GOLF COURSE

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Pebble Beach Primps

Legend Weighs in on Design

With plenty of notches on his Tour-career belt, Sam Snead wants to make a mark in course design 29



DROUGHT DEVASTATES PARTS OF TEXAS Battling rainless conditions for most of the year, Texas golf course superintendents struggled to save turf and trees. See story, page 3.

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SUPPLIER BUSINESS

PERIODICAL

US-UK study: It is greener on the other side of pond

By ANDREW OVERBECK

SANTA ROSA, Calif. — The top American golf courses earn twice as much and spend twice as much on maintenance as their U.K. counterparts, according to a survey by novice architect Bettina Schrickel.

Following a year comparing the maintenance practices of 25 of the top golf courses in both the United States and the United Kingdom for her graduate thesis in golf course architecture at

Merrist Wood College in Surrey, England, Schrickel has published the findings of her study.

"Some of the numbers really surprised me," said Schrickel. "For example, the large gap between the financial income of the clubs, the maintenance budgets and the number of greenkeepers."

Of the American courses that she visited, the average income was \$2 million, the maintenance budget was \$970,000 and the number of greenkeepers was 18. Comparably, U.K. courses had an average income of \$800,000, a maintenance budget of \$340,000 and an average of eight greenkeepers. Further, annual member-Continued on page 18



BIOLOGICAL CONTROLS

The world of biological controls is changing rapidly and GCN's special section, on pages 21-28, provides an in-depth look at the new research and products that are driving the industry. As government regulations and local legislation continue to take chemicals away from golf courses, the industry is primed for growth and many superintendents are starting to take notice. Also inside, a report on two ground-breaking research projects that use burrowing owls and wasps to fight pests on courses.

Certification the goal of CMAA env'l audit

By PETER BLAIS

ALEXANDRIA, Va. — Audubon International (AI) hopes to develop a certification program within the next 12 months for clubs, club managers and superintendents, us-

ing the recently developed Club Managers Association of America (CMAA) Full Facility Environmental Audit for Clubs (*see March issue*).



"Audubon and CMAA are 🚄

discussing what to do next with this information," said AI Executive Director Ron Dodson, referring to the self-audit that CMAA began mailing to its members in late March. "What we **Continued on page 38**

Simplot to buy Turf Partners By A. OVERBECK

RANCHO BERNARDO, Calif. — Eco Soil Systems Inc. has accelerated its original February deal to sell the assets of its Turf Partners subsidiary to Post Falls, Idaho-based J.R. Simplot Co. Instead of buying \$20 million of convertible Eco Soil stock and enduring a 12-month valuation period before definitively purchasing Turf Partners, Simplot has agreed to buy out the distribution channel this summer.

"The stock deal was scrapped because Simplot didn't want to focus on our technology," said Max Gelwix, president and chief operating officer of Continued on page 42



NEIGHBORING THE OLD COURSE WITH AN OLD COURSE HERO

Longtime St. Andrews Old Course head greenkeeper Walter Woods, right, served as a turfgrass consultant for course architect Kyle Phillips, left, on Kingsbarns Golf Links whose 1st green sits in the far background. Kingbarns, a public course, will have a grand opening the weekend following the British Open in July.

SubAir & Soil Air do patent combat in court

By MARK LESLIE

SYRACUSE, N.Y. — A battle about patents — spiced with added allegations of fraud, misappropriations and false advertising — will begin to be played out in U.S. District Court here in June between SubAir Inc. of Munnsville and Soil Air Technology of

Middlefield, Conn. The skirmish revolves around technology developed by Ferris Industries and its subsidiary, SubAir Inc., starting in 1994 that uses subsurface piping to add air or remove water from the root zone of golf course greens to enhance root health;

and a method developed by Soil Air Technology to measure pressure differentials and soil-gas concentrations to optimize soil growth.

But it gets much more personal than Continued on page 30

DESIGN & DEVELOPMENT

First totally SubAir course doing well in Indiana

By JOHN TORSIELLO

NEWBURGH, Ind. - Victoria National Country Club here has won numerous plaudits since opening in May 1999, including a coveted "Best New Private Course" ranking from Golf Digest magazine for 1999.

Mike Schaefer, sales manager for SubAir of Deep River, Conn., likes to think his company had something to do with that designation.

Victoria National was the first course in the world to have all its putting surfaces, 20 of them (including two practice greens) installed with in-ground SubAir systems. While a number of courses have installed the system on "trouble" greens or employ SubAir's portable systems, Victoria National constituted the company's most ambitious project to date.

Schaefer said his company is installing its in-ground units on every green at the Leopard Creek Country Club currently under construction in South Africa.

The SubAir in-ground system - which includes a 7.5-horsepower generator, fans and controls in a unit measuring 6-by-4 feet — is enclosed in a "vault" at each green at Victoria National.

The system can be used for several

purposes. It can create two-way airflow in the blazing heat of summer and warmer through the green by either pushing or pulling air through the root zone to purge harmful gases, such as carbon dioxide, methane and hydrogen sulfide, which gradually build up in the root zone and inhibit root growth and plant health. By using the system to create higher oxygen concentrations, organic matter buildup and thatch accumulation can also be prevented through the increased decomposition by soil microbes.

The SubAir system can be used to draw excess water off the putting surfaces, down through and away from the root zone by using the vacuum port of the SubAir blower. By controlling soil moisture, the system can prevent the occurrence of surface algae.

In addition, SubAir systems can move ambient air through the more temperate gravel and subsoil surrounding drainage pipes located below the surface of greens, allowing a more moderate root-zone temperature.

The SubAir systems are designed to be used on greens built according to U.S. Golf Association specifications, and are hooked into below-ground drainage pipes.

This allows the greens to be kept cooler



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in winter, the latter factor effectively extending the growing season.

Dale Minck, a certified golf course superintendent and superintendent at Victoria National, said the decision to install the SubAir system was made early in the planning stages for the course.

"It gets nasty during the winter, and summers are hot and humid here," he said. "We wanted to attempt to incorporate everything possible to help the golf course be in excellent condition at all times and use every tool available to us. What we are hoping to do with the system is provide consistent quality on each putting surface.'

Minck has used the system extensively to remove excess moisture and to promote healthy root growth on Victoria National's bentgrass greens. It helped attain quick grass growth on many of the greens during construction.

"We used the systems a lot this past summer and they worked well,' Minck said. "Our goal is to some day host a U.S. Open and this is a great tool to have."

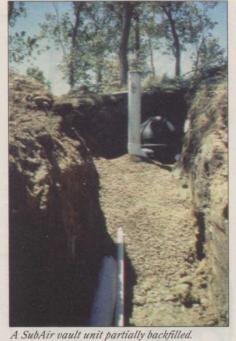
Minck said the cost of installing 20 inground SubAir systems was significant. 'We figured around \$600,000," he said, "but if you take out the cost of electrical service installed throughout the course, which we probably would have done eventually anyway, it was around \$300,000."

Installing the SubAir systems added about a day's work to the construction of each green, he added.

SubAir systems are used on a number of professional and college athletic playing fields, such as Safeco Field in Seattle, Busch Stadium in St. Louis, and the University of Colorado. The six-year-old company has also installed the system at several professional soccer fields in England.

The firm employs 12 people.

The reception we have received has been tremendous. Our portable systems



have been very popular for trouble greens," said Schaefer.

One of the aesthetic advantages of the in-ground SubAir systems is that they cannot be heard during operation, a plus for golfers trying to line up tricky 4footers. Also, controls can be remotely located for easy operation.

SubAir's portable units are designed for greens up to 12,000 square feet in size and range from 7.5 to 25 horsepower. They are available in gas, diesel and electric motors. The system is mounted on a trailer and accessories include a portable water separator, an airflow silencer and quick-connect tees for hooking up to existing drain lines.

Schaefer said his company is developing a hybrid system that will combine the designs of both the portable and in-ground systems.

"We are thinking of larger, localized units that would be located in something like a pumphouse, with the system servicing a number of greens rather than have a vault at each one," he said.

SubAir, Soil Air dispute in courts

Continued from page 1

that. The president of Soil Air Technology is David A. Potts, who once headed up SubAir, then left the company to form Soil Air with other investors. Ferris Industries and SubAir Inc. allege in their November 1998 suit that Potts broke a number of laws, including misappropriation of SubAir's intellectual property regarding trademark, design, manufacture, advertising and distribution of its SubAir system; breach of contract and fiduciary duty; and even using SubAir Inc. accounts to pay for services that eventually would benefit his new company.

Potts, in turn, claims in his February 2000 suit that "SubAir has infringed and continues to infringe Soil Air's '909 Patent by making, using, selling and offering for sale, subsurface soil remediation systems and component devices embodying the patented invention...

And he adds that he had developed the gas-soil analysis device before being hired by Ferris and SubAir Inc.. Indeed, "They hired me because I had that invention,' Potts said.

Ferris and SubAir Inc. are seeking injunctive relief and damages from Soil Air Technology, Potts, patent attorney Charles Nessler and several investors. Potts is seeking damages for patent infringement and attorneys' fees.

Discovery in the SubAir suit against Potts is supposed to close by June 30, after which motions and trial will be scheduled. Meanwhile, the case management plan meeting for Potts' suit is scheduled for June 5 and that trial date could be 18 months later.

"I anticipate the first case [SubAir suit] should be resolved at the trial level by the fall," said attorney Theodore Araujo, whose firm — Brown, Pinnisi & Michaels of Syracuse — is representing Ferris and SubAir Inc.

However, the two cases could be joined because the subject matter is very close and they are both assigned to the same judge.

"I hope that happens," said Potts, bemoaning the lengthy course proceedings which have been delayed in part because he did not get his method pat-Continued on next page

DESIGN & DEVELOPMENT

SubAir and Soil Air duke it out in courts

Continued from previous page ented until this February.

Although others have either blown or sucked air through soil long ago, SubAir's technology was the brainchild of Marsh Benson, senior director of golf course operations at Augusta National Golf Club, in the early 1990s.

He and Dave Ferris of Ferris Industries began developing the technology, leading to creation of SubAir Inc. in 1994. In June 1995, Ferris hired Potts, who had been employed in the soil-remediation field, primarily dissipating environmental hazards.

Ferris' suit claims he assigned Potts in September 1995 to measure the soil gases to determine the impact of the SubAir system on subsurface aeration at Augusta National. That same gasanalyzer probe "was later refined by SubAir employees, including Potts, and included as a component in the SubAir system," the suit says — although attorney Araujo said the probes have never been used in system installations.

Over time, Potts was given much authority at SubAir, especially when Ferris was forced for many months to deal with consequences from the bankruptcy of one of his major investors.

During this time, Ferris' suit alleges, Potts developed a provisional patent for the probe, then made "false representations regarding the source, description and ownership of the invention," enticing Ferris on Aug. 5, 1997, unknowingly to sign a letter purporting to acknowledge Potts' rights to the supposed invention.

In response to Potts' suit against Ferris and SubAir Inc., Araujo said probes similar to Potts' have been sold "off the shelf" for many years, and, regardless, SubAir Inc. sold a couple of those gas analyzers but does not run its system off them.

"What we're doing is not covered by Potts' patent," Araujo said. "There is no relation between what SubAir does and this. We decided not to do it because of its complicated nature."

Araujo's response to Potts' suit, he said, is threefold:

1) "We claim we own the patent, so we can't infringe it... Potts' patents were made in conjunction with SubAir, and the property of SubAir and Marsh Benson because they derive from the work Potts was exposed to."

2) "The patent is invalid because the way it was procured creates fraud on the U.S. Patent Office."

3) "If it is valid and we don't own it, that does not matter because we don't do it [use the probe] and neither do our clients."

But Potts said his attorneys — Bond, Schoeneck & King — have a SubAir Inc. brochure that sells a gas-soil analyzer as part of its system.

Both Araujo and Potts said the two sides have had negotiations to settle the issues, but to no avail.

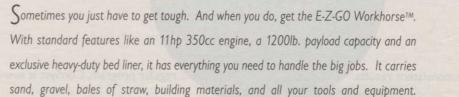
"We certainly have tried to work it out and have said we would license them the technology," said Potts. "At this

point it is more a matter of principle."

> In the months since Ferris Industries first filed its lawsuit, its

shares were sold to Simplicity Manufacturing. SubAir Inc. remains as an independent company, owned by David Ferris and a group of investors. Therefore, Ferris Industries is no longer truly involved in the court actions, according to Araujo.

Potts said Soil Air Technology offered the new SubAir ownership group \$1 million for the system and they have set the value at \$5 million. "It's not worth \$5 million," he added.



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