

# A Compromise Among Design, Maintenance and Playing Values

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**F**ifty-four strokes of every round of golf regardless of par are played to or on putting greens — 2 putts and 1 shot to the green. No wonder good design of greens encompasses golfing values and maintenance considerations. But there must be a compromise between these factors.

What are golfing values?

A shot to a green over a sandtrap with enough back spin to hold to a downhill slope away from the line of play?

A long downhill putt curling over a slight mound with a chance to take two more putts, or a chance for a short one footer?

A course that you have to think your way around, weigh birdies or pars against double bogies, triple bogies or worse?

A course you never get tired of playing because it plays differently every time you play due to wind, pin placements and trap carries?

All these conditions determine golfing values but here we are concerned with those 54 shots, the golfing values of the putting green.

## How Many Shots?

There being no ground rules for definitions of terms I must take the time to tell my approach to golfing values. I evaluate holes in terms of one shotters, two shotters or three-shot holes. Most people realize that the average player in this country plays to a handicap around 18 and that his greatest obstacle to improvement is lack of distance or inability to hit the ball far enough. Consequently, the values I use for greens is their number one characteristic — Size.

I believe that the largest target (green) on a one-shot hole should be on a hole 250 yards long. A short one-shot hole

should have a proportionately smaller green. A two-shot hole 450 yards long should have a large target and that the target should decrease in size as the hole approaches 475 yards (three shots) and then increase slightly as the hole lengthens until the green at 575 yards becomes quite large.

As a result of this approach I have spoken of the first characteristic of any green size — measured large or small, or in between.

Number 2 characteristic of a green is Shape and is described as:

- (a) Depth from front to back
- (b) Width from side to side
- (c) Shape from mowing or trapping

Number 3 characteristic is Location and is described as:

- (a) Elevation relative to fairway
- (b) Position relative to lines of flight
- (c) Location to natural objects such as trees, water, boundaries, etc.
- (d) Location as to other trouble, unplayable lies, etc.

Number 4 is Contour and is described as:

- (a) Tilted, sloped or pitched in any direction, or combination of directions
- (b) Terraced
- (c) Undulating
- (d) Mounds requiring carries that are not part of the greens but adjacent to them
- (e) Any combination of these

Number 5 is Trapping and is described as:

- (a) Setting up a target
- (b) Creating mental hazards as to position, distance and carry
- (c) Penalties for poor shots

I firmly believe that these characteris-

tics of a putting green determine golfing values. The degree to which the designer of a course uses them certainly is modified by a study of maintenance and playing problems as outlined in the following.

With reference to our number one characteristic Size, we must abide by the following maintenance considerations:

- (a) Variable cup placement so as to add interest, spread traffic, prevent soil compaction and actual wearing out of the grass;
- (b) Consideration for the efficient use of fertilizer, labor in mowing, spraying, spiking, etc. and the cost of these things;
- (c) Certainly the cost of original construction;
- (d) Provide for at least 10 to 12-foot collar surfaces so that mowers can turn off the green; so that greens can be cut in every direction and to prevent soil erosion from traps onto the green;
- (e) The other factors or characteristics of greens such as shape, elevation, location, contour and trapping also determine the size of greens.

### Shape of Greens

Shapes of greens are probably affected less by maintenance problems than any other factor. But there should be consideration of the cost of watering, mowing from every direction and traffic patterns to and from the green. How shape affects trapping or vice versa is an important factor in construction costs and costs of maintenance of traps thereafter. The approach areas must be considered in determining the shapes of greens.

Location of greens depends on:

- (a) Air circulation;
- (b) Effect of tree roots and shade;
- (c) Traffic pattern with reference to the next tee;
- (d) Maintenance of approaches to greens;
- (e) Cost of varying elevations and how this in turn affects the placing of traps.

The green characteristic that I call Contour affects maintenance so much that it undoubtedly is the basis of the entire subject. Let us consider that a good green must have:

- (a) Surface drainage for runoff;
- (b) Gentle grades so as to increase cupping area;
- (c) Grades to permit mowing in any direction, to prevent scalping and undue wear;
- (d) Consideration for collars and adjacent slopes;
- (e) Avoiding of erosion of adjacent traps;
- (f) Contour definitely affects the size or area of a green. The amount of actual surface used for slopes and irregularities in the surface cuts down the available cupping area.

As an example, take an area of 5000 square feet, irregular in shape with 30 per cent of the area with slopes, hills, mounds, etc., that prevent a fair cupping area. I believe to be fair in pin placement that the cup should not be any closer to the outside perimeter in extreme cases than 10 feet. Using this case, you lose fair cupping area on 1500 square feet plus 2600 square feet around the perimeter or 4,100 sq. ft. leaving only 900 sq. ft. of cupping surface. Not very large for changing cups everyday and in some cases, twice a day. Observing grades of 1 per cent — 1 foot in 100 feet or 2 per cent with greens pitched in varying directions certainly avoids the contour problems that are related.

### Trapping Characteristic

The last characteristic of greens that I have called Trapping certainly is compromised by the following considerations:

- (a) Cost of construction;
- (b) Cost of maintenance;
- (c) Drainage;
- (d) Traffic;
- (e) Mowing; and
- (f) Erosion.

I have played many courses in the Midwest, mostly around Chicago, almost 50 different courses during 1963, and because green design is so important I would like to give my impressions of some of the things I have seen.

Greens all pitched from back to front with from 2 to 3 per cent grades — drainage was the major consideration;

Greens all elevated and pitched so as to be targets requiring no skill to hit to; Greens with all plates upside down; Greens that were all flat.

These are the things that make golf  
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courses dull. These are the courses you don't want to play and I am sure the reason that lengthening courses has been so publicized is because the shots to the greens and on the greens are too easy and uninteresting.

I have talked to many supts. in our area and they conclude that a small green today should be about 4,000 square feet, and under no circumstances should a green be over 8,000 square feet in area.

By taking into consideration the playing values, and using slopes, surface irregularities, contours and traps there should be sufficient area for changing cups, providing traffic flow and caring for all maintenance problems. If this were done it would create sufficient interest, require good shots, create long and short putting to keep golfers of all abilities happy and interested in that hole or that course.

*This article is condensed from a speech made by Chuck Eckstein at the 1964 USGA green section meeting in New York.*

## Midwest Zoysia Released by Purdue University

A vigorous, open, medium textured zoysia has been released by Purdue University. W. H. Daniel, research director, has selected Midwest zoysia as a preferred type, resulting from a ten-year selection program. It is proposed for use on athletic fields, fairways, rotary mowed lawns in areas where zoysia is favored by warm, spring weather. It's zone of adaptation should not extend farther north than Meyer zoysia, but it is not as fluffy or difficult to maintain.

It was first released in 1963 to 52 purchasers in 15 states. Additional supplies are available for 1964. The price is \$4.00 per square foot with a minimum order of \$10.00.

As with other crops, Midwest zoysia is available not direct from Purdue, but from Agricultural Alumni Seed Improvement Assn., 2336 Northwestern Ave., West Lafayette, Ind.

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