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- **REEL MOWERS**
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Complete In-Field Service Support

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Midwest Breezes

Upcoming Events — Mark Your Calendar

July 18 — MAGCS monthly meeting at Springbrook C.C.
July 19 — Mechanics Meeting at Riverside Golf Club
July 21 — Field Day at University of Illinois
July 25 — John Deere Supt. Pro Golf at Elgin C.C.
August 2 — Purdue Field Day at Agronomy Farm
August 3 — ILCA Field Day at Morton Arboretum
August 15 — MAGCS monthly meeting at Balmoral Woods C.C.
September 13 — MAGCS monthly meeting at Crystal Lake C.C.
September 26 — ITF Golf Day at Knollwood G.C.
October 10 — MAGCS monthly meeting at Lake Barrington Shores
November 2 — Annual Meeting & MAGCS Turf Clinic
November 14-16 — Penn State Turf Conference
December 6-7-8 — NCTE, Pheasant Run
Jan. 23, 24, 25 — Midwest Regional Turf Foundation Seminar, Indianapolis

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Some of our fellow superintendents will be increasing the population this coming fall. **Bruce and Roxane Williams** are expecting a child in October, and **Mike and Sue Matchen** are expecting one in December.

* * * * * * * * * *

Plan for an overnite stay at Eagle Ridge Golf Club and Resort for next year's joint ITF and association meeting. **Bob Graunke** will be our host once again at a very beautiful setting. This past year the event was held at the rainy Silver Lake C.C. with host **Dudley Smith. Dudley** is batting 1000 with this event and rain.

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Bob Maibusch, superintendent of Hinsdale G.C. has become a certified superintendent just recently. **Bob** has been at Hinsdale since 1982. Congratulations!

* * * * * * * * * *

Assistants are still needed at Sugar Creek Golf Course — contact **Douglas Long** at (312) 834-3325. **Rick Hahn** at Marriott's Lincolnshire Resort is also looking for an assistant. **Rick's** phone number is (312) 634-0100.

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Rick Hahn also has many 650 Toro Hydraulic head casings for sale at $5.00 each. Call (312) 634-0100.

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Complimintary tickets for the U.S. Senior Open Championship being held at Medinah Country Club from August 1st through the 7th will be available to members of the Golf Course Superintendents Association of America and their spouses. Tickets must be picked up at the will-call booth which will be located at Lake Park High School on Medinah Road just south of Irving Park Road. Please have a photo I.D. as well as your GCSAA membership card.

FOR SALE: Irrigation Coupling Motor - Marathon Electric Motor; Model - LD365TSTDS7026HCW; Year - April, 1981. HP 75; Voltage 230/460; Phase 3. Minimal Use. Asking $650 or best offer. Village Greens of Woodridge (312) 985-8366.

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August is the last month to write an article to be included in the 1988 Ray Gerber Editorial Award Contest.

* * * * * * * * * *

July 19th Mechanics Meeting at 1:00 p.m. at Riverside Golf Club Maintenance Building. Enter Gate A. 26th and First Avenue, North Riverside. Call Wes at 447-1049.

"Summer Humor"

July Fire Cracker is the Name,
That envelopes You in It's Flame.
Heat, Humidity and Heavy Play,
The Culprits of the Day.
Wilt, be It wet or dry!
An un-needed deluge from the Sky,
All these plus Insects and Disease,
Can drop One to Their knees!
Yes, good Ole Summertime is here —
Where'd They put that Barrel of Beer?

Kenneth R. Zanzig

ATTENTION ALL GOLFERS

enter the

Illinois Turfgrass Foundation

NORTHERN ILLINOIS GOLF OUTING

Monday, September 19, 1988

SUPPORT TURFGRASS RESEARCH IN ILLINOIS

Donation — $85 per person — includes:

An afternoon round of golf at one of these prestigious Chicagoland golf clubs

Knollwood C.C.
Host Superintendent — Randy Wahler
11:30 a.m. Shotgun Start

Sunset Ridge C.C.
Host Superintendent — Dennis Wilson
11:00 a.m. Shotgun Start

- **A Golf Car**
- **Lunch**
- **Refreshments**
- **A Sit-Down Steak Dinner at Knollwood C.C. (Approximately 6:00 p.m. — Jacket Required)**
- **Prizes**

Golf courses will be assigned on an alternating basis
• Attendance limited to 200 Golfers •
Dom Grotti Trophy Award to Superintendents & Assistants for combined low net

Call ITF Headquarters for reservations

(312) 644-0828

USGA Recommendations Regarding Hole Locations

The USGA frequently receives requests for guidlines with respect to selection of hole locations on the putting greens, **particularly during competitions.**

The USGA believes that many factors affect selection of hole locations. The first and most important is good judgment in deciding what will give fair results. Do not be tricky in locating holes.

Following are specific points:

(1) Study the design of the hole as the architect intended it to be played. Know the length of the shot to the green and how it may be affected by the probably conditions for the day — that is, wind and other weather elements, condition of the turf from which the shot will be played, and holding quality of the green.

(2) There must be enough putting green surface between the hole and the front and the sides of the green to accommodate the required shot. For example, if the hole requires a long iron or wood shot to the green, the hole should be located deeper in the green and further from its sides than should be the case if the hole requires a short pitch shot.

In any case, it is recommended that generally the hole be located at least five paces from any edge of the green. If a bunker is close to the edge, or if the ground slopes away from the edge, the distance should be greater, especially if the shot is more than a pitch.

Consideration should be given to fair opportunity for recovery after a reasonably good shot that just misses the green.

(3) An area two to three feet in radius around the hole should be as nearly level as possible and of uniform grade. In no case should holes be located in tricky places, or on sharp slopes where a ball can gather speed. A player above the hole should be able to stop the ball at the hole.

(4) Consider the condition of nearby turf, especially taking care to avoid old hole plugs which have not completely healed.

(5) Holes should be cut as nearly on the vertical as possible, not plumb with the contour of the green.

(6) There should be a balanced selection of hole locations for the entire course with respect to left, right, central, front and back positions. For example, avoid too many left positions with resulting premium on drawn or hooked shots.

(7) For a competition played over several days, the course should be kept in balance daily as to degree of difficulty. In a stroke competition, the first hole of the first round is as important as the last hole of the last round, and so the course should not be set up appreciably more difficult for any round — balanced treatment is the aim. An old concept of making the course progressively harder round after round is fallacious. One form of balanced daily treatment is to select six quite difficult hole locaitons, six which are moderately difficult, and six which are relatively easy.

(8) During practice days before a competition, locate holes in areas not to be used during the competition and which will not result in areas to be used being impaired by foot traffic.

(9) Anticipate the players' traffic patterns. Locate holes for early rounds so that good hole locations for later rounds will not be spoiled by players leaving the green.

(10) In match pay, a hole location may, if necessary, be changed during a round provided the players in each match play with the hole in the same location.

In stroke play, rule 33-2b requires that all competitors in a single round play with each hole cut in the same position, but see Exception to that Rule.

When 36 holes are played in one day, it is not customary for hole locations to be changed between rounds, but there is no Rule to prohibit changing them. If they are changed, all players should be informed.

(11) The greenkeeper who cuts the holes should make sure that the Rules of Golf are observed, especially the requirements that the hole-liner not exceed 4¼ inches in outer diameter and that it be sunk at least one inch below the putting green surface.

The USGA® Equitable Stroke Control (ESC) Procedure

ESC is the downward adjustment for handicap purposes, of unusually high scores on individual holes which, if included in the 18-hole score, would be abnormally high in relation to the player's general ability. Each player is responsible for adjusting his socre in accordance with the formula below before it is returned for handicap purposes.

On completion of each round, adjust your actual score as follows for USGA Handicap System purposes:

Course Handicap / Limitation on Hole Score

Plus or scratch:
Limit of one over par on any hole.

1 through 18:
Limit of two over par on number of holes equal to handicap.
Limit of one over par on balance of holes.

19 through 36:
Limit of three over par on as many holes as the handicap exceeds 18 strokes. Limit of two over par on balance of holes.

37 through 54:
Limit of four over par on as many holes as the handicap exceeds 36 strokes. Limit of three over par on balance of holes.

For example, a player with a USGA Handicap Index of 21.8 who has a Course Handicap of 23 at a course with a relatively high Slope Rating would be allowed a maximum score of three over par on five holes and a maximum score of two over par on each of the remaining 13 holes. A player with a Course Handicap of 12 would be allowed a maximum of two over par on 12 holes and a maximum of one over par on each of the remaining six holes.

If a player starts but fails to complete a hole, he shall, for handicap purposes only, record a score for the hole in accordance with the above formula. There is no limit on the number of incompleted holes in a round provided incompletion is not for the purpose of controlling the handicap. A player should not discontinue play on a hole where there is a reasonable chance that he will play the hole in fewer strokes than the score allowed by ESC.

New golfers who have not established USGA Handicap Indexes should assume the USGA maximums of 36.4 for men and 40.4 for women - concerted to the Course Handicap.

(continued on page 15)

Example of application of ESC for a golfer with a course handicap of 23:

Hole	1	2	3	4	5	6	7	8	9	10
Par	4	3	4	4	4	5	4	3	5	5
Score	5	5	4	6	5	8	6	8	7	9
Over Par	1	2	0	2	1	③	2	⑤	2	④
ESC Adjustment								-2		-1

Hole	11	12	13	14	15	16	17	18	TOTAL
Par	4	3	4	4	4	3	4	4	71
Score	11	3	7	6	4	4	7	5	110
Over Par	⑦	0	③	2	0	1	③	1	—
ESC Adjustment	-4						-1		102

A player with a course handicap of 23 strokes must adjust downward any hole score in excess of three over par. He is allowed a maximum of five hole scores of three over par; beyond that, the maximum allowable score for any hole is two over par. On the scorecard above, he has six scores of three over par or more. Acocrdingly, he must reduce to three over part the scores on the holes on which he scored more than three over par, and he must reduce to two over the par the score on one of the holes on which he scored three over par. The 17th was selected arbitrarily to be lowered two over par. ESC is not related to the allocation of handicap strokes to the holes of a course.

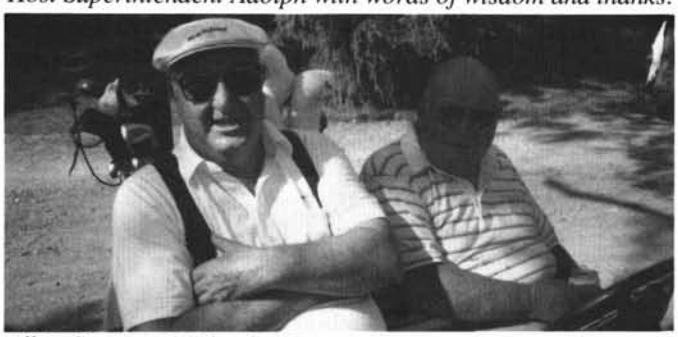
For additional information on the USGA Handicap System, refer to the *USGA Handicap System and Golf Committee Manual.*

Lake Shore C.C. Meeting Pictures

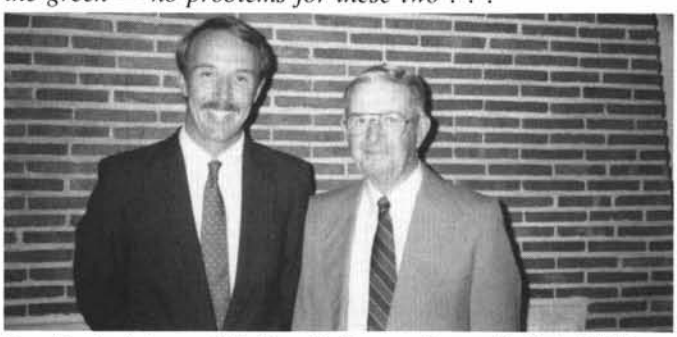
Our hosts from the last two meetings: Dudley Smith and Adolph Bertucci.

President Frederick Asher of Lake Shore C.C. presenting Adolph with a trip to Italy in appreciation of his many years of service.

Host Superintendent Adolph with words of wisdom and thanks.



Albie Stout and John Stephenson — down the middle and on the green — no problems for these two . . .



Excellent picture of Father & Son — Bruce & Bob Williams

Photos by Ray Schmitz

How Soil Factors Affect Plant Establishment and Growth

by Patrick D. Kelsey,
Research Soil Scientist
Morton Arboretum, Lisle, IL

Soil information has long been used by farmers, engineers and land managers, but little attention has been paid to soil management in the urban landscape by horticulturalists, arborists and landscape professionals.

Soil information used by the landscape industry is usually limited to fertility considerations only. But there is more to learn. Harsh urban soil conditions present one of the most severe environmental stresses encountered by woody landscape plants. Compaction, poor site drainage, manmade soil (mortar, building rubble, etc.) alkalinity and clayey materials are just a few of the physical limitations in urban planting sites.

By understanding basic soil properties, the landscape professional can modify planting sites and eliminate some of the differences between nursery conditions and the urban planting site. Analysis of site soil conditions is not generally a part of the design phase, but it should be. If soil information is not provided during design, it should be gathered and utilized during plan implementation. Site modification is more difficult at this stage, but in many instances may be the only way to increase the survival rate of woody plants on the site. Often, remedial action to improve the trees' environment after planting is unsuccessful, and very costly.

Physical soil properties critical to the establishment of trees in urban landscapes include texture, soil structure, available water holding capacity, bulk density, permeability and water table depth. Because of the complex interrelationships between physical properties, no single factor in this list is more important than another.

Soil texture Soil texture, the ratio of particle sizes (sand, silt and clay), can be estimated easily. Textures can be obtained in the field by kneading the soil between the thumb and forefinger. Gritty particles in the sample are sand; silt particles feel floury; and clay particles are sticky.

Textural analyses of soils can also be performed by commercial laboratories. Often, if a soil is the least bit sticky, people are quick to say that it is clay. In actuality, few soils in northern Illinois are clay.

Soil texture controls the permeability, moisture holding capacity and consistence, or friability, of soils.

Soil structure Soil structure refers to the size and shape of soil aggregates. These aggregates, or peds, are held together by a complex of organic compounds. Soil structure is described by the shape of the aggregate: granular, crumb, blocky, subangular blocky, prismatic and columnar. Soil structure controls the permeability and gas exchange, and affects the drainage characteristics by "perching" water in some layers of the soil.

Compaction from equipment causes the soil structure to break down. Tilling compacted soil will help increase its permeability and aeration. However, if the compaction is severe and the structure is destroyed, reaggregation may not occur. This is true of many urban situations, particularly where organic matter levels are low.

If poorly aggregated soil cannot be overcome, tilling and working in organic matter will ease some of the permeability problems. However, this is not a long-term solution. There s no quick fix to soil reaggregation available. Gypsum is com-

SOIL FACTORS (continued from page 19)

monly used to "improve" aggregation, but it is only effective in saline soils. Its ability to improve soil structure in alkaline materials that are fine textured has not been shown. Recent research on organic polymers to improve aggregation is promising, but few commercial products are available.

Water holding capacity Available water holding capacity (AWHC) refers to the capacity of the soil to hold water that plants can use. This is essentially the moisture levels from field capacity (saturation point) to the wilting point percentage. AWHC is controlled largely by soil texture. Silt loam and loam textures provide the largest AWHC of any soil texture. Coarser textures (sandy, sandy loam, etc.) have less surface area to hold the water for plants than do finer textured soils. Finer textured soils (silty clay loam, clay loam, clay, etc.) contain large surface area for holding water, but the clay particles bind much of it tightly so less is available to the plants.

Bulk density Bulk density is most commonly used as an indicator of soil compaction. It is a measurement of the mass of soil per unit volume. During the compaction process, soil structure is destroyed and large soil pores collapse. Density is an indirect indicator of the adequacy of soil pore space. High densities (greater than 1.8) indicate soil conditions which prevent root growth and survival due to reduced soil aeration, poor water movement and impenetrability. Bulk densities between 1.0 and 1.4 are optimum for root growth. Root growth is reduced at densities between 1.5 and 1.8

Permeability Permeability indicates the ability of water, gases and plant roots to move through the soil over a period of time. Pore space, texture and soil structure control the permeability of soil. Soils with coarse textures are more permeable than fine textured soils. Large pores transmit soil water and gases more readily than small. Transmission of water depends on the ability of water to move either laterally or downward. Most of the root growth, gas exchange and water movement through soils occurs in the large pores along the faces of the soil aggregates.

Water table depth The seasonal high water table and drainage characteristics are determined in intact soil profiles by marking the highest depth at which splotches of gray colors occur. These splotches are termed "mottles". Mottles occur in many colors, but are usually either dull gray or bright reddish-orange. If the gray color (gley) dominates the soil, the water table is at that depth for the majority of the year, unless the area has been recently (10-20 years) tiles drained.

Mottling and gleying of the soil are not good indicators of water table depths in disturbed urban soils, because the color of the soil applies to the soil before disturbance. Often, fill materials for urban sites do not originate at the site, but are brought in from other areas. This makes historic characteristics of little value in site evaluation.

In disturbed soils, monitoring of near-surface water tables is usually the only reliable measure of potential water logging. Unfortunately, site investigations are rarely undertaken until the plant has been killed by poor drainage or a high water table.

Water table and drainage problems are easily overcome by tile drainage, except in areas with fine textures soil materials that have been severely compacted. In these situations, site improvement usually involves the use of dry wells and the complete replacement of the soil environment in which the tree is to be planted.