1990, by contrast, the suburban population had quadrupled while its urban counterpart had only doubled, a 2:1 ratio. This kind of shift has been common to most U.S. metropolitan areas. By definition, the density of the suburban population is far less than that of its urban counterpart. In Boston, for example, about 19 people share an acre of urban land; in the Boston suburbs, by contrast, the number drops to a paltry four. One reason is larger lot sizes per household. Another is the dispersed pattern of the development. As any peek out of an airplane window reveals, suburban subdivisions mingle among the landscape with hills, crops, pastures, woodland, waterways, and wetland. That’s their appeal.

In Central Park “nature” was literally hauled into the urban midst. In the suburbs, on the other hand, it was urban development that was rolled out to nature. In the former the landscape was the message, in the latter (to borrow from Marshall M. McLuhan), the landscape became the message. And who but landscape architects were better prepared to push, poke, press, nudge, and ease the land towards this new development?

Out of this boon emerged a “planning” breed of landscape architect, perhaps none truer to the times than John Ormsbee Simons. One of his major accomplishments was the planning of Miami Lakes, a new community in northern Dade County. Back in the mid-sixties when this development got off the ground, the low-lying site of four square-miles was surrounded by cow pastures, with the Everglades looming just beyond the fences. Dry land was needed, which could only be obtained by means of dredging the substrate of muck and marl and piling it up just above flood levels. Lakes were thus constructed. The lakes helped retain the South Florida summer deluges, but, more importantly, they also certified the suburban aesthetic. No South Florida project before Miami Lakes afforded views of artificial lakes from public roads. The very idea of a lake being artificially contoured for aesthetic reasons was revolutionary. Soft, curving geometries abounded. The town center was designed to curl around a spiral. To accommodate the spiral, a County Section-Line had to be bowed. No such concession had ever before been requested, nor granted. Pumped with anti-urban fervor, Miami Lakes unceremoniously broke the grid that had shaped much of Florida’s urban land since Jefferson. Into this fervor the whole of the stepped into. Education followed suit.

During this time one of the essential educational aids was Simons' "Manual for Site Planning and Community design."

I was introduced to the profession doing just this kind of suburban community design. I had just graduated from architecture school, and two young partners in a growing landscape firm had asked me to join them on a part-time basis to do basic drafting. I needed to work and that was that, (convinced that in no time at all I would find a real job in an architectural office). But something was at odds with the order of things: it was the two young landscape architects that were calling the planning and design shots; they were the one's setting the building envelopes and, in some cases, the character of the architecture. To my surprise, landscape architecture, not architecture, was proving to be the more relevant occupation. The world, upside down, all of a sudden looked much more promising.

**EARTH'S HALF-DAY  
(THE IRONY OF DESIGN WITH NATURE)**

The late sixties and early seventies ushered in major societal changes, but perhaps none more profound than global environmental awareness. 1968: The Club of Rome; 1969: The National Environmental Policy Act (and McHarg's "Design with Nature"); 1970: Earth Day; 1972: "The Limits to Growth"; 1973; the Gaia Hypothesis and the Endangered Species Act (these were the milestones that paced the urge to look at nature with unprecedented concern. The biblical call to "procreate and subdue the Earth" became only half-reasonable. Seemingly overnight, nature acquired a friendlier more benign disposition. As if by magic, noxious swamps turned into wetland and jungles into rain forests.

Through McHarg's vision, the profession enmeshed itself into this new awareness. Here was a method that, by means of overlaying known, defensible scientific data could identify sensitive resources worthy of protection and conservation and could therefore also pinpoint the land most suitable for development. Without the ecological planning methods promulgated by McHarg, and as institutionalized through environmental impact laws, one can easily imagine that the natural landscape would have been ravaged. Yet the great irony of Design with Nature is that, in the end, so much of that nature actually got designed into.

Legal and technical mechanisms identified ways to save discrete, sensitive areas of the landscape, but at the expense of the larger regional landscape. Thus exurbia, with its integral natural and agrarian scenography, became transmogrified into an environmentally correct yet utterly chopped-up suburbia.

To the public eye Design with Nature has served to define the profession. However, its tenets have often times been viewed as a way of abetting development as much or more so than protecting the environment. By way of an example, a few years ago our office was selected to plan development within about 1,500 acres of rural and natural land in a well-known wine-growing valley East of San Francisco. Our qualifications were impeccable. What particularly impressed one of the landowners in the consultant selection committee was our firm's long-standing environmental ethic. We later learned, however, that this individual saw Design with Nature not so much as an eco-friendly ethic but as a sure-fire way secure approval for a few hundred homes on a property that was riddled with earth-quake faults, clay pans, landslide-prone areas and wildlife corridors. This was the property he was trying to develop, and he was right: through an opportunities and constraints analysis, it was determined that several hundred residential lots could be woven into the landscape. All that was necessary were a few sensible mitigation measures, such as building setbacks, drainage easements, native plant buffers, and backyard fencing to keep domesticated canines from harassing the deer. Had this particular development gone ahead, I am sure that our office would have been both applauded and vilified. Fortunately, Design with Politics won the day in this case. Pressured by neighbors and city officials, in the end this landowner transferred his development rights to more suitable land, ceding to the public ownership in perpetuity of the fragile hills, sensitive drainage corridors, and valuable vernal pools that supported the wildlife there.

But not every locale can muster this kind of private-public cooperation. Most communities have to rely on the letter of the environmental law. The effect is a kind of "diligent environmentalism" that says that as long as wetland is preserved, steep slopes avoided, eagles' nests buffered and so on, well, go right ahead and plow the rest under. Combined with the leapfrogging nature of the tract housing business, the result of this kind of practice has created, across the nation and regardless

of geography, a patchwork quilt of rooftops and, to paraphrase a leading New Urbanist, “ecological trimmings.”

Since the early seventies, much of our professional relevance has depended on threading the suburban train through the ecological needle. To this delicate operation, development know-how has proven to be as relevant as ecological know-how. In fact, not at any time before in its relatively short history has the profession of landscape architecture been more aligned with land economics. Rahenkamp Sacks Wells & Associates was a 70’s Philadelphia firm with a national planning and design reputation. On certain projects, once the land potential was well understood through normal opportunity and constraint analyses, they would perform financial analyses in-house as a means to guide developers towards an optimum land use program. To them, stewardship of land development was as important as stewardship of the land itself. Much of the profession’s business still depends on such dual stewardship. Within this line of practice, the greatest achievement to-date is probably San Diego’s Multiple Species Conservation Program, adopted in 1992. Aimed at preserving the habitat of threatened and endangered species (such as the California Gnatcatcher), the MSCP has been hailed by Secretary Babbitt as a landmark study and national model for balancing conservation and development agendas. Few people in San Diego are surprised to learn that the key advisor to the Mayor, working behind the scenes to see this project through, was a landscape architect.

**AN EXPANDING SPHERE?  
OR A DILUTION OF RELEVANCE?**

Over the course of the twentieth century, the three broad professional missions described above—providing a “green” urban difference; planning and designing the suburban landscape; and providing environ(develop)mental stewardship—have given the profession a fairly secure center. By “center” I mean a position identifiable as being different from other allied disciplines, such as architecture, urban design, and civil engineering.

In recent years, however, the center has become diffused. Other disciplines have come to visit our cozy nest, and different ideas have emerged to challenge our collective purpose and identity. There’s the undeniably sensible voice of New Urbanism, which has cleanly pulled the rug from under the Cluster

Development and Planned Unit Development typologies of old. Environmental and public artists have appeared on the scene, attracting prominent landscape design commissions. Civil engineers have become eco-friendly. And there’s Sustainability, which in recent years has been preached more loudly and effectively by the likes of Bill McDonough, and architect, and Amory Lovins a visionary environmentalist, than any landscape architect. To landscape architects this has been a cause for concern.

Part of the angst stems from the shift that has taken place with the way we look at this thing called nature. Through a science-based approach to planning and design, McHarg explicitly cast nature as an *object* of study and understanding. As nature becomes objectified, however, the idea of nature as *subject* rapidly loses currency, invalidating the use in design of metaphor, mystery and myth. It’s as if every idea about nature that ever existed in the right side of the brain is purged and rearranged in the left side.

And this has come at a heavy price. In “Landscape and Memory,” Simon Schama argues with uncommon erudition that nature, at its core, is a cultural invention. If this is so, then Design with Nature is perhaps as close as perhaps we will ever get to dis-inventing it. Today, invention has given way to preference: to save this or that species, to favor this or that habitat. This is something we are educated and trained to do. But in doing, so we’ve cast aside the metaphors of old, romanticized or trivialized age-old myths (Paradise, anyone?), and erased all traces of mystery from what once was called, forebodingly, the “wilderness.” Nature as object and nature as subject have become irreconcilable opposites. And where we have matters involving irreconcilable differences, a parting of the way is soon to follow.

Some landscape architects have chosen to reaffirm the idea of invention, focusing on the folly of human culture as the only and best source of design. We might put Martha Schwartz at the head of this class. Others, such as Carol Franklyn and Leslie Sauer of Andropogon (lovingly called the “Earth Mothers” by former students), have opted to reaffirm the intrinsic value of natural systems as the best and only source for design. I will not discuss the merits or demerits of either position here; what’s important is that for the past decade or so, the profession has had to face a defining fork in the road. Our sources of relevance have become confused and our professional identity divided. While we’ve

argued and pondered about which path to take, other professions, such as Landscape Ecology and Environmental Art, have emerged to lead the way.

Arguably, these two areas of focus—art and ecology—occupy polar positions on the scale of concerns that preoccupy the profession. Is their existence an addition to the scale or a deletion? In other words, have we ceded territory or become enriched by new ones? The polarity between art and ecology, however, only explains part of the perceived professional “de-centeredness.” Other societal factors are more likely to test our professional identity and any relevance we derive from it. The scale of professional concerns, in effect, is acquiring multiple dimensions. Similarly, what we need to learn in order to “keep up with the times” is becoming multi-dimensional. In the following pages I discuss three societal factors that I believe will fundamentally impact the identity and practice of landscape architecture: the expansion of the world’s population; the widening purview of Sustainability; and the individuation of local communities (as a recoil effect to the forces of globalization). These are the factors that should trigger a reevaluation of what is taught, in the hope that new thought can propel the profession’s continued creation.

#### **A QUESTION OF DENSITY**

The United Nations estimates that world population will likely double over the next seventy-five years. It is possible that over 8.5 billion souls will occupy the planet by the year 2025. In the United States the rate of increase will not be as dramatic, growing a third or so as much as the rest of the world. Some regions, however, will have to bear a greater burden of the growth. California’s Marin County, one of the nation’s most coveted places, where people flock and families blossom, the population is projected to grow by a whopping 79 percent!

This elicits a question: how likely is it that the next doubling of the world’s population will also double the current amount of developed land? Will suburbia double?

Not likely. Despite what we may read in housing journals, the trend to gobble up land for development is easing, not increasing. In Los Angeles, for example, the amount of land taken for suburban development doubled between 1950 and 1960, but grew only by ten percent during this last decade. Even in Atlanta, the fastest growing suburban region in the nation,

the rate of suburban expansion is today half as much as it was back in the seventies and eighties.

Clearly, it’s easy for something to double out of nothing. Yet the overall consumption of land for development has not been exponential, such as one would expect, say, with water lilies in a new pond. The analogy to a natural system is not altogether inappropriate. Any animal population, when confronted with a rapidly expanding habitat, grows exponentially. In the fifties and sixties, abetted by low-interest mortgage programs and federally subsidized highways, vast amount of land became accessible to home builders and buyers. Predictably, the suburbs initially grew at a very fast pace—as if to fill the lily pond.

Today, however, the suburban “habitat” is neither as expansive or luxuriant as it once was. In some cases, such as the counties in and around the Bay Area in San Francisco, it has become downright scarce. A combination of reasons account for this, but NEPA and CEQA (California’s equivalent environmental law), have to figure prominently. Faithfully expressing the public’s desire to at least have a “look-see” at the potential impacts of new development, such laws have effectively slowed down the rate of suburban expansion. In the case of San Diego’s Multiple Species Conservation Program, land has permanently been removed from the books, so to speak.

Market forces are also contributing to the slowdown. As the suburbs have become more populated, the quality of life has begun to fray. The woes are well known: traffic congestion, long commutes, absence of sidewalks, empty streets, thickets of strip development, alienation, just plain ugliness. To extend the natural system analogy further, all of these conditions point to a “stressed habitat.” In the face of such stress, many suburbanites are considering alternate, more urban lifestyles. Newspaper headlines such as these are not uncommon: “Our Towns; Suburbanites Heed the Call of the City”; and “Denver Stands Out in Mini-Trend Towards Downtown Living.”

Another phenomenon favoring development densification is the Internet and related information technologies. Conventional wisdom has it that the Information Age will do just the opposite. Being on-line, the thinking goes, means being able to live

way out over the line (an invasion of geeks will advance upon Exurbia). But this may not come to pass. In November of this year the University of Newcastle is sponsoring a planning conference to examine why “despite [the] many predictions over the past twenty years that advances in communications will lead us to some ‘post-urban age,’ cities continue to dominate the economic, cultural, and social dynamics of contemporary societies.” Part of the reason, it is argued, is the need to establish an efficient network of services, including fiber optic cable, in support of communication systems and corporate enterprises. But the ultimate reason may be social. Common sense dictates that people need human contact, a chat with the corner grocer, a latté with friends in the local café, or a walk along Main Street to mingle and window-shop. The more we spend hours on end facing a computer screen, the more we are likely to seek relief through this kind of interaction.

These and other factors—not the least of which is the high public cost of servicing sprawl—leads to the probability, if not certainty, that the nation’s future population will live and work within far fewer acres per capita than the current population. Take Florida’s Dade County, for instance. Hemmed in by the Everglades to the East, Biscayne Bay to the West, the Florida Key’s to the South, and burgeoning Broward County to the North, this once tranquil, sprawling county is fast filling its practical urban limits. The only alternative is densification.

The combination of less land available for settlement and more people wanting to settle it will have profound consequences on our profession. For one thing, the denser the urban environment, the more that other disciplines, namely architecture and urban design, can rightfully claim a role in defining the nature of human settlement. For another, future development typologies will demand different design skills.

Several years ago, for example, the University of Miami (Fl.) instituted the nation’s first-of-its-kind Master of Architecture in Suburban and Town Design degree program. New Urbanism was its foundation. The program directly aims to address the creation of denser, walkable, transit-oriented developments as an alternative to suburban sprawl. Issues of building scale, massing and street definition become crucial in such environments. These are not areas in which landscape architects have been traditionally trained. Not surprisingly, very few landscape architecture firms

are plowing the New Urbanism field. For all practical purposes we have ceded to others the spotlight under which land use and settlement issues are discussed. This was not the case even a decade ago.

But, in the end, New Urbanism is not likely to rule the day. Most Neo-Traditional communities are still suburban in character, gobbling-up raw land. They are not a model that can absorb a doubling of the world’s population. Higher densities will be necessary, such as that of Boston. More importantly, such traditional urbanity will have to take place in existing developed areas, suburbs included. In other words, the name of the game will be redevelopment. Brownfields instead of Greenfields. Not suburbs but “supra” urbs—*supurbs!* Some of this redevelopment will involve the wholesale transformation of large, obsolete urban areas. Other will likely be more “surgical” in character: a block here, a lot there, or single structures retrofitted to accommodate a new urban program. Depending on the scale and scope of work, different professional orientations will be called upon to effect the change. Many specialized skills will be required.

In a denser world, the amenity of open space will continue to be a critical quality of life necessity, and this will be an important source of work and utility to our profession. But such amenities will not necessarily stand in contrast to the urban domain as Central Park does in New York City; it will not necessarily be the “Greensward” difference of old. Rather, future urban open space will be fully integrated to the urban fabric. Through rooftop gardens, terraces, vegetable plots, playgrounds, alleys, streets and greenways, continuous systems of urban open space will emerge. This is by necessity; in redevelopment scenarios the hardest things to gain are large open spaces for non-commercial public uses. Where there is already density, it is easier and more effective to dedicate smaller areas for such uses, and to link them through traffic-calmed streets, urban trails, drainage easements, river-edges and infrastructure corridors. In such integrated systems, the line between what is a landscape and what is a building will be less defined. Everything will be landscape as much as everything will be building. All of it will be eminently artificial.

Reality or utopia? Both. From the utopian side of the line, it is worthwhile to revisit Archigram. Back in the sixties this provocative group of British

architects, led by Peter Cook, was into motorized “plug-in cities” that could traipse around the land like sci-fi invaders. Few viewed their work as anything other than utopian. In recent years, however, Cook has produced remarkable architectural studies in which structures appear to grow out of the earth or, alternatively, be half-covered with earth, sprouting vegetation as if every column and girder had been pumped with space-age fertilizer. The effect is one of indivisibility between vegetative and structural systems. Cook defines vegetation as an “architectural artifact” and landscape as “urbanism.” His thinking forces us to fundamentally question what is architecture and what is landscape. What he seeks is a both a semantic and practical metamorphosis—the fusion of one discipline to the other. Studies such as “Rotating Housing and Vertical Garden Tower” emphatically illustrate this point. While still retaining a clear visionary quality, Cook’s latest proposals are far from being outlandish.

Under the “Green” Architecture label, many architects have begun to apply such design fusion. Two notable practitioners are Malaysian architects Robert Hamzah and Ken Yeang. Their Menara Mesiniaga office tower in Kuala Lumpur, built in the early nineties, is probably the largest scale of Green Architecture yet attempted. Another is James Wines, founder of Site Inc. As a visionary who has sought to blur the distinction between building and landscape (and between art and design, for that matter), Wines has produced a remarkable collection of planted structures. These include early projects for Best Products (a retail chain) and the Tennessee Aqua Center, and a spectacular design proposal for Pershing Square in Los Angeles.

Wines taught at Penn on occasion. His studios were open to select students from both the landscape and architecture programs. Following final reviews each group went scurrying back to its lair in different parts of the Fine Arts Building. Sadly, the integration of skills that these combined disciplines could provide remains elusive. And this is not a phenomenon restricted to academia. Students who opt for advanced dual degrees in architecture and landscape architecture end up pigeonholed by their employers into one camp or the other. The fact is that few architecture or landscape firms exercise the kind of comprehensive design thinking that Wines teaches.

In whose domain should such integrated urban environments belong: architects, landscape architects, urban designers, or civil engineers? All of the above, of course. The question, rather, is who is better equipped to define such environments’ physical, social, and ecological content. No single profession can currently claim the high ground on this one. But we can be sure that whichever profession (or fusion of professions) figures out how to acquire the needed set of skills, will rule the roost. Education could play the deciding role in whether or not our profession has a chance here. With the addition to landscape curricula of coursework in Urban Development Typologies, Urban Infrastructure, and Green Architecture, we just might be able to remain relevant.

#### **S U S T A I N A B I L I T Y**

To anyone involved in planning and design today, “Sustainability” is the mantra. In the beginning, the concept was almost entirely directed at the conservation of non-renewable resources for the use and enjoyment of current as well as future generations. This represented another boon to the profession.

For landscape planners any approach that helps preserve a wetland here or woodland there qualifies as being sustainable. As for the design side of the line, almost any design approach can be turned quickly into a “sustainability” practice. All it takes is the specification, even to a modest degree, of non-toxic materials, recycled materials, locally manufactured products, a mix of native plants, organic fertilizers, water-conserving irrigation equipment, permeable hardscapes and, if one must, plantation-grown tropical hardwoods. All in all it has been rather easy for most firms to adopt such planning and design practices, and to retool their marketing kits to so promote themselves.

But, as alluded to earlier, other disciplines have jumped onto the sustainable development bandwagon. With the entry of Green Architecture and New Urbanism (which also espouses sustainable development goals) new voices are coming to bear upon the issue of non-renewable resources. Worse, these voices are better suited to engage in urban design talk than that is the voice of our own profession. Brownfields, after all, do not contain sensitive habitats or other such natural conditions as to merit the intervention of a resource-minded landscape architect. What is needed is environmental

know-how that deals with water conservation, air pollution, radiant heat, toxicity, soil remediation and biotechnology, pests, vermin, noise, allergens, and waste recycling. In other words, Urban Ecology.

A few landscape architects, most notably Anne Spirn, early on identified the need to focus the profession on urban ecology. With the publication of the “Granite Garden” in the early eighties, Spirn translated McHarg’s ecological planning and design principles to the design of cities. To Spirn, the antidote to the “infernal” city was not an escape to nearby parks and other tamed green areas. Rather, her book was a plea to design better, healthier cities out of which escape would not be necessary: cities with clean water, air, naturally curbed pests and integrated urban wilds. “Celestial” cities she called them.

It is bewildering that so few landscape architects have chosen to follow Spirn’s eco-grit vision. One who did is Martin Yoklick. As Director of the Environmental Research Laboratory of the University of Arizona in Tucson, Yoklick conducts research into how landscapes can support sustainability agendas, especially as it relates to reducing indoor energy usage in arid environments. He is also an expert in microclimate mitigation. His lectures hearken back to that brief period in the seventies when, facing a worldwide oil crisis, the design professions became tuned to passive cooling systems, for which a technical understanding of the body’s thresholds of comfort is necessary. How many of us apply such thinking when we design outdoor spaces? Yoklick worked in the design of biosphere II, the geodesic structure located outside Tucson that replicates a sealed, self-sustaining living environment. To him, cities must—and will—become metaphors of the ecological system.

We could speculate at length as to why our profession chose to ignore urban ecology as a core area of practice. What we do know is that it is not an area of focus in schools, nor in the registration exam. If we are to maintain our professional relevance, both situations must be redressed.

Yet in the end, urban ecology may not turn out to be the key sustainability issue. Rather, it may be social equity. Owing to political pressure exerted by developing countries, the Rio Summit of 1992 emphatically expanded the purview of sustainability to include issues of economic development and social

equity. The United Nations estimates that a quarter of the world—nearly 2 billion people—live in extreme poverty; these individuals subsist on less than a dollar a day. Many millions more live in merely “poor conditions”, eeking a living out of meager crops or doing marginal jobs within informal economies. And the trend points to a worsening situation. In 1960, for example, the Gross Domestic Product of the industrialized nations was only 21 times higher than those of the least industrialized nations; today it is 55 times higher.

It used to be that the lines dividing the rich from the poor were relatively clear. Geographically, the poor lived in Africa, Asia, Latin America and the Caribbean, the so-called Third World. Today poverty occurs everywhere—a “Fourth World,” as termed by sociologist Manuel Castells. The Fourth World comprises everyone who, by reasons of race, caste, class, education or other factor, cannot participate in the information-based and capital-driven global economy. Castells calls such aggregation of such people “black holes of social exclusion”. They exist in North Philadelphia and East Los Angeles, in the favelas of Brazil, in the tugurbios of Colombia. The Fourth World is almost entirely an urban world.

It is not the role of landscape architects to solve world-poverty, but we had better get used to working with it. Our office recently participated in the preparation of a comprehensive plan for Panama City in the Republic of Panama. Part of the work required the conceptualization of a comprehensive open space system, much of it through poor neighborhoods. It was quickly learned that in these neighborhoods poor sanitation and health were directly associated with polluted streams and badly drained lands, which were also elements to be included in a potential city-wide open space network. The proposed management of these spaces thus included objectives for improved health and sanitation, in addition to those normally related to recreation and circulation. On this project, a thorough understanding of family structure, work patterns and social networks within these communities became necessary to effectively intervene as landscape architects.

In our office, the impacts of development upon the poor have also been prevalent on new community and resort planning projects. In South Korea, for example, the retraining of farmers affected by new

development became a key reason for adding cultural and educational facilities to the overall resort program. Without such action, people who for generations have been drawing subsistence from the land would be forced out of their meager livelihood. In Portugal, a preliminary review of a new community development program suggests that the development should be sensibly integrated into the fabric of existing rural towns and fully account for agriculture as a sustaining source of employment. And in Chile, new recreation areas serving a pocket community defined by social exclusion had to be integrated to the recreation matrix of a new satellite community in the outskirts of Santiago. But one need not go abroad to look for examples: projects in Southeast San Diego, North Philadelphia, or central Saint Louis touch equal or worse social conditions.

Becoming sensitized to the conditions of the poor is essential in determining what kind of public space might support and improve their lives, or in integrating their villages and neighborhoods to new and adjoining development programs. To our profession, this should be an urgent matter (if not morally, at least from practical standpoint. As the population grows and redevelopment spreads across the urban realm we will come into increasing contact with poverty. Schools have the opportunity now to instill in future graduates the ethnographic skills with which to positively engage such contact. So, while we are tampering with academic curricula, let's also add coursework in Urban Ecology and "Design with the Fourth World."

Or we could choose to be a profession who caters primarily to the rich and privileged. This is, after all, our genesis. I have to think, however, that of all the credits and plaudits earned by the profession over the past one hundred years, that it has become socially relevant must be its greatest achievement. As Paul Friedberg says, "we have become a necessity instead of a luxury." Dealing with urban parks, abetting America's suburban dream, fussing over the environment—these are social works. We should not collectively revert to the womb.

#### **COMMUNITY IDENTITY**

The third major factor that will likely affect the profession's place in society is the increasing desire of local communities to define themselves distinctly. To this desire, public art and public participation have become indispensable aids.

A decade ago our firm was retained to develop a Specific Plan for the East Mesa of Balboa Park in San Diego. Immediately after being selected, the client asked us whether or not we would mind retaining an artist to assist with the design concepts. Of course not, we said and, owing to the naïve notion that artists can collaborate with each other, not one but two of them were brought on-board. Despite the ensuing clash of egos, their participation proved essential. One of them focused on the "impressionistic" qualities of the mesa and on how future improvements could capture its rustic soul; the other, by contrast, focused on the culture of "warfare and consumption" and on how this could be revealed in an extant landfill. To the various public boards and neighbors adjoining the park, their proposals were deemed, well, "interesting." Nevertheless, the art proposals certified to the local community that the overall plan for the park was uniquely their own. Public art seems to personalize the public domain in the same way that it is highly personal to the artist.

In 1995 the City of Santa Monica advanced to new dimensions the objective of integrating art into the public realm. The project in question was the design of the Palisades Park and Beach Boardwalk. Rather than selecting a consultant from a short list of pre-assembled design/artist teams, City officials selected individual designers and artists and asked them to present to each other to see what kind of chemistry might develop. Thereafter, with nary an instruction from the client, a mad scramble ensued to choose partners, a prerequisite to continue further in the selection process. After our pair was selected, we learned that our efforts to secure the artist we wanted and her efforts to choose us had been business-like compared to what other teams endured: rejection, abandonment, misunderstanding, secret dealings, and more. In our case, the chemistry worked from the get go. It was so positive, in fact, that soon after beginning the design process the traditional line that separates art from landscape architecture became hopelessly blurred. This was positive to us as a team, but not so to every one in the City. In one public meeting a concerned member of the City's Arts Council finally asked (recalling that famous fast-food commercial) "where's the art"?

To preempt this question entirely, San Diego's Metropolitan Wastewater Treatment Department, along with the City's Commission for Art and Culture,

retained an artists a few years ago as lead consultant to design the grounds for a major expansion of the city's main sewage treatment plant in Point Loma. This way every proposed improvement, including the paths, benches, overlooks and plantings proposed by the team's landscape architect, would acquire an artful aura.

To some landscape architects these accounts are disturbing. What business, after all, does an artist have in selecting the color of decomposed granite, the aggregate for concrete paving, the texture of seating walls, or the roofing material for park restrooms? To be sure, in the Santa Monica project described above, these and other design features acquired detailed definition after much discussion between the artist and the design team. Still, I am the first one to admit that in this instance the artist's contribution was essential, both on conceptual and technical grounds. She appreciated our contribution as well.

Is it artists learning about landscape architecture, or landscape architects learning about art that produces good results? Perhaps the answer is in the opportunity for chance invention or creation, aided by the client's inspired mandate to collaborate, or else. Yet it is also possible that public artists have acquired a critical public role: serving as "lightning rods" that attract the energies of a place and recast them with a glow of site-specific relevance. I'm not talking about the *Genus Loci*, but rather about poetics—the ability to shape light to illuminate the dreams and ideals to which a community aspires. The *Genus Loci* approach is about contextual regurgitation. Art is about revelation. Insofar as public space can be a field for revealed community identity, public art, more than landscape architecture, is proving to make the critical difference.

The means to define this difference and make it manifest in the public realm is the process of community involvement and participation. Any practicing designer has to face a client. There is a quantum leap, however, between client-as-patron and a client-community. A patron is the sole judge and consumer of one's work. Communities, on the other hand, judge by consensus and the consumer is multiple, ephemeral and ever shifting.

In every instance of collaboration mentioned above, extensive public participation programs were

undertaken before a final design was agreed to. Today, experts in public participation have emerged to shepherd such processes. They draft announcements, do mass mailings, conduct use-preference surveys, publish newsletters, design web sites, conduct public meetings, and organize site tours. All in the interest of ensuring that by the time a design gets in front of elected officials, a broad consensus about the direction of the design or plan will have been reached. To many designers, having to put up with all this is, at best, a necessary aggravation. At worst it is a blatant affront to his or her free spirit and a serious damper to the creative urge. Either way, community participation is here to stay because the need for community definition and identity is here to stay.

Some firms, like Berkeley's Moore Iacofano Goltsman have positively embraced this trend. MIG is perhaps the best known public participation firm in the nation. They also do planning and design. Some practitioners are suspicious of their design skills, believing that good design cannot possibly come out of any process of which the goal is public consensus. Yet Susan Goltsman has mastered the design of playgrounds based on the active and genuine engagement of the local community.

As we ponder how our schools might, too, embrace this trend, let's remember this: neither public art nor public participation emerged out of academia. Society does not as a rule wait for a certified degree when it is in need of a skill or service. But we could begin by adding to my dream curriculum courses in Environmental Art, Public Art, and Processes of Community Participation.

#### COMPLEXITY

The discussion throughout this essay is not intended to suggest that landscape architects should cease being planners and designers and instead become artists, public facilitators, urban ecologists, sociologists, or sustainability engineers. Rather, the plea is for practitioners and educators to mobilize in concert to ensure that the profession retains a relevant voice in defining the quality and content of human settlements.

As argued above, over the next one hundred years the world is likely to move towards denser urban environments, towards more community individuation, and towards mandatory sustainable development practices, including social equality. This movement is not revolutionary in character, but evolutionary. Traditional sources of work will continue: gardens,

new communities, parks and open spaces, resorts, habitat conservancies, streetscapes, and so on. New modes of practice will parallel old ones. Inevitably, the menu of professional skills and our approaches to practice required to address society's needs will grow broader and more complex.

So far, in the face of such complexity the profession has become an opera of lamentations:

"Who since McHarg has put forth a theory for us to test and use as a profession?"

"Licensing has let us drift from being broad problem solvers to narrow technicians."

"The most significant work being done today is probably the restoration or rejuvenation of towns and villages and, I'm sorry to say, I don't think our profession is the one leading the charge."

"The profession is seriously lacking in the "nuts and bolt" aspects of natural and storm drainage. By default, we are relinquishing this important phase of landscape architecture to the civil engineers."

"Some think of us as overall conceptualizers and designers; others think of us as plant consultants. This leads to confusion in relation to our own perceptions and inevitability of fees."

These are the voices of some of the Fellows of the American Society of Landscape Architects. They reflect an understandable concern about the profession's identity. A complex world, however, should be viewed as our greatest asset and perhaps our best source of future relevance. Someone, after all, has to make sense of the societal forces at work, of the technology, of the flow of information, of the development programs, of the political and economic processes-and, through planning and design responses, draw out the poetic latency of it all. I, for one, would rise to the challenge. But are we collectively prepared to accept it?

In this complex world, landscape will be defined more and more as a system of relationships, of what connects this to that and of the impact one link has on the whole. As such it will be a true ecology, natural and invented, physical and imagined. Owing to world demographics, such ecology will be an urban ecology (pure artifice). But such artificiality need not be seen as being contradictory to our "green" soul and spirit. Ecology, at its core,

is an artificial construct, and no other profession should be better able to deal with it.

#### **ECOLOGY AS ART**

When in the late nineteen eighties architect Peter Eisenman set out to design a new urban community in Frankfort called Rebstock Park, he was intent on breaking down traditional figure-ground frames of contextual reference. To him, context had to be extracted from the "manifold realities of contemporary life," not merely from the site's physical surroundings. In plain English, this means viewing context as anything and everything that the mind, heart and spirit can associate with a particular site. To put it another way, "site" becomes a set of associative relationships, phenomenal, historical, metaphorical or any combination thereof.

In the case of Rebstock Park, Eisenman's key contextual subject became the German soul (more specifically Nietzsche's view of the German spirit as being full of "foldings and unfoldings," a kind of disorder or acquaintance with chaos that engenders a "fascination with the mysterious." Following this idea, and with little concern for ambiguity, Eisenman "folded" the project site with a set of virtual, computer-generated contours and molded the landscape and the buildings to the new topography. In other words, he translated a very personal interpretation of the site's context into a concept of tectonics that he could manipulate as a designer. The plan graphics and perspectives portray the buildings and the landscape tilted this way and that as if frozen in the midst of an earthquake. Yet there is a remarkable degree of connectedness: both the buildings and the landscape (which was designed in collaboration with Laurie Olin), dance to the same tune. One cannot be separated from the other. The result is both unique and artful.

In Rebstock Park, the folding of the land is not merely a design gimmick. The Fold, as an idea, is attributed to the French philosopher Gilles Deleuze (whose writings Eisenman is familiar with). To Deleuze "folds" relate to the connectivity between things. Material and conceptual differences are a matter of aspect, of where something lies in the folds of space and time, rather than a matter of separateness. In a connected universe (and in connected universes) all things are subject to encounter. Borrowing from G.W. Leibniz, Deleuze calls such potential for encounter "compossibility," meaning the possibility of two or more things to meet and

compose each other into a new entity. To Deleuze, Leibniz is a huge hero—the “Father of Ecology.” In Rebstock Park, in effect, Eisenman performed a true ecological operation. He “composed” the project from the encounter between the site and the German soul- as best he could interpret. The art and science of interpretation, hermeneutics, assumes a critical function in an ecological world.

I can think of no other area of knowledge more relevant to the profession of landscape architecture than the philosophies that surround the idea of ecology. The writings of Deleuze and Leibniz, and of other so called “Constructive Postmodern” philosophers that span the centuries between them, would ideally be a central part of landscape architecture curricula. And design studios should ideally introduce hermeneutics as an integral part of design thinking. Few things can summon creative thinking better than having to connect this to that, or having to describe how one thing might relate to another. Interpretation is, in the end, about creation.

I suggest this with due with urgency. As the profession moves into the 21st century, it will face more and more a connected world in which professional boundaries are blurred, static centers are obsolete, and collaboration rules the day. Relevance, in this world, would be due to those who can best operate within the contextual folds, interpret sites, and bring about poetic resonance.

# ARTICLE FOUR

---

## THE UNFULFILLED LEADERSHIP PROMISE

Joseph E. Brown, FASLA, President, EDAW, Inc.

### I. THE CURRENT CHALLENGE

1. The century since 1899 has seen remarkable growth in the mission, prestige, power, and position of the landscape professions, as well as incredible leadership among a few brave souls. But this has crystallized in moments and cycles, as opposed to a steady climb. The highs have been followed by lows: often long, deep troughs.

- The 1900s-1920s, and mid-1950s-1960s, showed broad based leadership based on inspiring projects, but going beyond projects to promote education, studies, initiatives, engagement with collateral professions, a sense of role and history.
- In contrast, the late 1920s and 1930s, late 1970s-1980s, and early 1990s saw diversity turn into fratricide among competing centers of our profession, and even schisms: the Planning Association, IFLA, individual-based cults. These lows fostered survivalism. Economic downturns inspired pessimism and panic, rather than a marshaling of our profession's diversity as a way to adapt and prosper.

2. As early as late 1960s, the Fein Report identified a leadership crisis:

- Practitioners wanted to expand the boundaries of their profession but balked at doing so through projects—a kind of schizophrenia.
- '60s (and '70s) academics and firebrands bombed the profession's edges, demonized technology, and turned debated into conflict.
- Alert collaborators in government, science, technology, and architecture/ engineering found few allies among mostly timid, conservative landscape architects.
- A half dozen practitioners in Boston, California, and Florida, plus a few academics and writers, lit all the fires.
- According to Gallup's 1972 summary: "The profession

suffers from a lack of faith in its own abilities to provide leadership, while it has a considerable degree of confidence in its technical skills."

3. Today's leadership crisis, like earlier lows, reflects economic blows:

- The 1930s found 90% of landscape architects unemployed prior to New Deal programs.
- In 1975, 50% of landscape architects were unemployed.
- The economic struggles of the late 80s-early 90s wiped out entire concentrations of landscape architects, particularly in Southern California and the Southwest. Federal and State revenue drops and cuts undermined the profession.
- Since 1990 the number of landscape architecture graduates has remained constant despite revived government budgets and record economic growth.
- Today's explosion of private wealth has not been paralleled by a growth in public resources or the goals of public policy. Where are the committed young leaders on these issues?
- Peter Walker has said: "I believe the profession is in the late stages of a severe crises. The split between those who build and those who regulate and theorize have turned what I sincerely feel is a fine diversity into a separation by "article of faith," a litmus test of goodness. This happened to the profession in the twenties and the resultant split weakened it until after W.W. II. Given our numbers, collective causes, and legitimate purposes we are incorrectly perceived as a weak, secondary, and, in many cases, a profession that could be discarded. If this issue is not resolved, many fine minds will redefine themselves and cease to relate professionally to the title. The tragedy is that this is completely unnecessary."

4. Our leadership report card since the 1970s is fractured, and lacks clear or sufficient victories. It must be emphasized that today's leadership issue is distinct from our professions' internal debates, such as:

- design versus plan
- build versus regulate
- technology versus artful craft
- urban planning versus resource conservation
- state versus private education

Leadership looks beyond debates, projects, and disciplines. It provides both initiative and continuity for a whole profession. It defines how we meet the world.

Leadership was the legacy and promise of Olmsteads, Burnham, Nolan, Manning, Kessler, Eliot, Church, Haag, Sasaki, McHarg, Farrand, Earth Day 1970. By their measure, we have fallen short.

## II. LEADERSHIP AND RISK

1. The risk of being a leader often has less to do with danger or failure than with embarrassment—a fear of not being cool.

2. A century ago the man on horseback still inspired. Today, pigeon-covered, he seems tacky, even disturbing. Even the relationship this paper implies—you reader/follower, me writer/leader—is probably already slightly embarrassing for both of us.

An informed, globalized society or profession looks less to single, powerful leaders. We're no longer a pyramid. The corollary, however, is fewer jobs for followers. We must all accept some of the burden and risk of leadership.

So think of the ASLA audience—the profession—as a collective leadership.

- How do we all, together, visualize our leadership challenge?
- How do we all internalize a leadership agenda?
- How do we all adopt a change/renewal agenda?

3. Especially in times of crisis or downturn, it is our profession's tendency to respond to leadership issues:

- with gripes about the profession
- with glib irony or erudition

- with nostalgia for a nicer, smaller world
- with the humility of a subordinate

4. The alternative for all of us is a leadership circle: here's something we can do together. The following, not looking far beyond ASLA, are examples of leadership opportunities that exist here and now:

- Landscape Architecture Foundation
- San Francisco and Berkeley
- Harvard
- ASLA
- CEO Roundtable

Pitching in, being open and energetic about what's needed right now, is a lot of what makes broad-based leadership. But we need more than individual good works to move forward as a profession—we need to take a collective risk.

5. The longer term question is this: does the majority of the profession have the resources, the will, even the stomach for the radical realities of the near future?

This is a time for significant leadership renewal, comparable to the re-creation of the profession 100 years ago. Fragments abound. Now we need professional fusion, and fast.

## III. LEADERSHIP, LANDSCAPE AND THE SIGMOID CURVE

1. The sigmoid is the predictable trend curve for the rise and fall of both organisms and organizations, individuals and societies.

On this model, decline is inevitable, but reversible. A constant effort of discovery, change, renewal and leadership action intercepts decline and begins a new upward trajectory. Without such action, however, decline and disappearance can be expected.

2. An application of sigmoid curve to profession's history (as traced in Landscape Architecture Magazine's recent series of timelines) yields a graphic representation of where we are now. See Figure I.

3. As it shows, we're at a moment of radical renewal and redirection, characterized by:

- a society entering a truly new economy where technology goes beyond being a tool, defines a lifestyle of knowledge.

The upside for landscape architecture—a lifestyle profession—is enormous.

- a vastly wealthier society. Despite inevitable recession and poverty, the potential for haves to help themselves and the have-nots is unprecedented. Landscape architecture wins again, because wealth is needed to achieve the profession's functional, cultural, and social goals.
- a seamless relationship among client, consultants and community. Wealthy, plugged-in, educated consumers will drive and collaborate with professionals—rather than rely on remote regulators and ateliers. One example: the emerging consumer and political reaction against sprawl.
- within this world of consumer sophisticates, brilliant, informed client base seeking a consultant “firms without walls” that gives them direct access to people and resources, irrespective of job title, professional discipline, or geographical location. The people (ours and theirs) now have titles like:
  - Chief community (Web and real) strategist
  - Ethical hacker
  - E-mail channel specialist
  - Client experience manager
  - Meta mediary CEO
  - Chief knowledge officer
  - Chief Internet charrette officer
- as part of a seamless, global economy, a global marketplace for consultants and employees. Sped by the lack of new U.S. graduates, landscape architecture is more and more an international community: SWA filled last year's intern program entirely with young, non-U.S. professionals—another plus for the profession.

This is where we are right now, in my view, on the curve and in fact.

4. This discussion has mentioned, and will return to, the themes of a seamless client/consumer relationship; firm without walls; the fusion profession.

All these themes suggest—if you accept my view—that a new kind of leadership role is being created for us, if we choose to accept it. Landscape architects must decide among several options:

- assist in the urban and environmental calamity as bit players.
- offer quality alternatives, and thereby take part in

some quality, some calamity as others chose.

- lead others toward a new richness of land and community design and natural resource management.

The new leadership involves less hierarchy, and perhaps less exposure; however, risk and responsibility still come with the territory. What does leadership look like in this new world?

#### IV. THE WAY WE LEAD NOW

1. What kind of leadership does landscape architecture need to jump off the declining sigmoid curve, and start a new upswing?

As a broad-based leadership, we—all of us—will reject, or subordinate, the past professional roles of:

- bestower of sage wisdom, of the past or present.
- withholder and revealer of singular answers and secrets.
- conductor through the design process, the planning process or any product-oriented process.
- dispenser of goodies from private wealth or the public pork barrel.
- mere referee, arbiter, interpreter or dignified mendicant.

Instead, the leaders we need now ought to be provocateurs of new realities. They must prod the foot dragger, encourage the timid.

Given landscape architecture's chronic lack of confidence, what's needed is the ancient art of leading the charge-in a new, collective style. Our enemies: inertia, resistance to learning, lack of readiness and openness.

John O'Neil's analysis of modern leadership stresses, not static expertise, but willingness to jump in, learn, invent, and change.

- O'Neil writes in his book, *Leadership Akido*, of leadership mastery as a mastery of readiness, balance, harmony and learning—a holistic mindset, and one that often characterizes landscape professionals in other contexts.
- What he calls a “Readiness Setting” is a balanced triangle of knowledge, capital, and leadership.
  - Knowledge—including ideas—gets ready with information technology, storing and deploying our wealth of experience and insights.
  - Capital here means just-in-time capital—economic and

human resources ready for seeking out and acting on new opportunities, plus measuring risk and reward.

- Leadership gets ready by avoiding rigid layers and predatory infighting, embracing collaboration, employing amoeba-like change to fit each new problem or opportunity, and using the language of the future.
- O'Neil identifies typical failures of leadership not as lapses of rationality or guts, but gaps in emotional and creative connectedness—often caused by ego or burnout. Again, we as creative professionals should do better than most businesses on these issues.
- Finally, O'Neil looks at dilemmas or oppositions that face modern leaders:
  - the need for action versus need for reflection, intuition
  - linear planning versus scenario readiness
  - needed controls versus creative chaos
  - clear communications versus diverse global cultures
  - professional goals versus personal, community life

The stresses these opposites set up can become strengths if seen holistically, says O'Neil. His “mandala of creativity” embraces and balances them all as spokes of a wheel.

2. O'Neil stresses that ad hoc scenarios can be as important for leaders as structured plans. Still, leadership is inevitably defined by what it leads toward.

Leadership should drive and be driven by landscape architecture's changing role in a wealthy, consumer empowered, open borders economy.

I see an intense integration of leadership renewal with an intensely integrated profession of landscape architecture. For me at least, vision of a fusion profession is inseparable from a vision of the kind of leadership the profession needs.

#### V. A NEW FUSION PATH

1. Imagine a new kind of profession or professions, known as landscape architecture and emerging as:

- the land and community profession, reintegrating in both practice and theory all issues about remaking land and community.
- a first tier profession like architecture and engineering; literally designing and building community and nature; fusing history's icons with functioning biology and

the world of objects and spatial experience.

- the initiator profession for environmental/design change.
- a locus of high fees, rich talent base, research grants, academic alliances, policy agreements with clients and governments, journalistic credibility, extensive publication.
- a technology rich knowledge exchange for land, community ideas; information technology makes this the most connected profession in modern society.
- a remade profession fully grown from its honorable but struggling, cottage industry origins.

2. In fact, society is finally catching up to landscape architecture—always an attractor of holistic, cross-category thinkers, from Thomas Jefferson to J.B. Jackson.

- Olmsted Sr.—pioneer investigative reporter, social observer and critic, reformer, advocate, technician, integrator, designer—presaged today's information age leader.
- But it took a century for extractive, exploitative view of land and urbanism—which Olmsted could only mitigate—to yield to a holistic, information based view that balances conservation and development for maximum sustained value.
- Today's professions arose in an era of industrial specialization and monopoly, rationalizing short-term resource exploitation. The renewed profession should reflect a new model: integration, democratization of intellectual capital, prolonging and maximizing resource value, rather than this year's physical yield.

3. Landscape architecture needs to become a profession, not just of diversity or multi-discipline practice or collaboration, but a profession of fusion.

- Clients and communities and countries should be able to come to us not only for problem solving, but for opportunity finding and comprehensive understanding.
- They should not be passed from one specialist or branch office to another, but should be merged with our organizations and our profession in a seamless way that ignores disciplines and geographical boundaries.
- We know a lot individually; now we have the means to know collectively.
- We can integrate architecture, economic planning, environmental management, land design.
- We can create new functioning biologies as objects of design.

- We can work with a developing country as neither importers of our culture nor dilettantes of theirs, but as integrators of offices, information, ideas, people, in a way that links and advances both cultures and enlarges our profession.

Sketches from our firm show how we think about fusion in our practice. See Figures 2, 3, 4, 5, 6.

4. Thomas Jefferson's famous letter to Maria Cosgrove is written as a debate between head and heart.

In reality, however, for Jefferson intellect and senses were highly integrated, even if contradictory. He was, after all, the creator both of the first English romantic garden in North America, and the Cartesian land grid that organizes most of the United States.

Jefferson was the leader of a one person fusion profession, in a country that barely needed more than one landscape architect.

If we can't match his genius, we can follow his leadership model of:

- comprehensive scholarship and research
- refusal to get bogged down in debates like design versus economics
- willingness to accept, and optimize, contradictions for the sake of a larger vision and future good.

## **VI. LEADERSHIP, THE NET AND THE PROFESSIONS**

1. Jefferson's was a revolution of wealthy white men. The Internet starts there, too, but is fast moving from "consent of the governed" to a medium of, by and for the people. Its fusion of technology, community and land issues is bigger than even the most comprehensive profession.

Leadership in the Net age means serving not only those who pay us, but large and changing linked communities who become parallel clients and collaborators.

Web strategies represent opportunities based on reinvention as opposed to replication of existing design processes. New web world rewards facilitators and problem solvers as opposed to intermediaries and this is very liberating. Can we be leaders in articulation of both problems and solutions? We have been working with a toolbox of largely static tools.

A new toolbox has tools that facilitate real time collaboration both within the profession and between profession and other drivers of community design such as developers,

other design professionals, leaders, cities and countries. Are we going to take the lead in defining the shape of this new collaborative world or is it going to lead us. Can we predict not only public initiatives but also private initiatives?

On a global scale, Web sites like Neighborhood America link diverse cultures and geographies.

2. Land and community professions are already embracing the Internet as the fusion and integration knowledge market.

- Information Technology and the Net will take land and community proposals, plans and workshops out of the arcane world of zoning hearings and city hall lines and into every office, cybercafe, classroom and kitchen.
- Already USGS, ESRI, and other brilliant integrators of data give every community instant, comprehensive information. The potential: a broad base of informed citizens raises the common level of acceptable land and community design.
- Today's dismal standard of water and air quality, urban management, suburban community and transportation design will yield, not to theoretical debate but to consumer rebellion, spurred by the concrete future seen on the home office monitor.

3. Here and worldwide the arcana of specialists, agencies, approval processes, consultant relationships will slowly become obsolete.

The Internet will let communities and organizations themselves initiate resource planning and land design.

Will a comprehensive, revitalized, community-integrated landscape profession be their resource for ideas, knowledge, skills and leadership?

The message to the profession is this: please choose to include yourself and ascend the curve. Don't decline and disappear.

FIGURE 1

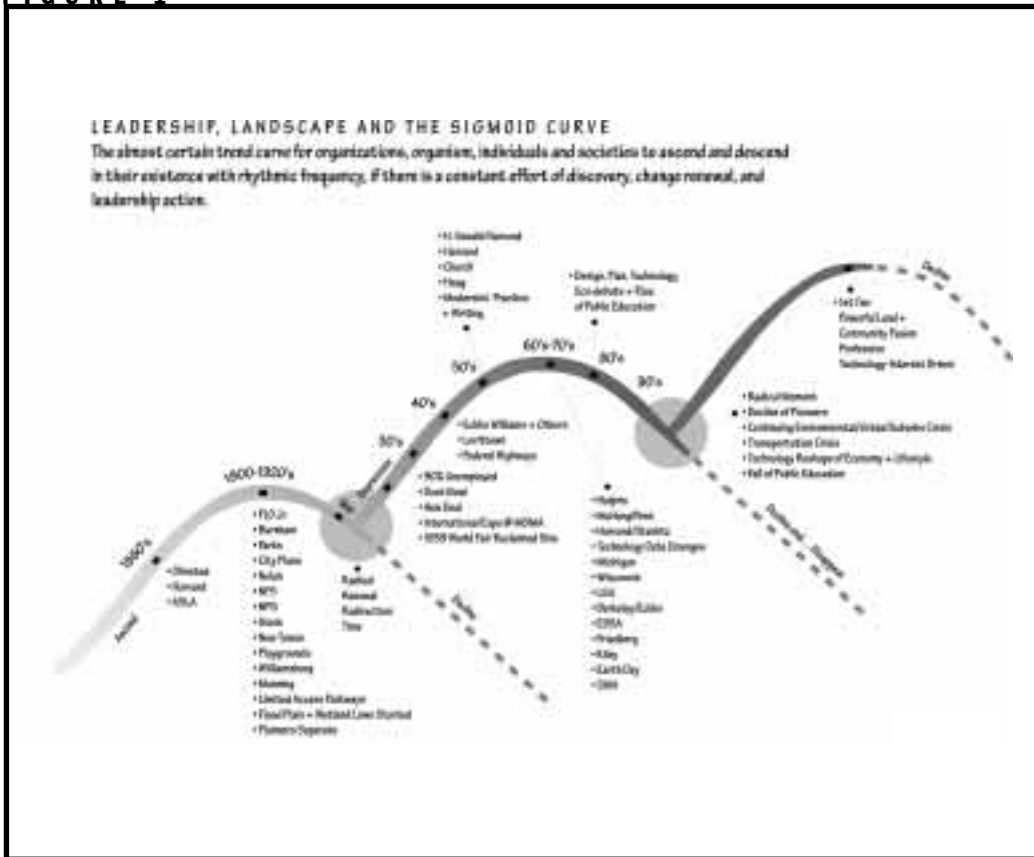


FIGURE 2

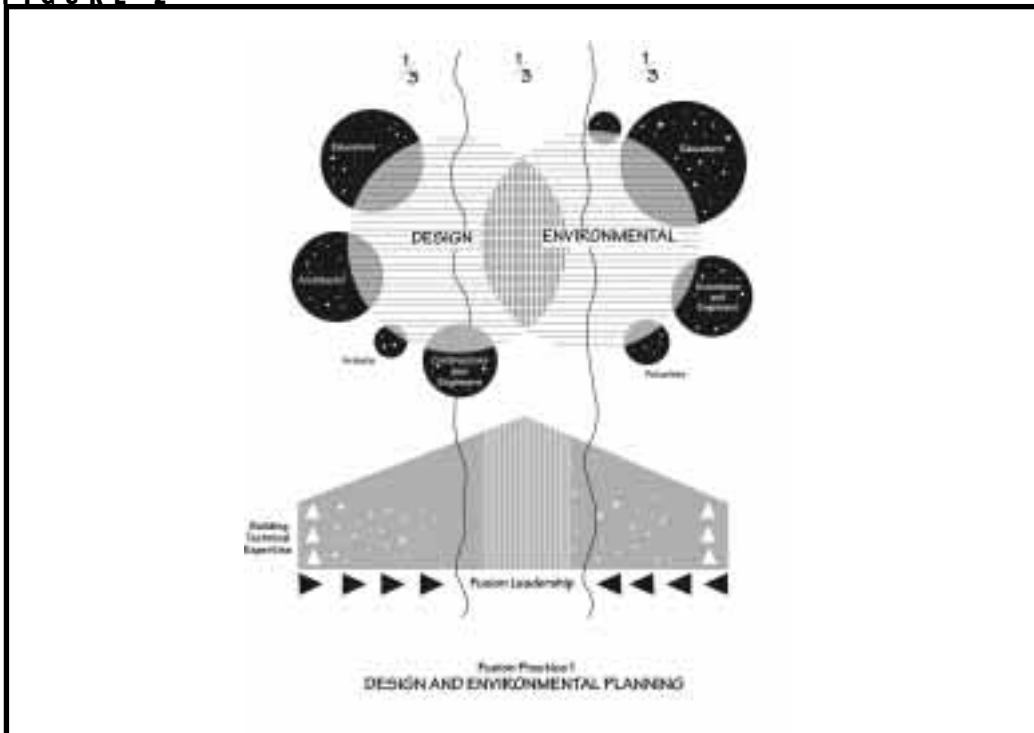


FIGURE 3

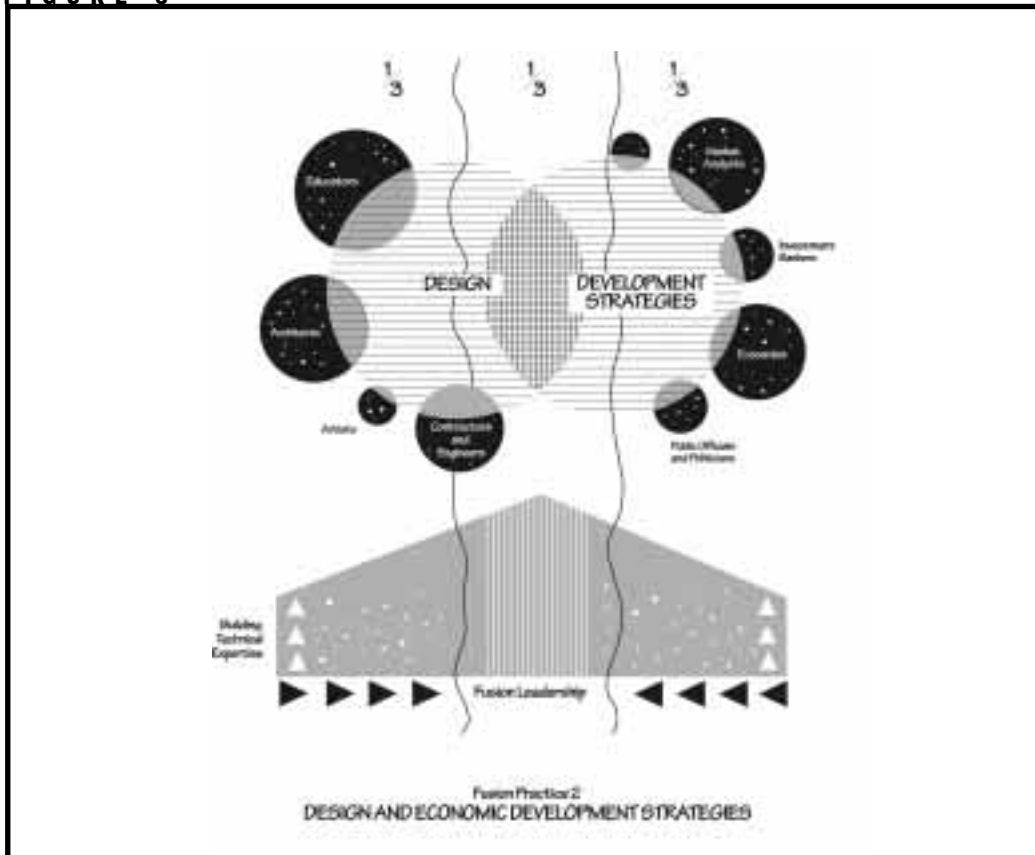


FIGURE 4

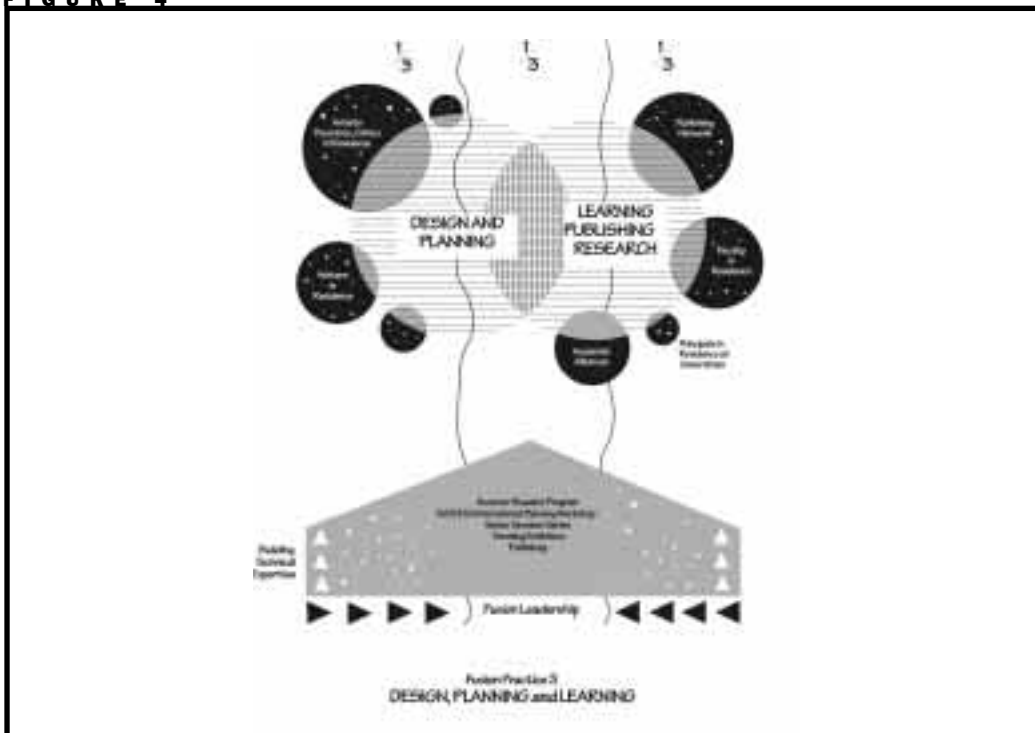


FIGURE 5

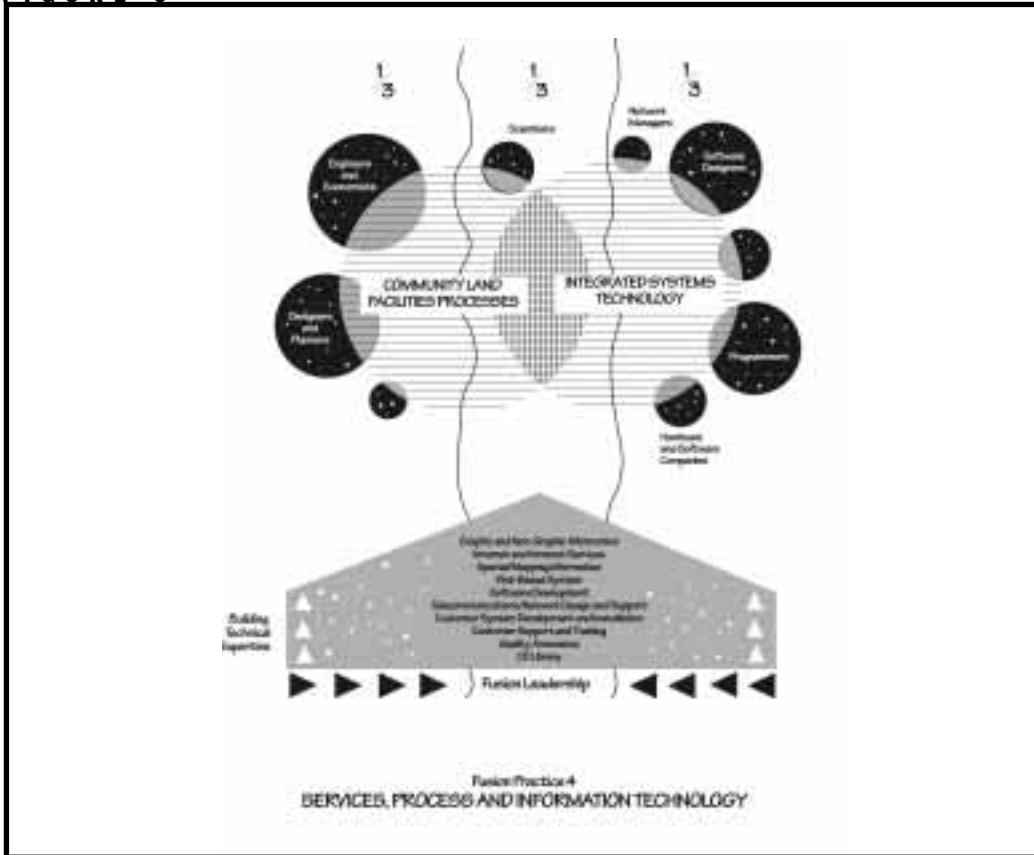
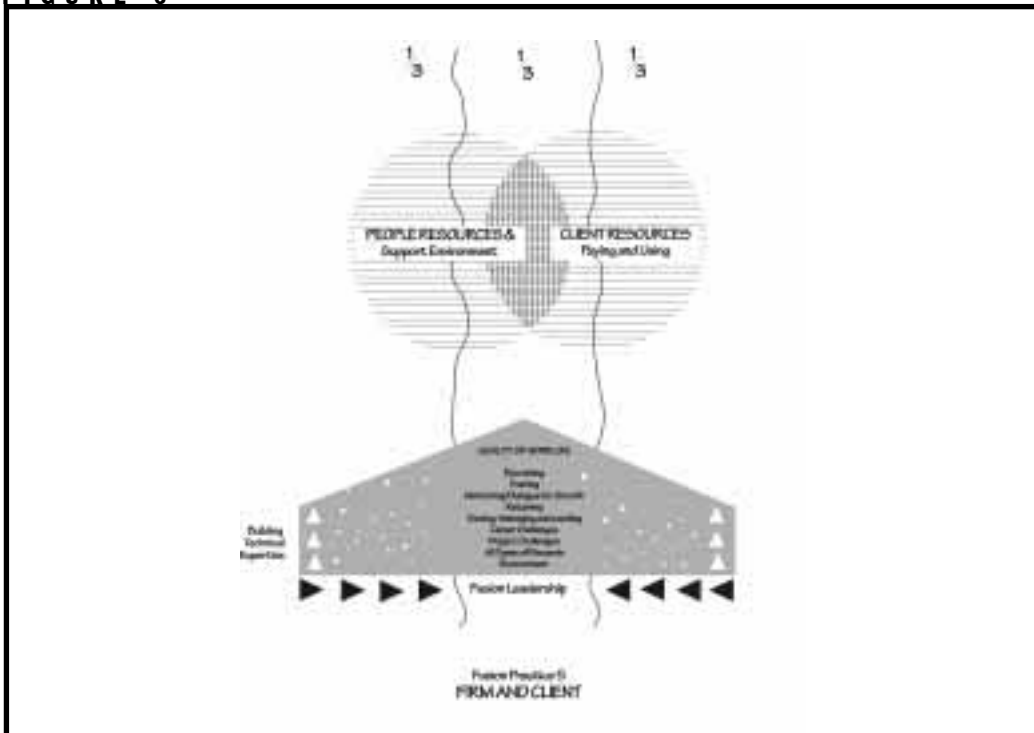


FIGURE 6



# B I O G R A P H I E S

---

## ASLA - LAF SUMMIT SPEAKER BIOGRAPHIES

### **JOE E. BROWN, FASLA**

As President/CEO and a seasoned planner/landscape architect, Joe Brown, FASLA has been an aggressive voice in the realization of his professions' goals for broader collaboration among disciplines, greater professional visibility and outreach, and the strategic resolution of diverse land, environment and community-based challenges. As a Principal in the firm, he has directed numerous EDAW design and planning projects throughout the world. As a Fellow of the ASLA, he is also a founder of the CEO Roundtable, a forum within the profession, brought together to offer national and international depth to the leadership of the organization.

### **IGNACIO F. BUNSTER-OSSA, ASLA**

Ignacio F. Bunster-Ossa ASLA is a landscape architect and urban designer with over 22 years of experience in planning and design of new communities, redevelopment areas, university campuses, open space systems, waterfronts, urban parks and streetscapes. As a partner for Wallace Roberts and Todd, a national planning and design firm based in Philadelphia, Pennsylvania, Mr. Bunster-Ossa has presided over much of the firm's significant and recognized work, spanning the East and West Coasts, Florida, Hawaii, the Midwest, Asia and Latin America. A Harvard Loeb Fellow, Mr. Bunster-Ossa periodically lectures, teaches, writes and serves in design award juries.

### **CAROL FRANKLIN, FASLA**

Carol Franklin, FASLA is a founding principal of Andropogon Associates, Ltd. in Philadelphia, PA, which specializes in bringing an ecological perspective to all the traditional areas of planning and landscape architecture as well as a number of emerging specialties, such as landscape management, habitat restoration and alternative stormwater management. She is also an Adjunct Professor in the department of Landscape Architecture and Regional Planning at the University of Pennsylvania, where she has been teaching since 1972. She has conducted training workshops for professionals, lectured at colleges and universities throughout the country and is on several non-profit boards.

### **JOANNE M. WESTPHAL, ASLA, AOA**

Joanne M. Westphal, ASLA, AOA is a landscape architect and licensed practicing physician in Michigan. A member of the Michigan State University Landscape Architecture faculty, her specialty areas involve therapeutic site design, design for special populations and research methodology. Dr. Westphal was a landscape architect before becoming a physician. She received her Ph.D. in soil science and environmental toxicology, and a MLA from the University of Wisconsin in 1977 and 1983 respectively. Her medical degree is from Michigan State University (1995). The challenges of designing in hospital environments and extended care facilities without adequate training in the medical arts led to her return to medical school in the early 1990's. Today she teaches MSU Spartans about patient needs and concerns that could affect decisions relating to interior and outdoor spaces in medical settings. Her students have won back-to-back national ASLA awards in the undergraduate design category for their therapeutic site designs 1997 and 1998. She is presently working on a book entitled Therapeutic Site Design.