

Golf Course Architectural Services

The golf course architect's function is to design the golf course and to superintend its construction.

The relationship between the golf course architect and the client requires mutual trust and confidence. The client should clearly outline his needs and requirements, and frankly state the amount of money that can be spent. The golf course architect may then help in budgeting all costs involved, not only for construction, but for maintenance equipment, annual upkeep cost, operating budget and cash reserves as well. In this way it can be determined at the outset whether the golf course needs and funds are compatible.

The client should have the golf course architect advise him on the selection of a site, particularly on its size, suitability, and the availability of utilities. When the site is selected, the client obtains or authorizes the golf course architect to obtain all information on boundaries, contours, trees, pavements, adjoining properties, rights of way, restrictions, easements, locations of utilities, plans of existing facilities to be altered, if any, and the like. If any unusual subsurface conditions such as rock or unstable earth are suspected, the client furnishes test borings or pits. Cheap land may turn out to be the most expensive investment a golf course developer can make.

Normally, golf course architectural services are rendered in three stages: (1) preliminary, (2) working drawings and specifications and (3) construction.

The Preliminary Stage — generally involves the following:

1. Conferences to determine the scope of the project — purposes, general plan and design feasibility, general type of construction, probable time required to build, approximate cost and means of financing.
2. Visits to the site — to study the possibilities in placing the various features.
3. Examination of laws, ordinances, codes, standards, rules and regulations of controlling agencies.
4. Preparation of schematic studies of the golf course and its relation to the site. The golf course architect amplifies the schematic studies with recommendations on type of construction, materials, and necessary equipment. He estimates the probable cost and construction time required.
5. Preparation of a comprehensive master plan in sufficient detail to make possible a realistic cost estimate.

Upon acceptance by the client of the preliminary documents and Master Plan, described above, the first stage of service is completed. This acceptance by the client is an implicit agreement that changes will not be made throughout the rest of the project. The reason so much emphasis is placed on the preliminary stage is that changes may be made with little trouble or cost at this point, whereas they become very costly and time-consuming during subsequent stages of the building process.

The Working Drawings and Specifications along with related documents represent what the golf course will be like in every detail when it is finished. In this stage the golf course architect will:

1. Develop the Master Plan into working drawings

to include all technical information needed for accurate bidding and final construction.

2. Include all essential staking, clearing, grading, drainage, irrigation, seeding, planting, and site improvement drawings.
3. Prepare technical specifications describing how every phase of the plan is to be executed.
4. Furnish the agreed number of sets of drawings and specifications for bidding and construction.

Upon completion of working drawings and specifications, the second stage is completed. At this time it is possible for the client to know exactly what his golf course will be like. During this second stage a running appraisal of estimated costs is kept. If at any time it appears that costs may rise above the preliminary estimates, the client is informed so that necessary adjustments can be made.

The Construction Stage — the golf course architect assists with proposals and contracts and supervises construction. Generally speaking the golf course architect:

1. Advises on the qualifications of prospective bidders.
2. Assists in preparing proposal forms and construction contract forms; also manages advertising for bids, the receiving and opening of bids, and the awarding of contracts.
3. Gives all instructions to the contractor. It is important that the client issue all his instructions through the golf course architect.
4. Prepares any supplemental drawings needed to clarify the contract drawings.
5. Checks material samples submitted by the contractor.
6. Makes periodic inspection of the construction at intervals deemed necessary by him to ascertain whether the work is being executed in conformity with contract requirements, and suggests full-time supervision at additional cost to the client when the character of the project so warrants.
7. Set construction grade stakes.
8. Directs and evaluates all required tests of materials.
9. Advises the client on the progress and quality of construction.
10. Prepares, checks costs of, and issues change orders covering modifications of the contract.
11. Checks contractors applications for payments, and issues certificates authorizing such payments.
12. When satisfied that all terms of construction contracts have been fulfilled, issues a certificate of satisfactory completion of the contract.

Upon certification by the golf course architect that all contracts under his supervision have been fulfilled, the golf course architect's normal services are completed.

The golf course architect is usually paid a fee based on a percentage of the cost of construction.

In addition to the services normally included, other services may sometimes be required, and additional charges incurred for them should be agreed upon before they are rendered. Examples of such services are:

1. Preparation of special display drawings, models, or perspectives.
2. Full-time supervision or services of a resident supervisor.
3. Reproduction of drawings and specifications be-

yond the number stated in the golf course architect's contract.

4. Major changes requested by the client after preliminary drawings are approved or after detailed work is completed on the working drawings.
5. Administering construction work let on a "cost-plus" basis.
6. Serving as an expert witness.
7. Consultation, when no other architectural services are required.
8. Furnish field engineering in connection with the work. During construction set stakes to assure accurate installation of the work in accordance with lines and grades shown on the plans.
9. Special travel in the interest of the client.
10. Measured drawings of existing features to be altered. Normally included in regular service.
11. Extra supervision resulting from unduly protracted construction periods through causes beyond the golf course architect's control.
12. As built drawings when required. Normally included in regular service.

As a rule the golf course architect saves the owner a sum much larger than his fee in the actual cost of construction. His contribution enhances the value of the finished job even more because he designs for savings in maintenance and operating costs. Carefully weighed against the total costs of construction, operation and maintenance; the golf course architect's fee is one of the best construction bargains available.

Dick Nugent
Golf Course Architect

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SHADE GRASSES

Dr. Robert W. Schery
The Lawn Institute

For the northern half of the country lawngrass blends that are shade-tolerant almost always depend upon the fine fescues (*Festuca rubra*). Bluegrasses and bentgrasses stand moderate shade, especially if compensated by high mowing and frequent enough feeding and watering to accommodate both grass and trees. A reasonable fertilization aim might be double the frequency recommended for these grasses in the open.

Perhaps the most publicized shade testing in recent

years has been at Michigan State University. The test area is heavily wooded, far more densely shaded than would be anything but an out-of bounds woods on a golf course. There even fine fescues suffer, but are recuperative enough to come back. Really, one doesn't need a University test to realize how well fine fescues are adapted to dry shade; just walk around the block and note what is growing under trees. Mowed tall, fine fescues persist well.

Fine fescues often hold up reasonably well even under rather low mowing, as for tees. But they do not spread easily, and should be regularly overseeded. Quicker healing of divots would be expected from bentgrass mixed with the fescue where the tee is not too densely shaded. For moist shade *Poa trivialis* can be used, but it is a "soft" grass that does not stand traffic well.

There is not a great deal of difference between the prominent fine fescue varieties so far as shade tolerance is concerned. The Michigan State work suggests that the grass declines because disease is more prevalent and the grass less able to "shake it off" in the shade. The Pennlawn variety was originally bred in Pennsylvania for a degree of disease-resistance, and might offer some advantage over unselected "creeping red". At the Lawn Institute, Chewings, Illahee and Rainier have all performed about equally as well as Pennlawn. Fine fescue varieties currently on the market include:

Cascade — a new Oregon selection out of Chewings.

Chewings — now mixed, but the original New Zealand type tightly erect.

Creeping Red — the unselected parent type mostly from western Canada.

Golfrood — a recent European variety said to be somewhat salt-tolerant.

Highlight — a European selection now grown in Oregon, dense and bright.

Illahee — widely used Oregon selection out of Creeping Red.

Jamestown — a new release from Rhode Island, from a shore location.

Pennlawn — A synthetic from three Pennsylvania selections.

Rainier — an Oregon selection performing well in northern locations.

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