



FAIRWAYS OF THE FUTURE

Issues and societal forces at work today are changing the look and management of tomorrow's golf courses. Equipment manufacturers say they'll be ready for the 21st century.

by Will Perry, managing editor

In many ways, the golf course of tomorrow is being shaped by the issues facing the green industry today. Concern about water conservation, dwindling employee pools, and the ever-increasing number of recreational golfers are some of the factors dictating what courses—and the equipment used to manage them—will look like in the future.

What will be the consequences of these developments for the superintendent in 5, 10, 20 years? LANDSCAPE MANAGEMENT asked around.

"There's no question that the big

issue for the next 10 to 20 years is water," says Dr. Michael Hurdzan, of Hurdzan Design Group, a golf course architectural firm. "Everything else will be driven off of the limitation of that resource."

Hurdzan believes that the recent appearance of meters on wells in many parts of the country is an early indicator of what lies ahead: increased monitoring. As controls tighten, water will become more expensive and, consequently, used more sparingly.

"I think that we'll start to see more

zonal maintenance. Intensively maintained tees and greens, moderately maintained fairways, low maintenance roughs and a lot more 'no maintenance' areas," he says.

Hurdzan echoes the sentiments of several architects who believe that tomorrow's superintendent is likely to rely more on super-absorbent polymers to supplement irrigation. Drip irrigation will grow in favor, they say, while soil and air sensors and fully-computerized weather stations will be commonplace.

"The big effort in computer-controlled irrigation will continue to be trying to fine tune each sprinkler head," says Ed Hunter, researcher and product developer for Hunter Industries. Sprinklers will have to be more consistent and effluent water will become more of a factor, he adds. "If water gets expensive enough, they'll put up with a lot more dry spots."

A place for bent

Will high maintenance turfgrasses be on the chopping block? "Some grasses that have the ability to get by without water will come into play," says Hurdzan. "Subsequently, bent-grasses, though they may remain the



The new generation of golf course fairways, shown above may include advanced bentgrass cultivars like this stand of Pennway at Oakmont Country Club.

grasses of choice, may not be practical on fairways 20 years from now."

Says architect **Rees Jones**: "Adequate water, particularly in the Northeast, will be the key. With the irrigation systems we have now, we can keep almost any grass alive anywhere on the course."

Hurdzan believes architects can be more responsive to calls for water conservation by taking a closer look at weather elements and their effect on the course. "I think we'll become more concerned with things like wind and trees than we have in the past. We'll re-route or change the way we orient fairways to cut down on the amount of evaporation," he says.

Drainage will take on increased significance, adds Jones. "In the old days a heavy rain would knock out golf cart rentals for at least a day or two. Today, with the drainage systems we have, there's almost no delay at all. And they're only going to get better."

Tough pars, easy bogeys

Golf car rentals will increase too, says **Jerome Hutchinson**, president of Turf Specialists Corp. in Holbrook, N.Y. Already an established source of income, they'll become even more common with the changing face of the American golfer.

"Golf course designers will have to cater to the older players, those who have retired early," says Hutchinson. "The aesthetics of the course will change a great deal in response to the number of female golfers on the scene. We'll see more flowers, water fountains—things like that. Courses will take on more of an arboretum look than practical golf."

Notes **Myrtle Feldmann**: "We are seeing more and more golfers and more use of carts, even on wet grasses." Feldmann is vice president of Feldmann Engineering and Manufacturing Co. "Playing on wet turfgrass causes increased compaction, which will result in a greater need for regular, programmed aerification on roughs and fairways, green collars and the edges of tees."

All the aerifying may be taking place at 2 a.m., says Hutchinson. "In heavy residential areas, like here in New York City, courses will be lighted. Not just so people can play at night, but so a lot of maintenance like cutting fairways and aerating can be done when it doesn't interfere with play."

Indeed, some companies are coming out with aerators specifically designed for large areas (fairways and roughs), like a new 10-foot unit just released by Cushman.

Hutchinson, whose company specializes in athletic field construction and drainage, also believes superintendents will rely more on subsurface irrigation and polymers.

Keep 'em light

Equipment manufacturers agree that the trend toward lightweight mowers will continue. Their increasing sophistication will make them more productive. Water-cooled, electric engines with full hydraulics will replace belt- or chain-driven machines. "I see built-in computer components that monitor engine function, oil pressure, temperature, rpm; even liquid displays that tell you when it's time for routine maintenance," says Toro's **Denny Brown**. "Now that the automotive industry and agricultural industries are beginning to incorporate these things, they'll become more cost effective."

A significant problem on the horizon, in addition to water availability, is the country's lack of adequate landfill space, says Brown. Future superintendents will have to find an alternate, affordable means of disposal as state after state bans clippings from these sites.

"We're going to see a real problem with clippings disposal in the '90s," adds **Bill Kinzer**, product man-

ager for Jacobsen.

What party to cater?

What we need to be keying on, says **Helmut Adam**, president of Ransomes, is who the builders and designers will target in the future. "There are public, privately-owned public, municipal, country club and tour courses out there. Which market the industry decides to build for will have a drastic impact on the type of machinery we'll see in 20 years."

Adds Kinzer: "The National Golf Foundation (NGF) says we're going toward more and more public golf courses." In 1931, 78 percent were private. By the year 2000, 72 percent will be public. In 70 years, the golf course industry has reversed itself from a private to public entity. "Golfers today are going almost tee to green on manicured turf," says Kinzer. "Today we have scaled down, more contoured fairways where 'target golf' is played. Twenty-five years ago a superintendent had 80 acres of fairways. Today they have anywhere from 22 to 35 acres that are actually mowed as fairways. It's treated as a highly formalized piece of turf."

The reduced acreage allows superintendents to cut back on watering

and fertilization.

"Generally speaking, you want an open golf course that players can get through," says Kinzer. "I think there's a middle ground between today's highly contoured, target golf courses and tomorrow's municipal course."

Yet there are doubts.

"There's still a real question in my mind as to where the real growth will be," says Adam. "It's obvious that there's a greater demand than supply, which should bode well for the industry."

If the industry leans toward the municipal course, which Adam believes it should, equipment sophistication will develop more slowly. Cost and maintenance standards will be key. If, however, the country club market is targeted, things will happen quickly. Says Adam: "I think a mistake that's often made is that we think of the golf course market as one entity. It's not."

"The premium courses out there continue to set higher and higher standards until we get to the point where fairways are managed like greens. Supers need the equipment to provide that type of finish. Yet we have to satisfy the needs of the public course. The successful companies of

tomorrow will be those that can offer a broad spectrum of equipment to satisfy both."

Adam pulls out no stops when he describes tomorrow's equipment. Mowers that cut with lasers have been looked at by researchers in Texas, and unmanned equipment is only a matter of time.

"You'll be able to take a picture of a fairway, program it into a computer, and have it go out there and follow the contour of the course. One person could monitor several machines by remote control, or it could go by itself."

Adam says the size of the market will determine how soon this type of technology is applied. After all, he points out, it doesn't make sense for someone to invest \$500 million in a market that has \$50 million in total sales.

"Our industry is simple in terms of the level of machinery sophistication right now," says Adam. "But I think with the age of computerization and robotics growing and we see technology taking the leaps it has been taking the last 20 years, we'll soon have very inexpensive components that we can add to our machines to make them that much more efficient and easy to operate." **LM**

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