

## URBAN FORESTRY WEST:

# Seattle's Freeway Park

by Betty Miller

Photos by Don Normark

A spectacular six-acre lid over this city's busiest artery masks traffic sounds and smells with lush environmental plantings and even a 32-foot waterfall—and makes a powerful statement about people and the urban landscape

VISITORS TO A six-acre city park can—with little stretch of the imagination—find themselves surrounded by a peaceful forest, or

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Spanning a 10-lane highway in the middle of a city, the Freeway Park presented planners with some special environmental problems

can perch high on a rock cliff beside a cascading waterfall. The park really exists; imagination is needed only in forgetting that it's in the middle of Seattle, directly over the city's busiest artery.

Twenty years ago, a new freeway was built to handle Seattle-area commuters and to carry the heavy coastal Interstate traffic. The route runs north and south, the same direction as the city is built, in much the way a main street runs in any city. The freeway soon proved to be a boon to suburbanites who wanted quick access to the city. There was an aesthetic problem, however: an ugly

"ditch" resulted as the freeway descended to a low level through the heart of the downtown area. But now Seattle-area residents can have their cake and eat it too: they still have access to the city, and a spectacular park has been built to lid the ugly chasm created by the freeway downtown.

Civic leader James R. Ellis served as the catalyst for the park by inspiring eight years of teamwork among city, county, state, and federal governments, and private citizens. The land that had been used solely for transportation was replaced through the use of air rights—permission was

The author at right shows humus created by the ground cover *Waldsteinia trifolia*. The greatest little "mother's helper" in our gardens or public plantings, she reports, is the ground cover—to reduce weed-seed germination, to maintain a loose, friable soil for rain and air absorption, to keep roots cool during drought by means of foliage transpiration and shade, to provide protection from frost by means of air-circulation control, and to provide beauty.

The greatest asset of ground-cover plantings is their effectiveness in continually processing the soil; the old foliage on certain species does not become detached, and remains to decompose and enrich the soil. Miller has used a ground cover, *Heuchera glabra*, with characteristics similar to those of the one shown, on a steep, sandy bank with full sun exposure, and in a very few years it "manufactured" a three-inch, rich humus topsoil.



## SEATTLE'S FREEWAY PARK

(continued)



Carefully sited trees give noon lunchers the peace and beauty of a forest setting



Running water helps complete the image of a natural setting removed from the harsh city. The 32-foot waterfall completely masks the sounds of the heavy traffic below

Lush plantings mingle with the angular concrete of downtown



## Guidelines for

**A**S THE PSYCHOLOGICAL and physical pressures of the city environment grow, the challenge to create plantings to alleviate those pressures will also grow. Scientists have been saying for some years that the changes we have wrought on our environment, particularly in densely populated areas, have created an entirely different set of factors for plant growth.

Many of our traditionally favorite trees cannot tolerate the environmental stresses; it is foolish to replace the trees that die with the same, equally susceptible, species. The cost is too high, and the taxpayer won't stand for it. We need to recognize and accommodate the plants that can succeed.

Landscape architects, research scientists, horticulturists, and nurserymen need to get together with public agencies, private businesses, civic planners, and citizens in order to meet urban environmental needs.

Here is a look at some of the environmental problems we face, and which we need to understand better:

**Pollution** does not necessarily directly cause mortality in plants unless they are exposed to extreme levels of toxic gases. Most of the time, a plant is weakened by pollution and thereby becomes less resistant to other environmental stresses or diseases.

Among these stresses are: dehydration of foliage from wind funneled by adjacent structures; general abuse by pedestrians, automobiles, and animals; glare from cement or glass; and soil and maintenance problems. In addition, the plant itself may be a

obtained to use the space *over* the ground for a purpose other than transportation. The total public cost of \$14 million amounted to \$45 a square foot—in an area where land is valued at \$63 a square foot. The cost created nary a ripple of controversy. Enthusiasm reigned among both participants and nonparticipants in the effort.

This new urban park covers both public and private parking structures and is integrated with the plazas and terraces of a high-rise office building. No more unfavorable environment for growing plants can be found in Seattle. Yet because of enlightened planning and financing, and the brilliant design leadership of Lawrence Halprin and Associates, the lushly planted park is a real and lasting part of the lives of the people of Seattle.

Halprin, his project designer

Angela Danadjieva, and longtime associate Jean Walton, a landscape architect and horticulturist, led the design team. The structural components of the garage, bridge, and plaza had to be designed to meet the load requirements of the park elements. This meant that early in the design process, soil-depth requirements for plants and location had to be determined. Understanding the unique environmental and social conditions of the site was a priority. To assist in this effort, the firm of Edward MacLeod & Associates, landscape architects and land planners in Seattle—and myself, their horticultural consultant—were added to the team.

The planting plan called for dense edges of conifers, medium and smaller flowering shrubs at the edges of walks, and open lawn areas. As these plants develop in size, the

habitat will become suitable for more vulnerable plant varieties.

The criteria for plant-material selection challenged us. Plants were chosen primarily for their environmental tolerance, including the ability to withstand strong winds, intense glare from concrete and glass reflection, and high ozone levels. But these were not the only tests the plants had to meet. It was critical to select plant materials that could flourish in relation to the structural variances provided for root systems. The plants were also to play an important aesthetic role as a contrast to the hard, angular concrete. This meant that any plant had to have the proven ability to achieve reasonable size and lushness considering the environmental conditions which would unavoidably limit its performance. The final challenge

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## Urban Plantings

poor choice for the prevalent conditions, or may be particularly susceptible to disease. It's best to prepare for increasing pollution with the use of tolerant plant material.

Soils are often a source of urban plant problems. Some common failures in practice related to soils are:

Assuming that a hillside means good drainage. If a means of drainage is not provided to carry water below the surface, the water merely runs down the surface, washing off the topsoil without providing water for root absorption by plants.

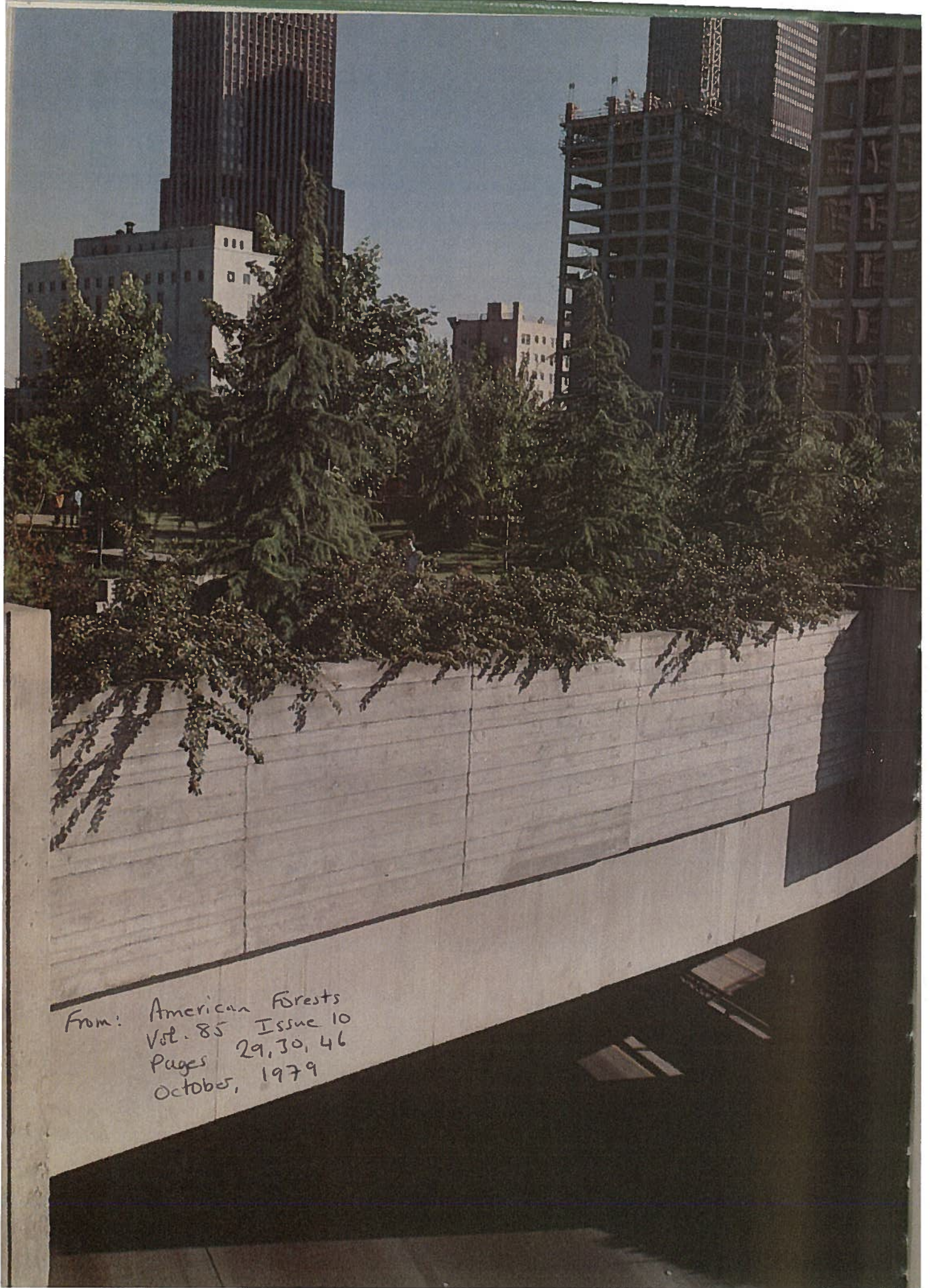
Placing a plant on top of a mound without concrete support. Again, the water is not adequately absorbed, and instead runs off. During a drought the roots might burn and dry out from exposure.

Planting street trees and shrubs in containers that do not have drainage from the base. The plants will eventually rot in the resultant stagnant water.

Mulching too deeply, or even planting too deeply. Putting the crown of trees and shrubs below the soil or mulch level is an invitation to root rot, which is eventually fatal. Fertilization is not a cure; it may produce a spurt of life for another season. The plant then dies from the extra strain of responding to the fertilizer with an inadequate root system.

Planting trees in sidewalk holes—regardless of the underground spaghetti of conduits, etc.—throwing in a minimum of soil, and allowing the surface to be compacted by pedestrians,

thereby cutting off the source of air and water. Large-growing street trees, depending upon the ultimate size of the species, should have vaults eight feet square and 10 feet deep, with elaborate drainage systems and ground covers for processing the soil. Just as the foundation of a house is essential to its ultimate strength, the health of a planting is dependent on its site preparation. It's better to invest funds in developing an appropriate site, and planting a smaller specimen, than to plant a mature tree with marginal site accommodations that will limit the chances of its survival. It is true that a plant can be kept alive with fertilizers and other artificial means, but these are best considered emergency or booster measures, rather than the tree's only source of survival. The strength and ability of a plant to cope with pollution will improve substantially when the priority consideration is given to site selection and preparation. Maintenance should be given highest priority on the budget. In general, the bulk of today's landscaping budget is specified for acquisition of property, fees for the landscape architect, contractor, and subcontractors, and a minute percentage for purchasing plants and planting media. Planters should determine which kind of plant material will survive the maintenance being allotted the site (lawn requires maximum maintenance; trees, shrubs, and ground covers vary in their needs). These plants should be carefully chosen according to the various criteria listed above.



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