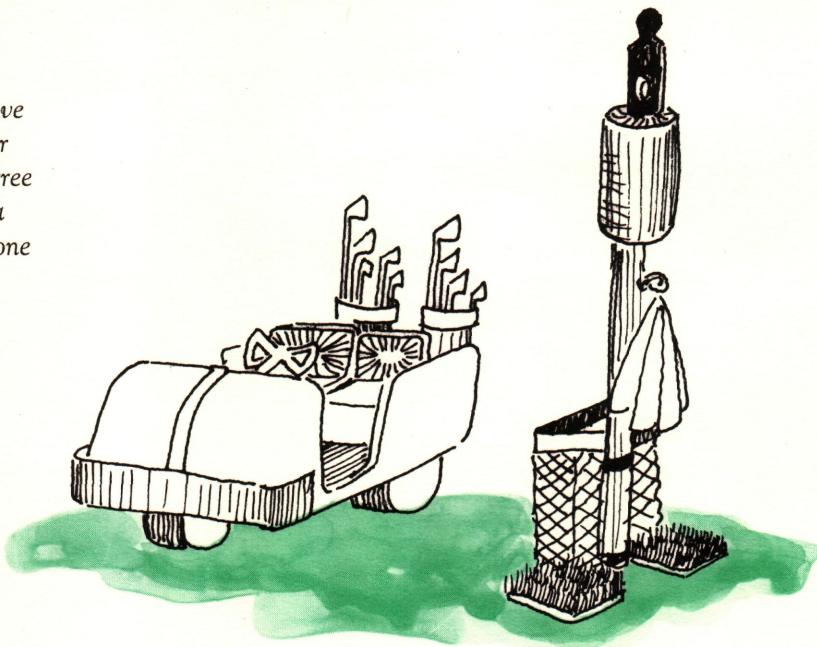


Analyzing the Golf Course

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Some people say golf is like life. As soon as you have accomplished one objective you head toward another until your goal is met on the 18th green. Others agree with the similarities between golf and life but say a better description is that as soon as you get out of one hole you immediately head toward another!



So goes the golf course and the game of golf. To some it is a challenge and reward strategy; an individual against the course; a competition; a feeling of contemplation in a beautiful environment with maximum visual pleasure. To others, it is a waste of time chasing a little white ball for 4 hours. Or it may simply be considered as restricting land use on some 200 acres of land.

Golf is a visual arboretum for both the player and the spectator. When considering aesthetic environments, the course can be enjoyed from outside as well as from within property boundaries. Landforms, accented by the verticality of the trees giving way to the horizontal dominance of the water's mirror-like reflections, give visual character to these spaces. The design principle of spatial realization is a potential in every course and should be the visual goal in every design.

A good golf course should not only challenge the golfer's ability but also provide visual stimulation as well.

This bulletin is to:

1. increase golf course design awareness
2. provide suggested design evaluation criteria that can be used to evaluate established courses as well as proposed golf course designs
3. serve as a checklist for existing and proposed courses

Market Analysis

The golf course market can be tight when the population is insufficient to support several courses. A good market analysis should include:

1. POPULATION. It takes 20-30,000 people to support 18 holes. In a community with a high leisure time average, 10,000 people will support 18 holes of golf.

2. COMMUNITY COMPOSITION AND GROWTH RATE. A community with high factory population may work many overtime hours—hence not enough leisure time to support the 4 hours necessary for 18 holes of golf. On the other hand, if layoff periods are common, leisure time increases.

3. AGE. Because so many age groups play golf, ability is more of a factor than is age.

4. LENGTH OF SEASON. It is estimated that a course in the southern states will have 85,000 rounds of golf per year, the middle states will have 60,000 rounds of golf per year, and the northern states will record 40,000 rounds.

A well-designed golf course meets the objectives of the game, has eye appeal, and allows for efficient maintenance.

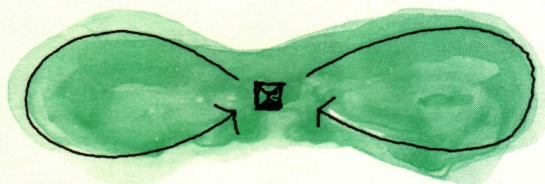
Important Design Considerations

Design criteria are valuable when evaluating existing and proposed golf courses. This brief outline of important considerations will serve as a basic review and guide.

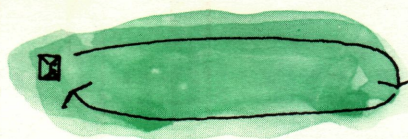
1. The Course:	Acres	Length (yards)	Par
18 holes	150-200	6,500	70-71-72
9 holes	70- 90	3,500	35-36
Executive 9	50-100	---	29-30
Par 3	25- 60	500-1400	27
Pitch & Putt	10- 25		

2. Course Layout:

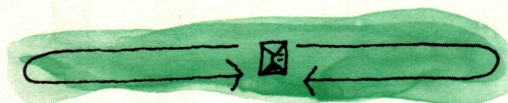
1. Single fairway — returning nines, 175 acres minimum



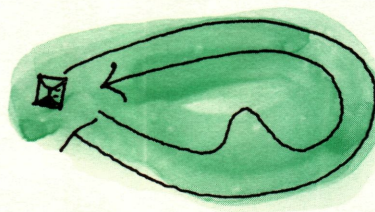
2. Single fairway — continuous 18, 150 acres minimum



3. Returning nine — double fairway, 150 acres minimum



4. Core, 150 acres minimum



The topography and shape of the boundary of your land dictates the best course layout.

3. Length of Holes:

	minimum	maximum	short tees
Par 5	470	600	576
(Avoid 440-470 — over clubbing sprays shots and promotes slow play.)			
Par 4	330	440	400
(Avoid 260-300 — a second shot is not a full iron to the green.)			
Par 3	120	250	210
Pitch	--	120	

4. Club Length (average distance)

yards	90	100	110	120	130	140	150	160	
irons	SW	PW9			8		7	6	5
woods									
yards	170	180	190	200	210	220	230	240	250
irons		4	3	2	1				
woods			5	4	3	2	1		

5. **Tees:** The size of the tee is best determined by the number of rounds played. The U.S.G.A. recommends:

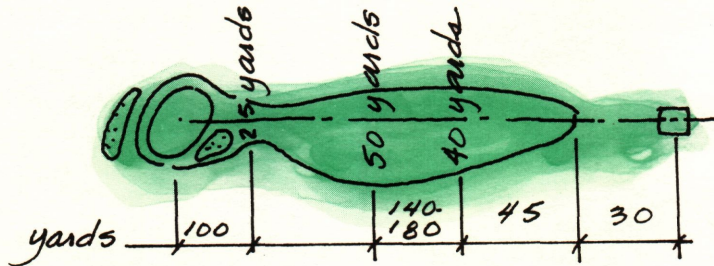
Par 4 — 5 holes — 100 sq. ft. per 1,000 rounds played

Par 3 — 200 sq. ft. per 1,000 rounds played

When facing the green, the tee should drain 1% to either the back or left side of the tee.

6. Fairways:

Fairways being initially cleared through the woods should be cut 40 ft. each side of center line with the first cutting. After seeding, the second cut should be 60 ft. each side of the center line. The third cut comes when the aesthetics and function of the golf hole is determined. This third cut is referred to as "feathering the hole." It is easier to take a full grown tree out than to put one back.



7. Greens: Pre W.W. II greens were approximately 5,000 sq. ft. Post W.W. II greens, 10-12,000 sq. ft. Current greens are 6-7,000 sq. ft. with 5-7 pin placements per green.

A green should drain rapidly but never into a sand trap. Each green should be designed to encourage exiting players to exit toward the back of the green.

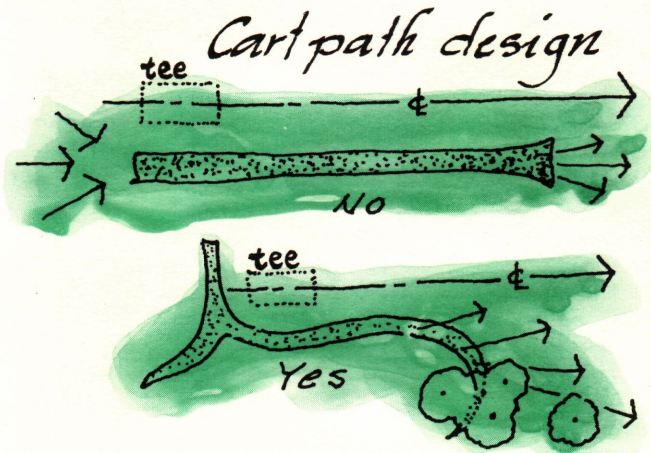
8. Hazards: Vertical hazards such as trees are most effective in directing any given golf shot. Horizontal hazards are used to test the ability of a golfer. They are also instrumental in influencing a strategy of play.

The most common fairway hazards are sand and/or water. Turf traps may also be used.

Fairway sand bunkers are shallow with no high back. The purpose is to stop the roll but not force the golfer to "blast" out of the trap. These hazards should penalize the golfer half a stroke.

Sand traps around the green can either stop the ball from rolling off the green into a water hazard or protect the green. These traps usually have high backs. They should be 6-10 ft. from the green (putting surface). This will help keep sand off the putting surface yet not allow carts to travel between the trap and the green.

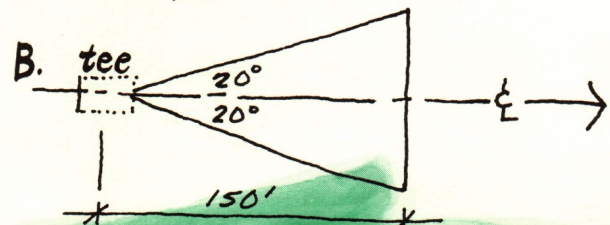
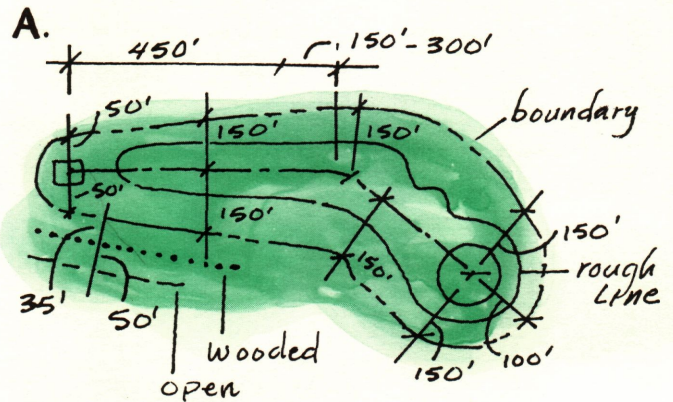
9. Cart paths: Paths should be designed to avoid waiting areas that require golfers to walk into the line of flight of on-coming approach shots. The path's pick up and exit zones should provide many areas to enter or leave without concentrating golf cart traffic.



10. Trees: Trees get old, too. Six planting considerations when preparing a planting plan and schedule are:

1. program for planting (season, cost, availability)
2. scale (size at maturity)
3. aesthetic factors (seasonal effects)
4. maintenance/durability (stress tolerant)
5. environmental factors (succession, association)
6. time (growth rates)

11. Safety checks include: A: Boundary lines; B: Overlapping centerline cones; C: Fairway centerlines. A safety check for parallel fairways is 200 ft. from center line to center line.



this cone should not overlap any other hitting zones.

C. Note: a safety check for parallel fairways is 200' from ξ to ξ .

Golf Course Evaluation Form

Course: _____ Date: _____ Course Rating: _____

I. The Course:

- A. Par sequence for each nine _____ , _____
- B. Number of rounds (18) per year _____
- C. Number of courses in area: public _____ , private _____
- D. Opening/closing dates _____ , _____
- E. Employees full/part time:
maintenance _____ / _____ operations _____ / _____
- F. Revenue from concessions: food, carts, proshop
\$ _____ , \$ _____ , \$ _____
- G. Turf type: tee _____ green _____ fairway _____
- H. No. of acres _____ Length of course _____

Check (✓) if holes do not:

- A. meet adequate distance
- B. take advantage of existing conditions

1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___ 8 ___ 9 ___
10 ___ 11 ___ 12 ___ 13 ___ 14 ___ 15 ___ 16 ___ 17 ___ 18 ___

Clubs: Woods: D, 3W, 4W Irons: 2, 3, 4, 5, 6, 7, 8, 9, P.W.

Every club should be used over 18 holes.

	Clubs Used		Clubs Used
A: Tee		B: Fairway	
C: Green		Special Areas	

II. Maintenance: Equipment items _____

- A. Unit costs: Payroll \$ _____, Fertilizer/Chemicals \$ _____
- B. Equipment replacement budget \$ _____
- C. Other _____

III. Design criteria. Total Points 100 Points earned

	Points total/earned	Points earned hazardous (✓)
A. Course entry (alignment, directional, informative)	3/ _____	_____
B. Adequate clubhouse (aesthetics, size, function)	3/ _____	_____
C. Parking (location, size, function)	3/ _____	_____
D. Maintenance building & service (secondary access, size & roads, visibility)	3/ _____	_____
E. Practice putting green (proximity, size, condition)	3/ _____	_____
F. Driving range (location, size, condition, orientation)	3/ _____	_____
G. Water hazards in good repair (bank, water condition, aesthetics)	3/ _____	_____
TOTAL	21/ _____	_____

PTS

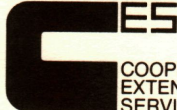
- 4 level adequate size
- 4 turf condition
- 3 alignment green to tee to green
- 3 cart path location/condition
- 3 drainage (back or left 1%)
- 3 furniture
- 3 aesthetics good
- ✓ safety concern: Yes=✓
- 23 Total

- 4 landing area adequate width & distance
- 3 good trap design & maintenance
- 4 hazard locations/visible
- 3 tree placement
- 4 tree condition
- 4 drainage in landing area
- 3 bunkers visible and shallow
- ✓ safety concern: Yes=✓
- 25 Total

- 3 good collar condition
- 3 cart path waiting area
- 3 traps 6-10' from the green
- 3 circulation on & off green
- 4 size/pitch
- 4 drainage (not into trap or apron)
- 4 traps drain
- 3 trap maintenance/location
- 4 aesthetics
- ✓ safety concern: Yes=✓
- 31 Total
- HOLE SUBTOTAL (A+B+C)**

- 2 blind shots unmarked
- 2 sprinkling system settling
- 2 ball wash area—compacted soil
- 2 benches poorly placed
- 2 heavy use area — poor condition
- HOLE TOTAL**

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