

# Sustainable Design and the U.S. National Park Service

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The 1916 Organic Act of the U.S. National Park Service establishes this as our purpose: “to conserve the scenery and the natural and historic objects and the wild life [within the parks] and to provide for the enjoyment of the same ... unimpaired for the enjoyment of future generations.” In 1978, the Organic Act was amended to further define our responsibilities—and to send us the clear message that Congress reserved for itself the authority to authorize activities that in any way lessened the essential values for which the USNPS or any of our particular park areas, regardless of designation, were created. This amending legislation states: “The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high value and integrity of the National Park System and *shall not be exercised in derogation of the values and purposes for which these various areas have been established*, except as may have been or shall be directly and specifically provided by Congress” (emphasis added).

As I read the Act and think about what Congress (which *makes* the laws) is saying to us in the Executive Branch (which *carries out* the laws), it is obvious that we in the USNPS have been handed an ethical, moral, and legal imperative to perform our management responsibilities in ways which preserve the natural and cultural resources entrusted to us in the strictest and most enlightened way possible.

Congress has “delegated” to us very few “blanket authorizations” to affect the natural and cultural resources of the parks. By far, the activ-

ity in which we have the most discretion is park development. Congress has left it to us to determine what is appropriate, how much is appropriate, and where it is appropriately placed. Congress has done so in order that we might provide necessary facilities to allow for visitor enjoyment and to manage the park and its visitors while they are there.

Based on the explicit “no derogation” language of the 1978 amendment to the Organic Act, as well as “unimpaired” from the Act itself, I have to conclude that for over 62

years, under greatly different social and environmental conditions, Congress is surprisingly clear in its desire for us to hold the parks as inviolate as possible.

How this conclusion applies to design, construction and maintenance is where the concept—and realities—of sustainable design come into play.

For many years, and especially before Mission 66, the USNPS was respected and revered worldwide for our sensitivity in design. This is not to be unexpected, because the mores and definitions of management philosophy were heavily affected by the landscape architecture profession. Frederick Law Olmsted first defined park development standards in Yosemite Valley, before it became a national park. He, and the American Society of Landscape Architects, were influential in the creation of the USNPS, and in its initial philosophies and policies. Landscape architectural philosophy became USNPS philosophy from the very beginning.

The concepts of rustic architecture, of a visual oneness between park development and the park itself, were of utmost precedence in the early management of the USNPS. We learned, as did everyone else, that we epitomized the ability to design and build as one with the land.

But something has happened in the world since then. In spite of the leadership of George Wright, in spite of the Leopold Report, in spite of the growth and maturation of ecological theory and practice, the large mass of the design world has stuck more to *art* than it has to *science*. This situation is not at all surprising. After all, it is

much easier to *see* the visual effects of something than it is to *know* even the local ecological effects, let alone effects that occur some distance away or over long periods of time.

Today we, and the rest of the design world, are on the leading curl of a new wave, the wave of sustainable design. Sustainable design, as Carol Franklin of Andropogon Associates says, “is not a reworking of conventional approaches and technologies, but a fundamental change in thinking and in ways of operating—you can’t put spots on an elephant and call it a cheetah.”

Sustainable design is truly an addition of science to art and engineering. It is an unfolding of ecological and holistic thinking into what has, up to this time been primarily an aesthetic undertaking combined with engineering expertise to physically allow a given design to be constructed. Environmental considerations, with only occasional exceptions, have to date largely been limited to geotechnical considerations and to accommodating the movement of water, and even then based more on engineering requirements than ecological principles.

Sustainable design is based on deep philosophical underpinnings that surround the morality and ethics of respect. First, respect for the environment, in an ecological as well as an aesthetic sense. Second, respect for all peoples from all times, including their own cultures as practiced and valued by them. And finally, respect for the advancement of knowledge and its rigorous use in arriving at decisions. Sustainable design is not a repudiation of historic parameters of design.

Rather, it is the shedding of past limitations to unfold greater potential for usefulness. To be good at sustainable design, a designer must be good at traditional design. However, being good at traditional design does not necessarily mean one will be good at sustainable design.

To be able to “buy into” sustainable practices of any kind, including design, a practitioner must give up any conscious or unconscious pretense of arrogance, and replace it with a pride based on humility and respect. “Arrogance” as I use it, means believing that human beings are *more* important than anything else on earth. Rather, we are only *equally* important. “Humility” means that each of us believes we are equally important to the rest of what makes up the world, be it forest, ocean, air, a migratory song bird, humans of another color, men, women, rocks, and so on—and that they are equally as important as ourselves. “Pride” means proud to be equal, rather than proud to be better.

In these respects, sustainability is a social, as well as an ecological or cultural precept. The final concept behind sustainable practices is that we must continue to learn, and then apply what we have learned as quickly as possible.

There is a direct relationship here to the Organic Act of the USNPS. Congress expects no impairment, no derogation. They have iterated that statement twice in organic legislation, 62 years apart, and many more times in park specific legislation. To me, that means they are serious about it. And since we know more now than we did in either 1916 or 1978, it seems to me

that “no derogation” is a constantly evolving standard—as we know more, we are obliged to change our ways to incorporate what we know.

Sustainable design is about adding what we know today to what we knew yesterday, about evolving our practices. Therefore, it is not only a philosophy, it is also a standard—but a standard that constantly evolves based on new science that creates the need for new practices. In its most universally accepted common definition, the standard is expressed; the philosophy implied: “Sustainable design is designing to meet the needs of today without compromising the ability of future generations to meet their own needs.”

As discussed in the USNPS’s newly published “Guiding Principles of Sustainable Design” (Denver Service Center, 1993) there are nine basic areas of consideration that must be addressed in and are integral to park development activities.

These are:

1. *Interpretation*: use of the park and the development itself to impart sustainability principles to users.
2. *Natural Resources*: the relationship of the design concepts and the resulting construction to the local, regional and global environment. Nearby and far away effects must be considered through the life of the project and its operation.
3. *Cultural Resources*: the past remains of human activity and existing cultural practices must at the least not be adversely affected, but, rather, enhanced and given further value and protection.
4. *Site Design* must recognize the larger site context, treat landscapes

as interdependent and interconnected, reduce habitat fragmentation, integrate native landscapes, promote biodiversity, reuse disturbed areas, and make a habit of restoration.

5. *Building Design* must (a) be subordinate to the ecosystem and cultural context; (b) reinforce and exemplify environmental responsiveness; (c) enhance appreciation of environment; (d) create a "rite of passage" into a place that is special; (e) use simplest appropriate technology; (f) use renewable indigenous building materials when possible; (g) use cradle-to-grave analysis in decision-making for materials and construction techniques, (h) optimize use and flexibility; (i) identify opportunity for reuse and recycling; and (j) provide full access to people with physical or sensory impairment.
6. *Energy Management* must reduce off-site energy production demands and reduce overall energy consumption.
7. *Water Management* must reduce need and reuse and recycle water in ways that are respectful of availability.
8. *Waste Prevention* must be achieved so as to reduce or eliminate unused end products.
9. *Facility Operations and Maintenance Practices* must reflect a philosophy that, once built, a sustainable facility must be operated with equally sustainable practices.

There are three highly significant efforts related to park management and design going on in the USNPS today which demand to be integrated

with each other to expand the arena of sustainable practices.

The first is the Sustainable Design Initiative which I have described here. The second is research into improving design based on user experience; it is called "user-centered design." It aims to improve design through analysis of how visitors and other users actually use a facility.

The third is a USNPS approach to the "carrying capacity" issue, aiming at developing a useful process by which a park can determine appropriate operating goals and standards to ensure high-quality visitor experiences and a fully protected resource base. Appropriately titled Visitor Experience Resource Protection," this approach is being developed to be analogous to the U.S. Forest Service's Limits of Acceptable Change and the National Park and Conservation Association's Visitor Impact Management processes.

All three of these efforts are important evolutionary experiments and discussions of new approaches to do a better job of planning, designing, and managing parks. All three should be valued equally, studied, debated, and tried, and then monitored and improved. All three should be integrated into the best of our agency's superb past to evolve to a better future.

As a next step, the USNPS also needs to establish and follow sustainable practices in all of its operations. Several activities, a few of which follow, are already underway. The USNPS is engaging in a recycling program with Dow Chemical in several parks. Experimentation with alternative energy vehicles is happening here and there.

Many offices already use only recycled paper. Our integrated pest management program is one of the oldest organized sustainable practices in the government. The Association of National Park Maintenance Employees is working on "green maintenance" initiatives. And much, much more.

The two conclusions of this article are, first, that the concepts of sustainability are part and parcel of the philosophical underpinnings of the Organic Act and its amendments; and,

second, that it is our ethical, moral and legal responsibility to embrace the emerging philosophy, help shape it, and practice it.

To be willing to evolve from our traditional excellence, based on an opportunity to lead in learning to live in a way which lends the highest quality of life to all future generations: I can think of no greater contribution to the planet, and to ourselves, that we could make.

