

# LA RENOVATES WITH NATIVES TO SLASH WATER AND LABOR COSTS

As senior park maintenance supervisor for the Los Angeles Department of Water and Power, Sanders Barnett has done his best to halt the waste and along the way has become the model of efficient municipal landscape management. His emphasis on the use of native vegetation has significantly reduced the county's maintenance costs and created beautiful natural landscapes.

The keynote of Barnett's philosophy is simplicity. "I stress simplicity because its very hard to work with a complicated design," said Barnett. "It's more economical to work simpler; you're working with fewer elements." He approaches a landscape as a lesson in problem-solving. The simpler you solve the problem, the prettier it is going to look. Even more importantly, Barnett believes, is to solve the cause of your problems rather than camouflaging them with lush foliage. "I don't care if you spend a million dollars on a landscape, if you don't solve the basic problem it's not going to work," said Barnett.

While many municipalities have been under the gun to cut costs, few have had their fiscal problems trumpeted in the media the way California has. The city of Los Angeles is very dollar conscious and the individual departments have a

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At one power plant  
Barnett cut water consumption to 200 gallons per week from 30,000.

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vested interest in being economical. A Hollywood producer might be able to stock his garden with thirsty azaleas, rhododendrons and begonias because he has money to burn. Justifying the use of taxpayer's money is another story. The areas that are maintained by the Department of Water and Pow-



LA's Optimum Energy House not only has a native vegetation landscape, but the parking lot is partially turf blocks to reduce the impact of pavement.

er (power plants, reservoirs, power lines) are often visible from many high-income areas. Therefore they must be both functional and appealing. In this respect, the contribution of Sanders Barnett to the Los Angeles landscape has been the use of native plants. "We have to think in terms of low water consumption plants," said Barnett, "and that brings us back to our native vegetation. Sure, we could use up a lot of water and artificially grow lush tropical gardens. But if you look at our native plants, you will see that they are just as pretty as many of the imports." Interestingly enough, the plants considered exotic in California are natives in Australia and South Africa.

The beauty and esthetics of a landscape are important to Barnett, even in planning areas that serve functional purposes (such as erosion control). Barnett told *Weeds Trees & Turf* of how plant-conscious the country has become. He pointed out how people now expect the beauty that plants add to

an environment, particularly in resort areas and public places.

The Harbor Steam Plant was typical of many areas that were attractive and maintainable when resources were plentiful. The landscape was very tropical and required high maintenance. Barnett removed the tropical plants except for the palms because of their age and height. As a replacement he used a perennial mix of gazanias and three types of ground covers. Water usage was cut and the landscape is now in bloom all year round due to the variety of the plants. Barnett added a prostrate form of *ceanothus* to act as an anchor plant. The design is simple, serene and inexpensive. Barnett noted that the landscape was suffering from too much water. It used to be irrigated with \$4,000 worth of sprinklers which now can be used infrequently.

At the DWP's Optimum Energy House Barnett planted a mixture of foliage that, like the Harbor Steam

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Plant, is in bloom year-round. The drought-resistant plants are so hardy that no irrigation system is required. The water needed is supplied on a "as needed" basis with a hose. Prominent in the landscape is ornamental strawberry (*fragari chiloensis*) ground cover and a wildflower mix.

While Barnett has done wonders to streamline plant maintenance at the DWP, some of his practices go uncopied by sister agencies in Los Angeles. The sound barriers along the highway system (maintained by the Department of Transportation) are still basically tropical plants that need a lot of water and maintenance. Barnett compares La's rights of way with those of northern California and finds his own city lacking. "In northern California they have been working with natives for about seven years, incorporating them into the landscape," said Barnett. "They plant them in the fall before the rains and let them get acclimated to the natural conditions under which they grow." Much of Southern California is irrigated by sprinkler

systems. Barnett noted that his upstate neighbors are learning from LA's mistakes. "Why give alot of life support and maintenance to a plant that doesn't want to live there in the first place," he added. "Take the plant who originally lived there, and plant him there."

Along rights of way particular attention has been paid to the pollution resistance of the plants used.

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**Barnett is a strong advocate of pretesting native plants before installation.**

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Los Angeles has had good results with some of Australian imports. Barnett noted that generally plants with hard, waxy surfaces thrived better than those with fuzzy surfaces. The fuzzy plants trap tremendous amounts of dust and dirt and clog its stomata.

In creating a landscape, be it 20 miles of rights of way or a power

station, Barnett stresses *planning* over any other consideration. He is a strong advocate of pretesting to find out what plants are suitable for that particular area. These tests include soil testing and planting of frost-susceptible plants.

"In the planning stages you can erase your mistakes with an eraser," said Barnett. "Once its planted, you need a shovel." He noted that one well-known landscape architect, Thomas Church, has been very successful with very few plants. Church has two full-time horticulturists on his staff. He plans a landscape and notes the shapes and colors of the foliage that he wants. His horticulturists then advise him which plants both meet his specs and will flourish in that area. In planning a landscape Church thinks of the ultimate color, not only what it will look like right after installation.

When working on an existing landscape Barnett always examines the plants already there. He notes which ones are thriving and what families they come from. In

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## LA Water and Power has massive task

The use of native vegetation by the Los Angeles Department of Water and Power has an enormous impact on the landscape due to the number of areas DWP maintains. The department is responsible for 352 water and power facilities and will be adding six more. That translates into close to 11 million sq. ft. of lawn areas, 11,856 trees and over 75,000 shrubs.

According to Principal Park Supervisor Alex Costa, that is not the entire picture. DWP maintains 12 transportation rights of way (ranging from 2-12 miles each); 440,000 sq. ft. of sidewalks (that are maintained with backpack blowers and brooms due to the water shortage); 1.3 million sq. ft. of blacktop; 3.8 million sq. ft. of rock mat (areas that must be kept weed-free); and over 36 million sq. ft. of weed control areas (those

with no formal landscaping) that are maintained on a semi annual or bimonthly basis. "We are one of the few entities that purposely maintains weeds," said Costa. "They hold down dust, which is a big problem for our energy equipment. The weeds are now being converted to native vegetation."

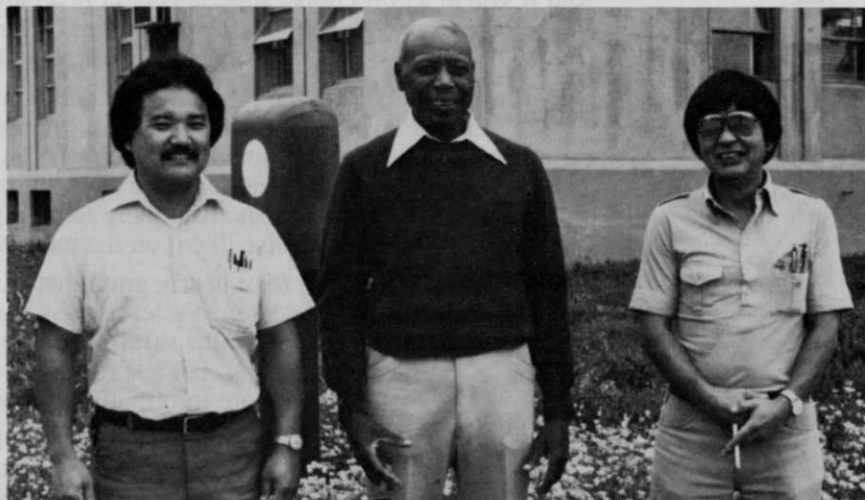
To handle the massive job of maintaining DWP's landscaping Costa has a staff of 113. Beneath Costa are two senior park supervisors, six area foremen, six area senior gardeners, one vector control specialist (who handles chemical operations), six pest control operators (licensed by the state), one propagation supervisor, and gardeners. The department is responsible for most of its own design work and that is generated in-house.

The department's budgeting is handled by a two-tiered system.

Manpower, equipment, equipment maintenance and materials are budgeted and funded through municipal channels. A second level of budgeting is required for "on-demand work." Special projects not in the annual budget are funded separately. To purchase equipment, Costa and his staff work up a list of specifications and submit them to the city's purchasing agent who does the actual buying. Maintenance of equipment is handled by DWP's Shop Service, who has a staff of 15 doing small equipment repair.

For the first time Costa's office is contemplating contracting work out. "The city wants us to reduce our staff, so we're studying the cost-effectiveness of doing the work ourselves or contracting it out," said Costa.

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Barnett (center) with two crew chiefs prior to his retirement.

his contact with landscapers, Barnett advises them to steer their clients away from plants that have marginal chance of survival or short blooming seasons. He finds many instances where people in mountainous regions want to plant azaleas. They look good in the summer but die after the first frost. Although many Southern California residents can afford to foot the bill of replacing the plants, to Barnett that is not the point. "If something is planted where it won't flourish, it is a waste of plant life, water and money," said Barnett. "Everybody suffers, because plants and natural resources are being wasted."

Another facet of proper planning is to know the proper moisture requirement of your plants. "We kill more plants with the water hose than anything else," asserted Barnett, "in both tropical and arid environments." He noted that a lot of the Australian and New Zealand imports currently being used suffer from "overculture"—too much water. One of the reasons for the overuse of water, according to Barnett, is that man can't match the conditions of nature when he irrigates. Typically when it rains it is overcast and humid, while an irrigation system waters according to a schedule (during which it is often sunny and dry). The natural condition lends itself to a much more efficient use of water.

In many cities, such as Los

Angeles, water allocation is not a matter of money but of priorities. Those who waste it will not be able to get it when the water shortage hits (and in many areas it will) regardless of their income. Many of Dpw's power stations are being relandscaped with native plants to cut water use. Just as the Optimum Energy House is a prime example of native vegetation for the consumer, many government landscape managers could pick up some hints from Barnett's treatment of the Sylmar Converter power plant. The ground cover is similar to the Optimum Energy House's, largely ornamental strawberry with red berries and white blossoms. To minimize the weeds, Barnett laid down a four mil thick black polyethylene tarpaulin to cover the soil. He then went over it with an aerifier and punched holes to allow water to seep in. "The tarp cuts sunlight but retains water," said Barnett. "We cut our weeds by 95% and instead of using up to 30,000 gallons of water per week, we use as little as 200 gallons." He added that once the ground cover is established (6-12 months), there is very little maintenance. At Sylmar, volcanic cinders are used as a mulch. Barnett pointed out they are very effective retaining water regardless of the heat.

Beautifying a power station, with conservation in mind, is no small feat. Yet Barnett has gone even one step further and illustrated how

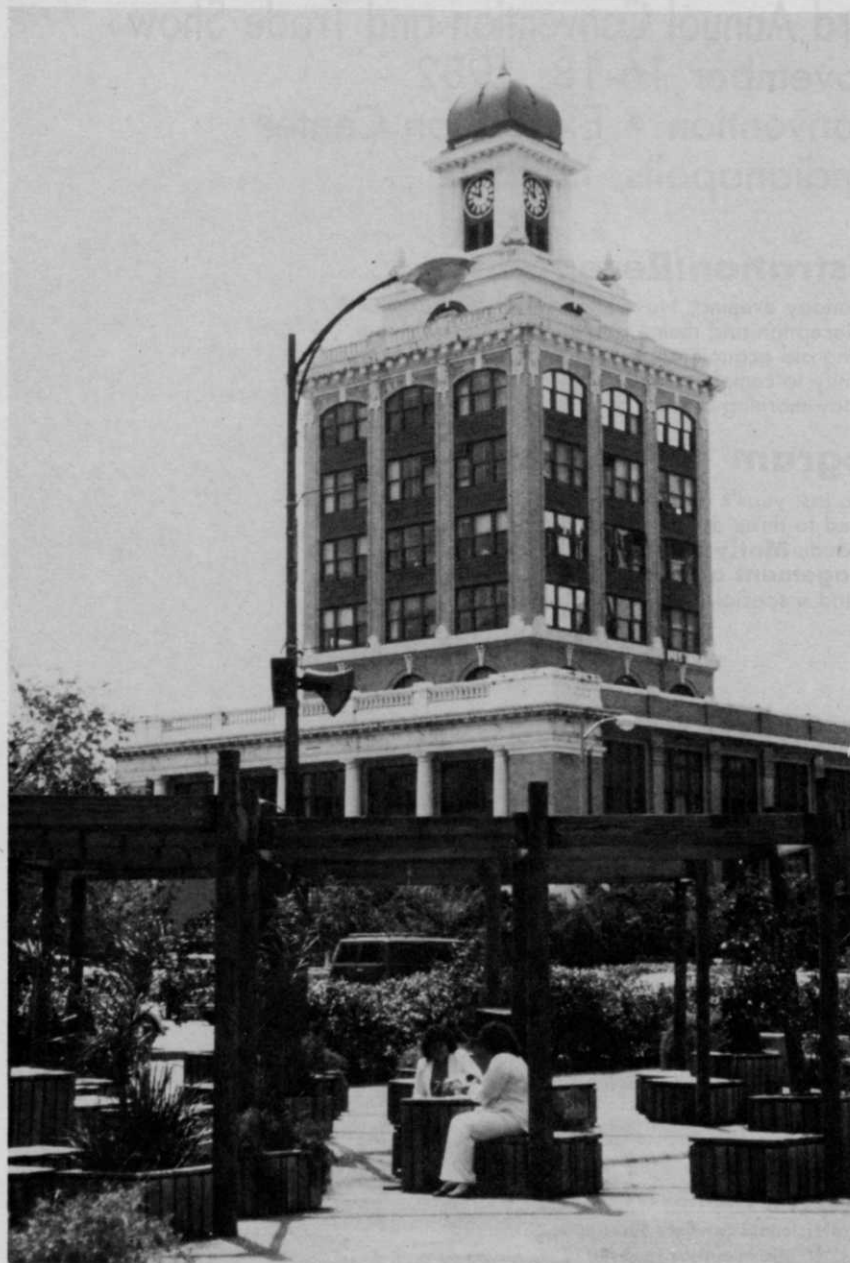
functional foliage can be. The generators at the plant have to be kept very clean to work efficiently. Trees were planted in front of the fences bordering the generators and serve the dual purpose of obscuring the ugly generators from view and also trapping dust to cut down on generator maintenance. Due to the generators' need for air only 60% of the fence could be covered. The irrigation for the station is a drip system. Two systems have been set up—one for the ground cover and one for the trees and shrubs. Barnett's reasoning is that they have different requirements, so it would be a waste to water the whole station when only the shrubs needed water.

One innovation that has commercial potential for many landscapers is the carport at the Optimum Energy House. The parking lot at OEH is very unparking lot-looking because it is grass and not paved concrete or asphalt. Concrete units that consist of blocks set two inches apart are set on a sand base. One and one-half inch of top soil is added and then grass is planted. The effect is a green and white checkerboard parking lot. The cars literally mow the grass, but because the plant is set below the surface the plant survives. Barnett noted it is also tremendously cooler than asphalt, not a small benefit in Southern California.

A point often brought against the use of native vegetation is its uncontrollability. It doesn't necessarily bloom right on secheule. Barnett believes this is something we will all have to adjust to in the future because we simply won't have the resources to maintain tropical vegetation. Annuals and mediterranean imports will also fall by the wayside as the water flow is turned down to a trickle. Barnett told WTT that we should be opting for year-round foliage color, not bloom color. "I know that if some of my plants don't come up one year, they will the next and eventually the landscape will be just as I planned it, said Barnett. As resources tighten, that's a philosophy many people will be embracing.

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## TAMPA TRIES COMPUTER TO INCREASE EFFICIENCY BY SETTING PRIORITIES



Arbor in downtown Tampa invites public use of parks.

government, Ferlita had no trouble picking up the extra crews to maintain the new property, but he was without the management structure to run such a large staff over the 1400 acres cared for by the city.

As a result, crews with minimal supervision were operating from an inconsistent system of work orders. Priorities for jobs were often being set on a day to day basis by the crews themselves. The end product was a haphazard maintenance job. Vacant areas needing minimal maintenance were receiving more man hours than necessary while highly visible, intensely landscaped parks were inadequately kept up.

Ferlita and the city recognized the problem and brought in a man-

Each crew was setting its own priorities with haphazard results until the computer began scheduling based upon system-wide needs.

agement consulting firm who organized the present system. The firm first had to assess the maintenance needs of the parks and the works capabilities of the crews. Data would then be correlated in the creation of a program to provide the most efficient use of the department's resources.

The first task in the project was to determine exactly how much could be accomplished by the manpower available to the department. There was no labor shortage with over 200 on staff. But the demise of CETA had taken away a large surplus of workers the department was accustomed to having, requiring more careful use of those remaining. "We did time and

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Computers are a fact of life now and learning to use them is fast becoming a necessity for people in all occupations. The Municipal Parks Department of Tampa, FL is following the trend. But the efficiency and information control to be gained from putting a Parks Department on-line is not without

problems as Parks superintendent Ross Ferlita explained.

A year ago, the Tampa Parks operation was out of control. Its responsibilities had increased many times in a short period, as lands that had been maintained by other city departments were turned over to Parks. In a financially stable city

motion studies for all of the activities involved in maintaining the parks: weeding, mowing, trimming, edging, etc. and compared our results to national averages," said Ferlita. Where the Tampa crews fell short of the average, changes were made in the methods or adjustments were made for the local climate differences.

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Foreman roles have become much less physical and more managerial.

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The study then broke down the tasks done by maintenance personnel in to 46 work activities to standardize the methods for each activity. The number of man hours required for each task was then computed. The standard methods were incorporated into a book of performance guidelines and given to the staff.

Each task was fed into the com-

puter with the amount of time and supplies it would take following the uniform method. The computer's job was to allot each job to one of the four district crews, the city-wide crew or the forestry crew.

Each month, the computer produces a stack of cards. On each card is one of the jobs slated to be done that month. The cards are sorted by district, delivered to the manager of each district and then delegated to the supervisors. Using the cards the supervisors must design two schedules for each of the crews under their jurisdiction. Once the biweekly schedules are approved by the deputy superintendents, the cards are further divided up among the crew foremen and the workers.

The men later report back how many jobs were finished and a monthly log is kept on how much the schedule is completed and how many man hours it actually takes. At the end of a year on the system, Ferlita and his staff will refer to these logs to update the accuracy of the data that the computer has to

work with, and make adjustments for the following year.

In theory, the system should run the Parks Department with robotic efficiency. But the human element has shown up in more ways than the sick days and vacation that are programmed into the computer.

Convincing employees to maintain grass, ornamentals and trees

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It was hard to convince crews to stick to the computer schedule instead of handling work as they saw it.

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from a schedule designed by a computer has been difficult in many cases. Ferlita has found that workers and foremen, many who have been in the department for 20-30 years, always devised their own schedules according to what they observed on a day to day basis, "It was hard to convince the foremen to stick to the new schedule, if

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they saw grass that needed to be cut, they cut it, regardless of whether it was a level three area and not to be cut for three months," said Ferlita. These activities seem conscientious, but they divert time away from completing items on the list.

Ferlita also found resistance to the increased paperwork for supervisors and foremen. Their roles have become much less physical and far more managerial. "We have been able to keep most of the people in the same jobs, but we have had to take people that have been with us for years and channel their thinking into a whole new pattern of planning ahead to write schedules, record what gets done, and keep a backlog of additional work to be done in extra time," explained Ferlita.

The Department has overcome many of its personnel problems by training the foremen and supervisors in the design and use of the system to clarify how their activities fit into the whole. Ferlita and

his deputies have found patience in this endeavor has paid off. Most employees needed more than one sitting through the training class on the system to fully understand it. As Ferlita explains, "it often hits like a bolt of lightning; after attending the same class two, sometimes three times, the picture finally comes together for them."

As the personnel problems in the field are ironed out, the system had has been showing some immediate benefits to the operation of the administrative offices. Requisitioning and inventory are now done through the computer. Records for materials and supplies use are kept, not only in terms of the quantities used, but also according to the jobs and crews by which they were used. The computer then automatically purchases general supplies according to the inventory levels.

Budgeting, which begins in May, is a much simplified process with the computer. As plans are made for the coming year the data from

the preceding year can easily be called up to document requests that may be questioned.

The Parks Department submits their finished budget to the mayor's office in mid July. "Now when we go to defend our budget, we're not arguing with estimations, its all there in black and white," said Ferlita. Although the final procedure is to submit the budget to the City Council in mid-August, in Tampa's strong mayoral government, the Council has very little power to revise and almost no option to veto the document that the mayor's office presents to them.

An evaluation of the management system will be made at the end of a full year. Ferlita is already aware of small changes that may have to be made but wants the system to run a complete year to get a consistent picture. At year's end, the monthly and quarterly reports of work finished will be pulled out and seriously compared to the original projections.

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