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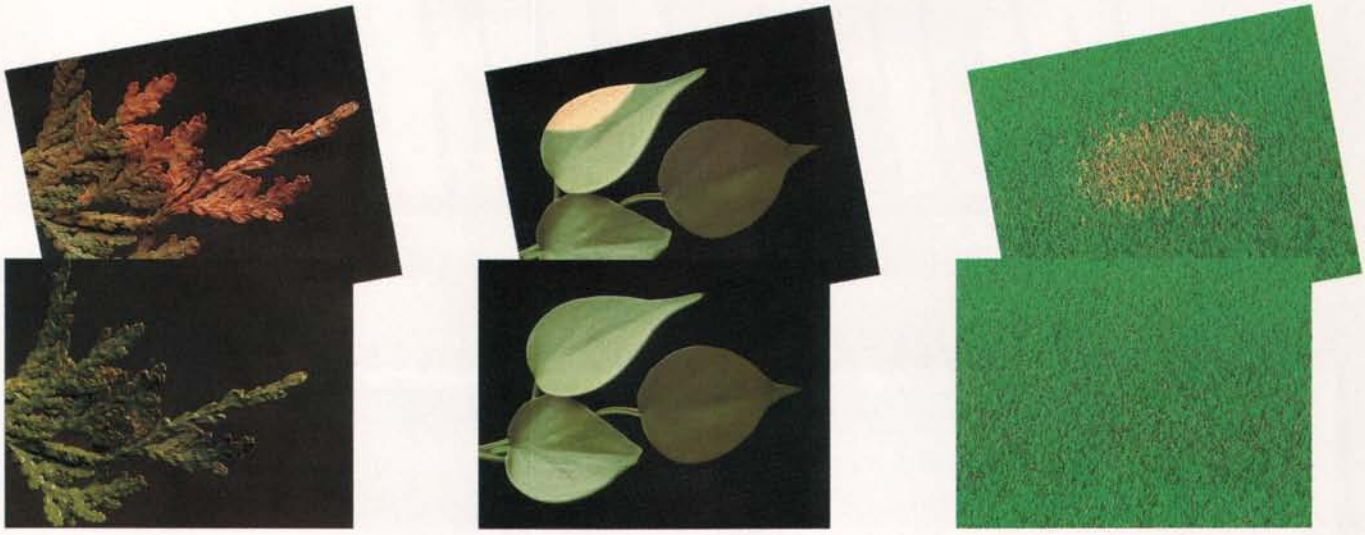

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Headline = sun's interior temperature according to Encyclopedia Britannica (1974 edit.)

Golf & sportsTURF

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MAIN EVENTS

LINE-UP

COVER: *Koolau Golf and Country Club on the island of Oahu, Hawaii. While this course was being built, more than 130 inches of rain fell each year.*

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THE FRONT OFFICE

OPINION PAGE

LIABILITY TO CHALLENGE QUALITY IN FUTURE

This past week I received phone calls from two different insurance companies inquiring about safety standards for sports fields. They called the magazine because they were unable to locate a set of recognized safety standards for the millions of acres of athletic turf in the United States from industry associations.

All I could report to them was the work initiated by the American Society for Testing Materials (ASTM) two years ago. This work was supported primarily by the manufacturers of artificial turf. Even though a number of major specifiers and builders of natural turf systems attended the ASTM meeting in Phoenix in 1989, their input seemed to be utilized mainly as a benchmark for the safety of artificial turf.

Ironically, no representative of the insurance industry attended the meeting. Apparently we have now caught their attention.

Up to this point, superintendents and groundskeepers have been judged by the quality of their turf. Things like color, density, uniformity, bounce, and roll have been the key issues. All these are qualities visible to the eye. If a turf area scores well in all these categories, we often assume it is safe too. That might be changing.

The primary focus of those trying to quantify safety on our sports turf is hardness. Technology currently exists to measure hardness and compaction. Simple penetrometers or more advanced impact absorption meters can be used to test the hardness of any surface. A number of people who have tried these devices report some fields are nearly as hard as concrete.

The next step is to track field-related injuries and compare them to field hardness. Researchers at Pennsylvania State University and Michigan State University are heading in this direction. Once a clear relationship between field hardness and injuries is established, and insurance companies find out about it, we will have a new ball game.

Insurance companies will associate field hardness with safety. They will judge their exposure to liability claims on hardness ratings. For some, this will mean higher premiums. However, by exposing hard, high-risk fields, claims and premiums can be reduced. These savings can then be attributed to the work of the skilled turf manager.

We all want our fields to be as safe as possible. We also realize that budgets don't always allow us to meet quality standards, much less safety standards. If insurance companies can help us justify the budgets we need, let's welcome them with open arms.

Properly managed turf translates into safe turf. In the near future, safe turf will be linked to lower liability. That should get the attention of those who think sports turf management is simple and finally bring much-deserved recognition for those who have been concentrating on safety, as well as quality, all along.

Bruce Shank

EVENTS

CALENDAR

JUNE

27 Field Day, Cornell University, Ithaca, NY. Contact: New York State Turfgrass Association, P.O. Box 612, Latham, NY 12110, (800) 873-8873.

JULY

25 Facilities Management Seminar, Professional Grounds Management Society, Ohio State University, Columbus, OH. Contact: PGMS, 10402 Ridgland Road, Suite 4, Cockeysville, MD 21030, (301) 667-1833.

28-30 International Power Equipment Expo, Outdoor Power Equipment Institute, Kentucky Fair and Exposition Center, Louisville, KY. Contact: Expo '91, (800) 558-8767 or (502) 473-1992.

29 Turfgrass Field Day, South Farm, University of Missouri, Columbia, MO. Contact: Missouri Valley Turfgrass Association, 344 Hearnes Center, University of Missouri, Columbia, MO 65211, (314) 882-4087.

30 Midwest Regional Turf Field Day, Midwest Regional Turf Foundation, Purdue University Agronomy Research Center, West Lafayette, IN. Contact: Clark Throssell, (317) 494-4785.

31 Griffin Field Day, Georgia Golf Course Superintendents Association, Georgia Experiment Station, Griffin, GA. Contact: Karen White, GGCSA, P.O. Box 683, Watkinsville, GA 30677, (404) 769-4076.

31-2 American Sod Producers Association Summer Conference and Field Day, Red Lion Inn-Lloyd Center, Portland, OR. Contact: ASPA, 1855-A Hicks Road, Rolling Meadows, IL 60008, (708) 705-9898.

AUGUST

1 Turfgrass Research Field Day, National Turfgrass Evaluation Program, USDA Beltsville Agricultural Research Center-West, Beltsville, MD. Contact: Kevin Morris, USDA-BARC-West, Building 001, Room 333, Beltsville, MD 20705, (301) 344-2125.

5-6 Summer Meeting, Georgia Golf Course Superintendents Association, Lake Lanier Islands Hotel and Golf Club, Lake Lanier Islands, GA. Contact: Karen White, GGCSA, P.O. Box 683 Watkinsville, GA 30677, (404) 769-4076.

Send announcements on your events two months in advance to editor, Golf & SportsTURF, P.O. Box 8420, Van Nuys, CA 91409. Fax: (818) 781-8517.

MANUFACTURER DONATES MOWER

From left: Supt. J. H. Zanzalari, Locke's Ian Burden, Cipperly, and Principal Klumb.

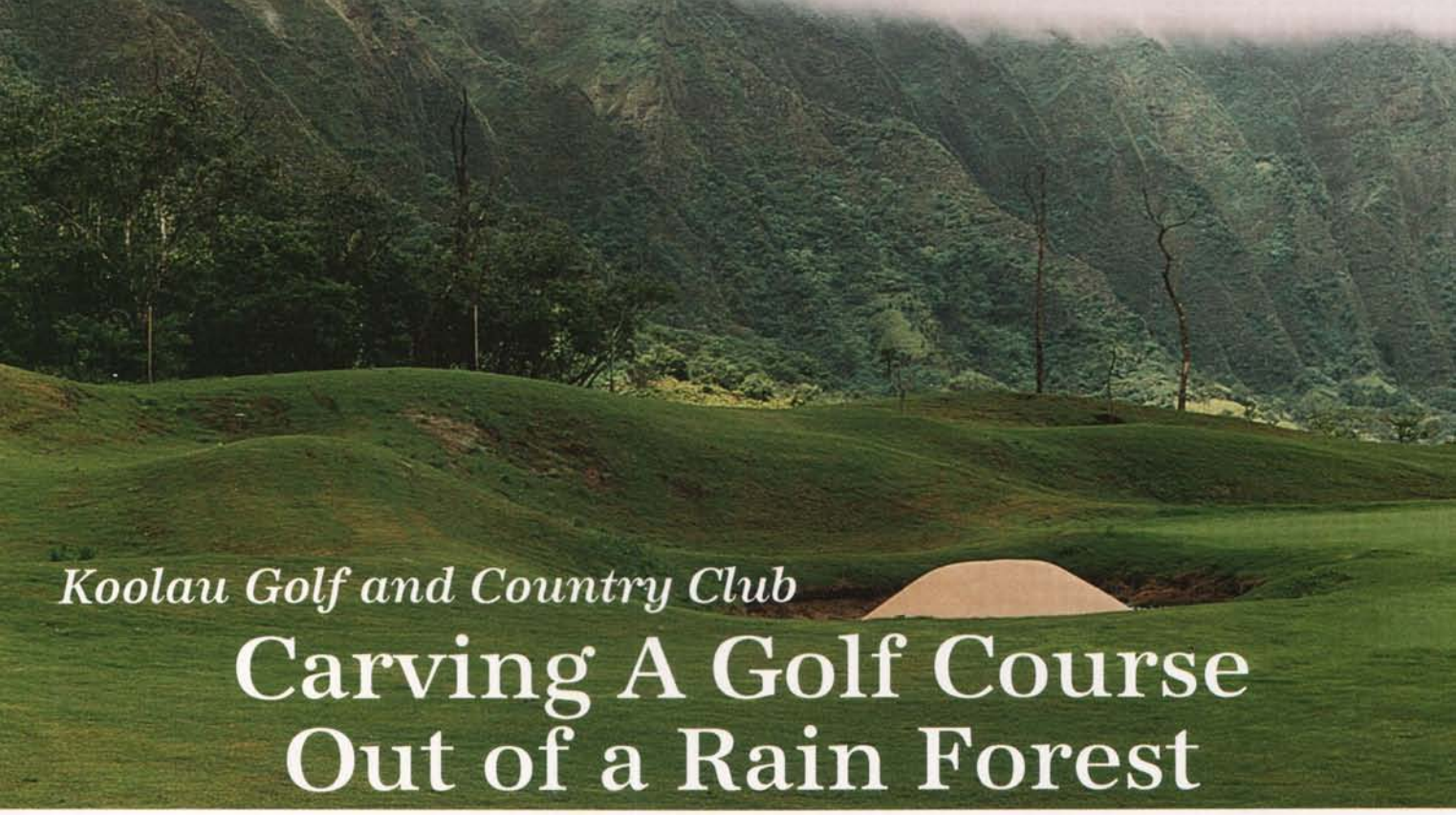
Ray Cipperly recently expressed his desire for a new mower, and his wish was rapidly granted, thanks to Locke Mowers, Inc. Upon hearing that Cipperly, The Tech Tigers coach at the Middlesex County Vocational-Technical High School in East Brunswick, NJ, wanted a new Locke reel mower for grooming the infield of his team's award-winning *Diamond of the Year,* the company donated the 30-inch model to the school.

RANSOMES NAMES EXECUTIVES

Todd Jerred has been appointed vice president of sales and marketing at Ransomes, and Bud Muser has been named director of customer service.

Jerred will assume leadership of the sales, marketing, technical service and parts support functions at the company, based in Johnson Creek, WI. Previously, Jerred was director of marketing for Universal Foods–cheese division. He began his career at Oscar Meyer Foods, a division of Philip Morris, where he served most recently as a senior product manager.

Muser will oversee the technical service and parts support departments at the firm. Prior to joining Ransomes, he served as sales manager, commercial division for Steven Willand, a distributor of Ransomes turf and commercial products in Augusta, NJ. He also served as service manager for that firm for eight years.



Koolau Golf and Country Club

Carving A Golf Course Out of a Rain Forest

By James Gregory

Sean Hoolehan, the superintendent at the Koolau Golf and Country Club on the windward side of Oahu in the Hawaiian Islands, is playing a waiting game. He's waiting for the Penncross bentgrass and the 328 hybrid bermudagrass to finish growing in this October at the new club.

Koolau will have its grand opening next year, though some light playing is already taking place. By then the clubhouse will be ready to welcome golfers to the exclusive country club being built by Minami Group USA, a Japanese company.

It's a breathtakingly beautiful site for a golf course, situated at the foot of the Koolau Mountains that divide the leeward and windward sides of Oahu. A dozen or so "disappearing" waterfalls suddenly appear during rain showers, enhancing the many streams on the emerald-green landscape, and then abruptly vanish soon after the rain has abated.

The Koolau Golf and Country Club has a prime location, carved out of a tropical rain forest below the windswept Pali Lookout known to all tourists. However, the weather at Koolau posed a real erosion threat to the course during and after construction. Fortunately, everyone involved was prepared, the club's young superintendent reveals.

The Road to Hawaii

Hoolehan is a native of the Midwest and completed a specialized two-year program in turfgrass management at Rutgers University in New Brunswick, NJ. His first golf course job as assistant superintendent at a club in Hinsdale, IL, where he met Dick Nugent, the golf course architect for the

Extensive erosion control was necessary to meet the opening deadline. Hole growing in this past March (left). Erosion devices in place on November 1990 (right). Hydromulching, blankets, silt fences, and sand bags held the sprigged turf in place.

Hawaiian club. Nugent was impressed by his knowledge of bentgrass and later recommended him to the owners at Koolau. By that time, Hoolehan was the superintendent at the golf course on the military reservation at Pearl Harbor, on the other side of Honolulu from Koolau, and had become very familiar with the unique problems caused by the Hawaiian weather.

"Construction here began in 1988," says Hoolehan, "and I came on board in 1989. We just wrapped up construction this spring, and now we're busy with the grow-in. Winter is our rainy season here, and not a great time to establish bermudagrass. We only have about five months of optimum bermudagrass weather. But it should be looking good in October. We already have some light play on the course, even though we won't have our grand opening until approximately March of next year."

Stormy Weather

Hoolehan confides, "We have an exceptional erosion problem here. The last two years, we've had over 130 inches of rain each year! We've done a lot of different things to try to control erosion, and we've been fairly successful with the different methods.

"Hazama Corporation was the general contractor and Wadsworth Golf Course Construction Company was the golf course feature contractor. They were very cooperative about getting the erosion control materials down in a timely manner. But their responsibility stopped right after grassing. They had to basically sprig the course, and we accepted the project from there.

"The first hole was turned over to us back in August of last year, and the last hole–actually, the driving range–was turned over about the middle of April this year," he notes. "Once Wadsworth had grassed and capped the course, then it was our responsibility to water it."

How Hydromulch Helped

"The contractor didn't have any responsibility for erosion control once the sprigs had been planted. We were presented with a site that gets a tremendous amount of rain in the wintertime. Our program was to come in behind the contractors, or sometimes alongside of them, and do various methods of erosion control. Often there would be a small overlap. For instance, we'd be putting our materials down, and they would hydromulch over that material. The hydromulching, which was done by Wadsworth, was more to keep the sprigs moist than to control erosion," Hoolehan comments.

In case you're wondering why the sprigs had to be kept moist in an area that averages almost half an inch of rain a day, Hoolehan has a ready explanation. "It might rain half an inch in the morning and then be bright and sunny for the rest of the day. Young sprigs don't have much of a root system, and the tropical sun and winds can dry them out quickly."

On some occasions, the hydromulch had bermudagrass mixed into it for the very steep slopes that could not be planted any other way, Hoolehan explains. When you're working with a mountain, you learn to adapt to it–but the results can be beautifully rewarding.

Bunker slope lined with double netted straw blanket.

Instant Waterfalls

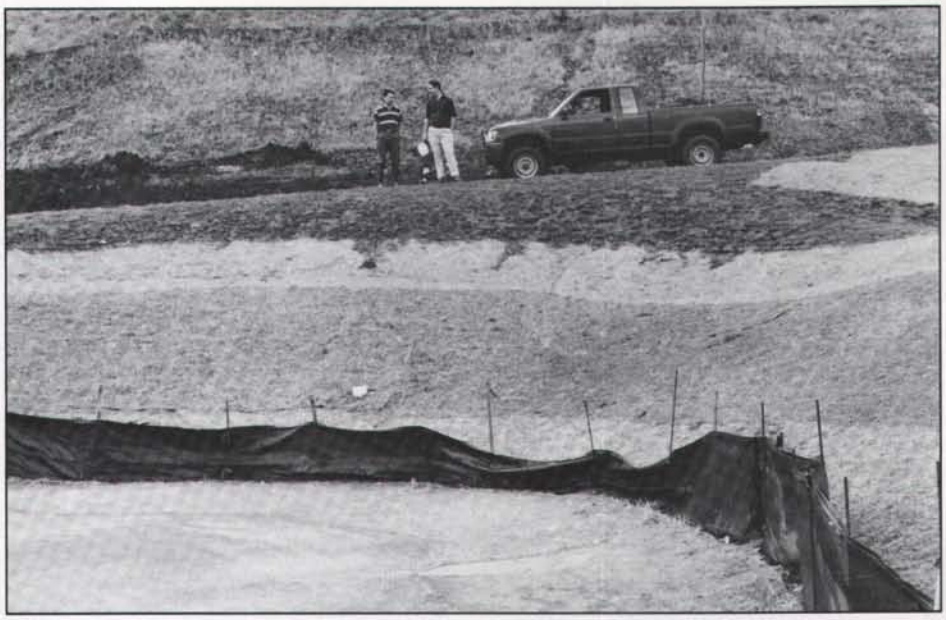
"When it rains, cutoff ditches above the club keep the water on the mountainside from rushing down onto the course," Hoolehan explains. "From the cutoff ditches, it runs down a whole series of beautiful streams. You might see a dozen or more waterfalls on the mountain above the course during a rain shower, and none after it finishes raining."

Working in such changeable weather conditions made it more important than ever to work in concert with the contractor. "Their operation would go something like this," says Hoolehan. "They'd do all their forming on the hole, grading and raking and putting in the amendments. And then they would plant the sprigs. They would either use a sprigging machine or hand sprig difficult areas, like around the greens. Only the bentgrass greens are seeded. The rest of it is all 328 hybrid bermuda."

Hoolehan continues, "After that, they would go back and put a hydromulch cap over all their grass, within an hour or two after they had planted it. Then at that point it became the responsibility of the owner.

"Our problem was that we might get rains of more than an inch an hour during the winter. There were periods where we had 20 inches of rain over a 24-hour period! Between mid-November, 1990 and the end of December that same year, we had 45 to 50 inches of rain. Warm air comes in off the ocean, hits the mountain, goes up, meets cold air, and the result is rain. Not just rain–buckets of it.

continued on page 10



Superintendent Sean Hoolahan (r) and Gilbert Araki from Pacific Agricultural Sales look over green protected by blankets and silt fence.

Koolau Golf and Country Club
continued from page 9

Erosion Control Strategies

"So we used a number of different erosion control materials that we found available," Hoolehan continues. "Our main source was North American Green. They supplied three different types of erosion control blankets made of nylon netting that contained straw and solid coconut fibers."

Before the blankets were installed the sprinkler system was run for a short time after final grading to reveal potential problem areas on each hole. A plan was then developed to provide high-performance erosion control where needed.

The rainfall, much of it coming down at tremendous intensities, was not the only problem. The silty clay volcanic soils which dominate the site are easily eroded. In fact, says Hoolehan, "Irrigation alone is enough to create erosion."

Double-netted straw erosion control blankets were installed on steep undulations and bunker faces to control soil loss and hold sprigs in place. A heavy-duty blanket made from a combination of wheat straw and coconut fiber was used to line drainage swales and cover steep slopes. For those high-flow channels designed to carry runoff water from large drainage areas on the course, the coconut and nylon channel liners provided maximum scour protection. "Wherever we successfully used the erosion control blankets, we had good compaction of the soil first," says Hoolehan.

At Koolau, only 10 percent of the total course area required erosion control blankets to ensure the stability of the meticulously sculpted landscapes. The remaining acreage was hydromulched to cover the sprigs and hold moisture. Although blankets may initially cost more than other forms of erosion protection, Hoolehan be-