

BRIEFS

GILBERT, Ariz. — Ground has been broken on an 18-hole course at Meadowbrook, a residential area here being developed by UDC Homes and Sunbelt Holdings. Arizona-based architect Dick Bailey is designing the track. This is the second time Bailey has teamed with Sunbelt. The firms have also worked on the Arizona Traditions golf course in Surprise. The new links is expected to be open by March 1999.

•••

ST. GEORGE, Utah — Keith Foster has been hired to design an 18-hole course as part of a 900-acre, master-planned community here. SunCor, an Arizona development firm, is developing and will manage the daily-fee facility. Plans are to begin construction in early 1999 and open the course sometime in 2000.

•••

ARDMORE, Okla. — A nine-hole, \$1.3 million expansion has been approved for the Lakeview Golf Course here. Architect Tripp Davis said the current 18-hole course gets a great deal of use and the greens will eventually have to be rebuilt. The addition of nine holes will allow the greens to last longer, said Davis.

Responsible golf development topic of worldwide conclave

By MARK LESLIE

ST. ANDREWS, Scotland — The custodians, protectors and leaders of the golf world for the next millennium should be guided by the concept of "affordable, accessible and sustainable," according to golf course architect Dr. Michael Hurdzan.

Keynoting the World Scientific Congress of Golf here July 22, the former president of the American Society of Golf Course Architects said:

- "affordable" means keeping the game within economic reach of all citizens by building simplistic, low-cost golf courses as well as upscale facilities;
- "accessible" means to build those courses near population centers, train or bus lines, or within bicycling or walking distance; and

• "sustainable" means building courses that will be maintained with the fewest maintenance inputs as possible to produce an acceptable golfing venue.

"It means applying emerging science to conserve or efficiently use every possible liter of water, kilogram of fertilizer, gram of pesticide or drop of fossil fuel,"

Hurdzan said. "It also means changing the attitudes of golfers to accept less-green turf, the maintenance techniques of our greenkeepers, and the public view of a golf course's worth to the environment."

Hurdzan, who holds a bachelor's degree in turfgrass management and master's degree and doctorate in environmental plant physiology, said the same turfgrass sciences that produced products that allowed golf courses to reach their "ultimate perfection" are causing the pendulum to swing back toward "a sustainable middle ground."

"The final test of success for this research and development will be if the golf courses of the year 2020 look like golf courses of 1920," he said.

Continued on page 9



Dan Maples-designed Dunegrass in Old Orchard Beach, Maine, opened recently in this Southern Maine coastal town. The 17th hole, pictured here, is located among the inland sand dunes that are a major feature of the 18-hole, daily-fee course. Local businessman Ron Boutet is the developer.

Otterbine Aerators

Enhancing Waterways...

Otterbine Barebo offers a complete line of custom water features; including ornamental 1/2 HP Instant Fountains and High Volume units that dramatically increase the flow of oxygen throughout your body of water. From golf courses to residential housing, we can meet all your water quality management needs. Each Otterbine aerator is made to the exacting standards that have given Otterbine products their reputation for high quality, longevity, safety and ease of installation.

Inquire today and let an Otterbine representative show you how!



Otterbine®/ Barebo, Inc.
3840 Main Road East
Emmaus, PA 18049
1-800 AER8TER



World Congress

Continued from page 3

Science has already made vast advances toward that goal, Hurdzan said.

He predicted even more dramatic improvements in global positioning systems; plant breeding and genetic engineering; "seeding" of root zones with soil microorganisms; an array of techniques and soil amendments to modify a root zone to a more ideal state; and systems to improve the quality of irrigation water.

Specifically, he said:

- "As the accuracy of satellite imagery improves, it can be used to monitor migration patterns of animals through or to the golf course site, assess the health of the turf, and evaluate the efficiency of irrigation systems."

- "Scientists are developing turfgrass cultivars that have been selected or genetically designed to provide better adaptability to heat, shade, drought, compaction; better resistance to weeds, disease, insect and mechanical injury; and require less water, fertilizer and cultural manipulation. Planting better-adapted and genetically superior plants means less environmental impact while producing outstanding playing conditions at lower costs. It is truly 'doing more with less.'"

- "Research on *mycorrhizae* [an endophyte that lives in the root and helps plant absorb nutrients and water] in turfgrass is just starting and holds great promise."

- "Soon, 'seeding' root zone with soil microorganisms may be a normal part of golf course construction or maintenance. Science is making the future today."

- The promise of short supply and poor quality of irrigation water in the future requires specialists to tackle the problem in several ways, he said. "One is to product turfgrass varieties that can cope with the limitations of lower-quality irrigation water, such as high tolerance to salt. Another is to improve the quality of irrigation water through bioremediation, or passing it through a series of ponds planted to selected vegetation capable of cleansing the water."

"Perhaps irrigation water will be improved by passing it through inexpensive osmotic filters, or an electromagnetic field that changes the polarity and, hence, the properties of the water. Such techniques are in their infancy, but show promise."

- "Scientific and engineering research has recently introduced the first economically priced and easily calibrated soil-moisture sensors for golf course use. Installed at various depths in the root zone, these sensors and computer software programs al-

GOLF COURSE NEWS

low irrigation applications to be matched to soil-moisture reserves to small areas around the golf course, resulting in enormous water savings by tailoring water application to each small area."

- "Irrigation head design and control systems continue to advance so water can be placed exactly where it is needed, in the proper amount, and at a rate that the soil and plant can receive it."

- Along with calcine clay, diatomaceous earth and zeolite products, "polyacrylamide gels to retain water and nutrient are finding application in turfgrass culture as they did in agriculture in the arid areas."

- "Systems for pumping air under root zones of greens are applying a vacuum to drain greens down. [This has] made troublesome microclimatic sites

more predictable, healthier for the plants and hence reduced the need for artificial cures like preventative pesticide treatments."

- "The 'seeding' of soil organisms that increase the health of turfgrasses and act as antagonists to pests may soon be standard practice in golf course construction."

Citing great advances in pesticides, turf-grade fertilizers and biological-control products,

Hurdzan said: "Properly applied modern pesticides and fertilizers used on golf courses pose no significant health threat to golfers, greenkeepers, neighbors or the environment."

"I welcome any peer-reviewed research to the contrary and, in fact, I have challenged the United States Environmental Protection Agency at the highest levels to do that, and none has come forth."

THE PROBLEM IS COMPLEX.

The temperature rises. So does the humidity. And you've got a problem, because conditions are perfect for algae and turf diseases like Brown Patch and Pythium Blight. If the health and vigor of turf are your responsibility, you really feel the heat.

THE SOLUTION IS SIMPLE.

The solution is Fore®. The active ingredient in Fore creates powerful synergistic action with products like Subdue®, Aliette®, and Banol®, to control a wide spectrum of your worst summer challenges. Mixtures that provide a simple solution to some tough problems.

FORE® ...ALL THE RIGHT REASONS.

And there's more. Like the way Fore controls over a dozen fungus diseases. Easy-to-use packaging combined with cost-effective, broad-spectrum turf protection make Fore your best solution for complicated problems. Call 1-800-987-0467 to get more information.



ALWAYS READ AND FOLLOW LABEL DIRECTIONS.
Fore® is a registered trademark of Rohm and Haas Company. Subdue® is a registered trademark of Novartis. Banol® is a registered trademark of AgrEvo. Aliette® is a registered trademark of Rhone-Poulenc.
©1998 Rohm and Haas Company T-0-241