

Golf Course Architecture and Construction

Designing the Course—Part II

By William S. Flynn

In staking the preliminary layout of the golf course on the ground the first thing the architect's engineer does is to locate the center of each tee, green and the angle, if there happens to be one, on the various holes. The staking is done so that the architect may check up and revise any particular site where necessary.

The stakes should be high enough to be easily visible and each one should have a different colored piece of bunting tacked on—white for the tees, yellow for the angles and red for the greens. This color combination is not necessarily standard and sometimes in the absence of bunting, newspaper or absorbent cotton for that matter may be tied on so as to make the stakes visible from a distance.

In the case where holes are played through woodland it is necessary to cut a sighting gap approximately three feet wide. This not only provides visibility but also makes it much easier to walk along the line of play and study the varying condition of the terrain.

When the preliminary staking has been completed the architect starts out with his engineer, beginning at the first hole and making a complete study of the course. It is wise in making this study for the engineer to accompany him because in this way there is very little chance of making mistakes in the construction later on. With the engineer along, it is possible for the architect to secure a great deal of valuable help in finally determining the exact location of tees and greens. The engineer is also of great help in discussing conditions involving engineering problems as they arise and which can be disposed of before the final plans for the layout have been completed.

It often happens that swinging a hole slightly to the right or left eliminates the necessity of drilling and excavating rock. Serious drainage conditions may be obviated by the slight shifting of a green or tee.

It is unwise for an architect to attempt to finally decide the locations of his holes without the help of an engineer.

Many architects may have engineering training but so many details come up in the designing of a course that have a bearing on the subsequent construction that it is very easy for one man to miss what two might find.

It often happens that a layout planned on paper does not exactly stake out where the architect thought it would and it is necessary to make a very careful check of the site for greens and tees.

It might also be that moving a tee slightly to the right or left precludes the necessity of taking out some beautiful tree. This also applies to green sites. Sometimes a slight change in the alignment of the hole permits the architect to keep a specimen tree or trees which also may act as a key or turning point in the hole.

In making minor revisions as outlined above it does not necessarily follow that the character of the course is in any way changed. As a matter of fact it generally improves the layout.

While the five foot contour map discussed in the previous article is invaluable in connection with the design of the course it is necessary to have a really close survey of the green sites.

It is hard to tell by the eye just how much slope there is to the ground and one of the most difficult things to do is to attempt to judge accurately when the grade is slight in any direction. It often happens that the ground looks as if it were running away when it is actually pitching forward.

In connection with the design of greens it is very desirable to have a close survey or cross section of each green site, say 100 feet square, showing one-foot contours. With this type of survey the architect can then design a green that will fit into its particular location, making it blend with the surroundings and presenting a natural effect.

It is also possible after the design of a green has been completed for the engineer to determine fairly accurately how much material must be moved to construct it and the cost.

There has been in the past considerable copying in the designs of greens. The custom has been to select so-called famous holes from abroad and attempt to adapt them to a particular hole. While it is a simple matter to copy a design it is almost impossible to turn out a green that resembles the original. This is not due to any technical reason but is on account of the surroundings being different from the original.

Copying greens in detail is not generally a good plan but there should be no hesitation about copying the principal connected with any green particularly when it is good.

It has often been said that architects have designs for 18 greens and that the same ones are used over and over again on the various layouts.

A successful architect of today does not follow that system. His greens are born on the ground and made to fit each particular hole.

In constantly designing greens it is very easy for an architect to acquire a pet type and to apply this frequently, thus creating greens of great similarity. A tremendous amount of study must be given each site on the ground and also on paper so as to get distinctive types, thus avoiding sameness.

The length of the shot to the green as well as the bunkering scheme of the hole must be considered in the design of each green. A green receiving a long iron shot should not have the same gradient or be of the same size as a green receiving a mashie, niblic or a brassie shot. Care must be taken so that in the main body of the green there shall be sufficient cup space, a very important consideration when the wear and tear of the green is considered as limited cup area increases wear.

The tendency in the past ten years has been to bank up greens to a greater degree than is really necessary. While holes with long second shots whether iron or wood should have a reasonable amount of rise, yet the value of being able to apply stop or under spin to a shot is entirely lost when such a condition prevails with a mashie or mashie niblic to the green.

The advent of vegetatively planted creeping bent in a measure checked this condition. This is due to the fact that the bent creates a more uniform surface and mowers have been improved, thus giving us a faster green or one that is in tournament condition all the time rather than, as in the past, merely during the running of a competition.

Steep slopes are out of the question particularly in the main body of a vegetatively planted green. In the old days the mixed seed greens were cut down real close only when an important tournament was being played. At that time the word "slippery" was often used in connection with a description of the greens. If we still keep steep slopes with our vegetative greens we will keep on hearing the expression "slippery."

The maximum gradient of the main putting surface of any green should be not more than one foot in thirty-five. There can, however, be slopes greater than this gradient on a green particularly where a roll blends into the putting surface or a mound perhaps built at the back or side of a green sweeps in naturally.

While the maximum gradient of a green should receive due consideration the minimum gradient should also be taken into account. It is necessary in designing greens to consider the rainfall and care should be taken that the slopes of the surface are sufficient to get a quick run off. In fact the water should be carried off at several points and the minimum gradient in this respect should be not less than one foot in fifty.

The most important consideration in conjunction with the designing of a green is to create naturalness. Of course this condition can only be brought about as construction progresses, but the frame work must be right in the beginning. Naturalness should apply on all construction on golf courses, greens, tees, mounds and bunkers alike. It is much more expensive to construct a natural looking golf course on account of the tremendous amount of material that must be moved, but the money saved in the subsequent maintenance greatly offsets the original cost.

In designing greens the architect not only makes a close-up study of the green sites but also studies from a distance, that is from the spot where the shot to the green is supposed to be played. Having visibility of the green surface from this point is one of the most important considerations in the design of a golf course. The drive, with the exception of the carry or accuracy required is practically similar on each hole and securing visibility of the area played to is not nearly as important as securing visibility for the shot to the green on any type hole. The green is the final objective and how can a man reach the objective satisfactorily if he can not see it?

It naturally follows that any bunker construction in conjunction with the greens should also be visible.

However, it is not always possible to have visibility of every green but the hole that does not have a visible green should have some other feature or indicator which tells the player where to go to get the best results. Visibility in the shot to the green is much to be desired and a little more time spent in modifying the layout may perhaps bring about the result desired and increase the pleasure in the play of the course.

The design for bunkering the course is tremendously important and the architect should spend a great deal of time going over the various holes determining the exact location of his fairway bunkers.

It is important in locating fairway bunkers to place them in positions where they also are visible.

A concealed bunker has no place on a golf course because when

it is concealed it does not register on the player's mind as he is about to play the shot and thus loses its value. The best looking bunkers are those that are gouged out of faces or slopes, particularly when the slope faces the player. They are very much more effective in that they stand out like sentinels beckoning the player to come on or keep to the right or left.

A very important consideration in the design of bunkers is to make each one surface drain. In flat country this condition can be secured by building them above the surface of the surrounding terrain.

It is not wise to attempt to design a complete bunkering system for the course in the beginning but the frame work bunkering plan can be worked out and as the course is played a complete scheme developed more satisfactorily and to better advantage.

The placing of the tees requires considerable thought and they also should be designed to fit in and blend with the landscape.

The topography of the ground should have a bearing in the outlining of the fairways, they being designed with the idea of producing character rather than the commonplace straight line effect of a decade ago. A curving line whether it be a road or the outline of a fairway is much more attractive than the straight line.

After a complete study of the whole course in the preliminary layout the architect takes his plan again back to his office or drafting room to make his final general layout plan.

The notes and changes that he has made in the original are transcribed to a new plan which is final in so far as a paper plan can be. From this general plan he makes individual hole plans on cross section paper. This is done to simplify the work of the constructing engineer and to indicate just how each is to be treated, instructions being written on same for the foreman's use.

The superintendent of construction may divide his work among his foremen giving each the plans of the particular holes on which he is to work. The detail plan can be very readily explained to the foreman and is not cumbersome to handle in the field.

In conjunction with the plans the architect must prepare specifications for the construction of the course. While the specifications for golf course construction are generally similar, yet, there are seldom two courses alike and the architect must consider any peculiarities that may occur in a particular course and take care of them accordingly.

Although the architect has spent a great deal of time and study in the preparing of the plans only the frame work has been finished. The ultimate character of the course must be developed as the construction progresses.

“Skilful golfers should be able to control their shots, and few of them resent punishment when they fail to do so; but high handicap players and older men playing indifferent golf are punished quite enough by their own incompetence without having to suffer additional penalties. The fewer the better of those hazards which simply levy fines on bad shots.”—The Links.