

Landscaping and landscape maintenance are a vital part of the Disney Magic.

EPCOT CENTER

By GEORGE L. ZEIS

During his life, Walt Disney shocked the business world with his fearless drive in creating mammoth entertainment "lands or worlds". His followers have a new shock in the form of Epcot Center, described by its designers at Walt Disney Enterprises as a permanent World's Fair of imagination, discovery, education and exploration.

More than \$1 billion has been spent in construction of the current 260-acre site in Orlando, Florida. According to plan, the site may double in size in years to come.

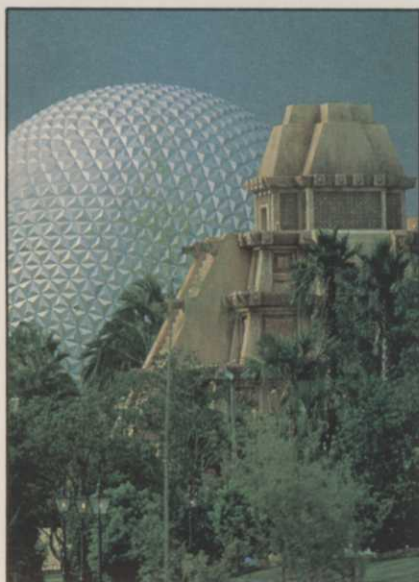
More than \$9 million so far has been spent on landscaping; including 12,500 trees of 125 species, 200,000 shrubs of 250 species, 20 acres of emerald zoysia and Argentine bahiagrass, and more than 700,000 annuals in three acres of plant beds.

Epcot Center is divided into two parts, Future World and World Showcase.

The towering gateway to Future World is Spaceship Earth, a 180-ft. tall geosphere. Around Spaceship Earth are six pavilions sponsored by U.S. Corporations. Future World's landscaping carefully blends futuristic structures with plants.

World Showcase contains a 40-acre lagoon and eight mini-nations requiring appropriate vegetation, such as a Canadian pine grove, a German Black Forest, a Japanese garden, and the chestnut-lined Tuileries of Paris.

The people behind this massive landscape are Scott Girard, chief landscape architect for Walt Disney Enterprises, Tony Virginia, director of horticulture for



Walt Disney Productions, and Pat McCarty, landscape manager for Epcot Center.

McCarty has a full-time staff of 94 managed by three superintendents; Barry McKently, Jerry Hagedorn, and Walt Pillows. The staff includes four irrigation specialists and four arborists.

Obtaining the plants for Epcot Center required a nationwide search. Eucalyptus, rare in Florida, had to be grown in a 100-acre tree farm at the site. "We used effluent water from the waste water treatment plant to water eucalyptus seedlings," said Virginia. "They grew more than one foot per month! We now have 20 varieties of eucalyptus on site, some 40 feet tall."

"Trees were relocated from all over the United States," McCarty pointed out. "The ancestors of those trees came from Europe, Mexico and the Orient. But trees adapt to their new surroundings (North America) and change shape. We had to train, prune, and re-shape linden, oak and poplar trees to capture their original native land appearance."

Bill Evans, the original landscape architect for Disneyland and Disney World, said, "We play tricks with trees to get the most unusual uses out of them. We sometimes carve them into imaginative shapes to fit the needs."

Virginia acquired a 100-year-old weeping mulberry for the Chinese pavilion from New Jersey. Magnolia trees were brought in from Louisiana, crepe myrtle from South Carolina, Italian cypress from California, and many other trees and shrubs from Texas.



Vegetation had to match that of each nation presented, such as Germany (top) and Mexico (left).

Some trees had to be substituted. Hemlock, common in Canada, wouldn't make it in Florida, according to Virginia. "They need cold winter weather and don't like humidity." After testing, Virginia found that *Cedrus deodora*, a native Himalayan cedar which looks like hemlock, thrived in central Florida.

World Showcase, arranged around the lagoon, presents the architectural, social and cultural heritage of nine nations. In addition to the centrally located American Adventure, are the mini-nations of Canada, the United Kingdom, France, Japan, Germany, Italy, China and Mexico. The nations of Morocco,

Spain, Israel, Venezuela and equatorial Africa will be added.

The trees in the Japanese and Chinese pavilions include Japanese pagoda tree, Japanese black pine, Regent scholar tree, Chinese fringe tree, flowering magnolias, and Japanese cherry trees.

Unique shaping of trees and shrubs and the careful mixtures of color are subliminal to the tourist. There are 180 laural oaks and Southern live oaks pruned to specifications. Three separate groups of sycamores are pollarded and interlaced to shapes found in France and Germany. Elms are pruned to be pancake-shaped.

Azaleas, junipers, roses, holly, jasmine, bamboo are a few of the many species artfully placed in beds or berms. Bougainvillea is selectively used around the World Showcase. There are more than 10,000 poinsettia plants on stage in the Epcot Center.

Annuals, such as violets, pansies, celosia, coleus, begonia, impatiens, petunia, marigold and others are planted out four times a year in 165 beds ranging in size

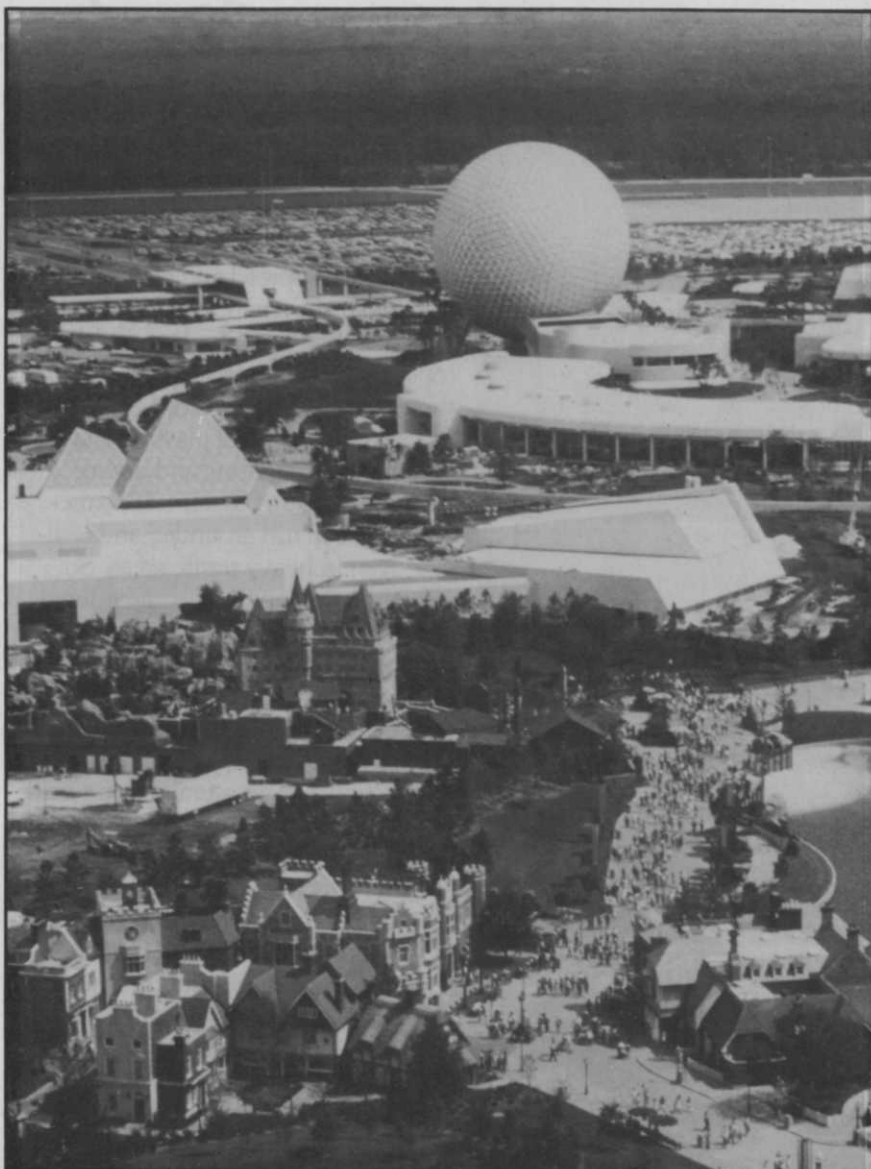
from 50 square feet to 20,000.

Maintaining this vast assortment of plant material in Florida's sandy soil is also a project of Disney proportions. Nitrogen leaches rapidly from the soil and must be replaced at one-half to three-quarters lb./1,000 sq. ft. per month.

The automatic irrigation system is extremely sophisticated, operated by clocks and sensors. "It is as automatic as we could get it," says McCarty. It consists of 33 controllers, each with 24 stations, and more than 600 remote control valves. From a master display panel, maintenance personnel can identify any problem in the field, whether hydraulic or electrical.

Ground moisture is monitored by irrometers which override the controls. Programming is done at field locations. Subterranean tubing is used in guest areas so water can be applied during the day without turning on the sprinklers. Pressure sensors for each remote valve can signal a broken head or line and send a warning to the master panel and the field control.

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Most irrigation is done between 7:00 pm and 1:00 am. Under normal conditions, 5,500 gallons per minute is used. Water is supplied by five wells.

Hanging plants are watered by small tubes which drip as needed.

The irrigation lines and the Valcon control system cost \$1.7 million to install.

Insects and plant diseases have to be watched carefully. Oftanol is used for control of mole crickets, followed by spot treatments with diazinon. Sevin and Dursban are used for sod webworm and armyworm control.

Hemlock, common in Canada, wouldn't make it in Florida, so landscape architect Tony Virginia substituted a Himalayan cedar which looks like hemlock.

Tree and shrub insects, such as mites, hard and soft scale, and lepidoptera, are kept under control with Orthene, diazinon, Kelthane, Vendex and summer oil.

Tree diseases, such as leafspot and dieback, are treated with copper sulphate or Fore. Root rot is treated with benomyl, Banrot, Subdue, and Truban.

Treflan, balan, and Ronstar are used in preemergence weed control. Roundup is used for spot control.

"Since all the horticultural work is done with our staff, we have a broad range of equipment," McCarty said. "We have two Ford tractors, Mott Interstater mowers, two Kut-Kwik rotaries for slopes and overpasses, four Toro Groundsmasters, and eight Cushman Trucksters. The landscape crew also has seven half-ton trucks and a number of sprayers."

As Epcot Center expands from 260 acres to 500 acres, the same high level of landscaping will be applied. Without landscaping, Epcot Center wouldn't be the attraction it is. Landscaping and landscape maintenance are a vital part of the Disney "magic". **WTT**



Epcot's 260 developed acres include plants from all parts of the country. Crew plants annuals four times each year in 165 beds ranging in size from 50 to 20,000 square feet.