

# NORTHERN THEME PARK PLANTINGS REQUIRE COMPLETE IRRIGATION SYSTEM

Marriott's \$50 million Great America family entertainment center near Chicago, Illinois is one of the world's most dazzling theme parks. Its five theme locales are jam-packed with daring thrill rides, live shows and colorful eating spots.

Today the park features lush green parkways, beautiful flower beds filled with exotic plantings and handsome wooded slopes. But the landscape wasn't always as colorful and thriving. In 1976, just two months after the park had been officially opened, the management of the vast entertainment center had to come to grips with a landscaping problem that was detracting from the beauty of the park and that was costing a considerable amount of money. There was no effective permanent irrigation system.

Complete irrigation systems are not considered necessary in the Midwest because of the usually abundant rainfall and are not usually a part of the total plan for an amusement park or other complex. Secondly, the Great America center is open only through the summertime, causing an expensive irrigation system to sit dormant through the cold months when the park is closed and the ground frozen.

Unfortunately, that rationale didn't take into consideration the intense heat of Illinois summers or the fact that park gardeners had selected flowers and other exotic plantings that required special watering care. The results: many of the plants died. These losses occurred despite the fact that maintenance people were watering the grounds as regularly as possible with a quick coupler valve system put in primarily to wash down streets and sidewalks.

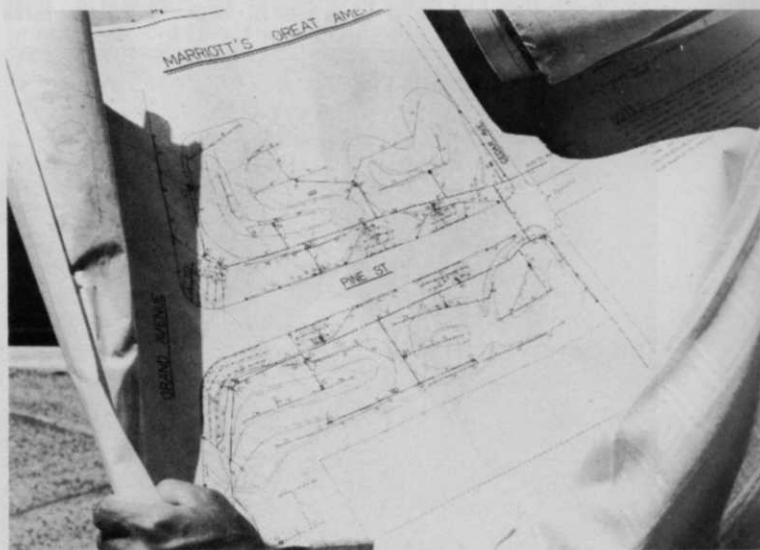
Faced with these losses, the park management sought irrigation help. In August of that first season, Century Rain Aid of Southfield, Mich. was asked to plan an irrigation system to water the front entrance of the park, one of the areas most affected by lack of proper watering. While undertaking that project, the firm met with park officials and were eventually asked to design the overall irrigation system that is under construction today.

"Our first problem was to provide the proper irrigation for the park's front entrance," said Ken Hodas, design manager for Century. "The grass was dying and detracting from the beauty of the park."

Hodas developed plans for the entrance watering system that included bringing in a line from the pump house. The project went smoothly and was completed very satisfactorily.

Once the front entrance was completed, Century Rain Aid was given the go-ahead to design a system which would allow for the many variables the 80-acre park's watering needs presented. That assignment called for the solution of several basic irrigation problems.

"Our first step was to develop an overview of the project," said Hodas. "We had to ask ourselves several basic questions and build on the answers



**Plans for flower bed irrigation** with approximately 50 head locations and proper spray overlap.

we got back. What kinds of plants are we watering? What moisture requirements must we meet? What present equipment and facilities do we have to work with? How long do we have to do the watering? What other variables are there?"

Great America displays some of the most exotic and unusual outdoor plants imaginable. Landscapers may decide, for example, to plant 5,000 tropical ferns in one given area, then pull them up the next year and transplant them in another area of the park. For that reason, Hodas had to take into account the fact that watering requirements would change from season to season as the plants were varied.

"To compensate for the flat Illinois landscape, a number of banked flower beds and berms had been put in," said Hodas. "These were steeply graded and bristled with pine trees. The park's professional caliber greenhouses kept the exotic plantings in ample supply, but the cost was tremendous money that could be saved with proper irrigation outdoors."

Therefore, irrigation recommendations were required in terms of planting areas rather than for specific greenery.

"There was a lot more to the project than just irrigating 80 acres of land," said Hodas. Their existing main line and pumping policy had to be altered to take into consideration the planting changes occurring almost yearly."

To get a handle on the exacting water requirements needed to irrigate the varying plants, Hodas relied on aerial photography and about 250 Polaroid snapshots. Additionally, the park supplied the Century Rain Aid team with a set of plans for the amusement park. Hodas assembled this



**Aerial photographs** like this were used to pinpoint the location of sprinklers.

### **Irrigation** from page 36

blueprint jigsaw thirty-six 24- by 36-inch sheets. Additionally, Hodas and his assistants walked through the park at least three times in order to spot locate the many sprinklers and valves that would be required.

To determine just how much water was available to do the job, the irrigation specialists called on the park's maintenance people.

"We started our planning with a figure of 1,500 gallons of water per minute," said Hodas. "But maintenance teams were also cutting into that figure at a rate of about 200 gallons per minute to wash down walkways and perform other watering duties."

Subtracting that figure allowed 1,300 gallons per minute to do the job. Additionally, park restrictions prohibited irrigating during visiting hours. With park hours from 10:00 a.m. through 10:00 p.m. throughout the summer season, plus other timing considerations, eight hours per day were left to irrigate the park.

Because of the high level of traffic through the park, including thousands of children, the sprinklers were located away from the walkways where they might be kicked or damaged.

Rain Bird equipment was used on the job, including Model RC-1260 Controllers, specially adapted for moisture sensing and lighted for nighttime observation and electric valves.

"As a part of our plan, we gave the Marriott people some figures for proper maintenance," said Hodas. Towards this end, we tried to limit our use of different models of sprinklers to a select few. In that way, we could keep our equipment standardized with backup quantities should replacements be needed."

The plan was delivered to the Marriott corporate offices in Washington, D.C. in the summer of 1977, six weeks after Century Rain Aid was asked to plan the project.

"We realized we were talking about a big expenditure even for a company of Marriott's caliber," said Hodas. "Savings in maintenance costs alone would not be cut drastically upfront. But, we emphasized that the savings in plantings would be considerable." Marriott okayed the plan and work was ready to begin.

The first phase of development involved approximately 65 acres. Contractors used more than 40 controllers as well as more than 300 electric valves and miles of pipes and wires.

What can irrigation designers learn from this project?

"Like a mathematician, you have to consider the problem step by step," said Hodas. "Be aware of all the variables you're going to face — the climate, the landscape, the variety of plants, available water sources, and so on. With those answers in hand, your previous experience can come into play. Certain sprinklers will work better than others depending upon the situation you're presented with. And costs are another important factor; you'll want to budget your efforts to stay within a realistic framework given the size of the project."

How does Hodas feel about the Marriott project?

"I'm very pleased with the plans we eventually drew up," he said. "If we had it to do over again, though, we'd prefer to be involved from scratch. We would have preferred to design the system as part of the overall project, before the park was open to the public."

What about the reaction of the visitors? Unfortunately, irrigation systems go largely unnoticed when working properly. Mothers may notice how beautiful the flowers look. Fathers will probably appreciate the shade trees. The kids? Well, they're there just for the fun. But few visitors will stop to think of the energy expended to make it all happen.

**WTT**