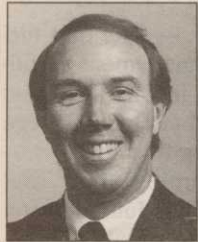


BRIEFS



PGA HONORS WILLIAMS

Golf Course Superintendents Association of America (GCSAA) President Bruce R. Williams has been recognized for his accomplishments by The Professional Golfer's Association (PGA)



Bruce Williams

of America. Williams, superintendent at Bob O'Link Golf Club in Chicago, was elected PGA honorary director at the PGA's annual meeting in San Diego this winter. "Bruce has been instrumental in forging a strong relationship between the PGA and GCSAA," said PGA Honorary President Tom Addis. "He is a strong leader who has demonstrated a commitment to excellence in his profession and in service to the game of golf."

CHALIFOUR SUPER OF THE YEAR

GROTON, Conn. — The Connecticut Association of Golf Course Superintendents (CAGCS) has named Robert Chalifour the 1996 Superintendent of the Year. The superintendent at Shennecossett Golf Course here for 27 years, Chalifour was CAGCS president in 1988-89 and has served on many of its committees. A certified golf course superintendent since 1982, he was cited for his unmatched dedication to the advancement of the profession.

RUTGERS OFFERS INTRO

NEW BRUNSWICK, N.J. — Rutgers University is offering two short courses at Cook College here March 3-4 — Management Skills for Golf Course Professionals and Introduction to Golf Course Turfgrass Management. The \$245 course for professionals is described as an innovative and value-adding workshop designed to provide superintendents and assistant superintendents with hands-on exercises to sharpen their skills in management. People may call Rutgers at 908-932-9271.



AUDUBON CERTIFIED AQUARINA CC

MELBOURNE, Fla. — Audubon International's Cooperative Sanctuary Program for Golf Courses has certified Aquarina Country Club here in environmental planning. Greg Plotner, staff agronomist for International Golf Management, which maintains the course, vowed that it would work get the club fully certified. Scott Campbell is the resident superintendent overseeing the programs at Aquarina.

Golf catches the new technology wave

Restoring greens for play in 24 hrs.

By MARK LESLIE

PEBBLE BEACH, Calif. — Coming soon to a golf course near you: Sand Channel Greens. The company, which promises to add drainage channels to old pushup greens and have them playable in a day, is expanding this winter into Southern California, Arizona, Las Vegas and the Northwest, according to Marketing Director David Lansdale. "And we're looking to establish a machine on the East Coast. We have two machines going full-time now, and we want to be up to five next year."

The former "Cambridge greens" process, which used a vibratory plow so disruptive it took months for turf to heal, also has a whole new life: cutter wheels. With these cutter wheels, the machine can

Continued on page 32



The WHoleView image from a flyover shows turf health, from the less healthy browns and yellows to the more healthy greens and dark greens.

Flyovers fore see future of turf health

By MARK LESLIE

Thank you, Dr. John Schott. Schott, of the Center of Imaging Science at Rochester (N.Y.) Institute of Technology, was an early pioneer of digital enhancement of infrared images. Today, combining that technology with Global Positioning Systems, CADD and digital mapping from LinksManager software, golf course superintendents can "see" situations developing on their turfgrass weeks before they are visible to the human eye.

"It's an exciting prospect to integrate all these technologies for the maintenance, construction and redesign of a golf course," said Bob Katula, president of Links Diagnostics, Inc. (LDI) here.

In its agronomic service, LDI flies over a property taking infrared images revealing the photosynthetic rate of the plants

Continued on page 38

Taking irrigation into the future

By MARK LESLIE

ST. BRUNEAU, Quebec, Canada — A golf course irrigation control system that may change the industry has been installed at one of the oldest golf courses on the continent, Mont Bruneau Country Club outside Montreal, and at Widow's Walk Golf Course in Scituate, Mass., which will open in July.

"They just might revolutionize the irrigation industry," said Dr. Michael Hurdzan, a golf course architect from

Continued on page 36



The mat: a 1-inch-square metal drag covered with a piece of artificial turf-type material.

The drag mat beats snafus from moisture

By TERRY BUCHEN

Superintendents are very happy and fortunate to have the many new pieces of equipment now on the market. Of particular note is the fairway topdressing machine. Most of these new implements can carry 4,000 pounds of top-dressing material, usually more, making top dressing fairways almost as easy as greens.

However, fairways are many times top dressed during the early-morning hours, making for wet, dew-type conditions which can cause a delay in "dragging-in" the top dressing. The top dressing can be wet from natural causes, as well.

One great idea to help drag in wet top dressing, especially a sandy material, is to use a 1-inch-square metal drag mat and lay a piece of artificial turf-type material over the top (attach it with a zip strip plastic-tie material every few inches on all four sides).

This idea really works in helping keep the top dressing from "balling up" and "clogging up" the drag mat, which obviously makes quite a mess and delays dragging until the top dressing is dry. This idea is also especially helpful in getting the dragging done ahead of play, which golfers obviously appreciate.

When the top dressing is wet, for whatever reason, this drag-mat concept can also work quite well when top dressing greens with straight sand, or with a 90/10, 85/15, 80/20 sand/peat moss mixture.



ON THE GREEN

Niemczyk on non-traditional turf treatments



Dr. Harry Niemczyk

Dr. Harry Niemczyk is professor emeritus and coordinator of turfgrass entomology research at The Ohio Agricultural Research and Development Center of the Ohio State University in Wooster. He received his bachelor's, master's and doctoral degrees from Michigan State University. His research on turfgrass insects and behavior and mobility of turfgrass pesticides has been widely published. Recently he has been doing extensive research on biological controls of turfgrass insects.



Golf Course News: Could you describe the progress of your work regarding biological controls for insects?

Harry Niemczyk: I've been studying the effects of entomopathogenic nematodes, parasites that destroy cutworms, grubs and other insects. Several have shown good results. They are introduced live into the soil, seek out the insects, enter their bodies and cause the insects to die.

GCN: What products are showing promise?

HN: We've had some good results on grubs with a product called Cruiser by the Ecogen company. The key is getting the nematodes through the thatch and into the soil. It's hard to introduce them since they can be destroyed by desiccation and ultraviolet light.

LESCO has a product called Vector that's been pretty successful with cutworms on golf greens. It is supposed to be irrigated into the green. But that can be complicated. Vector is often mixed in a spray tank and applied along with other products, like a contact fungicide. But contact fungicides should not be watered in. So you end up applying two products together that have different requirements for post-treatment irrigation. That's a problem. Vector can be effective if it's used according to the label directions.

GCN: Are there any other biological or biological-like

Continued on page 37

Flyover photography maps courses, sees into the future

Continued from page 19

on the ground — something that can not be seen with the naked eye.

"It's a first line of defense to keep turf as healthy as possible," said Katula, who is working with the Space Remote Sensing Center to develop a technology for golf course use — Links-Manager. "With the information we provide, instead of spraying four times, perhaps you can spray twice or three times."

That flyover of the golf course provides layered maps depicting soil types, course layout, surface hydrology, chemical applications and irrigation network.

Paul Latshaw at Congressional Country Club here and Bob Alonzi at Winged Foot Golf Club in Mamaronek, N.Y., are among Katula's early clients for this diagnostics service.

"[Infrared technology] has been used in forestry and row-crop agriculture," said Dr. Eric Nelson of Cornell University in Rochester, N.Y. "The major breakthrough is not in the technology but that superintendents now are interested in it. They weren't before."

Nelson worked with Zeke Hurd of Pegasus Environmental, Ltd., of Rochester several years ago, intending "to match what we were seeing on the ground with their flyovers. We never got to the point that we could relate the aeriels to particular diseases. We knew it was stress, but not what disease symptoms there were."

While saying he and Hurd did not find disease correlations in the flyover photographs, Nelson acknowledged it probably can be done. He added: "The information they give is valuable. You can pick up the nutrients and the water. And it is possible to pick up the diseases. If you map out a putting green, for example, so you know year after year where the disease problems are. Then you can fine-tune the infrared photography to detect some of those diseases early in the season."

"The value is building a database and seeing how stresses change with time, and what it really means when you are down on the ground."

"What we hope to do," said Katula, "is, if we get certain reflectants of fairways and greens that mean low fertility, compaction or a developing disease, we can tell the superintendent they could have one of two things. Then they can take tissue samples for those possibilities."

LDI's flyover cameras are sensitive enough, Katula said, "to pick up a healthy reflection pattern through the green, red and near-infrared bands... When we fire the camera we get the direct reflectants off the turf. We put

filters in at very specific parts of the spectrum... It's based upon research at Mississippi that shows that if you use this filter setting, you'll get two weeks warning of anything that's green like grass or crops — anything that has to do with chlorofil production. So you'll know of a problem two weeks before it's visible

to the naked eye."

LDI produces standardized images, then creates enhanced versions "showing the best of the best and the worst of the worst on any one hole. Basically, you try to look at patterns between the standardized and enhanced and that's when you really know you may have some problems com-

ing up," Katula said.

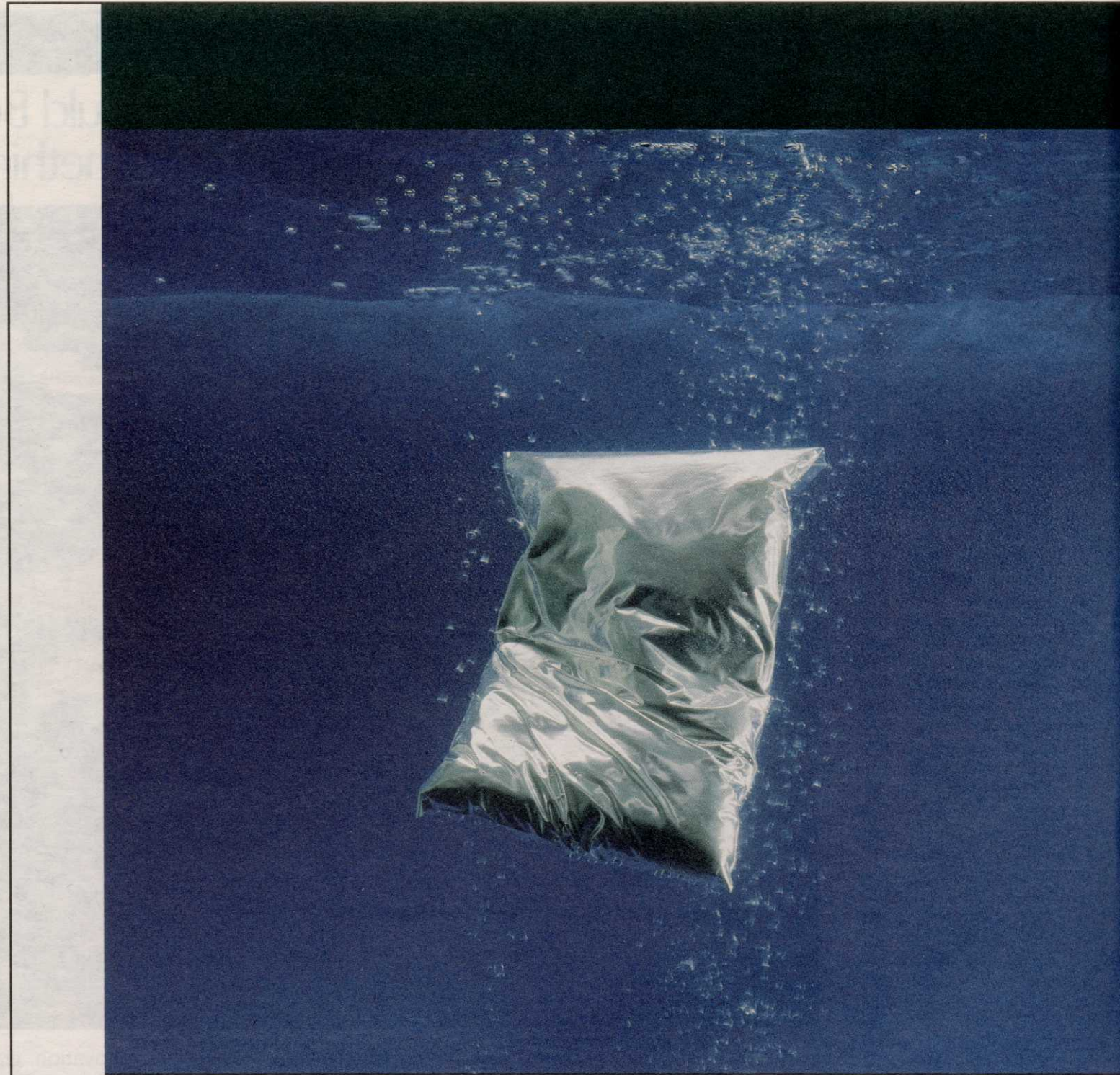
"It all works beautifully and it's all combined with mapping products so that you can literally follow small spots of stress on a golf course. Every little isolated image has little boxes (pixels) in them, and every one is 2 feet. You may have a 20-square-foot stress area. You can save it

in our mapping and on the next flyover you can compare it and see if it's gotten better."

"Anything you can think of, the GPS technology can do now," Katula said.

In building a golf course, the technology can provide real-time cut and fill, volume analysis of dirt moved, and other figures, Katula said. "If you input CADD into the receiver you can com-

Continued on next page



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Griffiths comment

Continued from page 17

"Americanization" may eliminate many shots that are required on the traditional Scottish and English courses... shots that add to the game's challenge and finesse.

In discussions with other members of the American Society of Golf Course Architects, I find that most strive to meet these Americanized expectations. As a result,

today's course architecture may best be described as a study on how to best modify terrain to create the desired golfing experience.

With sites containing more and more limitations — whether they be related to size, terrain or environment — designing to this American style of golf often involves extensive earthwork to reform the ground, especially to prevent blind shots and provide level play areas. It also requires green

construction methods, irrigation system design and grass selection that have reached a level of sophistication almost beyond comprehension. All in the name of perfect playing conditions.

While meeting golfers' expectations, these designs have and will continue to drive course construction costs higher. The dramatic upswing in maintenance costs is likely to continue as well. (It is not uncommon for the average annual

maintenance cost of a 25-year-old facility to exceed the original cost of construction for the same course!) All of which has led to an overall rise in green fees.

It is my belief that the quality of a game of golf should be judged more on the integrity of the course's design than its condition. The goal of the golf course architect is to create variety, demanding that players use every club in their bag. Less-than-perfect turf

conditions provide an additional variable that should not necessarily be considered a negative.

When playing older courses where the condition of the turf is determined by the most recent weather cycle, golfers are required to adjust their game to the specific conditions every time they play.

I believe we should consider changing our expectations and returning more to the original concept of the game. In this concept, the ball is played as it lies, and there is not always a reward for a perfect shot. In doing so, we will expand the opportunity for more affordable golf. We will also obtain a better appreciation of what the game has to offer.

Flyovers

Continued from previous page

pare the design to the actual build and calculate the cut-and-fill off of that. Or when they do a rough grade of the course, you can shoot the contours then; and when it comes to moving the dirt, you can also do the cut-and-fill.

The contour mapping is extraordinarily precise. When it was receiving bids to renovate its Pinehurst No. 2 greens, Pinehurst Resort asked LDI to produce 300th to 400ths of a foot verticle mapping. Surveyors generally work in 10ths of a foot, Katula said. "We have to do special things to hit that 300th height every time."

But LDI's normal survey data shows 1/10th-of-a-foot contours on each green and 1-foot contours of fairways at any scale the superintendent requires.

"I hope to achieve two things," said Alonzi. "First, as a warning sign. Since it has the ability to see what the naked eye cannot, is perhaps give me warnings of things that may be occurring in the plant before it actually happens.

"Second, to reaffirm some of the critical areas on the golf course... from subsurface rock formations, or just poor soils, to help me to zero in on these areas and explore it. Not only to be able to go out myself, but to take a committee out on the course with evidence in hand that there is something wrong."

In the future, Alonzi said, infrared photography's use may expand. "It's new technology and they're improving it every day. Maybe we'll be able to tie it to certain pathogens from information we get from the stress areas. It could help to manage microclimate situations.

It already has come to Alonzi's rescue. The same day a club member objected to overwatered fairways, the aerial film arrived showing that the course was in jeopardy from lack of water, Alonzi said. "So it also becomes a tool to help you support some of the practices you are exercising."



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