

ence. Time spent in the garden should feed the spirit as well as the mind. The atmosphere of the garden should be welcoming and inviting. Circulation in a garden should be obvious and easy to understand and lead visitors into and through the garden. Displays and labels should be helpful and meaningful. Service structures and equipment should be unobtrusive.

- **Communicate information to people.** Educating visitors through creative interpretive methods will help them develop a greater appreciation for the value of plants and can make them more keenly aware of the purpose of research projects. Research and education are not mutually exclusive. Careful planning in this area will create a useful facility for people at all levels of expertise.

Gardens provide visitors with the opportunity to interact with an exhibit, an experience which many other institutions cannot provide. Visitors can actually move through an exhibit rather than merely view it from the perimeter.

- **Create an appropriate response to**

site and program. A worthwhile master plan must consider site and program as equally important elements from which the final design evolves. With budget restrictions a factor in most gardens, it makes sense to limit garden goals to what can be accomplished well. Take advantage of existing site features and climate, as program dictates. By building carefully around these factors, a garden can develop displays which are truly unique. Drawing upon existing wetland or forest areas or native stands of grasses and forbs (or creating these areas) can communicate to people that the natural resources around them have as much or more value than an imitation Japanese garden constructed totally out of context.

- **Provide flexibility.** The needs of any garden will change with time. Plant collections tend to expand. A good master plan anticipates and plans for change by allowing development options at any state of progress.

- **Allocate adequate space for garden support functions.** Good maintenance requires equipment and materials. Build-

ing space must be provided to house these items. Such garden operations as bedding plant production, plant propagation, automatic irrigation systems, sign making, record keeping, voucher specimens and scientific research/laboratory facilities all need enclosed and, in some cases, climate controlled space. A sensitive master plan should consider these needs along with all of the other programmatic needs of the garden. The support functions should be integrated into the landscape in areas that are appropriate and convenient and in ways that do not detract from, or compete with, feature areas.

Successful planning is much more than a display of virtuosity in individual areas; it ties all garden elements into a unified whole.

The Components of the Garden

The basic components of a garden combined together form the physical expression of the garden's mission. Their quality, availability, sensibility and affordability will mold the final space, and their skillful arrangement and integration

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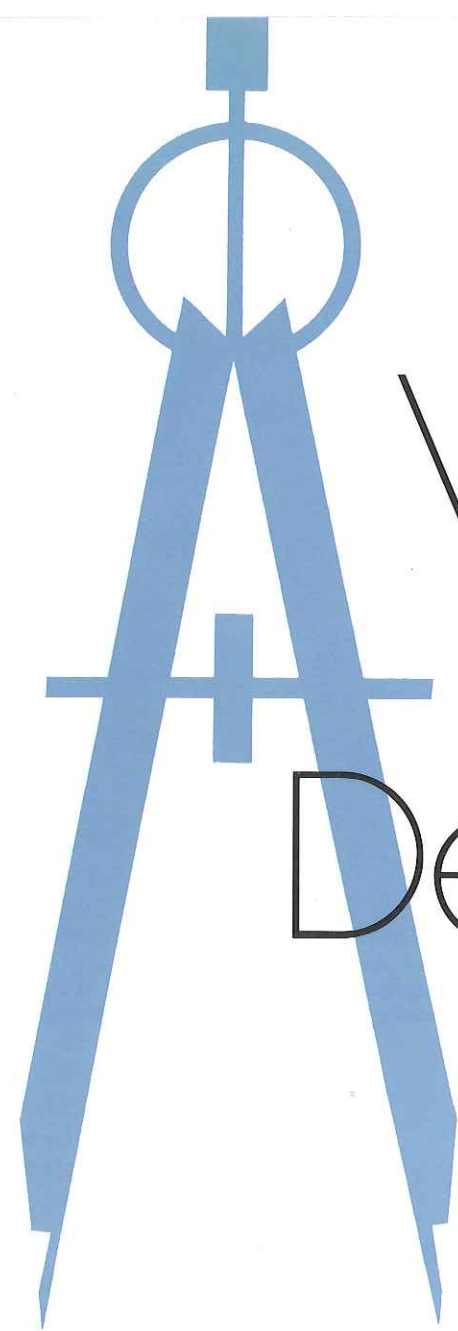
When botanical gardens first originated during the mid-sixteenth century, they quickly became centers for scientific research and dialogue. As science advanced, however, the role of the botanical garden and its offspring, the arboretum, shifted from the center of scientific focus. Today these facilities, although of multifaceted purpose, play a more general supporting role in scientific research and academic pursuits. Fortunately, a by-product of this gradual shift in purpose has been the greater accessibility of gardens to the general public and a greater emphasis on providing the public information about the plant world. With the recent renaissance of public interest in plants, the challenge facing today's public garden is to define a mission which can serve science and society in a meaningful way.

Even with a relevant mission statement and well defined goals, gardens need funding to implement these goals, and secure funding requires a broad base of public support. Too often in trying to attract visitors, gardens piece in special exhibits known for their public appeal (e.g., rose gardens or fountains) without much concern for how those exhibits reinforce the garden's objectives. The initial success of those exhibits encourages the further development of crowd pleasing displays. Without a master plan to follow, this type of development may diffuse the intended purpose of a garden rather than reinforce it. It is at this point that the garden's governing body should begin to realize the need for a competent professional design consultant. The cur-

rent resurgence of public interest in botanical gardens has also led to unplanned development as gardens reassess their roles and their audiences and perceive a need for new development or renovation. When consultants are included in planning efforts from the beginning, new development can be worked to generate a stronger, more unified whole, rather than a patchwork of unrelated experiences.

Because every garden site is unique and its purpose different, it doesn't make sense to try to imitate other gardens, no matter how successful. Neither will the use of "formula" design (the same components plugged into any design for any site) achieve a satisfactory result. Instead, a specific plan must be developed that merges the unique features of the site with the particular requirements of the program. The resulting plan, if successful, will stand the test of time.

The Value of Design



Benefits of Good Design

What, then, are the benefits of a good master plan and a high quality garden design? Many people view botanical gardens and arboreta as "especially nice parks." Good design can carry them beyond that initial perception. It will (or should) accomplish the following:

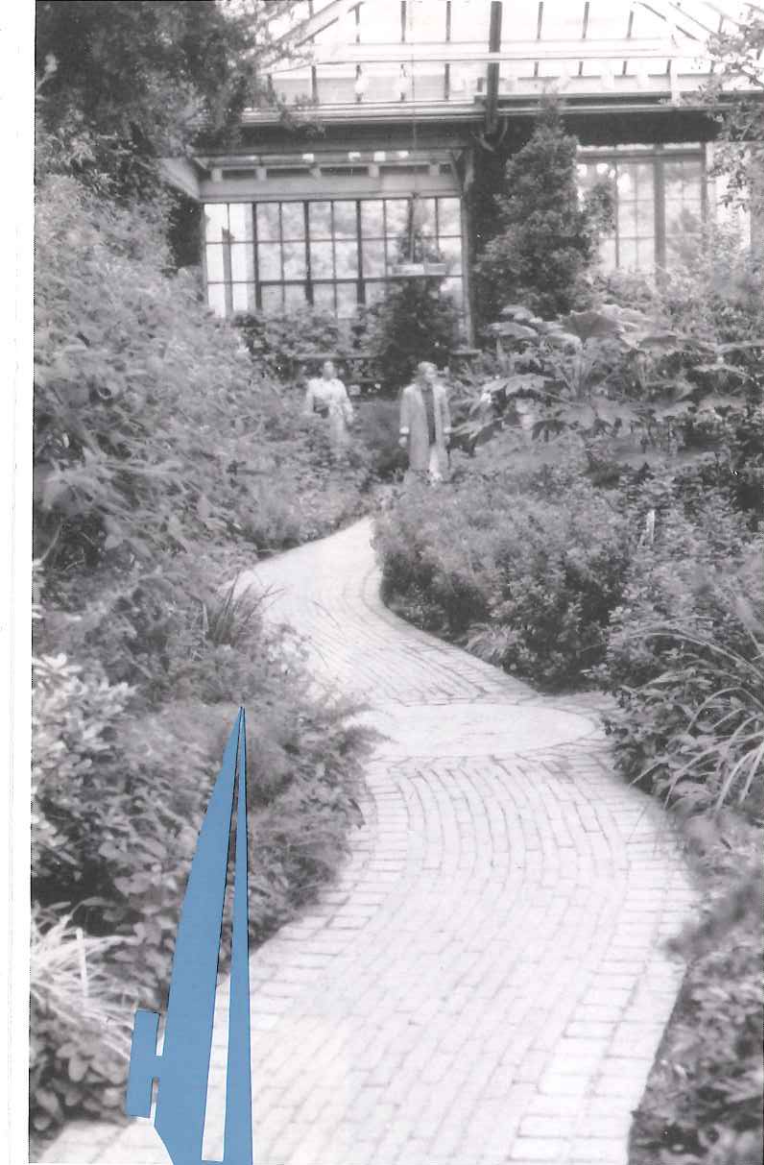
- **Reinforce the theme or mission of the garden.** The chosen theme must be organized. A visitor should be taken on a logical progression through the garden and leave with a clear understanding of the garden's purpose.

- **Enhance plant collections** (the focus of any garden) and their significance, rather than overshadow them with structural elements. A theatrical approach to design will inevitably allow architectural and hardscape features to dominate over plants. Show gardens (e.g., floral displays) will become more important than scientific or educational displays. This defeats the purpose of many gardens.

- **Create a positive aesthetic experi-**



The scene above at the Beal Botanical Garden at Michigan State University demonstrates how a carefully designed landscape setting can enhance a collection of herbaceous plants without overpowering them. The Climatron at Missouri Botanical Garden shown on the opposite page is an example of how a significant structure within a garden can become a reference point which helps keep visitors oriented.



The conservatory display at Longwood Gardens in Kennett Square, PA, is an example of how artistically displayed and well-maintained plants attract visitors all year.

to get into detailed issues too quickly; master plans are general design solutions. Detailed designs are created when specific components of the master plan are to be implemented. Avoid preconceived design solutions. Be flexible and willing to adjust the elements of your defined program if valid reasons are given to support change. Planning workshops should be held (with all design team members in attendance) to evaluate concepts and program statements, consider options for development, discuss design presentations and review the financial impact of decisions.

As the team evaluates ideas, it is helpful if team members have clear expectations of what the final design solution should achieve. The final design should be a direct response to the site and the program. It must be flexible, allowing (as site conditions permit) different options for the development of exhibit areas and offering ways to accommodate ever-expanding collections. The plan should be easily implemented in phases, based on the priority of program elements. To move the project beyond planning and into implementation, all members of the garden's governing board and management staff must support the final design.

The Challenge

The development or renovation of a public garden is an exciting opportunity. At its best, the botanical garden or arboretum will conduct research, attract visitors, educate through meaningful interpretation, focus on the strength of regional characteristics, bring plant professionals and scientists together, add to the vitality of its community and society in general, and stress the value of our natural environment. Its purpose and mission will be clearly projected to all who visit. The key to success in creating the best garden possible is thoughtful planning and careful design. Don't be tempted to underestimate their value.

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communicate ideas effectively and the desire to listen carefully to your concerns.

Working as a Unified Team

Use a team approach to problem solving. Team members should be clearly identified, their professional limits defined and a team leader designated so that despite some overlap, each team member will be responsible for the area in which he or she has the greatest expertise. The team can include garden staff, representatives of the garden's parent institution, members of the designer's staff and any other invited professionals. Garden representatives should focus on defining the themes, scope and collections needs for the new development which the consultant will organize on the site.

At the outset, the team should agree upon a problem solving process and with the consultant should outline a specific process to bring the design project to a successful conclusion. Begin by orienting the consultant to the mission statement and goals. Start discussions in general terms and cover broad topics. Don't try

The Value of Design

will form a hierarchy of space which places rightful emphasis on the plant collections.

- **The site.** The integrity of the existing site must be respected. It is a piece of living earth with its own unique natural characteristics, history and value. At the outset, these factors must be acknowledged and evaluated. *Natural components* include indigenous vegetation and specimens, the natural lay of the land and its climate, water, wildlife and soil composition. Research the site's *history*. The significance of past events and its natural or built features may inspire design. Analyze in-place *support systems* such as utilities and public transportation. Are they adequate? Note any linkage, either programmatically or physically, with other public facilities.

- **The plantings.** As the primary component, plants *are* the garden. The basic plant palette will be directly tied to the program. Most likely, the method of display (scientific, habitat, theme) will also be prescribed. The challenge to the designer rests in creating a physical environment manifesting that mission. Clearly form follows function here, and function must follow mission.

The horticulturally skilled designer will provide healthy microenvironments for the plantings. Pleasant composition, the interplay of leaf texture and careful attention to flowering colors require healthy specimens placed in favorable locations for effectiveness.

Displays should involve visitors with the plants and subtly teach and awaken their curiosity. This can be accomplished with an exhibit style and logical movement through exhibit spaces that play on the human senses. Develop an easily read, informative signage system and eye-catching brochures. Rows of systematically arranged plot beds, labeled and meticulously cared for, may fulfill research goals, but is it a garden if it fails to engage others?

Design must anticipate natural, inevitable changes over time. As plantings grow, micro-systems will be altered, focus may fluctuate, programs will change emphasis. Flexibility is key to a garden's evolutionary process. This is not a static place developed for a single purpose. Allow for manipulation of spaces, plants, beds and features. Changes will happen

and can occur (if sensitively anticipated) within the framework of a clearly stated mission.

- **Features (vs. gimmicks).** It could be argued that a true garden must contain nothing more than plants and earth. But if the stated mission includes sparking educational interest, attracting crowds of people for broadly based support and even painting permanent memories, then do design gimmicks have a place in your garden? Perhaps one person's gimmick is another's educational tool; definitions can be very subjective. Is a fountain a gimmick? How about a historically accurate replica of a former garden shed or a spinning wheel within an exhibit on textile plants? A feature seems to become a gimmick when placed totally out of context.

Be true to your goals and your audience. Examine your budget and maintenance constraints. Would it be a failure for visitors to thoroughly enjoy your garden's grand plaza and fountain and never realize the garden's basic mission? Showmanship can expand the experience or mask it. Handle with care.

- **Circulation.** To successfully manipulate the flow of a place is to develop a small, memorable journey. Though not always consciously perceived, approaches and pathways are very important. They embrace and welcome, reinforcing the garden's chosen exhibit system and gently guiding the first-time visitor. Through their configuration, location and size, pathways can suggest interaction with others or solitude and contemplation. They should also present the garden's best views.

Clear movement unburdens the garden visitor. Visitors find it easier to concentrate on exhibits when they don't need to periodically reorient themselves. Features orient. A few examples of "stand on their own" reference points in the garden may include: a specimen tree, a welcoming entrance structure, a hedge maze, an annual display or a reflecting pool. Visitors can always sense their location across carefully orchestrated expansive views. The comfort in that can't be underestimated.

- **Support systems.** These include utilities, lighting and security systems. Like all other components, these are unique to each site. They can facilitate smooth

operation and reinforce aesthetics.

Hire the Right Design Professional

The next step is to hire a design consultant. But before interviews can begin, some preparation is necessary. In particular, the mission of the garden should be clearly defined and agreed upon by *all* decision-making parties. Without a consensus on this most fundamental point, no productive planning can take place. A clear vision of where a garden is and where it should be going is essential. When defining the mission and purpose of a garden, care should be taken that the goals established not exceed the financial grasp of the facility. A smaller garden done well is better than a larger garden stretched to mediocrity by financial limitations.

Searching for and interviewing potentially suitable design professionals will take some effort, so plan to invest sufficient time in the hiring process. The planning process itself will also require a significant commitment of time since, at its best, it is a participatory process involving not only the consultant but also representatives of the garden. Together, this group forms the design team which should meet regularly. If the design process is to be successful, time for the process must be budgeted into work schedules and given a high priority.

It is important to select a consultant who meets your needs. When interviewing potential consultants, there are several things that should be considered. The consultant should have experience designing other gardens of similar size and purpose. In addition, a designer with experience on a wide range of projects besides botanical gardens may be able to bring a broader perspective to your project. Review several examples of each consultant's work. Pay particular attention to garden designs, making certain that the work is not repetitive. The work should demonstrate skill in planting design and appreciation for plant diversity. Find out which of the consulting firm's staff members will be part of the team working on your project. Will people with special expertise (ecologists, botanists, environmental analysts, horticulturists) be included? Feel confident that the consultant you select has the ability to