

Get Expert Engineering In Golf Course Construction

By **WILLIAM F. GORDON**

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Having specialized in golf course construction engineering since 1920 I would like to make a few observations and pass along some of the information I have picked up through the years.

One of the basic facts, and one of the first considerations in order to get a satisfactory golf course is to secure a suitable piece of land over which to lay out the course. It is customary for a committee to buy land and then call in an architect. If a committee lacks the engineering knowledge which would qualify them to cope with the engineering problems of design, construction and maintenance it is apt to buy land without thought to the practical difficulties involved. Often a lay-out on such a site may involve a greater expenditure than one on some other advantageous piece of property. The question of whether there is a good water supply on the property available is a very important one, and too, subsequent maintenance after completion may be higher due to hilly topography where hand labor replaces machinery and many other details.

These are things on which you can consult your architect. Therefore, I would suggest where possible to call him in before the ground is selected and purchased.

Secure the best architect and the best construction engineers available. The two are an entity that is absolutely essential. This combination is your best insurance toward getting a fine course. The two working together can sometimes save you a great deal of money. A good combination exists when an architect is associated with engineers who have an organization trained in the science of golf course construction. It is possible from their past joint experience for this kind of combination to effect many economies in their line of work. A contracting engineer who knows the architect's work can get your course completed in the shortest possible time with a minimum of change.

One of the facts the committee must face, and cannot get away from, is that a good golf course costs money. I say from long experience, do not stint on your course construction. Your course will reflect upon completion, how it was built and what was put into it. Therefore, in giving out a contract be guided by the past experience of the engineer you select to do the work for you.

Be wary of estimates. I would like to stress here that in many instances an estimate is just that—an estimate. Many a club has been misled by an estimate only to awaken at a later date to the realization that they must refinance to complete the work.

I like a lump sum contract. Here the committee knows exactly how much the course will cost to complete. The club can ask for bids on specific plans and specifications, furnishing sets of these plans and specifications to each bidder. Stipulate that bids are to be sealed and set a definite time and date for the opening of the bids. Request that all bidders be present when bids are opened and award the contract to the lowest qualified bidder. Require bidders to furnish bid, performance and completion bonds. This last I believe to be fair to the reliable man who can really build your course for the amount stipulated and eliminates the unqualified contractor who may take the contract for less and when half through finds he is unable to finish the work for the contract price. This has happened in a great many instances. The completion cost then is higher than some of the original higher bids to the detriment of the work and sometimes with a great loss of time. The bid, performance and completion bonds do away with this. You are assured that your course will cost the figure agreed upon, and only that.

A reliable course construction contractor usually can complete a course in from 2 to 3 months. It is purely a matter of experienced efficient organization and good equipment. As a protection to the contractor the club should furnish a certified financial statement and set aside sufficient funds to guarantee payment.

Major Construction Items

The major items of construction are as follows:

CLEARING--Removal of trees, stumps, brush, stones, hedgerows, etc.

DRAINAGE — Springs, ponds, swamp area, streams and ditches.

GRADING — Sub-grade greens, tees, bunkers, fairways, rough areas and top-soiling.

WATER SYSTEM — Pipe lines, pond,

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dam, pump and pumphouse, excavation for pipe lines and back filling.

MATERIALS—Topsoil, fill, sand, manure, lime, fertilizer, seed and stolons.

TRANSPORTATION— Equipment, housing.

The grading and turfing of your course are two of the deciding factors as to whether your course will be one of the best or just another golf course.

The construction period is the time to make any and all physical changes in the areas that are to be turfed. It is also the time when all materials needed to establish a fine stand of turf be incorporated into the soil prior to seeding and planting. It costs just so much to move a cubic yard of material, and the amount of material moved is one of the determining factors in the cost of your course.

Establish the "do it now" slogan. It will pay dividends in a turf you will not only be proud to play on, but one which you will thoroughly enjoy. This same reasoning is true of clearing, drainage and water system. You cannot save on these items. They must be done and they all cost money.

If you do not do things properly the first year it means expenditures through the ensuing years and prolongs the time before you will have a good course.

One of the prime requisites of any course is good turf. The finest designed and constructed course is not a golf course until a good stand of turf has been established. Turf which if properly maintained will endure for the life of your course. The success or failure of good turf depends on the following elements: A scientific study of existing soils and drainage, selection of seed and stolons best suited to your soils and climate, followed by proper maintenance. No experienced construction engineer would submit a bid until these conditions have been investigated thoroughly.

Drainage Essentials

Drainage is a very important factor in producing good turf. If tile is to be used, size should be sufficient to carry off the water, better too large than too small.

Be sure that in your drainage system you:

Cover the open joints with tar paper or straw to keep loose earth from entering the tile before backfilling.

Protect each inlet with block of slate or flat stone.

Protect outlets; setting tile in concrete. Screen outlets with 1/2" mesh wire gate to keep out rodents and other small animals.

I make an issue of such details because, although the above are elemental specifications known to all contracting engineers,

it is amazing how often they are neglected and result in faulty drainage.

Here are a few rules to follow:

Do not tile when an open ditch can be used.

Do not tile if open ditch can be used.

Never let anyone talk you into board, plank or slab wood drains.

Nothing can take the place of well contoured swales and grass hollows with sufficient fall to remove water quickly.

A well constructed green built of good soil with proper surface run off seldom needs under-drainage. Golf course turf will not survive where water remains on it for any length of time. This is where you need experienced men in construction.

It is a good plan for the club to engage a greenkeeper during the construction period. He will then be in a position to study all details of construction and be better able to handle subsequent maintenance.

Use the same discretion in planning your course construction as you would in your business transactions. Investigate thoroughly and make sure that you are really getting the best for your money.

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