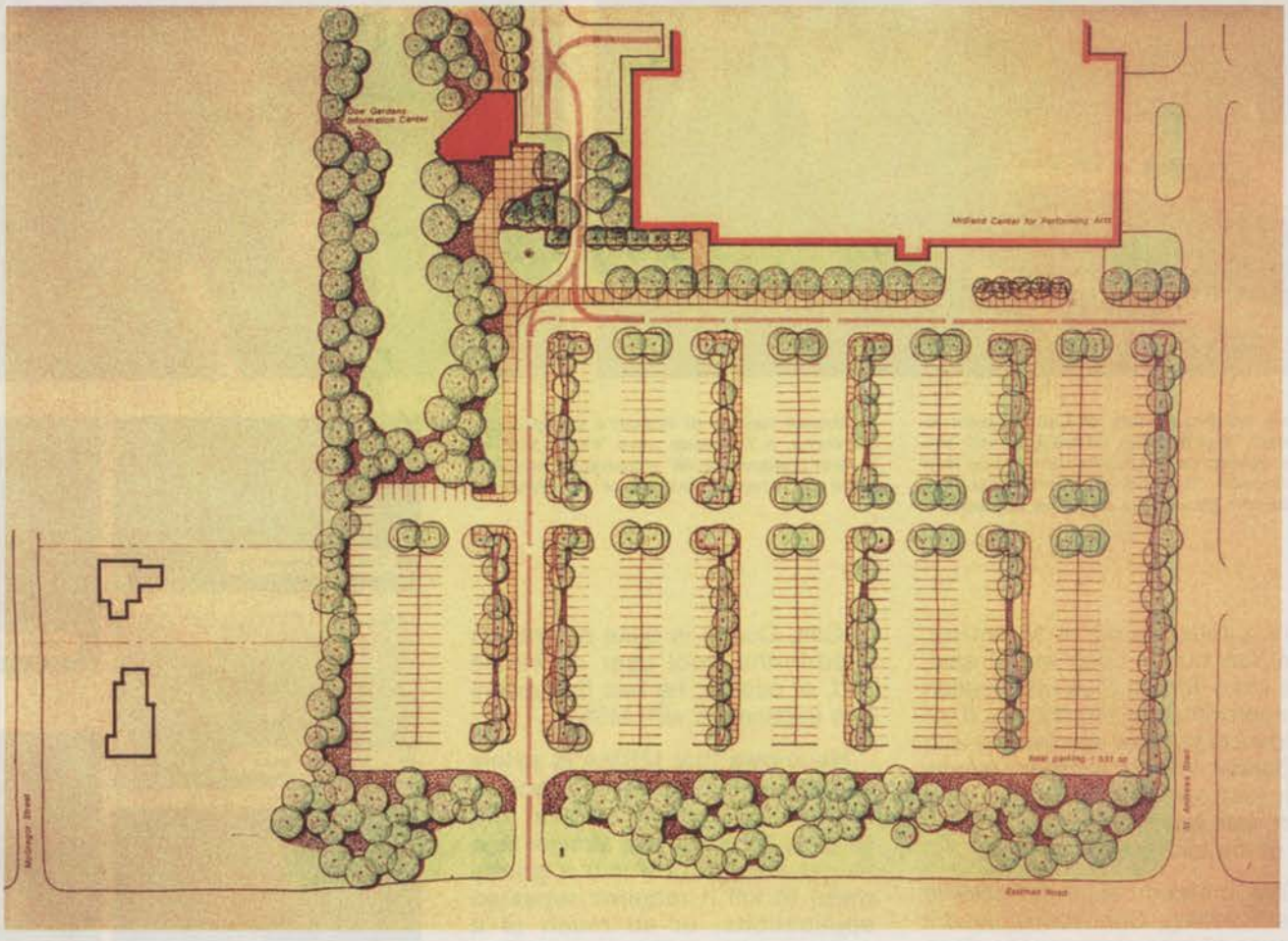

LOW-MAINTENANCE PARKING LOTS

A noted horticulturist tells landscapers how to create functional and cost-effective parking lots by using 'holistic' plants.

by Doug Chapman, Dow Gardens

The ecological approach to designing parking lots can be interesting, colorful and help reduce maintenance costs.

Recently, the parking lot for the Dow Gardens and the Midland Center for the Arts was re-designed. It was adjusted to accommodate 600 parking spots from its original 380. Developing an area with that much asphalt meant that several new objectives had to be met.

The first was simply increasing the number of parking spaces. This had to be met while not detracting from the building architecture of the two organizations the parking lot serviced.

The second objective was continuous traffic flow. With this in mind, two entrance/exits were developed, essentially as far apart as possible, so that the traffic would not overflow to the streets adjoining the entrance to the Gardens.

Creating illusion

A primary objective was to create an illusion that the lot contains only 50 to 80 parking spaces. In doing this, we developed small cells, or individual parking lot sections (for example, red, blue, green-coded sections). Surrounding these areas were significant plantings of trees, shrubs and perennials, creating a visual block. At no point during the growing season would visitors be able to see the entire expansiveness of the parking area.

Another objective was to create a sense of "arrival" at the gardens and art center. This was accomplished by heavily planting in these large (14- to 20-foot wide by 100- to 200-foot deep) planter beds, while allowing visitors to see the entrances to the organizations. In planting these, we tried to create open screening at the entrance drive for the Dow Gardens with dense east-west visual block to reduce the impact of such a large parking lot.

Blocking areas

A new adjustment was to de-emphasize the art center's loading dock at the entrance to the Dow Gardens. This objective was met by curving the road back to this service area. Further,

plantings were installed to create a year-round screen.

The last objective—and most significant from the horticultural point of view—was to develop an ecological home for the plantings. This ecological approach meant that we were going to create a landscape that would have reduced maintenance yet healthy plants by planting them in conditions for which they are suited. The ecological approach is analogous to a holistic approach in human health.

Diverse plantings

After reviewing the general literature, we found research on street trees in urban conditions that was conducted at Cornell University. It stated that if planting areas were increased in size so that multiple numbers of trees or shrubs could be planted in them, the plants seem to flourish when a forest situation or favorable micro-climate is created.

Further, we had to look at plant communities for diversity, be they pioneer or climax trees, understory shrubs or perennials. We wanted individual low maintenance gardens, while not having simply turf under the trees.

So the entire area was excavated down four feet. Underground drains were installed. (The Midland area is essentially the site of an ancient lake bottom and, therefore, heavy clay.) Once the underground drains were put in, two feet of sand was spread throughout the area and compacted. In the parking areas, gravel was installed, compacted and then the asphalt surface was applied. In the planter areas, the final two feet was filled with sandy-loam.

The planter islands are essentially multiples or mirror images of each other. They are either wide planting islands, 100 to 200 feet in length, or they are small planters, with a single tree and perennials.

In the smaller areas, where the single tree and perennials were planted, we put single trees of *Ulmus parvifolia* (lacebark elm), *Acer campestre* (hedge maple) or *Syringa reticulata* (Japanese tree lilac). Surrounding these trees a groundcover was used, in each case, a different cultivar of hemerocallis to create summer color. Further, we wanted herbaceous perennials that would die to the ground and, therefore, not be impacted by snow setting on top of them.

In the long planter islands, unique plantings were developed. For example, where honeylocust (*Gleditsia triacanthos inermis* "Skyline") was used, underplantings of fragrant sumac (*Rhus aromatica*), beach rose (*Rosa rugosa*), little princess spirea (*Spiraea japonica* "Little Princess") and bush cinquefoil (*Potentilla fruticosa*) were planted.

Herbaceous perennials

Further, as we moved closer to the edges, herbaceous perennials were integrated. These included such things as yarrow (*Achillea millefolium*), butterfly weed (*Asclepias tuberosa*), astilbe (*Astilbe chinensis* "Bridal Veil"), painted daisy (*Chrysanthemum coccincea*), blue lyme grass (*Elymus arenarius*), geum (*Geum quellyon*), showy stonecrop (*Sedum spectabile*), speedwell (*Veronica spicata*), and shasta daisy (*Crysanthemum maximum*).

In other planter areas, shade situations were developed. Climax trees, such as sugar maple (*Acer saccharum*), Norway maple (*Acer platanoides*) and red oak (*Quercus rubra*) were planted, with understories of arrowwood viburnum (*Viburnum dentatum*) and blackhaw viburnum (*Viburnum prunifolium*). A

border planting of light shade herbaceous perennials came to the edge of the planters.

Year-round color

In using this approach, we were able to plant areas that would not need long-term irrigation or mowing. These areas would be colorful spring, summer and fall, yet the plants would not have to be irrigated or pesticides applied because they were put in their correct ecological niche.

This type of planting just became more exciting as we installed it.

In the large planter bed, the soil area was cooler, the rootzones were cooler, moisture was conserved, yet plants that were compatible with each other were planted (companion plants). This first year a significant amount of irrigation, at least every seven to 10 days, will be needed. We anticipate that amount for the establishment year only.

Comfortable walks

The intent, then, is to present the Gardens, breaking up this huge sea of asphalt and yet creating an illusion of being in a park. To add to this illusion, we installed several walk areas 42 inches wide. These were wide enough for one person to comfortably walk. They gave us opportunity to be sensitive to the needs of the pedestrians, getting one out of the flow of traffic. Further, we were able to install small enough walks to give vistors the feeling of an intimate garden path.

The final part of this parking lot garden is, of course, lighting. The lighting was designed to create several images. Large-area lighting—but not as bright as daylight—used large, 24-foot metal halide fixtures.

Up-lighting was placed in the planter beds. This not only provides light at the perimeter but also accentuates the plants' habit growth. As the plants continue to develop, this uplighting will have more and more biomass to reflect against, thus increasing its effectiveness.

A garden stroll

Bollards were placed along the walkways for an intimate feeling of walking down a garden path. These were only 12 inches in height.

The final illusion was to develop facade lighting for the buildings. This gave the patrons the feeling of a new parking lot, a new garden, and new buildings.

This kind of a project can only be developed in a team approach. We put together the team of Jack Lee, architect and planner from Dow.Howell.Gilmore Associates; Don Hogue, electrical engineer from Dow.Howell.Gilmore Associates; John McPeak, contracter, Fisher Contracting; and Doug Chapman, horticulturist at the Dow Gardens. It certainly took each one of the principles cooperating as a team to complete the project.

We feel this blend of design, function and biologically sensitive landscape development is the key to a more people-friendly, aesthetically-pleasing parking lot.

Some suggest in landscape architecture that geometric form is becoming paramount in the landscape. I would like to say maintenance costs, landscape health and design must go hand in hand.

Horticulturists feel that the plant health and cost of landscape maintenance are paramount. Further, as resources become more limiting, the ecological approach to design and maintenance makes sense (cents). **LM**

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