DECOUR

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Sophisticated Irrigation

Fertigation, filtration, acid injection and GPS technology take irrigation into the future 9, 21-23

Something Old, Something New Renovations and restorations of older and classic courses complement new construction25



A ROSSIAN TASK MADE EASIER

How to repair turf after vandalism

Poland Spring Golf Club superintendent Dick Fahey, left, and mechanic Ben Perreault hold an original Donald Ross rendering, from 1913, that has aided a bunker restoration at the Maine resort. See story page 25.

COURSE MAINTENANCE

	available from non-'name' courses, too	
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New Turfgrass America eyes national market

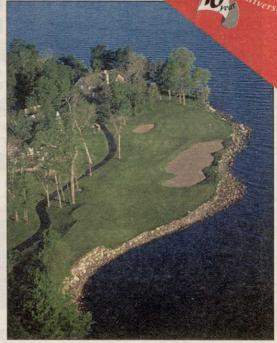
By A. OVERBECK

GRANBURY, Texas -In a move to expand beyond their regional reach, three Texas turf companies and a Florida grower have formed an alliance creating a new full-service firm here. The new entity, Turfgrass America, combines Thomas Brothers Grass, Crenshaw and

Doguet Turf and Milberger Turf Farms with Apollo, Fla.-based Elsberry Green-

While the merger was completed May 14, Milberger and Thomas Brothers have been considering the move for a year and a half.

"As we all looked at the Continued on page 7



A SHORE BET

Black Brook, which has opened along with its sister track, The Sanctuary Course, is nestled along the shores of Mille Lacs Lake in Minnesota. The courses are designed by John Harbottle in collaboration with 1993 U.S. Amateur champion John Harris and owner Chip Glaser. The Sanctuary Course is geared toward the average player, with shorter yardage than its counterpart Black Brook. Harbottle feels the courses should be "instant classics." See story, page 30.

Z-Net may revolutionize slow-growing grasses

LITTLE ROCK, Ark. -Tannenbaum Golf Course on Greers Ferry Lake near Heber Springs may have written its name into golf course history when it opened for public play in June. No scoring records were broken. The big story was a process that doubles the speed of growth for zoysiagrass, an excellent turf many superintendents have not used because of its notorious slow growth.

Z-Net, a new patented growing method developed in Japan and brought to America by Winrock



A crew lays down a roll of Z-Net with zoysiagrass implanted in it.

Grass Farm, Inc. here, was used on the fairways and roughs at Tannenbaum for

the first time in America. The new technology produces complete grow-in during just one growing season - about twice as fast as standard sprigs or plugs, according to Winrock President Frank

"Z-NET worked beautifully," said Tannenbaum course superintendent Scott White. "We grew in our zoysiagrass fairways and roughs in a little bit longer than the four to six months they predicted. But last summer was a hot summer and it was hard to get anything to grow. Right now it's 90 to 95 percent

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Fertigation, filtration systems said growing in popularity

By PETER BLAIS

Demands for improved playing conditions have led many courses to install fertigation, acid-injection and filtration systems as part of their pumping stations.

Tanks, tubing and controllers for both fertigation and acid-injection systems (which improve water quality) can be rigged up to a pump station at a cost ranging from \$7,000 to \$15,000, a dramatic reduction from the \$20,000 to \$30,000 price tag common just a few years ago, said

Continued on page 22



The red attachment filters water to this pump station.

Country club fertility on a public's budget

The subject of turfgrass fertility is an ever-changing and often complicated road of twists and turns. But by being aware of several essential areas, turfgrass managers at public, resort and daily-fee golf operations can untangle the knots that might otherwise keep them from having

the best possible fertilizer program.

There is a myth that only the private club is spending enough money to do the fertility management job correctly. From the standpoint of many golf facilities, public and private, fertility management and fertilizer purchasing is often a guessing

Continued on page 18



Fertigation

Continued from page 1

Gary Kaye, a principal with Golf Engineering Associates Inc., a Phoenix-based irrigation de-

Filtration systems are becoming increasingly common, particularly in areas with water suffering from clam, mussel and suspended solids problems, Kaye said. These can clog the gear-drive rotors on irrigation systems, which are much more sensitive and back up more easily than the old impact sprinklers.

"Filtration is becoming more and more necessary, rather than the luxury it used to be," Kaye said. "If you are going to buy a pump station for \$75,000 to \$100,000 minimum, an extra \$10,000 for filtration is not a big

Pump stations in the Southwest and other arid areas pump anywhere from 1,800 to 4,000 gallons a minute, providing water to as many as 2,000 irrigation heads. With that cost, spending an additional \$10,000 for a filtration system and/or a similar amount for a fertigation/acidinjection system is a wise investment. Kave said.

Irrigation consultants specify

pump stations with fittings that allow these systems to be installed immediately or in the fu-

"When we order a pump station from a manufacturer," Kaye "we have them install threaded outlets and an extra piece of pipe, and then have them size the manifolding big enough to accommodate this extra equipment. Sometimes we order a

pump station with all these goodies right on there. Other times the client is not sure or doesn't have the money right away, so we have the manufacturer set up the pump station at the factory so that installing a filter or fertigation system in the future is a simple matter.

"You add an up-front cost of roughly \$1,000 to a pump station. But that prevents having to hire a welder to cut pipe later if you decide to add on a system. That can save you thousands of dollars. So, when you order a pump station, make sure to set it up to accommodate future fertigation, acid-injection and filtration systems.'

Pump system manufacturers don't make these systems, but they will provide them if requested. "They are used to dealing with customers who want a turnkey package," Kaye said. "A typical course owner just wants to be able to call the pump manufacturer and say, 'Look, I need a pump station, we have dirty water, and I want fertigation.' He just wants the pump station sales person to provide it. He doesn't want to shop around for hightech filters and fertigation sys-

"If you are a client and I'm your consultant, I'm going to set you up with a pump station so that, when I'm gone, you can come in later and add anything you may buy out there. You may get a good deal on a fertigation system from a manufacturer I never heard of. But I want to get the pump station set up so that a year or two later, it's easy for the client to plug in anything he

Fertigation and acid-injection systems are generally located a short distance down the discharge line from the main pump, and generally in the same pumpstation building. The filtration system, on the other hand, is generally an integral part of the pump station itself, Kaye said.

Some fertigation systems are relatively low-tech, allowing superintendents to "just turn the dial that lets you inject as much as you need," Kaye said. Other systems are very sophisticated. "They actually take a sampling of the water downstream and program the controllers to release more or less material at various times of the day," he added.

Older pumps can be retrofitted with fertigation systems. "It has to be worth it, though," Kaye said. "You don't want to take a 50-year-old pump that's on its way out and modify it for \$5,000 so you can do something."

When seeking pump-station bids, Kaye generally contacts two national companies and one or two local manufacturers,.

> Continued on next page GOLF COURSE NEWS





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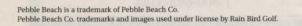
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Rain Bird introduces confined-area rotor



TG-25 rotor

Rain Bird's Golf Division introduces the TG-25 rotor. Ideal for tees, watering greens or other confined areas on a golf course, the TG-25 is engineered to deliver high-quality performance at an affordable price.

The TG-25 features a 31- to 50-foot watering radius and uniform distribution across the entire distance of throw. A heavy-duty stainless steel retracting spring helps ensure a positive pop-down while the durable block-style case provides superior strength for golf applications.

Available in full- and part-circle models, the TG-25's tapered riser and pressure-activated wiper seal work in concert to protect the internal assembly from grit and debris - especially when it is used in non-potable water applications. The flush face nozzles also help keep debris from entering the internals.

The TG-25 is "top serviceable," meaning that the special rotor design eliminates the need to dig for repairs. A convenient snap ring at the top of the case also helps make servicing quick and easy.

Keeping problems from becoming major crises

IRVING, Texas - When Four Seasons Resort and Spa here needed a way to monitor lightning and pumping systems during the Byron Nelson Classic, it turned to HotWire, a new product from Flowtronex.

HotWire immediately alerts users to potential system problems. The device informs the user of a specific problem through a paging system easily programmed through Windows '95 or '98.

With HotWire, Four Seasons and other courses can monitor up to four specific functions, such as a power failure or a hard fault, by assigning each a one- to five-digit code. If a problem occurs, HotWire dials the pager service and punches in the code to appear on the end-user's pager.

At only 4 inches tall, 3 inches deep and 1 3/4 inch wide, HotWire fits inside a pump station control panel on even the smallest stations.

As HotWire beta tests continue, superintendents have become more excited about its widespread applications. Recent comments include:

Said one course manager, "We've

Other features of the new Rain Bird TG-25 rotor include:

· The water-lubricated gear drive designed to provide years of reliable service.



been frustrated by these problems forever, and now you've given us a way to deal with them."

- · A diffuser screw reducing the spray radius up to 25 percent without changing the nozzle.
- Interchangeable, color-coded nozzles that can be replaced without special tools.

Fertigation

Continued from previous page

Fertigation systems will inject anything a superintendent can apply with a sprayer (fertilizers, chemicals, pesticides, fungicides, etc.) onto the course. "But putting in a fertigation system doesn't mean getting rid of your sprayer or walk-behind spreader," Kaye said.

There are some things the fertigation system just can't do. You will always need to put that special material on the green or tees by hand. But for things you put over the entire course regularly, fertigation is great."

Acid-injection systems are generally separate units requiring equipment that will not be corroded by acids.

Fertigation and acid-injection systems have evolved over the past 20 years from units placed atop a 50-gallon drum to very sophisticated items.

Golfers' expectations are much higher than they used to be, especially in arid areas, where superintendents need all the help they can get," Kaye said. "And these things can help.'

Different areas of the country have different needs. While many Southwest courses may require the entire filter/ fertigation/acid-injection package, areas with high-quality water may not need filtration and/or acid-injection systems.

You have to analyze each site individually," Kaye said.

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