

April 18, 2005

Design Principles, Design Guidelines, and Standing Review Committees for The Arboretum at Penn State

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“The mission of the Penn State Arboretum is to promote the quality of life by seeking, through scholarship, research, and education, collaborative solutions to growing demands on the natural landscape and its resources. As a place of beauty in a rapidly expanding metropolitan area, an educational facility, and a microcosm of the human/nature continuum in settled landscapes, the Penn State Arboretum shall strive to become an interdisciplinary ‘institute for land health’ of state, regional, and perhaps national significance.”

—Excerpt, *Preliminary Master Plan for The Penn State Arboretum*, Sasaki Associates, Inc., January 1999; hereafter, *Sasaki Preliminary Arboretum Master Plan*

DESIGN PRINCIPLES¹

- I. The Arboretum will be an integral part of a major gateway to the University and a vital part of the fabric of the University Park campus, linked both physically and symbolically to the University and surrounding community. Its design shall feature open and porous edges, creating a welcoming environment and facilitating accessibility from both the campus and surrounding neighborhoods.
- II. The architecture and landscape design of the Arboretum shall respond to the cultural traditions and natural forces rooted within central Pennsylvania's environment, its people, climate, and resources. Design elements shall recognize the Arboretum as a unique entity within the campus, while responding to both regional design character and local campus character (especially that of the contiguous East Subcampus and other development along Park Avenue).
- III. The Arboretum will be contemporary and innovative through a harmonious composition of disparate elements along the human/nature continuum, from the most clearly human-controlled zone along Park Avenue to the most nature-controlled demonstrations of natural systems in the northern zone of the site. Throughout, the Arboretum will serve as a metaphor for environmentally compatible use of the natural landscape by humans. The design expression of the human/nature continuum shall be varied in accordance with the three zones established by the *Sasaki Preliminary Arboretum Master Plan*: the Mitchell Tract, Overlook Heights Teaching and Research Area, and the Big Hollow, providing distinction to each zone.
- IV. Designs for the Arboretum shall emphasize four interpretive themes: 1) Richness of biological and ecological diversity in native and cultivated collections; 2) Stewardship and conservation of soil, water, and biological resources; 3) Demonstration of environmentally responsible landscape design; and 4) Restoration of degraded landscapes.
- V. All development within the Arboretum, including all research and teaching activities, shall be grounded in exemplary practices of stewardship, conservation, and, where appropriate, preservation.
- VI. All elements of the Arboretum, including all research projects and facilities, shall be designed to enhance and contribute to the educational and outreach missions of the University and the Arboretum.

¹ These principles are based on concepts in the *Preliminary Master Plan for The Penn State Arboretum* by Sasaki Associates, Inc., and the *Master Plan for the Mitchell Tract in The Arboretum at Penn State* prepared by Marshall-Tyler-Rausch, LLC, as articulated by the Arboretum Design Principles and Guidelines Task Force.

DESIGN GUIDELINES

- I. Conservation and Stewardship
 - A. Designers shall obtain LEED (Leadership in Energy and Environmental Design) certification for major new building projects.
 - B. Design, construction, and maintenance of Arboretum facilities shall comply with best management practices for stormwater management and water quality in order to achieve the following objectives:
 - 1. Protection and enhancement of groundwater recharge capacity;
 - 2. Preservation of natural drainageways;
 - 3. Management of stormwater as a site resource through innovations in on-site irrigation, maintenance activities, and groundwater recharge;
 - 4. Compliance with wellhead protection area management initiatives.
 - C. Architects shall consider life-cycle costs in addition to initial construction costs.
 - D. All Arboretum planning shall support Penn State's policies regarding environmental stewardship (currently "Key Initiative 1: Environmental Stewardship" in *Finance & Business' 2002-2005 Strategic Plan*).
- II. Education
 - A. Projects, buildings, infrastructure, gardens, and plant collections should include educational materials that explain both the interdisciplinary design process and the completed project for the student and the public.
 - B. Whenever possible, architects and landscape architects shall strive to involve students and the public in the design process of each new project in the Arboretum.
- III. Design of Primary Landscape Spaces
 - A. Design of each landscape area of the Arboretum shall respond to the character prescribed for that locale in the *Sasaki Preliminary Arboretum Master Plan* and the *Master Plan for the Mitchell Tract in The Arboretum at Penn State* by Marshall·Tyler·Rausch (April 2002; hereafter, *MTR Mitchell Tract Master Plan*).

April 18, 2005

- B. Selection of plant materials (e.g., ornamental vs. native) and arrangement of plant materials (e.g., geometric vs. naturalistic) shall be appropriate for the landscape character of that part of the Arboretum. Species known to be invasive in central Pennsylvania shall not be planted.
- C. Architects and landscape architects shall establish strong compositional unity within each landscape space as well as visual continuity between contiguous landscape spaces.

IV. Site Design of Primary Building Elements

- A. Architecture and landscape design in the Arboretum will respect the context of the area. This includes the aesthetics, scale, and quality of the buildings and civic spaces on campus, as well as the agricultural history and activities of the region.
- B. Landscape elements and buildings, including structures such as parking areas, entry walkways, porches, and terraces, shall be organized and designed to spatially define, order, and sequence these elements and structures with respect to one another.
- C. Building and landscape elements shall be designed and constructed with a view to their relationship with future elements as described in the *Sasaki Preliminary Arboretum Master Plan* and *MTR Mitchell Tract Master Plan*.

V. Architectural Form and Character; Relationship of Interior and Exterior Spaces

- A. The design of architectural and landscape elements shall respect regional and cultural traditions while symbolizing the vision and innovative nature of the institution. Direct stylistic imitation of historical structures shall be avoided.
- B. Architectural design shall emphasize the relationship between interior and exterior spaces and maximize the use of natural light.
- C. The exterior scale, composition, color, and materials of buildings shall complement and enhance the surrounding landscape of the Arboretum.
- D. Architects shall use transitional spaces such as porticos, pergolas, and sunrooms to create inviting connections between interior and exterior spaces.
- E. Educational, research, and social venues shall accommodate audiences of various sizes simultaneously and without visual or audible competition between venues and audiences.

April 18, 2005

VI. Materials and Building Systems

- A. Materials and building systems shall be durable (to minimize life-cycle costs) and adaptable (to accommodate future change and growth). Whenever possible, these materials will be authentic, reflecting their substance and structure in their appearance, rather than simulating another substance.
- B. Materials in Arboretum structures shall adhere to the University's standards for construction quality and craftsmanship, as articulated by the Office of Physical Plant. These requirements can be accessed on the Internet at www.opp.psu.edu/stdn/stdn.htm.

VII. Circulation

- A. The principal circulation system in the Arboretum shall be pedestrian and bicycle trails to maintain the integrity of the site and the visitor's experience of an "oasis of green and peace in a rapidly urbanizing landscape."
- B. In general, the circulation system of the Arboretum shall fit existing continuous, curvilinear alignments that evoke a sense of harmony with the natural setting. The only exceptions should be the "fracture trace" trails (*Sasaki Preliminary Arboretum Master Plan*) and the existing straight-line sections of Big Hollow Road.
- C. The design of the circulation system shall preserve the natural woodlands, natural landforms, native flora, and native fauna of the Arboretum.
- D. Maintenance, service, delivery, and emergency vehicles shall be sensitively accommodated in the planning and design of the circulation system, preferably by adapting pedestrian and bicycle paths for their use, whenever feasible.

VIII. Signage, Lighting, and Outdoor Furnishings

To ensure visual unity and institutional clarity, signage, lighting, and outdoor furnishings (such as benches, trash receptacles, and bicycle racks) for any area of the Arboretum shall relate stylistically to existing University Park and Arboretum standards. Lighting should be designed to minimize light pollution of the night sky.

ADDITIONAL RECOMMENDATIONS

In addition to design principles and guidelines, the Arboretum Design Guidelines Task Force recommends that the following standing committees be established to provide oversight in the design/development review process to ensure the design integrity of the Arboretum:

I. Arboretum Design Committee

An Arboretum Design Committee shall be appointed by the Arboretum director to work with the Office of Physical Plant in developing the Arboretum. The committee shall review all development plans as “acting stewards” of the *Sasaki Preliminary Arboretum Master Plan*, the *MTR Mitchell Tract Master Plan* (if appropriate), and the Arboretum vision, mission, concept, principles, and guidelines.

II. Arboretum Horticultural Committee

An Arboretum Horticultural Committee shall be appointed by the Arboretum director to review proposed materials and locations of horticultural collections within the Arboretum, including research collections. This committee shall review all horticultural proposals as “acting stewards” of the *Sasaki Preliminary Arboretum Master Plan*, the *MTR Mitchell Tract Master Plan* (if appropriate), and the Arboretum vision, mission, concept, principles, and guidelines. The Arboretum Horticultural Committee shall serve as advisors to the Arboretum Design Committee and the Arboretum director.

III. Arboretum Research Committee

An Arboretum Research Committee shall be appointed by the Arboretum director to review and approve research projects proposed for locations within the Arboretum. This committee shall review all proposed research projects to ensure the compatibility of the research project intent/requirements and the Arboretum mission, especially in regard to education and environmental stewardship. The Arboretum Research Committee shall serve as advisors to the Arboretum Design Committee and the Arboretum director.