

**S**ound master planning for an arboretum starts with an assessment of the existing landscape and leads to an integrated package of management (long-term operations planning), design (the realization of new visions) and maintenance (day-to-day operations). The integration of the three, tempered with a full understanding of the viewpoints of potential user groups, is the key to progressively translating the institution's overall dream and program into physical form. The maintenance, management and design dialogue must begin immediately and continue throughout the life of the arboretum. Problems often arise because designers, managers and maintainers each have their own vocabularies. Designers wonder why their designs are not turning out as planned while maintenance people may lack respect for designers who may be perceived as impractical. All parties must be willing both to address the most mundane issues and to dream.

#### **Design**

An understanding of maintenance concerns is often a missing component of the design process. Its omission typically results in one of two scenarios. In the first, a sound design is presented, approved, constructed and then neglected because it overtaxes the existing maintenance staff. In the second, the manager, in order to avoid the first problem, instructs the designer to hold back on the design. The result is an oversimplified landscape. To avoid either scenario, a proposed design can be quantified in terms of staff hours per year. In the master plan, design implementation can then be phased to dovetail with increased maintenance staffing and materials as funding grows. Everyone's job is easier if the manager can translate designs into the number of staff members and pieces of equipment required for proper maintenance.

By keeping in mind standard sizes of maintenance equipment and standard maintenance methods, designers can make minor changes to a design which might not affect the overall appearance to the visitor but can make a great difference to the maintainers. For instance, care can be taken to make sure that the sides of a proposed grass swale are one mower-width wide and set at a manageable angle. Plants for hedges can be selected which will look their best at an easy-to-maintain height. A design with maintenance needs clearly articulated and scheduled and with a layout which allows for easy maneuverability of staff and equipment is most likely to receive attention and achieve the designer's vision.

Designs for new areas to be developed should be tempered by the realities of their maintenance requirements, but not to the point that design inspiration is sacrificed. Designs should be both practical and challenging and stretch beyond what is immediately feasible. Inspirational designs can capture the fancy of contributors who will provide the funding required for their realization.

#### **Timing and Funding**

Master planning, designing and follow-up maintenance are often assigned discreet funding bundles and discreet time frames as if each had a life completely apart from the others. For instance, the design is often considered complete once all plants, walks and structures are in their intended location. In fact, design is inseparable from maintenance. With construction completion, the design is only partially realized. Time must elapse before a design matures. An installed design depends on nature and the skills and motivation of the maintenance staff, with the manager, not the designer, as the watchdog of the overall vision. Although budget considerations in the early stages of design may stifle creativity, ignoring them may ultimately be more stifling

because false expectations are raised. It is better for a garden to decide early on whether to raise more funds to make a design workable in terms of maintenance or to cut back on the scope of the design.

A successful example of realistic design and planning is the Queens Botanical Garden in New York City. The Garden owns 30 acres and has long envisioned using all of them for gardens. Budget constraints prohibited the Garden from competing with larger institutions for completeness of collections. The administration, therefore, defined a more manageable, limited role for the Garden which emphasized community environmental education and volunteer involvement. Maintenance and design resources were concentrated on five acres of intensely maintained gardens including a senior citizens' garden and children's garden. The remaining 25 acres were left as an open park and an area for annual festivals. In recent years, with increasing membership, the Garden has begun implementing designs to expand its high-maintenance areas and introduce more collections and theme gardens.

#### **Preserving the Existing Landscape**

The choice of what portions of the existing landscape to preserve is a design and maintenance issue as well as an ecological one. Design and implementation which are custom-fit to the existing landscape may be labor intensive at first, but the long-term benefits will justify the expense. Tom Wright in *Large Gardens and Parks* points out that the more that can be preserved from the existing environment, the more money can be saved by having that many fewer plants to fit to a new environment.<sup>1</sup>

Preservation can provide the garden an immediate inspirational scale, especially if stately trees are present, and give preliminary physical form to future design. It is important, however, to remem-

# RECIPE FOR A SUCCESSFUL GARDEN

MANAGEMENT • DESIGN • MAINTENANCE

by Mike Van Yahres and Peter Dunleavy



*Good landscape management depends on understanding differing points of view.*

ber that assessment includes mapping not only what features are present, but what condition each is in. Great effort can be wasted by focusing a design on a grand specimen tree which may, in fact, be in a severe state of decline and will soon be gone.

The approach taken by the Woodberry Forest School in Orange, Virginia, avoids this pitfall. To reestablish and plan for expansion around a declining stock of historic trees, the school first inventoried the condition, maintenance requirements and anticipated longevity of all major trees on the campus. An ideal tree planting plan was then prepared, to be implemented over a 10-year period in coordination with the anticipated decline of existing trees. The school is further capitalizing on the required new tree planting to serve clear design purposes such as enclosing and enframing views rather than merely replanting one tree for each one in decline. The existing landscape is thus preserved while being adapted to suit incremental changes in the school's facilities.

### Maintenance Zones

There is no such thing as a no maintenance landscape in a public garden, although budget conscious managers often request that some portions of a landscape design be made so. Few would ever find it politically acceptable to say we want a high-maintenance landscape, but they often get one anyway and find themselves short of funds because of their reluctance to accept the fact that all parts of a high-use landscape will require a degree of maintenance or monitoring. Just as no one ever expects a building to require no maintenance, so it is with the site; maintenance comes with the territory.

The request for no maintenance areas may often arise to offset expected expenditures on high maintenance areas. There is often, therefore, a wide gulf between intensely maintained and under-maintained areas. Good management recognizes and plans for that continuous range of intervention which will most efficiently allocate staff and equipment and address the landscape's needs in a comprehensive fashion. With a good dialogue among all planning parties, the site can be organized into zones of maintenance intensity, so that all areas, even if left wild, seem purposeful in the overall scheme. One can speak of these zones in terms of characteristic plant types, machinery, tasks and spatial qualities as summarized in the accompanying chart.

This chart is not meant to be comprehensive, but should rather be seen as a useful and flexible organizing tool. There is actually much overlap between categories. Areas may start out in one category and over time make a transition to another category. For instance, a wildflower area needs attention early on (medium maintenance) to get to the point where it can be maintained merely by cutting twice a year (low maintenance). An awareness of this time factor must be built into the plan.

Flexibility is also called for in that not all conditions can be fully controlled. Some plantings and garden features are bound to be destroyed by surprises, such as storms, drought, lightning, freezes, abuse from vandalism and sheer numbers of visitors. Just as the landscape can be envisioned in terms of zones of maintenance so can it be envisioned in terms of



zones of sensitivity. It is likely that there will be a high correlation between the degree of both; high maintenance areas will very likely be most susceptible to surprises, so an extra contingency factor should be built into the plan for these zones.

### Visitors' Viewpoints

Manager, designers and maintainers must be aware at all times of visitors' perceptions of the garden and its various operations. A garden should offer interest on many levels of detail to meet the expectations of a wide range of visitors. Some people will visit only once seeking visual pleasure and relaxation. Others will repeatedly visit for educational purposes or meditation. The master plan should ensure that there are publicity-making show areas year-round and, for those willing to explore, much more detail beneath the surface show. Arboreta are exemplary landscapes; people not only

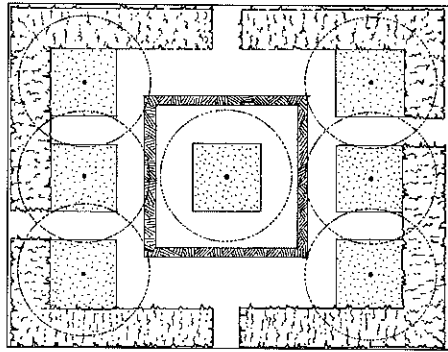
appreciate them as special places, but also as sources of ideas for other landscapes.

The implementation of new designs and programs should be planned in phases so as to minimize the disruptive impact of protracted establishment periods. One technique is to balance implementation between large, contracted projects and smaller-scaled in-house or volunteer projects. Although requiring supervision by the staff, the latter will make as many people as possible feel that they are a part of the process. Even in established areas, drastic measures must occasionally be taken, such as cutting back a seemingly sound plant to the ground to thicken or rejuvenate it. Disruption can be minimized by diverting attention to a temporary focal point (such as a display of plants in pots) or be made an educational feature in itself by heightening the public's awareness of the intent of the disruption.

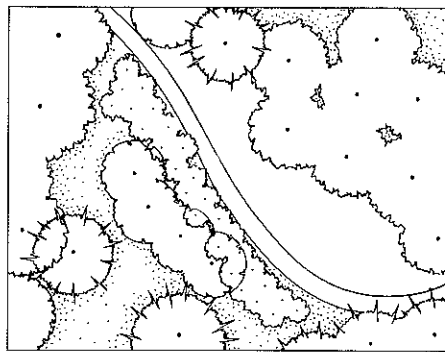
A sensitivity to visitor perceptions is not only required for major projects, but also for continuing maintenance practices. Maintenance practices should sometimes be hidden to give an illusion that the area is natural and at other times made visible, experimental and part of the garden's educational program. Thomas Jefferson's Monticello offers examples of both. Visitors can take a quick bus ride from the parking lot to the intensely maintained setting of Jefferson's house or venture through the woods on foot to get an impression of what the area must have looked like in its natural state when Jefferson first contemplated living there. Substantial maintenance has actually been done here, but in a very subtle manner. The woods feature a mulched path with drainage structures, occasional benches, a managed understory and trees pruned for safety. The maintenance is also hidden by the fact that staff are not generally visible in the woods, whereas in the more highly-maintained, heavily visited areas staff are visible and ready to answer questions.

### A Creative Dialogue

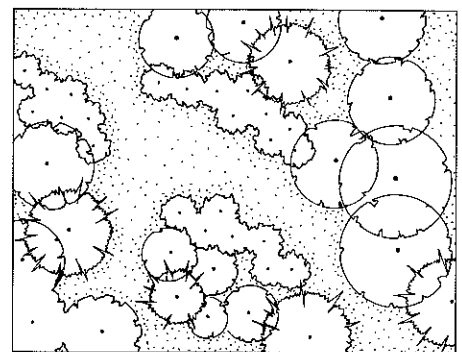
The true success of the management/design/maintenance dialogue rests on its being infused with a sense of creativity and possibility. Garden management and maintenance should be seen as the creative endeavors they are rather than mere paperwork and perfunctory tasks. A heightened awareness for the staff of what purpose each maintenance activity will serve, both in terms of the physiology of the plants and the overall design intent, will go far towards achieving a fineness



HIGH



MEDIUM



LOW

**Zones of Maintenance**

**High**

**Medium**

**Low**

Plant Types	Roses Bedding flowers Shrub specimens Rock gardens	Lawns Bulbs Tree specimens Shrub masses New wildflower areas	Tree masses Established wildflowers Naturally occurring communities Woodland/water edges
Tasks/Concerns	Labelling Annual seasonal planting Detailed pest control Hand weeding Pinching Topiary Espalier Mow 25-30x year Varied fertilizer types Hedge shearing Continuous edging	Mow 10-15x year Shrub transplanting and thinning Broadcast fertilizing and spraying Routine pruning Integrated plant management Occasional edging Roadsides Main paths	Mow 2-3x year Selective clearing Management for safety Foot paths, boardwalks Remote roads and walks
Supporting Landscape	Fine paving Decorative lighting Fountains Constant irrigation	Picnic shelters Occasional irrigation Intermediate views Transition zones High maintenance pockets within an informal setting	Large, expansive views Framework, skeleton Backdrop, screening Buffer
Spatial Characteristics	Fine detail Textures Free-frame landscapes Close views		

of detail and a consistency in the garden. In many cultures and religions, humble garden chores take on a transcendent quality reflected in the uplifting nature of the gardens. In China during the Ming Dynasty, "Making gardens and cultivating flowers were seen as the way to align oneself with nature and thereby become immune from evil."<sup>2</sup>

Creative collaboration can take the form of bringing about the microclimatic conditions which will make specific planting designs possible by modifying the existing landscape in advance of design implementation. An example is thinning and limbing-up of dense wooded areas a year in advance of trying to establish a naturalistic understory of rhododendrons. Another example is planting a field of wildflowers a few years prior to constructing a new entrance road so that the flowers will have passed through the

weedy establishment stage and will give an instant effect when the road is finally constructed. The collaboration can be as subtle as performing a standard task carefully, such as pruning suited to the growth and flowering characteristics of each plant type, as opposed to uniform shearing. Proper pruning requires artistry, vision and a sense of the plant's function in relation to the overall spatial design.

In summary, the dialogue which will successfully integrate management, maintenance and design requires creativity and a constructive attitude. It also requires of all parties an extra effort and the openness to overcome often antagonistic roles and compartmentalization of the process. The long-term benefits in terms of the beauty and the smooth functioning of the arboretum or botanical garden will be well worth the effort.

Endnotes

1. Tom Wright, *Large Gardens and Parks* (Great Britain: Granada Publishing, Ltd., 1982).

2. John Brooks, ed., *Garden Design* (New York: Simon and Schuster, 1984), p. 25.

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