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# Design Review: 1985-2005

By Garrett Gill, ASGCSA  
Gill Design, Inc.

## Introduction

Jack MacKenzie, CGCS, asked me to develop an article on changes in golf course design from a more recent historical perspective. I chose the twenty-year period from 1985 to 2005 for three reasons. First, this period represents one of the greatest periods of golf growth and, more recently, one of the most severe declines. Second, this period represents one of the most significant periods in terms of sophistication and advancement in golf turf grasses, maintenance equipment technology and golf club/ball technology. And thirdly, as a design company, we are celebrating our 20th year of professional practice in golf course architecture.

This is the first segment in a three part series. Part I responds to basic design changes we have seen, Part II will look at maintenance equipment and practices that have changed in the twenty-year period and their impact on design, and Part III, will focus on golf participation, management philosophies and legal issues.

## MAJOR DESIGN INFLUENCES

*Oh where, oh where, has the dogleg gone...*

Since 1985 we have moved this theoretical point in golf design three times. We started at 250 yards (750 feet), then 266.67 yards (800 feet) and now we use 300 yards (900 feet). Much of the time the dogleg point is only a dimensional location used in conjunction with the center of the green and one of the tees for construction purposes, but it can also serve as a general reference for the position of hazards such as bunkers or water, or for positioning other design features such as tree groupings. In reality, hazard position is based on many factors including prevailing winds, terrain, visibility, function and effect.

Related to the distancing of the dogleg point to reflect longer drives is the much more important aspect of design corridor width. We are all aware that golf equipment technology has enabled us to hit the ball farther. As designers, we have learned these advancements have also enabled the golfer to hit the ball higher, farther right and farther left. In the past,

two adjacent holes may have fit nicely into a 450-foot to 500-foot corridor width. The distance has now widened to 600 feet or greater. In a single fairway configuration (double loaded in real estate jargon), today's textbook, published corridor widths have grown to 370 feet or greater, up from widths of 250 feet to 300 feet. Sometimes this is tough sell to advocate safety and future liability concerns to course owners and developers interested in lot sales or more holes per acre.

Also related to the distancing dogleg point is the reference to course length. We complete numerous master plans for existing courses every year. In every recent project, one of the common goals has been to seek and add safe length to keep up with the perceived loss of challenge or marketability. Championship length considerations have grown from 6,700 or 6,800 yards to 7,000 or 7,200 yards. This impacts even regular tee playing lengths that are now averaging 6,500 to 6,700 yards up from 6,200 to 6,400 yards.

## ISOLATIONISM

*Shunning the Parkland*

In the past 10 years there has been a strong push by some golf developers and certain clients to advocate the concept of isolating by design one hole from another, the thought being to control the vision of what the golfer sees on the tee to just that hole and not any other. This is accomplished not only by distancing the position of one hole from another but typically also by mounding and tree planting. We have employed the concept on many new courses, most recently at the Meadows at Mystic Lake, Prior Lake, Minn, White Eagle, North Hudson, Wis., and at the Legends, also in Prior Lake,

Minn. Willingers, in Northfield, was an early example. Willingers opened in 1992.

This is in stark contrast to the historical inland course, termed parkland course, which is, in turn, contrasted to their seaside counterparts we know as the links-land course. Twin Cities metro courses we have designed of the parkland type include Cedar Creek, Albertville, Crystal Lake, Lakeville, Inverwood, Inver Grove Heights, Minn., Highland Park National, St. Paul, Glen Lake, Minnetonka and the Ponds at Battle Creek in Maplewood.

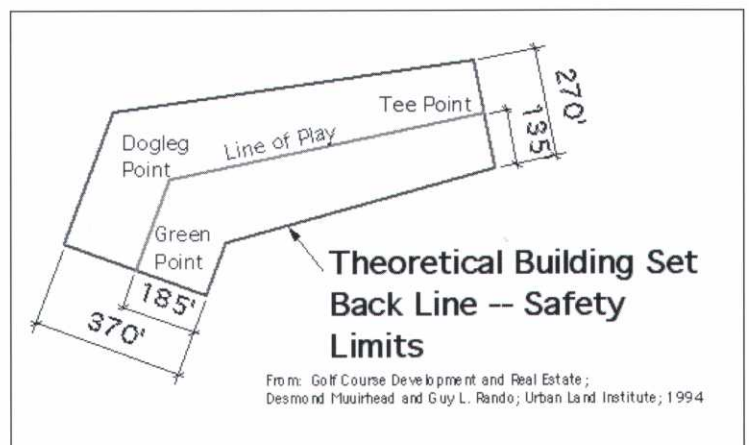
I personally believe the concept of presenting each hole individually pushes the designer to design each hole individually rather than reflecting on the design of the golf course as 18 holes. I believe the influence of what was just played or yet to be played is lost when the design of the course as a whole yields to the design of 18 individual, independent holes.

## THE LOST COURSE

Interestingly many of our recent master plan projects address the issue of removing trees, not to improve turf quality near greens or tees, but to return lost shot values to the course. Prior to 1985, on a national level, there was little interest taken by designers to advocate tree removal.

Starting in the early to mid 1990s many of the older established clubs began the process of course restoration. By

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## Design Review—

(Continued from Page 22)

examining old photographs they realized how much their course had "closed in" and tightened due to the planting and maturing of trees. They realized, as well, that many of well intentioned greens and grounds committee chairpersons planted trees in their position of liking. The resulting impact was a beautiful, landscaped golf course, but one that had lost much of the character and shot-making attributes of the original design.

National Golf Club was essentially restored to its tree cover condition prior to World War II. At Oakmont Country Club, approximately 2,000 trees were removed and I'm not sure they are done yet.

In many instances, we have observed sand bunkers and trees occupying essentially the same space and serving the same purpose. We often see trees that were planted between the fairway line and fairway bunkers as well. In our design practice, we advocate trees or bunkers, just not both.

But because of courses understanding that trees greatly influence play or courses

beyond agronomic reasons, we have found a more sympathetic audience since 2000 for removing trees to improve the playability of the course design. In the recent renovation of Highland Park for the City of St. Paul, approximately 430 trees were removed. The number seems high, however, many of the trees needed to be removed because of disease, old age and poor branching habits. As you walk the course today, even the very familiar player rarely remarks that any trees are missing.

At the Village Links, in Glen Ellyn, Ill., willow trees became so large that they completely hid water hazards from view. Once gone, the complete beauty returned



*Many trees were removed in the restoration of National Golf Club, Long Island, New York.*

to the holes my father David Gill, had originally designed. In this regard, I would advocate that any master plan should include a review of the course with respect to lost shots, lost shot values or lost views.



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# An Architect's View of Minnesota's Great Golf Course Heritage

By Jeff McDowell  
Bonestroo Golf

## The Roaring '20s

The roaring '20s was an exceptional era for American golf course development. Dubbed the "golden age" of golf course architecture, the country saw an unprecedented number of courses developed. During this time many of America's greatest courses were built by architects whose ideas and philosophies have stood the test of time. We're still playing championship golf on some of these courses - Augusta National, Bethpage Black and Pinehurst Number 2 to name a few.

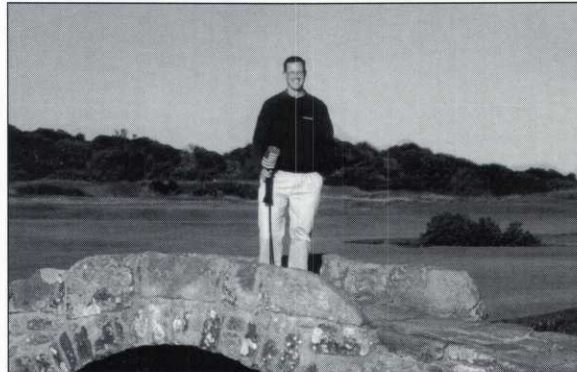
Minnesota is lucky to have a number of courses designed by the same architects responsible for America's masterpieces.

We have courses designed by Donald Ross - Minikahda, Northland, White Bear Yacht Club, Interlachen, Woodhill. Rochester Country Club and Golden Valley CC were designed by A.W. Tillinghast. Seth Raynor, who was mentored by the great C.B. MacDonald, designed Midland Hills, Somerset, and Minnesota Valley (with Ralph Barton). And we are very fortunate to have a Stanley Thompson designed course at North Oaks Golf Club.

Each architect had his own style he brought to Minnesota. Donald Ross, the most prolific designer, has a reputation for consistency. Ross had a gift for routing golf holes over the terrain. He could look at a contour plan, find the ideal areas for tees and greens, and then connect the dots into 18 holes of coherent golf. Ross was as good as any architect at using angles of approach to create subtle strategic choices. Many of his best holes look plain if not easy, but leave you wondering how you just made double bogey.

Tillinghast's style is the most difficult to define. His curious mind and his creativity never settled on a single look. At Bethpage Black in New York he designed a course that rivaled nearby Pine Valley with forced carries and massive bunkers. In California where George Thomas and Alister MacKenzie dominated the scene,

he designed bunkers with intricate capes and bays. In Minnesota, Tillinghast seemed to use a style more reminiscent of MacDonald and Raynor - flat bottom bunkers with steep turf faces. Despite the



Jeff McDowell at the Old Course

different bunker styles, Tillinghast holes always make you think. He understood the principles of strategic design, and was a master at creating dramatic shots on average terrain.

Seth Raynor's style is the easiest to identify, since he never changed. He designed geometric features with sharp edges and steep slopes. His courses looked built. This shouldn't come as a surprise since Raynor was an engineer by trade, and wasn't a golfer. He learned to design golf courses while working for C.B. MacDonald on the National Golf Links in New York. On this project, MacDonald taught Raynor many "classic" design features found on Scotland's best courses. When Raynor designed courses, he worked these designs into the land as best he could. When he couldn't find the topography he needed, he built the features. An often duplicated design was the Redan - a par three with a green that slopes away from the golfer. This hole comes from the 15th hole at North Berwick Golf Club in Scotland. Somerset's fourth hole is the best example of a Redan I've seen in Minnesota.

Including Stanley Thompson with the above architects is a bit of a stretch, since he designed North Oaks in 1951. But he had such a great influence on the art of golf course architecture, I think he's worth

including. He had a style that combined the best of strategic design and glitz. He forced golfers to take risks if they wanted to score well. He was one of the first architects to incorporate the principles of art into golf course architecture. This translated into big, intricate bunkers with large capes and bays.

## The Future of our Classics

These courses should be treated with the same respect given to buildings designed by Frank Lloyd Wright. They are examples of what the most creative minds in golf have produced in our backyard. The membership of these clubs should be mindful that they are the keepers of Minnesota's great golfing treasures.

But they have a difficult task. Technology is taking the teeth out of these older courses. They play considerably shorter and easier than the original design. Remodeling to keep up with technology while retaining the classic elements is a difficult balance.

Green committees looking into remodeling should work hard to understand the styles of their architects. There are books available on nearly every prolific architect that give insights into their tendencies.

The best way to understand specifics about each course is to find and study old photos. A little known resource for old aerial photos is the Borchert Map Library at the University of Minnesota. They have photos that date back to the early 1900s.

If a course is lucky, members may be able to find the original drawings. These drawings should be studied carefully to understand the design intention and the intended effect.

Green Committees may also find helpful information from the Donald Ross Society, the Tillinghast Society, or the Seth Raynor Society.

Finally, work with an architect that understands the importance of these courses, and who is willing to do the research necessary to preserve the original architect's style.

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# Greens Construction: An Alternative Approach

By Kevin Norby

President, Herfort Norby Golf Course Architects, LLC

When the City of Anoka in Minnesota decided to undertake the renovation of six greens at Greenhaven Golf Course, they took a somewhat unusual approach - the greens were sodded rather than seeded.

The original front nine holes at Greenhaven Golf Course were built in 1937. As is typical of most of Anoka County, the underlying soils were nearly all sand with very little topsoil. The push-up greens were constructed without drain tile and averaged about 3,800 square feet in size.

In 1955 the City added nine holes, now the back nine, and over the next 42 years reconstructed ten of the greens to modified USGA standards with drain tile and a sand-based amended soil. Other changes were also made but as Greenhaven's popularity increased, the course began to show its age. The small greens and tees were slow to recover from ball marks and divots and the greens began to show stress from inadequate irrigation and lower cutting heights. Bunkers grew in size, lost definition and became difficult to maintain due to the development of ridges created from decades of raking.

In January of 2002, the City Council requested proposals for design and project management services and subsequently retained our firm, Herfort Norby, to assist with the renovation of six greens on the back nine. We were told that the City wanted to sod all six greens and wanted the course open for play by the spring of 2003. Superintendent Morrie Anderson had been with Greenhaven for 34 years and was anxious to improve the quality of the putting surfaces and reduce the ongoing maintenance issues associated with the small putting surfaces. In February of 2002, a renovation plan was prepared which assessed the strengths and weaknesses (safety, strategic quality, etc.) of each hole and identified the need for some additional improvements.

In March of 2002 detailed drawings of

each hole were prepared to indicate green size, sand traps, cart paths and drainage. The proposed greens averaged 5,800 square feet with numbers 12 and 13, the



short par four and short par five, being somewhat smaller. We had sodded putting greens previously but I had strong reservations about doing six greens at one time. I was most concerned that it would be difficult for Morrie and his staff to keep up with the watering, aeration and top-dressing of the new greens at a time of year when his seasonal staff would be gone and his remaining staff would already be spread thin.

The project went out to bid in late March and, as is often the case on competitively bid public projects, we received numerous bids ranging from \$254,000 to \$362,000. On April 10 the City Council reviewed seven bids and approved Hartman Company's bid to reconstruct six greens, four sets of tees, ten sand bunkers

and approximately 300 lineal feet of cart path. The original budget of \$240,000 established by the City in 2001 was increased to \$259,000 to include the additional cart path improvements, irrigation and the expansion of four sets of tees.

The City decided that it would prefer to close the back nine holes around Labor Day to allow the project to proceed as quickly and as efficiently as possible. We had originally set the schedule to allow for construction to start immediately after Labor Day and to have the project completed prior to October 1 of that year. However, after some discussion, I was able to convince

Morrie and the City Council that we could start the project earlier if we relocated the green for hole number twelve 40 yards to the east. Number twelve was a very short par four which played downhill and straight away. It had two peanut-shaped bunkers at the green which were too far away from the putting surface to have much strategic value.

On August 7, 2002 the City began hauling approximately 2,000 cubic yards of soil into the new green site for No. 12. On August 11 our contractor began rough grading the new green complex and bunkers as indicated on the green drawing. Drainage was installed and 12 inches of 80/20 soil mix was placed on August 13.

(Continued on Page 28)

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## Greens Construction—

(Continued from Page 27)

Greenhaven's existing irrigation system utilized a block system whereby all four heads around the green were operated by a single electric valve. The irrigation installed around the new green utilized modern valve-in-head sprinklers with individual control. On August 16 the putting surface was seeded with certified Penncross seed at a rate of 3 pounds per 1,000 square feet. Prior to seeding, the green was fertilized with a 10-10-10 starter fertilizer and Milorganite. The green surrounds, rough and fairway were sodded with Kentucky bluegrass and the bunkers were drain-tiled and filled with 4-6" of sand. From start to finish, the construction of No. 12 green took 15 days including a delay of two days due to rain. After the seeding and sodding was complete the old green and bunkers were regraded to create some subtle mounding and then resodded and irrigated.

On August 22 the City closed the back nine holes to play and we began construction of the five remaining greens. The first of these five greens was No. 13. Our goal was to reconstruct the greens in their current location without having to import or export soil. This was critical to minimizing disturbance to turf areas and to keeping the project on budget. Each green site was rough graded using a small dozer and then the bunkers and green were cored-out using a small backhoe. Just as with the seeded green on No. 12, each green received drain tile, pea rock, 12 inches of green mix and new irrigation. On August 29, Penncross Bentgrass sod was installed on No. 13 green. The sod was provided by Country Club Turf from its fields near Wyoming, Minnesota. The sod was freshly cut in the morning and delivered to the site the same day. Since the sod was grown on sandy soils it was not necessary to wash the sod. Once the bentgrass sod was laid, the sod was rolled and then thoroughly watered. Generally, we found that after three days the sod was rooted into the soil. After five to seven days the sod could be mowed.

Each of the five greens was completed using the same procedures. The final green on hole number 17 was completed on September 20, 2002 - only 43 days from the start of the project to finish.

Grow-in of a sodded green is much like

that of a seeded green. It is important, initially, that the green be thoroughly watered and, once rooted, that it is top-dressed and aerated frequently.

Initially, the sodded greens were mowed at 3/8". This height was slowly brought down every other week and was

*"Seeding is, in my opinion, still the best method of constructing a putting green."*

stopped at 1/4" for the fall of 2002. In the spring of 2003, the cutting height for all six new greens was started out at .140" and then brought down to .125". They were fertilized with 19-2-19 at 1/2 lb. of nitrogen every three weeks and aerated three times during the year. The greens were also topdressed and rolled every other week throughout the 2003 and 2004 season.

On April 2, 2003 the back nine was opened for play. Again, I expressed some concern that this date might be too early for the recently installed sod to handle the stress. But after visiting the site on numerous occasions my concerns were put to rest. Morrie was doing a great job and the greens looked great. By early June, Morrie could cut a cup and observe a healthy root system of 6 inches or more. Maybe equally as important, the membership and golf staff were delighted and, according to Morrie, by the fall of 2003 there was no discernable differ-

ence between the sodded and seeded greens. Greenhaven logged over 37,000 rounds in 2003.

Finally, a word of caution. The success of any project is in large part a function of the experience and knowledge of the superintendent, contractor and the architect. Even after such a successful project, I would not necessarily encourage someone to follow Greenhaven's lead and take on a project which involves the sodding of five greens at one time. Seeding is, in my opinion, still the best method of constructing a putting green. However, if disruption to play is keeping your Board or your Green Committee from giving you the go ahead to complete your project, you may want to consider sodding as an alterna-

tive to seed. The key points to remember are 1) the sod should be grown on sand, 2) the sod should be freshly cut and delivered immediately to the site, 3) the sod should be newly seeded and free of thatch and, 4) be patient and allow time for the turf to mature.

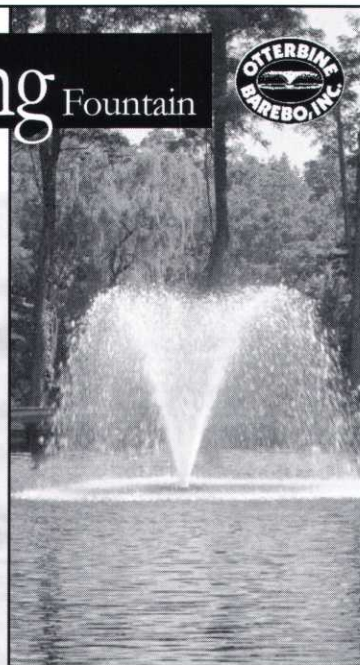
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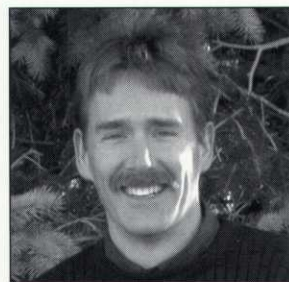


## Insight:

# One Architect's Perspective

By Kevin Norby

Herfort Norby Golf Course Architects



### *Biography*

I attended South Dakota State University and the University of Idaho at Moscow and I have a degree in Landscape Architecture. Much of my early education on the principles of golf course architecture come from my relationship with Don Herfort who spent 35 years designing golf courses in Minnesota, Iowa and Wisconsin. I formed Herfort Norby Golf Course Architects in 1998 and Don retired in 2003. New courses include The Refuge in Oak Grove, Greystone in Sauk Centre and Boulder Pointe in Elko. With the slow down in new courses, most of our work currently involves renovations and practice facilities including Forest Hills Golf Club, Columbia Golf Course, Gross National and Mason City Country Club.

*Today there is a push to restore golf courses back to their original design, sometimes called sympathetic restoration.*

*How does one select an architect for the job?*

The success of any project is in large part dependent upon the personalities of the people involved. It is important that your architect be someone who can effectively communicate with you and your Board so that your project gets approved. It is, of course, also important that you select an architect who has the knowledge and experience to come up with creative solutions to difficult problems. There are a lot of people out there that have been involved with two or three projects but don't have the experience to know how to handle the uncommon or unforeseen issues that come up during a golf project. During a "sympathetic restoration" we are trying to preserve the original course architect's design philosophy and architectural style but not necessarily preserving the original course routing or bunker placement. Most experienced architects will have the knowledge and ability to successfully research and implement a "sympathetic restoration." As a superintendent, you need to determine which individual will be the most effective

at successfully communicating with you and your Board without interjecting too many of their own personal stylistic biases.

*Why should an architect be used when restoring a golf course?*

You hire an architect to listen to your ideas, provide alternative design solutions and to help educate your Green Committee and Board on how your project will affect aesthetics, playability and your maintenance budget. Restoration and renovation projects, in particular, can often become very political. Your architect can assist you by presenting alternative solutions and attempting to bring the differing parties together. Your architect can use his expertise to insure that the final design not only looks good, but is also sympathetic to the limitations of your maintenance budget and to the varying abilities of your membership. Once approved, your golf course architect will prepare detailed plans and specifications, guide you through the bid process and then oversee the work to insure that the original design intent and budget are met.

*Technology is impacting the game of golf and many courses do not pose a challenge to the bigger hitters. With limited land, what can be done to thwart their attempts at par without disrupting the integrity of the architect's intent?*

The game of golf is about so much more than distance. Subtle undulations in the green, alternative approaches to the green and risk/reward opportunities which require the golfer to decide where to place the ball are good ways to make a short hole exciting yet challenging without necessarily adding length. Some of my favorite local golf holes are very short par fours with water or heavily bunkered approaches.

*Was it the ball or the clubs or the USGA that allowed this situation to get out of hand?*

I think it would be unrealistic to expect the manufacturers of golf equipment to stop trying to come up with new products each year. On the same note, I don't think we can blame the public for wanting clubs or balls that go longer and straighter. I think the problem here is that for years the USGA has placed so much emphasis on length and not enough emphasis on strategy, ball control and accuracy. I would like to see the USGA, and more of today's architects, get back to creating golf courses and golf holes that place a greater emphasis on strategy and risk/reward opportunities.

*Have you considered the newer Round Up ready bents and their impact upon golf courses?*

I'm not one to jump on the band wagon for new products when we have old proven products which are functioning just fine. This is particularly true with turf grass varieties. Every year there are dozens of new varieties and the seed suppliers try their best to get us to use theirs. I like the varieties that have been around for five or ten years and that I know don't have any major deficiencies. I prefer to let someone else do the experimenting.

*Have players taken to the forward tee programs being designed into older courses today?*

We have had a few of our courses consider the program but unfortunately there have always been higher priority issues to deal with. I think in time the program will catch on and the public will come to appreciate the idea.

*Do you have a preference of sand used in bunkers today?*

We have used a lot of different sands but my preference today is the Ohio Best Signature Blend. It has a great consistency, it drains well and balls don't plug.

*(Continued on Page 35)*

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