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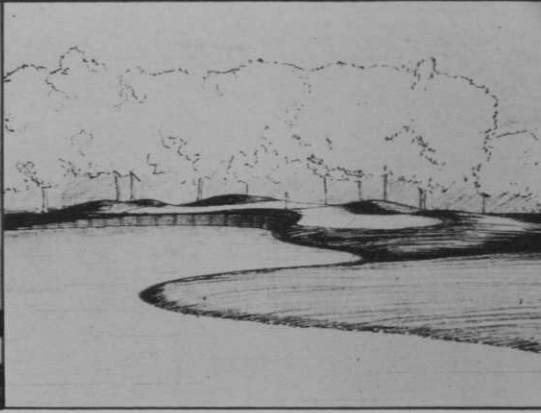
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Water/p. 8



Red Oaks/p. 14

golf business/september

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FRONT COVER:

A full-fairway irrigation system in operation. Ron Fream describes the factors involved in making the most out of water on the golf course, both from an aesthetic and a maintenance view.

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Clippings

Brief bits of news from in and around the golf business...

In case you missed it, **gasohol is harmful** to small engines! The methyl alcohols in it react with water and form strong acids which may eat up rubber and plastics and corrode metal parts. This can be particularly evident during storage periods.

Lime is being tested for its ability to control **Japanese beetle grubs** at Lyons Den Golf Inc., in Canal Fulton, Ohio. It is being applied over about an acre of test plots on the 17th fairway. Ken Lawrence, a USDA researcher from the Ohio Agricultural Research and Development Center is leading the project.

Boca Greens Country Club is taking shape in Southern Florida. The country club will be unique in at least two ways, according to Bill Roach, executive director. It will be owned by the members and will be available for resident and nonresident memberships. Other clubs in the area will not allow

nonresidents to renew when residents take over the roster.

Conrad Sheetz, executive director of GCSAA has been designated a Certified Association Executive by the American Society of Association Executives (ASAE). The certification process involves an extensive personal evaluation, a six-hour examination on association management subjects, high standards of performance and conduct and at least five years experience as a staff executive or three years experience as the chief executive of an association. Sheetz is certified for a three year period, at the end of which he must submit proof of continued education and/or testing. ASAE has nearly 8,000 members representing an estimated 24 million person constituency.

The 1979 **New England Weed Control Guide** is out. To obtain a copy of the four-page guide, write Vaughn Holyoke, Extension Crops Specialist, University of Maine, Orono, ME 04473.

Notes from...

California

Irwin Hearsch has been using about 25 percent less water by irrigating for six to eight minutes every two hours instead of 30 continuous minutes. Hearsch says he gets better coverage because the spray is not fighting the same wind all the time. He has had no problems with run-off or low spots since he began this program.

Virginia

Dave Harmon, superintendent at Colonial Williamsburg Foundation, reports that excessive rainfall, cloudy skies, and temperatures in excess of ninety degrees have caused shallow roots, wilt and disease for Virginia turfgrass. Harmon is seeing Pythium and Brown Patch and some leafspot on the fine-leaved bermudagrasses. The leaf spots look as if someone has dumped black pepper on the turf, Harmon says. As this goes to press, temperatures are dropping only to 75 degrees and reaching 80 by nine o'clock. Superintendents are eagerly awaiting August's end. This has occurred in August for the past three years, Harmon adds.

The Club Managers Association's industry authored **textbook on club management**, operations and organizational philosophy is progressing. Material has been written and is ready for editing. In the planning stage for the past three years, the book is being written by industry authorities in each area of prime management

concern. It will have 11 chapters and is expected to be ready for distribution by the end of this year.

Colorado State University is offering nine, 30-minute color **video tapes** covering: Soil-water-plant relations; Irrigation systems; Irrigation scheduling; and Evapotranspiration estimates, among others.

Conference Previews

Virginia

Virginia Tech's Turfgrass Field Days are Wednesday and Thursday, Sept. 19-20. Participants will be able to view experiments and facilities continuously during the two days, a departure from previous years. In addition, about 30 commercial exhibits will be set up. An equipment parade will be held at 3:30 Wednesday, in the stadium. For more information, call William Burleson, 703/961-7370.

Indiana

The Midwest Regional Turf Foundation field day will be Monday, September 24 at the Purdue Agronomy Farm. The farm is located outside West Lafayette, on Highway 52 NE, just west of the Elks Golf Course. The program will start at 9:45. There will be a group lunch and a campus turf tour before dismissing at 3:30.

California

The Northern California Turfgrass Council, in conjunction with the University of California Cooperative Extension, will hold the 1979 Irrigation Seminar Wednesday, October 3 at Goodman Hall, Jack London Square in Oakland, California. This year's theme will be "Irrigation for Energy Efficiency". Andy Bertoni of W.A. Cleary Co., New Jersey, will be the keynote speaker with "The Humorous Side of Our Industry" as his topic. Concurrent sessions during the afternoon feature Johns-Mansville, Rain Bird and Toro in-service repair training and various speakers presenting management topics. Registration will be \$10 for NCTC and other Turfgrass Council members and \$15 for others. An additional \$2 will be charged for door registration. For more information, contact Seminar Chairman Jim Prusa at 408/426-5911, or write to N.C.T.C., P.O. Box 268, Lafayette, CA 94549.

Florida

"Does my golf course really need a PGA Professional?" will be one topic at the Florida Course Management Seminar to be held Nov. 18-19 at the Cypress Gardens Sheraton Hotel in Winter Haven. Gary Wiren, club relations director of the PGA of America, will participate. The seminar is sponsored by Florida Golfweek, official publication of the Florida PGA Section. 813/294-5511.

Georgia

The 10th Annual Georgia Golf Course Superintendents Association/University of Georgia Turfgrass Short Course will be held at the University of Georgia's Center for Continuing Education in Athens. Contact George Kozelnicky, Dept. of Plant Pathology & Plant Genetics, University of Georgia, Athens, GA 30602.

New Jersey

November 26-29 are the dates for New Jersey Turfgrass Expo '79. Meeting will be held at the Cherry Hill Hyatt House, Rt. 70, Cherry Hill. Contact Dr. Henry W. Indyk, General Chairman, Soils & Crops Department, P.O. Box 231-Cook College, Rutgers University, New Brunswick 08903.

Maryland

Maryland Turfgrass '80 will be held in the New Baltimore Convention Center beginning Sunday, January 6 through Wednesday, January 9. The Mid-Atlantic Association of Golf Course Superintendents and the Greater Washington Association of Golf Course Superintendents are among those coordinating the educational subjects. The sessions will be held immediately adjacent to the exhibit area. Headquarters hotel is the Baltimore Hilton, located in downtown Baltimore, a block from the convention center. Contact Dr. David J. Wehner, Dept. of Agronomy, University of Maryland, College Park, MD 20742, 301/454-3715.

News

EQUIPMENT

Weed-Eater patents ruled invalid

Nylon-line trimmer patents claimed by Weed-Eater, Inc. have been ruled invalid by a Federal judge. A suit by Weed-Eater against Toro and K&S Industries had contended that the other companies had usurped its patents for the rotary head trimmers. Toro and K&S claimed that Weed Eater had obtained the patents from the U.S. Patent Office by fraud.

U.S. District Court Judge George Templar stated that the patents obtained by Weed-Eater do not cover new developments but information that was known already in the business. Templar, who heard the case for more than a month and a half, concluded that the improvements Weed-Eater had made on the lawn trimmers were not sufficiently unique from several earlier trimmers to warrant a patent.

FERTILIZER

Brew feeds the land in experiment

Southern Turf Nurseries, Inc. of Tifton, Ga. has combined efforts with Anheuser-Busch, Inc. to grow turf adjacent to Anheuser-Busch's Jacksonville, Fla. brewery by utilizing liquid brewery waste, rich in nutrients. The turf is being grown on a 300-acre site about one mile north and adjacent to the brewery on property owned by Anheuser-Busch.

John Mueller, brewery plant manager, says that since starting on May 11, the project has substantially reduced loadings sent to the Jacksonville sewage treatment plant. About one million gallons of almost three million daily gallons of liquid wastes are being diverted to the turf farm.

Director of Environmental Engineering and Resources of Anheuser-Busch, Robert R. Imsande, says from that a conservation standpoint, the Jacksonville turf farm has twin benefits. "First, it would require substantial energy to make the amount of fertilizer for turf growth which we are providing from an existing source. This energy is now

NATIONAL GOLF FOUNDATION BOX SCORE					
January-August 1979		REGULATION COURSES	EXECUTIVE COURSES	PAR 3 COURSES	TOTAL
OPENED FOR PLAY	New	35	4	5	62
	Additions	14	4	0	
UNDER CONSTRUCTION	New	43	5	2	82
	Additions	31	0	1	
PROSPECTIVE	New	37	6	2	76
	Additions	26	2	3	

free for other uses. Second, since brewery waste streams are over 95 percent water, we are practicing water conservation. This water is going directly back to the ground rather than requiring energy intensive treatment at municipal waste treatment facilities."

It makes good sense, Imsande says, to put the brew's natural ingredients—hops, malt, rice, yeast, and corn—back into the ground where they can replenish the soil.

INDUSTRY

Toro buys Barefoot Grass

The Toro Company has entered the lawn care business industry with its acquisition of Barefoot Grass Lawn Service, Inc., located in Columbus, Ohio. David McLaughlin, Toro chairman, and Marvin Williams, Barefoot Grass chairman, said the companies have signed a letter of intent for Toro to acquire Barefoot Grass as of August 3, for an undisclosed amount.

Barefoot Grass was started as a subsidiary of O.M. Scott and Sons, but has operated independently since 1975. Sales this year are expected to be approximately \$3 million. They currently operate in 12 metropolitan areas with primary emphasis in Ohio.

FINANCE

Colgate drops funding for most pro golf

Colgate-Palmolive Company will not renew its sponsorship of several professional golf and tennis tournaments where the contracts are presently expiring. The decisions were based on a detailed analysis of the company's involvement with sports programs, initiated by Keith Crane, president, shortly after his election as chief

executive officer in January of this year. "We have evaluated the tournaments as corporate business investments," Crane said, "just as we do with any operation of the company. We have also assessed their value, individually and collectively, to Colgate's overall corporate image."

Colgate will maintain its sponsorship of the Colgate-Dinah Shore Winners Circle, but will drop the Colgate Triple Crown, the Colgate European Open, and the Colgate Far East Open, all women's golf events.

The company will not renew the Colgate-Hall of Fame Golf Classic for men. They have also discontinued sponsorship of the World Match Play Championship, a British event, and the British PGA Championship.

GOVERNMENT

OSHA calls hand weeding unsafe

A California landscaping crew, assigned to pull weeds along a highway in San Diego, was cited by OSHA for using unsafe handtools, when it was discovered that they carried mattocks in their belts and occasionally drew them to wipe out the tougher weeds. Fortunately, the company decided to fight it out in court, rather than pay the \$125 fine.

Testimony for OSHA included doctors who reasoned that stooping over to pull weeds could cause back injury. Dr. Ira Monosson correctly testified that in order to use the mattock-type tool, one would have to assume a stooped position in excess of 90 degrees, unless one was working up a hillside. Dr. Monosson also testified that the tool itself would not cause a back injury. It was the use of it in a stooped position that did.

While it is humorous that such a suit be filed against the lowly mattock, reading between the lines

of the case would leave on to think that working in a stooped position, pulling weeds by hand, could be an unsafe work habit.

A doctor who had collected medical data on farm workers performing stooped labor testified that it could damage ligaments, vertebra, and intervertebral discs. Hernia and slipped discs could result. However, the difference in severity could not be ascertained until two people, one using a mattock in a stooped position and the other stooping and pulling weeds by hand, died and autopsies were performed.

While it is not within this reporter's capabilities to judge such a case, as medical training is limited, it is a fact that pulling weeds by hand is a rough job. It does lead one to wonder though, if there has been any medical research on whether pushing buttons causes crooked fingers?

FERTILIZER

Penn. sludge fertilizer hindered by cadmium

Development of a sludge-fertilizer industry in Pennsylvania has been hindered by cadmium's dangerous potential in the food chain. Dr. Dale Baker, professor of soil chemistry at University Park, has defined a worthwhile goal as no more than 20 to 50 parts per million of cadmium in sludge fertilizer. He described 50 ppm of cadmium as equal to 50 pounds in 500 tons.

The metal remains in the plow layer. Sludge applied to Penn State test plots at 10 dry tons per acre for seven years increased soil test levels of cadmium from less than one-half pound per acre to five pounds per acre. For land application of sewage sludge in Pennsylvania, a municipality or hauler must obtain a permit from the Pennsylvania Department of Environmental Resources.

Blue Ash, Ohio Management Innovation

by Michael J. Hurdzan, Ph. D.



lem of rapid development and escalating land prices, to the extent that prospects for preserving significant open spaces in public ownership were becoming critically slim. Moreover, the City had been less than successful in encouraging private developers to preserve open spaces and to respect trees, hillsides, ravines and other natural features of the land.

Development strategy

The development strategy involved a public/private partnership, and a private developer was selected in January of 1978. By acquiring this site, the City could through careful planning (1) assure preservation of a significant amount of public open space, (2) provide a golf course to serve recreation needs in the community and (3) show that development of homesites can be done profitably without destroying important natural features of the land, in hopes that this effort would serve as a model for future private developments in the area. In addition, the plan developed by the City allowed for upgrading the overall residential image of the community by intermingling expensive homesites with a golf course and naturally wooded areas on the site, thereby offsetting or balancing the current image of the community as being one having only very few high quality residential areas.

The City purchased the 273 acres for \$5,495 per acre and sold 103 acres to a private developer for \$21,845 per acre. With the land, the City sold an approved development plan, complete engineering drawings for streets and utilities and the amenity of an adjacent golf course. The return of \$2.25 million that the City received for the residential land offset 59.3% of the City's total project cost, without which the program would not have been feasible. The developer also bought with the land a legal obligation to implement the project totally in accordance with the City's approved plan, including a design guide, a design review process controlled by the City and development standards to assure environmental preservation. As a land owner rather than a review agency for private development proposals, the City can be and has been far more successful in environmental management and resources conservation. At this state both the City and the

developer believe that the cooperative or partnership approach taken in this program will mutually be beneficial to each and are hopeful that it may well serve as an incentive if not a model for future co-ventures between the public and private sectors.

The plan

A quote from Vic Suhm in a presentation made at the October 20, 1977 public meeting during which this program plan was adopted is relevant. "In developing this plan, we viewed the site as a whole, in its entirety. Great concern was given to all of the natural features of the land; the goal of the plan is to allow development which disturbs very minimally the existing natural features of the land. There are topographical changes as great as 100 feet on the site; there are stream beds, ravines, rock outcroppings and tree groves on areas throughout the property.

We view all of these natural features of the land as assets which enhance site design and project amenity; we do not see them as obstacles which must be bulldozed away. Our goal is to encourage development which is sensitive to the natural surroundings. Creative building siting and innovative architectural design are possible and are encouraged by the site plan. The intent is for the end product to represent a more interesting and attractive appearance and actual living environment than are frequently found in typical residential subdivisions."

The plan achieves the results described above; the program is well into the implementation phase now and the end product will undoubtedly reflect these results. Especially for smaller communities and very likely for any community, this program represents an outstanding example of innovative environmental management and resource conservation.

It has resulted in an overall upgrading of community image by (1) receiving extensive, favorable publicity, (2) implementing an aesthetically pleasing land use plan and creating a superior living environment, (3) providing with the help of private funding a first rate public golf course and (4) upgrading the residential quality of the community.

The large amount of open spaces
Continues on page 20

For a city of 12,000 to win an international award for Management Innovation by providing a superior eighteen hole golf course, 15 acre nature preserve, tasteful clubhouse, outstanding maintenance facility and equipment, and have 60% of the cost paid by land sales to private developers requires perfection in planning and implementation. The credit for this perfection belongs to the City of Blue Ash, Ohio located just north of Cincinnati, and its youthful, dynamic City Manager Victor Suhm. Vic, as he is more commonly known, has a plaque in his office with a quote written by George Bernard Shaw but attributed to Robert Kennedy that says "Some men see things as they are and say why. I dream things that never were and say why not?" It was this philosophy that allowed him to convert a dream into reality by using a sound planning process. His process is no secret and it can be duplicated by any small town or city in a similar circumstance.

Before 1976, the City of Blue Ash found itself with the common prob-



Michael J. Hurdzan, Ph.D., is a partner in the golf course architectural firm of Kidwell & Hurdzan, Inc., Columbus, Ohio. He is a member of the American Society of Golf Course Architects and the

American Society of Landscape Architects. He is currently writing a book on the history of golf course architecture.



Some golf courses have more water hazards than they need.

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Water on the golf course

by Ronald Fream

Water is as integral a part of a golf course as it is in any other form of organic life. Water and the golf course are interrelated in three generalized groupings: Aesthetically and strategically, through irrigation and by the effects of water upon maintenance.

The visual impact of water

The most obvious results of water to the typical golfer is as the game is being played. The ball in the lake, gone forever, is a memory, an extra stroke and sometimes an alibi. The use of water on a golf course, as an aesthetic element to enhance the visual beauty of a course, is common. The use of this aesthetic water should be carefully considered, since the impact of water as an element of finality in the hierarchy of penalties and hazards presented to the golfer is generally terminal. The indiscriminate use of water as a hazard is unfair and impractical. No hazard should be added arbitrarily or capriciously, especially one as final as water. The use of water to enhance the beauty of a particular setting while also offering a fair, reasonable and challenging element which heightens the drama and play of the game, is thoroughly justified.

Improper use of water features as



An in-place, full-coverage system is in operation on the putting green of a par-3 hole.

hazards can contribute to slow play, golfer frustration and, quite possibly, lost revenues for the operator.

Obviously, the abilities of golfers differ, with a 14 handicapper being considered "average." Yet, the introduction of water into the design of the golf course does, on occasion, disregard the average and at times the superior golfer as well. When the "average" golfer is not considered, you may automatically assume those higher than average handicappers are also given scant regard.

Disregarding the golfer when designing a golf hole or a golf course, seems an impossibility, if in fact, one is designing a golf course, yet such is the case more often than one might believe. Consider how often a hazard — and this discussion is regarding water hazards only — is discovered after the golf shot has been hit. The blind shot, or blind hazard, is a design weakness in old and new courses alike. Justifications are few for a blind water hazard. To crest a rise and observe the concentric rings of the impact point of your ball can create frustrations not desirably associated with golf. If, on the other hand, you are able to observe the pond, lake, stream or seacoast before you address the shot, you have the opportunity, if

not the ability, to select a tool from your bag with which to attempt to negotiate or surmount the pending hazard. Whether or not you are able to overcome that hazard, the eyes must be able to observe and the nervous system must be able to react to the flight of the ball and the ultimate results be they favorable or discouraging. Here is the essence of golf! To observe and master an obstacle en route to holing-out provides the joy, the satisfaction and addiction of the game.

As water offers a soothing visual amenity like few others, the inclusion within most modern golf courses is almost obligatory. In actual fact, the real and original courses, those grand and intimidating links of Scotland, have virtually no lakes and few too are the burns or streams. Modern golf architecture introduced the water as a means of presenting a hazard of finality which, while different, was as total as the deep and treacherous gorse of the links. Golf architecture of recent years has also been oriented more to the aesthetic design of the course as compared to the earlier years laying out of a course on naturally receptive ground. Those "natural" sites are few and far between today and where the given site



Ron Fream is a principal in the golf architectural firm of Thomson Wolveridge Fream & Associates, Los Gatos, Calif. Fream oversees an office which presently has

golf course projects underway in the U.S., Austria, Singapore, Indonesia, Malaysia, Tunisia and Trinidad. He has degrees in Park Administration, Ornamental Horticulture and Turfgrass Management and was variously associated with golf architects Robert Muir Graves, Robert Trent Jones and the late Commander John Harris of London prior to establishing his own office in 1972. The firm has an office in Melbourne and recently established an office in Singapore.



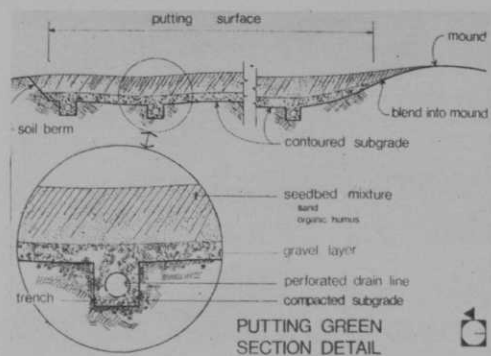
A gravel drainage line is visible in this sand bunker prior to placement of sand.



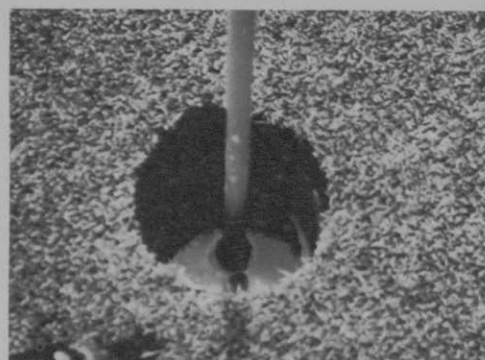
Close up of a quick coupling sprinkler head.



This portion of an irrigation system plan layout shows head and piping layout.



This cross section detail of a putting green illustrates the correct construction method to provide for subsurface drainage.



Standing water in a cup is an obvious sign of putting



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