



*Many could be saved if
more care were taken in planning*

Construction Pitfalls Are Obvious—But Are So Easily Overlooked

By **LOUIS BERTOLONE**

Years ago a course architect had to hope that a selected golf terrain had a stream, a lake and many natural course qualities on it, so that he could make use of them. Even then, most of the time, the natural qualities were never in just the right place, but they were there and the architect made the best possible use of them.

Today, all this is changed. The big tractors and carryalls move voluminous amounts of soil in a matter of minutes. The characteristics of 120 or 150 acres can be completely altered in a matter of a few days. Lakes of the right size, shape, and depth can be constructed exactly where they are wanted. If the course of a stream is not where it is wanted, it can

By the time he was 20 (which, he says, was a few years ago) Lou Bertolone had built two nine-hole courses. A pro for more than 35 years, he took time out after World War II to attend the University of California and get a degree. Thereafter, he went into course design and construction work and more recently has served as a turf consultant. Lou has a putting green in his backyard in Los Altos, Calif. That may be one reason why he shoots in the 70s.

be filled and another creek bed constructed.

These new techniques are a dilemma for the old established golf clubs. They are being forced into modernizing their courses. Re-contouring of fairways, reshaping of greens, designing modern tees and building of artificial lakes vastly improve a golf layout. These things have to be done if a club is to retain its membership.

Placed As A Challenge

The placement of lakes, traps, trees, undulations, and tall grass should never be in a location where a well directed shot will go. Hence, when lakes are placed in the fairways, they should be placed and shaped so as to challenge and intrigue, perhaps even tempt the golfer into "taking a chance." On the other hand there should always be plenty of room away from the danger, giving the golfer a chance "to play it safe."

Perhaps, the most critical part of a modern golf course is the "setting off" of the green itself. The contouring around a green is vital. This "setting off" is done by the careful placement of the traps, their size and shape, and by judiciously contouring the mounds, and in having them of the appropriate size and shape. Certainly, there should be two or three water holes on every golf course. One of



Turf and park management students at the 14th annual Winter short course, Univ. of Illinois College of Agriculture, held their annual banquet at the Urbana (Ill.) CC. This year marked the first time that turf and park management had been included as part of the short course. This program was designed primarily for persons who are employed in turf and grounds management by golf courses and others.

these water holes should be on a par 3 hole. The lake should be close enough to the green to challenge the golfer's fine touch. The tee, if possible, should be slightly higher than the green, and the tee should be half-moon shaped to give the golfers a demanding yet safe shot.

A factor which no club or course owner can overlook is the cost of maintenance. A course should be designed to minimize upkeep costs. All design should be done with mowing, labor, watering, and other costs in mind. Oversize greens shouldn't be built just because it is the fad. There should be a purpose in building them, especially when it is considered that the cost of fertilizing a 10,000 square foot green is almost twice that of a 5,000 square foot green. And, fertilization isn't an experience that stops at the end of one year.

In designing a course, the use of golf cars must be considered. But if a choice is to be made between good course architecture and good traffic patterns for the cars, good architecture should be given the preference.

Course design and construction are in-

cluded subjects. The surface can only be touched here. To mention some of the pitfalls into which some people have fallen, may save others anguish and abuse.

Difference in Attraction

Two golf courses were constructed in nearby locations in the same town. Today, three years later, one course enjoys a full membership; the other, with 18 holes, has barely 150 members. The course with the full membership has beautiful green fairways all through the summer. The other course has a water problem and dry, brown fairways during the summer months. Just how many members this club would have if it could keep its fairways as green as the first club is rather difficult to determine. Perhaps 100 or 150 more.

The dues at the two clubs are approximately \$40 per month. This means that the club with poorly conditioned fairways is losing \$6,000 a month — right off the top. In addition, how much is this club losing at the bar and in the restaurant?

This revenue is lost because the people who started the club were unwilling or

(Continued on page 108)

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Plan Against Pitfalls

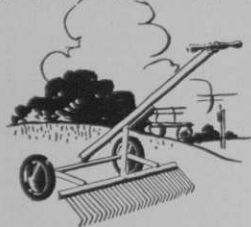
(Continued from page 78)

unable to hire a competent architect. How was this mistake made? The architect "miscalculated" on the number of acre-feet of water he expected to capture from the winter rains in the lake which he constructed for the dual purpose of serving as a reservoir and a hazard. He not only miscalculated the winter rain capture, but the per acre foot water evaporation, and the loss through seepage.

Why doesn't the club dig a well to rectify these mistakes? "The cost is too high," and, "the course is not worth the expense," officials say. Of course both of these excuses are unfounded. The expense is justified and if this club is to stay in business, it will have to make the investment sooner or later.

While the first course has lush fairways, it is paying too much for watering its course. The pipes used in the sprinkling system are too small, thus putting an overload on the pumps. The overload is cost-

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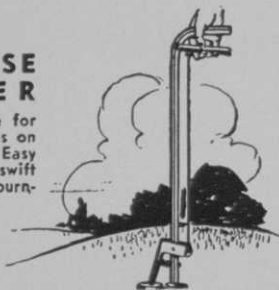
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ing the club roughly \$1400 per year in extra electrical costs. This permanent cost is unnecessary, considering that four-inch pipe costs almost as much as a six-inch pipe.

Sins Are Hidden Here

Not too far from my home (less than 10 miles), lies a tract of land which appears to be nothing more than a field, neglected, gone to weed. These weeds hide the sins of a golf course architect, and the dreams of an investor. Hidden, here, never ever used, is a fully automatic sprinkling system which drained someone's pockets to the tune of \$90,000. Easements were not checked before construction work began.

Also not too far away are two other courses which started out to be the "best in the state". Neither of these courses can be truthfully rated as average.

One course built a lake in which it hoped to impound water from the winter rains. The porosity of the soil was not considered. The water caught in this catch basin seeps out and drains into a nearby bay long before the water can be used for summer watering. A plastic lining in this lake would prevent seep-out. This club now buys its water from the city at an exorbitant cost. Because of this excessive expense, the course is permitted to "dry out" during the summer.

Missed Being Good

The other course missed being a good one because of its design. The greens are large enough, but they are not "set off" by contouring of the collars and shoulders. bunkers, were placed right at the borders of the greens. The tees are large and well graded, but every one of them is elevated out of proportion to the relatively flat course. The fairways, especially the doglegs are hogbacked, and hogbacked to the side of the dogleg. This defeats the purpose of a dogleg hole. The golfer cannot risk a big "bite" of the fairway because the ball will always bounce into the rough, and in some cases, trees.

Recently I visited a place where money apparently was no object in the construction of the course. Everything radiates

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luxury. Clubhouse, course, swimming pools, tennis courts, maintenance buildings are as plush as any you will see. Yet, somehow, I did not feel that I was reveling in a golfer's paradise. The greens are huge, averaging over 10,000 square feet, smooth as glass, without a weed or a ball mark in them. The fairways are wide and lush. Several lakes sparkle through the course. A stream splashes in and out of many of the fairways as it winds through the course.

Test of Endurance

But the course is tiring. It is too long — 7400 yards, and spreads over too many acres — 204. A round of golf here, even with a car, takes close to five hours.

There always will be competition to see who has the shortest or the longest golf course in the world. Of course, it is usually the golfer who pays for these absurdities. Thirty- or 40-yard holes are not exciting to play; 600-yard holes are just

too long for the average golfer.

During my 40 years in the golf business, I have seen many changes in the design of golf courses, especially the greens. They have gone from the round flat to the table top, to the punch bowl, etc. These innovations, as a whole, were vain efforts to gain character, win distinction for the course. Needless to write, none of these "distinctive" features are favored today, but the struggle for distinction still goes on. The efforts still being made to achieve distinction are no less ridiculous than the table top green.

Closer to Town

Going back, that course which built a catch basin to capture the winter rains had a choice of two properties, the one which was selected and another one about a mile farther from town. The land that wasn't selected has an artesian well spouting forth 6,000 gallons of water per minute on it. Yet, the club chose the other site

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because it was a mile closer to town, and because it was decided a lake on the course "would look nice."

Native Soil Better

In another case I know of, a new golf club brought in topsoil for its fairways at a cost of \$250,000, even though the native soil was better than the imported soil.

Not long ago a private club in the West installed a fully automatic pumping system at a cost of \$120,000. As everyone knows, the installation of such a system requires the movement of a substantial amount of soil. Yet, a few months later, I played a round of golf with one of the members at this club. We came to a time clock station. This member said to me, "Look at that! We paid \$120,000 for that!" He was disgusted and annoyed. As far as this member was concerned his course was no better than it was before the expenditure. And in many ways, he was right. The course was built about 35 years ago when horses and Fresno scrapers moved most of the dirt. The greens are small, poorly designed and several of the tees poorly placed.

This type of a fairway is a monstrosity. A good drive up the middle invariably bounces to the right or left. It seldom bounces straight. Then the golfer is faced with a blind shot to the green. An expenditure of \$40,000 more would make this golf course really modern, one of the best in the area.

Must Know The System

A competent architect knows which is the best type of sprinkling system for a particular need. Above all he knows how to install it. Recently, a new golf course had 120 breaks in its irrigation system in the first two months of operation. All because the nature of the sub-soil was not considered in the installation plans. The trenching was done with a scraper blade instead of a trencher. The job had been given to the lowest bidder, and the contractor wished to save time and money. The trenches were rough and uneven, and many of the larger rocks were not removed. The pipe was laid so that it came in contact with some of the exposed rock. The hammer action of the water flow

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caused the pipes to vibrate and pound against the rock. Abutments were neglected at critical points and the pressure of the water caused the pipes to separate at these points.

Should Know Seed

The architect knows seeds, and how to use them — or he should. Several months ago a new golf course was opened in a city not many miles away from my home. This course used Seaside bent on its greens, and a mixture of Highland bent and Bermuda on the fairways. When they called me in (I had supplied the seed) they complained because Bermudagrass had strongly infested the greens. When they purchased their seed, I emphasized that they should keep the fairway mixture at least 20 yards from the greens. The workmen who had seeded the course told me that this was not done. In addition, when the fairways were seeded a fairly strong wind was blowing. No doubt the fairway mix had blown onto the greens.

The cases cited here illustrate only a few of the pitfalls that must be anticipated in building a golf course. Many are obvious, yet it is strange how they can be overlooked.

National Golf Day • May 31