

## Sustainable Design for an Evolving Landscape

Paul Schrooten, Alaska Support Office, National Park Service, 240 West Fifth Avenue, Room 114, Anchorage, Alaska 99501; paul\_schrooten@nps.gov

The ability to preserve the Dyea historic townsite in Klondike Gold Rush National Historical Park in some meaningful form requires resource specialists and designers to work together in rather innovative ways. Because of the particular dynamic of the natural processes at this location, there is a need to re-define the traditional National Park Service (NPS) paradigms that generate park facilities. Primarily concerned with varied aspects of recreational tourism, the Park Service's leadership culture has been extremely reluctant to abandon traditional assumptions.<sup>1</sup> Therefore, the methods and techniques used to construct infrastructure need to be based upon the premise that emergence of structure from the landscape is preferred over that of imposition. This means more than a cursory recognition of organic architecture. It is important to begin the design process during the formative period of resource inventory, analysis, and appraisal. A higher level of responsible treatment and use of the landscape can then be attained. The ultimate goal is to demonstrate to the public and to our own professionals that constructed infrastructure can exemplify sustainable design for an *evolving* landscape. The sustainable approach to site planning and design goes beyond combining and comparing site inventories. A sustainable process attempts to determine the *relationships* between site factors and how those factors will adapt to change.<sup>2</sup>

First and foremost, basic preservation and management is predicated upon a decision that was made in the enabling legislation of the park, encouraging the public to enjoy and experience the very resources intended to be protected. Successful implementation of this requires a holistic approach to designed improvements that can assist managers in making difficult decisions about competing and sometimes conflicting resources. This approach to design requires a comprehensive interdisciplinary strategy. Through research and careful planning, ecological preservation and recreational tourism do not have to be mutually exclusive.<sup>3</sup>

Focusing on recreational tourism, NPS neglected to push science to the forefront and make it a non-negotiable element of park management.<sup>4</sup> To alter that thinking, a comprehensive interdisciplinary strategy ideally places a designer of visitor facilities in the landscape at the time of resource assessment to gain an appreciation for the environment in which facility development will eventually occur. The designer can also interact with resource scientists so that they might begin to participate in the development of design criteria. Traditionally, "the principle of beauty of

scenery called upon planners to study the landscape by going alone to experience all kinds of weather, at all times of day, and in all seasons."<sup>5</sup> Going one step further, the goal is to develop planning strategies early in the design process that will identify research needs and provide logical methodologies for management decisions. Linda Flint McClelland credits author Frank Waugh with the notion that "the principle of conservation [upholds] the preservation of native flora and fauna as a fundamental but complex requirement, calling for long and serious study." She goes on to note that "[w]here native species were already depleted or lost, Waugh called for their restoration...."<sup>6</sup>

Created infrastructure evolves from many design criteria, but the criteria that respond particularly to the natural and cultural resources of a site or environment give enhanced meaning to form, function, and longevity. Embodied energy that exists in these resources must be viewed for sustainable qualities before any disturbance, alteration, or elimination is contemplated. Once the resources are well understood and can support the criteria that determine design form and function, it is imperative that tech-

niques be used to emphasize their importance throughout the planning, design, and construction of facilities. In the past, concern for the harmonization of construction and nature led park designers to adapt principles of natural landscape design for restoring building sites to a natural condition after construction. In 1930, the recognition of landscape naturalization as an ordinary and advantageous consequence of park development coincided with a policy prohibiting the introduction of exotic plants in national parks.<sup>7</sup>

Today, planning, design, and construction techniques must support cultural and natural resource preservation, including, but not limited to:

- Adequate coordination of planning requirements between the park, relevant stakeholders and all owners of land inholdings to save duplicative processes and unnecessary invasive testing.
- Promotion of research studies by cultural, natural, and interpretive resource staff with a clear intent to provide the compliance clearances necessary for the creation of visitor facilities, but also to contribute findings to the proposed interpretive programs and design development of new facilities. Architect Alvar Aalto conceived of a design process that was more a collaboration of creative individuals than a disparate collection of isolated specialists and disconnected client representatives.<sup>8</sup>
- Preparation of detailed specifications for land surveying to prevent unnecessary resource damage.
- Completion of visitor-use analyses as a key to making sound decisions about the size, location, and function of infrastructural facilities.
- Consideration of sustainable design philosophies to not only minimize impacts on the resources during construction, but also for the post-construction period of maintenance and operations. For example, the naturalistic landscape gardening practices that had evolved in the 1920s called for the planning of groupings of native trees, shrubs, and grasses along roadways, construction sites, and eroded areas, and

the removal of vegetation for fire control and beautification. As construction took place in the parks, trees and shrubs were removed from the construction sites of buildings, roads, overlooks, and parking areas and transplanted in temporary nurseries or on the sites of completed construction. By 1930 this process of transplanting and replanting had become known as “landscape naturalization.”<sup>9</sup>

- Involvement of resource staff in design submittal reviews and value analyses.
- Construction specifications that thoroughly manage site access, ground disturbance monitoring, vegetative root pruning, temporary erosion controls, equipment and material storage, and appropriate staging activities.
- Construction administration and inspections that provide the potential for an empathic contractor relationship, periodic review of progress by resource staff, and confirmation of interpretive content. Waugh cautioned his readers that “a genuinely naturalistic planting was excessively difficult to achieve” and that training and a close observation of natural conditions were necessary.<sup>10</sup>

The protection of resources in areas designated for intensive public use first begins with recognition, then understanding, and finally empathy. It is commonly understood that pertinent cultural and natural resources must be easily identifiable and separate from undesignated areas or interpretive facilities. No matter how intelligent or familiar a new visitor might be, there is often not a full appreciation or awareness of the differences between significant resource preservation areas, designated interpretive opportunities, and undesignated areas with less or no significant resources. Nor should a new visitor be expected to be aware of these differences. Even when ecological degradation is pointed out to park visitors, the new conditions may be thought of as merely “another change in the scenery.”<sup>11</sup> Good design and effective interpretation should attempt to solve this problem. Once a visitor is able to identify the resource(s), it is up to the resource specialists, researchers, and design-

ers to enlighten through effective means of interpretation so that knowledge is shared or enhanced. Ultimately, resource protection is successful if there is a physical, emotional, or psychological experience the visitor gains from the presentation of unbiased interpretive content. Environmental interpretation becomes even more important as natural landscapes and cultural treasures disappear. Today, the public has an expanding role in land management decisions.<sup>12</sup> Have the resources been presented in such a manner that the visitor eventually forms an opinion and/or takes an action? If so, the effort to substantiate sustainable design has been worth it.

So we ask ourselves, how are we to protect resources from human threats (impacts), whether intended as such or not? The answer lies partly in the conscious decision to guide or manage the basic sequential human tendencies of discovery, exploration, domination, alteration, domestication, cultivation, and, in some cases, destruction. The resolve to blend new construction with natural surroundings—to develop the parks without destroying their beauty—formed the basis of landscape architecture’s central role in national park development.<sup>13</sup> As a modern designer, one must now confront these tendencies in three ways. *All* threats have the potential for impacts. Design or education can address *most* threats. *Few* threats should require an enforced response.

Ethical design decisions must have a basis in the legislation of the park. When conflicts occur between natural and cultural resource values, choices will be made. Landscape architect John O. Simonds called for a “means of coordination and bringing to concerted focus on our planning problems the experience and accreting knowledge in all areas of inquiry.”<sup>14</sup> Even when a “no action” alternative is selected, it requires a conscious decision, and so varying degrees of ethical choices will result. This interdisciplinary approach to visitor facility planning and design may not solve all potential conflicts, but it may help to rationalize the decisions made for the visiting public. As a rule, the focus on decision-making is on those areas of the design problem that are like-

ly to produce the most significant results or the most important consequences for the design as a whole.<sup>15</sup> Therefore, it may be advocated that the ethical reasons for land development decisions are not of critical importance. The ethical relevance lies in the interpretive message that is presented to the visitors so that the conflicting issues and the solutions chosen can be weighed and judged by the public that we are all dedicated to serving.

### Endnotes

1. Richard West Sellars, *Preserving Nature in the National Parks: A History* (New Haven, Conn.: Yale University Press, 1997), 284.
2. National Park Service, *Guiding Principles of Sustainable Design* (Denver: National Park Service, Denver Service Center, 1993), 43.
3. Sellars, 284.
4. Sellars, 286.
5. Linda Flint McClelland, *Building the National Parks: Historic Landscape Design and Construction* (Baltimore: Johns Hopkins University Press, 1998), 444–445.
6. McClelland, 445.
7. McClelland, 5.
8. Stephen J. Kirk and Kent F. Spreckelmeyer, *Enhancing Value in Design Decisions* (Detroit: Smith, Hinchman, and Grylls, 1993), 8.
9. McClelland, 255.
10. McClelland, 447.
11. Sellars, 287.
12. Kathleen Regnier, Michael Gross, and Ron Zimmerman, *The Interpreter’s Guidebook: Techniques for Programs and Presentations* (Stevens Point: University of Wisconsin–Stevens Point Foundation Press, 1992), 5.
13. Sellars, 51.
14. John Ormsbee Simonds, *Landscape Architecture: A Manual of Site Planning and Design* (New York: McGraw-Hill, 1983), 307.
15. Kirk and Spreckelmeyer, 27.

