

Drainage Renovation Stressed

Two young architects, heavily engaged in course reclamation work for the last two years, cite need of better systems for drawing off excess water


By JOE DOAN

• *Courses that are poorly drained, over-watered or hard hit by rain provide the healthiest kind of incubating "soup" for pythium (a water mold). It becomes even healthier if high humidity (consistently about 70 per cent) is prevalent. — Golfdom, Sept., 1964, page 28.* •

It was just a year ago that an emergency meeting of supts., green chairmen, club officials and agronomists was called by the Chicago District GA in an effort to find out if some remedy couldn't be found to counteract a pythium plague that struck Northern courses in late July and continued to cause distress until the weather turned cool in mid-August.

No definite solutions came out of the Chicago meeting, although it was agreed that the blight probably could be headed off if clubs were willing to spend extraordinary amounts of money on a manganese-zinc fungicide program, to be started early in the season. Most supts. expressed doubt that their clubs would be willing to undertake the costly treatments, even if these guaranteed disease-free turf.

The alternative was to improve drainage. After the pythium blight, which hadn't struck with damaging intensity in the previous nine years, had subsided, many supts came to the conclusion that the disease would never gain a foothold if better drainage systems were to be installed at their courses. Actually, the plague had caused much more damage to their combination bent and poa annua



All emphasis is being put on drainage of greensites that are being rebuilt through the Midwest. Here is the tile layout on No. 14 at Lake Shore in Glencoe, Ill.



Reconstruction of the sixth green is part of the rebuilding program at Lake Shore. Several older clubs are revising their courses on a five-year plan, with three or four holes being rebuilt each year.



A poor drainage system not only causes trouble on the course but spills over into the parking area, as it did last year at Glencoe (Ill.) CC. This has been corrected.



Every member of the Southern California GCSA must be a horseplayer because there was 100 per cent attendance at the June meeting when Pacific Toro treated the greenmasters to a day among the bookies. Host for the day was Horace Pratt. Lovely young hostess is Donna Hartssock of Inglewood.

fairways than it had to greens. The supts. reasoned that the greens had escaped because drainage of those built in the last 20 years or so had been carefully planned when they were constructed. But this wasn't true of the fairways. Pythium struck hardest where fairways were poorly graded and low spots abounded.

Five-Year Improvement Programs

In the last two or three years, several older courses in the Midwest have embarked on five-year course improvement programs. Two, three and four holes are being rebuilt each season, partly because it is easier to finance a program of this kind, but mainly because it isn't necessary to take a course out of play when reconstruction is going on. In the Chicago area, the architectural and site planning firm of Ken Killian and Dick Nugent, is handling a large share of the course re-vamping that is going on. About 70 per cent of the work undertaken by this team since 1963 has consisted of rebuilding undersize greens — and improving fairway drainage where clubs are willing to go to the expense of having this done. Supts. generally agree that Killian and Nugent, who are proteges of Robert Bruce

Harris, have a god selling point where the fairways are concerned.

Start with Greens

Usually, when Killian and Nugent undertake a reclamation job, the first consideration is the greens. At many of the older clubs the greens that were built 40 to 50 years ago cover an area of less than 5,000 square feet. Traffic on them today is at least twice as great as it was when they were built and compaction, possibly poor contouring and lack of space for interesting pin placements are among the deficiencies associated with small putting areas. In many cases, Killian and Nugent have found the older greens have been devoid of drainage systems, or where they had been installed, were either poorly designed or perhaps almost completely plugged.

K & N has handled remodelling projects at Glencoe CC, Onwentsia Club, Lincolnshire CC and Lake Shore, in the Chicago area, and Lake Ripley, Wis., in the last year or so. Usually, when the greens are enlarged, tees are rebuilt as part of the reconstruction package. At Glencoe CC, a municipal 18, Supt. Tom
(Continued on page 62)

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our course. To these we apply Malic Hydrizide to reduce or stop growth. We also plan on using this material in the near future to eliminate the frequent hand trimming of the hedges and ornamentals around the club house. Power companies are using the product to reduce tree trimming around power lines.

We planted a number of small trees several years ago. We knew we should keep the ground around the trees open so the water could get to the roots easily. Open ground also keeps the large mowers from coming too close to the tree and breaking the bark. To hoe is time-consuming and even one week makes the area seem unkempt. We use Simizan which acts as a pre-emergence herbicide for any growth, yet will not harm any tree or ornamental even if sprayed on the foliage. We then dress the area with wood chips, leaving it somewhat beautified and more playable.

These cases are, I think, generally new in grounds maintenance. The use of chemicals is limited more by imagination than by any other factor. Labor savings

often pay for the chemicals. Today the supt. has only to recognize what he wants to get rid of and then select the proper material.

Drainage Renovation

(Continued from page 34)

Burrows prepared a survey for city officials calling attention to the necessity and advantage of installing a new drainage system. In it, Burrows pointed out that the Glencoe course is inundated in spots until late in the spring and following heavy rains, many low areas remain under water for as long as a week. This, the Glencoe greenmaster pointed out, results in the onset of destructive diseases such as pythium.

Drainage Flow Reversed

"Forty years ago when the course was built," Burrows' survey continued, "Glencoe's tile drainage system was adequate to carry off excess water. But with the construction of real estate developments in the vicinity of the club, outside water

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By **TOM MASCARO**

Geographical Area: Southern State

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from them seeped onto the course, doubling the drainage burden."

In effect, the drainage system was reversed. This is not a condition peculiar to Glencoe GC. When there were no real estate developments adjoining relatively isolated courses, drainage ditches built by club maintenance departments were sufficient to carry off excess water. Now, in many cases, ditches and outlets installed by home developers are higher than the fairway levels of clubs which they adjoin.

Covers Five Years

Glencoe's renovation program will go on until 1969. In one large area, covering approximately five holes, tile was not installed when the course was built. In another equally large section, the tile that was installed is plugged, rotten or broken. To alleviate flooding, it was recommended that a lake be constructed on the back nine, with an 18-inch line running into

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it. It was further suggested that a low lift pump be used in removing the water to the lake. A storm drain, the existing ditch and lagoons are also employed in Glencoe's drainage system.

Look for Outlets

In planning course drainage systems, Killian and Nugent first survey the entire layout with a view to using all possible outlets for drawing off water. This entails running drains from greens, traps, approaches and tees, and, of course, problem areas such as swales. When lakes are constructed, provision is made for free flowing ingress of drainage water, impounding of enough water to maintain a hazard and a pumping system to carry excess water to storm sewers.

In presenting a proposal to a club, the architectural firm not only stresses the advantage of installing or remodeling a system that will carry off excess water, but emphasizes the agronomic factors involved. Generally, these are the removal of excess water that suffocates turf and prevents the circulation of necessary air

and nutrients among the grass roots. When roots are waterlogged and there is no chance of relieving the saturated condition, turf killing diseases such as pythium have a perfect breeding medium.

Because they have become so immersed in straightening out drainage problems in the last two or three years, both Ken Killian and Dick Nugent have come to the conclusion that irrigation perhaps is being overdone and drainage is being neglected. The demand of golfers for spongy fairways and even softer greens is at the root of the evil. This is not going to change and so supts. have no choice but to live with it. If the supt. had the manpower and facilities to water moderately and more frequently, and wasn't forced to over-irrigate when he turns on the automatic system or sets out the sprinklers, the drainage problem would be minimized. But as long as he has to pour on the water he had better have a good drainage system. Otherwise, he is going to be swimming in diseases such as pythium and others that are induced by oversaturation.