

by David A. Mittelstadt

# Design Basics

**P**roper planning is the essential first step in the garden design process. After the master plan is drawn and accepted, though, the work of implementing design projects begins. As a design evolves, many issues will be considered including the use of appropriate materials, sizing of walks and roads, the desire for flexibility to express new ideas, the need for standardization of replacement parts and the sense of continuity between old and new parts of the garden. How well a garden deals with these issues and communicates its mission depends on the skillful application of the basic building blocks of design. This article will present some ideas you may wish to consider as you seek solutions to your garden's need to grow and change.

## Design Vocabulary

Garden design is like a language built from a vocabulary of such site design elements as pavements, walls, steps, planting, lighting, graphics, site furniture and water features. Skillful use of these elements can result in landscape patterns which are able to communicate powerfully to the visitor. They can carry a clear message about the mission and goals of your institution; whether you are historic or contemporary; research oriented or committed to aesthetics; regional or eclectic. Like any language, the language of design should be used with clarity to bring out the unique qualities that best express your garden's purpose. If the pur-

pose is not clear, design cannot be expected to create a message on its own. The strong participation and leadership of a garden's administrators can help insure that design efforts contribute to the overall message.

## Design Guidelines

Clearly, common systems for labeling, irrigation and lighting promote cost efficiency and a unified institutional image. Why not apply similar logic to the design of paths, roads, site furniture, graphics, steps and walls? Surprisingly, standardized systems often help ideas work through to reality and keep decision making focused on the key issues. As a result, quite often the next step after master planning will be to determine design guidelines. They could be introduced at any time, however, to help bring a sense of order to the garden.

An overall theme or central goal should guide the formulation of the guidelines. Today's gardens are made up of many separate spaces and may embody diverse plant themes. Design guidelines are the thread that can hold them together. They can also create a distinctive identity for a garden by requiring designers to draw on

locally available building materials and design expressions where appropriate.

While it is common to seek a single firm to prepare the master plan, specific projects can be successfully carried out on a more local basis, especially when the design guidelines are flexible. Seeking several designers to contribute to your garden's development over time may be a good way to get fresh ideas and keep the public interested. A word of caution, however: because you also want to build on each successive installation instead of rebuilding existing facilities rendered obsolete by new designs, old and new parts of the garden should work together. This can be accomplished through the use of design guidelines which give designers certain choices within predetermined limits. The following sections will explore various categories of design guidelines and possible design expressions they can help create.

## Pathways

Based upon their expected use, garden pathways can be divided into several levels. The highest level would probably be the widest and paved in the most durable materials, allow barrier-free access and link major districts within the overall garden. Subdivisions of the garden could be served by a second level of paths that are narrower in width, suited to lighter traffic and characterized further by more closely-spaced plantings. The lowest level of path might be more like a trail with loose pavement such as stone dust, gravel or bark mulch. Consistent use of the levels of path design outlined in the design guidelines would suggest in a subtle manner the fastest and slowest routes to view the gardens. Figure 1 illustrates a typical pathway design guideline.

## Mass Plantings

Equal in importance to the circulation system, mass plantings give structure and spatial definition to the garden. They can create outdoor rooms where none exist or provide relief to the enclosure of the

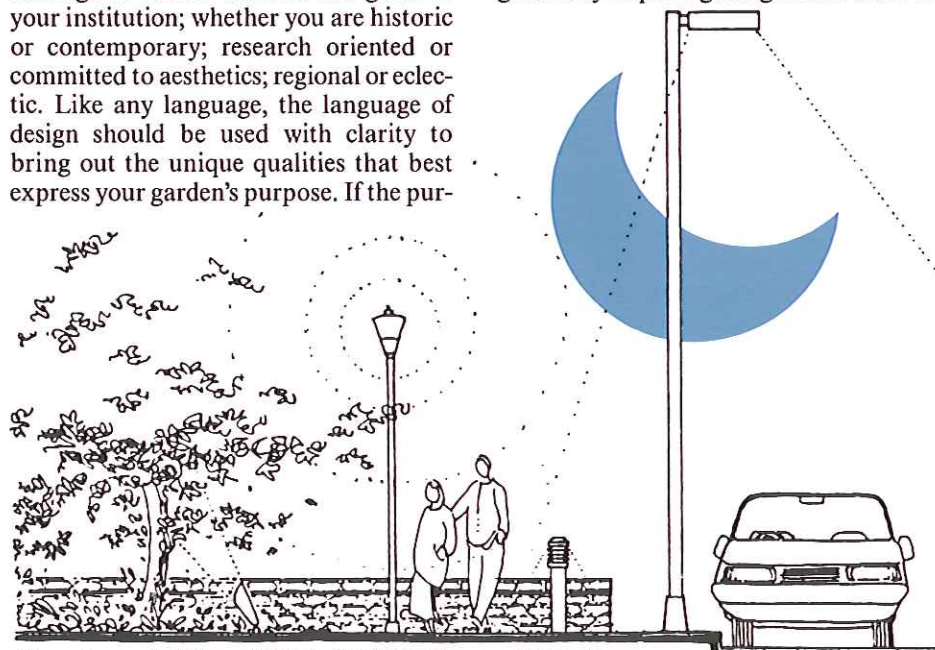


Figure 2. Bullet Decorative Pole Top Bollard Pole Mounted Cut-Off



forest by its selective removal. Although mass plantings should be closely associated with the collections, they are typically thought of as background to the main horticultural focus, the displays and collections. Mass plantings can be used to separate major spaces and serve as buffers; reinforce a consistent edge; create a shade canopy for understory plants; channel vistas and views; and add bright spring or fall color. In some gardens, all

## Common Design Faults

**1**

### Inconsistent Use of Materials:

Select an approach and stick with it. Change is not always the best remedy.

**2**

**Cutting Corners:** If the materials are not selected for long-term use, costly repairs or replacements may be needed later.

**3**

**Barriers to Handicapped:** Take a consistent approach to providing access for the physically impaired and handicapped. Do not forget special needs of the elderly and families with infants and young children.

**4**

**Unwillingness to Spend Money on Infrastructure:** Assess your growth potential early enough to provide for expansion of utilities and systems. Subsequent installations can be costly and disruptive. Install additional utility sleeves under pavement crossings, if necessary.

**5**

**Forgetting About the Master Plan:** Long-range plans are useful for keeping the big picture in perspective. Invest the time to keep it current and make it required reading for staff.

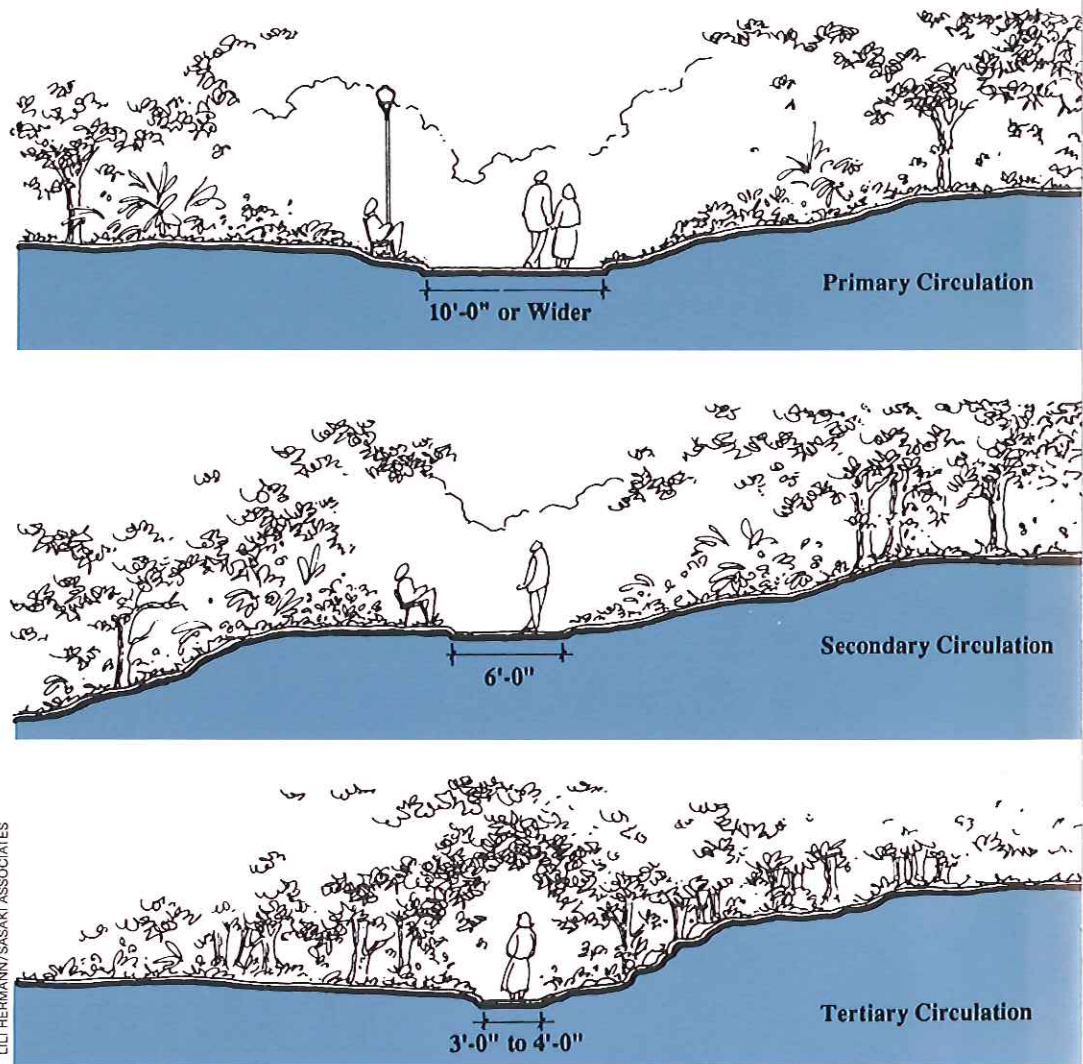


Figure 1. Typical Pathway Design Guidelines

plants are part of the collection including the massive plant groupings. The spatial structure of these gardens must be organized with great care to create variety and interest in addition to displaying the unique qualities of individual specimens. As an example, the U.S. National Arboretum's dawn redwood grove is both a horticultural display and an inspiring space.

To be effective, design guidelines should include policies on the layout of outdoor rooms to highlight collections with an emphasis on such functional characteristics as plant height, branching characteristics and leaf texture. For example, flowering specimens could be enhanced by a backdrop of evergreens, while deciduous trees may benefit from being backed by sky so as to accentuate their winter branching habits. Similar guidelines need to be established for the removal of plants, including what to remove, what to keep

and how to deal with the newly exposed edge.

## Lighting

Whenever facilities such as meeting rooms, classrooms and conservatories are used in the evening, exterior lighting for public safety is imperative. After dark gardens need to welcome the public with safe and convenient access. Entry drives, parking lots, walks and building entrances each require different lighting solutions. Lighting can also be used to create sculptural and aesthetic effects with plant materials at night.

Lighting design must deal with technical parameters involving: the color balance of the source used; the foot candles or quantity of light produced; the distribution characteristics of luminaries; the height and spacing of poles; and the aesthetic features of the lights themselves.

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Cryptomeria Valley, National Arboretum, Washington, D.C. Alan Ward, photographer



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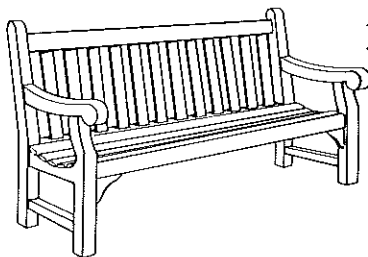
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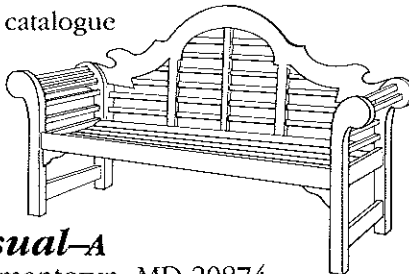
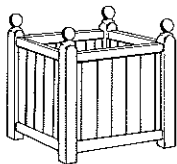
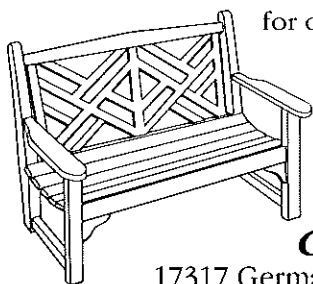


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Examples of four types of lights are shown in Figure 2.

Cut-off reflectors are helpful in controlling glare from sources with tall mounting heights like those used to illuminate roads and parking lots. These luminaries can help promote better relations with adjacent property owners, and they direct more light downward where it is needed. Walkway lights in the garden can be chosen for the opposite effect—that of throwing light to the side and upwards to highlight plant materials. Bollard and bullet spotlights are typically used for more intimately scaled lighting effects. A simple spotlight on a specimen plant can be inspiring in its simplicity. Greater interest can often be achieved by varying light levels to highlight activity areas and specimen plant materials.

**Site Furniture**

The term site furniture covers a broad array of items such as benches, trash receptacles, bike racks and drinking fountains which are placed in the landscape. Many are manufactured items and subject to influences from the marketplace. Whether you select off-the-shelf models or develop custom designs, obsolescence and the availability of replacement parts over time are issues to consider when selecting these items. The consistent use of site furniture conveys an image of overall organization. Some variation may be appropriate, however, if your grounds change dramatically in character from formal to rustic in outlying areas. Benches, for example, can be designed around a family of similar criteria but have a formal or rustic character depending on where they are placed. Figure 3 depicts typical character differences. Usually, benches with backs and armrests are more easily usable by the elderly and handicapped.

Design guidelines should also specify the typical distribution and placement of site furniture. Furniture should be clustered at activity centers and placed regularly along circulation routes. Consistent setbacks will keep paths clear for pedestrians and maintenance vehicles.

Site furniture items can make a strong design statement. Today, a broad range of styles is available from high-tech to classical. Photographs, models and even samples of actual furnishings should be studied singly and in groups to see whether the image is consistent with your institution. A common fault is to overpower the garden with unnecessary detailing in site

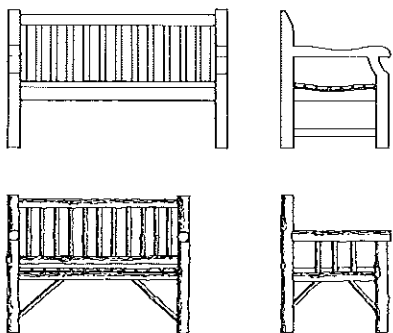


Figure 3. An example of character differences. Shown at the top is a formal bench and at the bottom a rustic bench.

furniture. Once the decision is made, plan to make a long-term commitment to furnishings and promote their use throughout the garden.

### Sign System

As educational facilities, public gardens need to communicate effectively with a coherent graphic system. Gardens have some of the most complex graphic requirements of any institution. They include logo identification, printed matter, personnel and equipment identification, directional and guidance systems, inter-

pretive displays and plant identification labels. Consistency is once again the key to the success of a graphic system as change in one area will probably affect other areas.

From these brief examples it should be evident that tending to the basics of design can further the image of your institution in the public's eye. Design is conscious intervention rather than unfocused reaction and, when it is well executed, can create educational landscapes that teach us about plants, the world and ourselves.

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Illustrations for this article are excerpted from Design Guidelines prepared for the North Carolina Arboretum, Asheville, NC.

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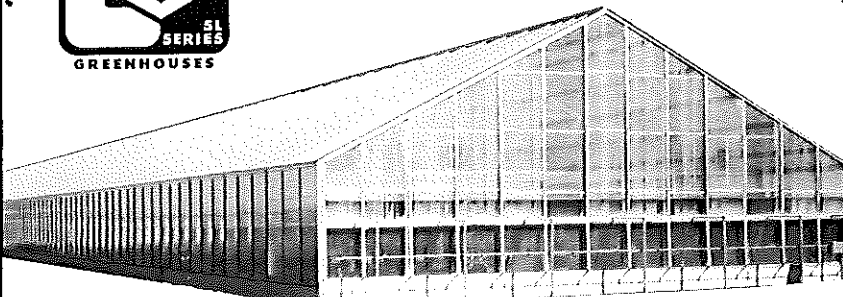
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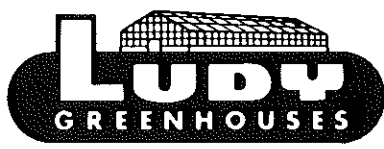
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