PART I

Theory

CHAPTER

1

What Is Golf Course Architecture?

In simplest terms, golf course design is the arrangement of starting and ending points within which to play golf. Over the past 150 years certain conventions have emerged. A round of golf is usually considered to be 9 or 18 holes. It is played on maintained grass. A proper golf course is a combination of holes of various length and par. However, there is nothing in the rules of golf that governs golf course design. There was once a table on the length of holes and their appropriate par, but longer-hitting players have rendered that meaningless. So, the design of a golf course is pretty much open to interpretation, but straying too far from unwritten but contemporary conventions can invite serious criticism.

LAYING OUT GOLF COURSES

As pointed out in the first edition of this book, golf holes that are created by little or no earthmoving are said to be "laid out," in the manner of Old Tom Morris (1821–1908), Willie Park, Jr. (1864–1925), and Tom Bendelow (1872–1936), before powerful excavating equipment was available *(see Figure 1-1).* The master designers of this period studied the land, selected the best green sites of naturally occurring short or stunted grasses, then picked teeing grounds to play to these greens, and finally cleared away tall vegetation to allow native grasses to flourish and serve as fairways, or "fairgreens," as they were called. To lay out a golf course,

GOING TO THE 7TH HOLE. [*From a photo by Jackson, Cove*

Figure 1-1 To lay out a golf course in Old Tom Morris's day meant locating the tees and greens and clearing away most of the brush. Consequently, golf courses of that period didn't look much like those of today.

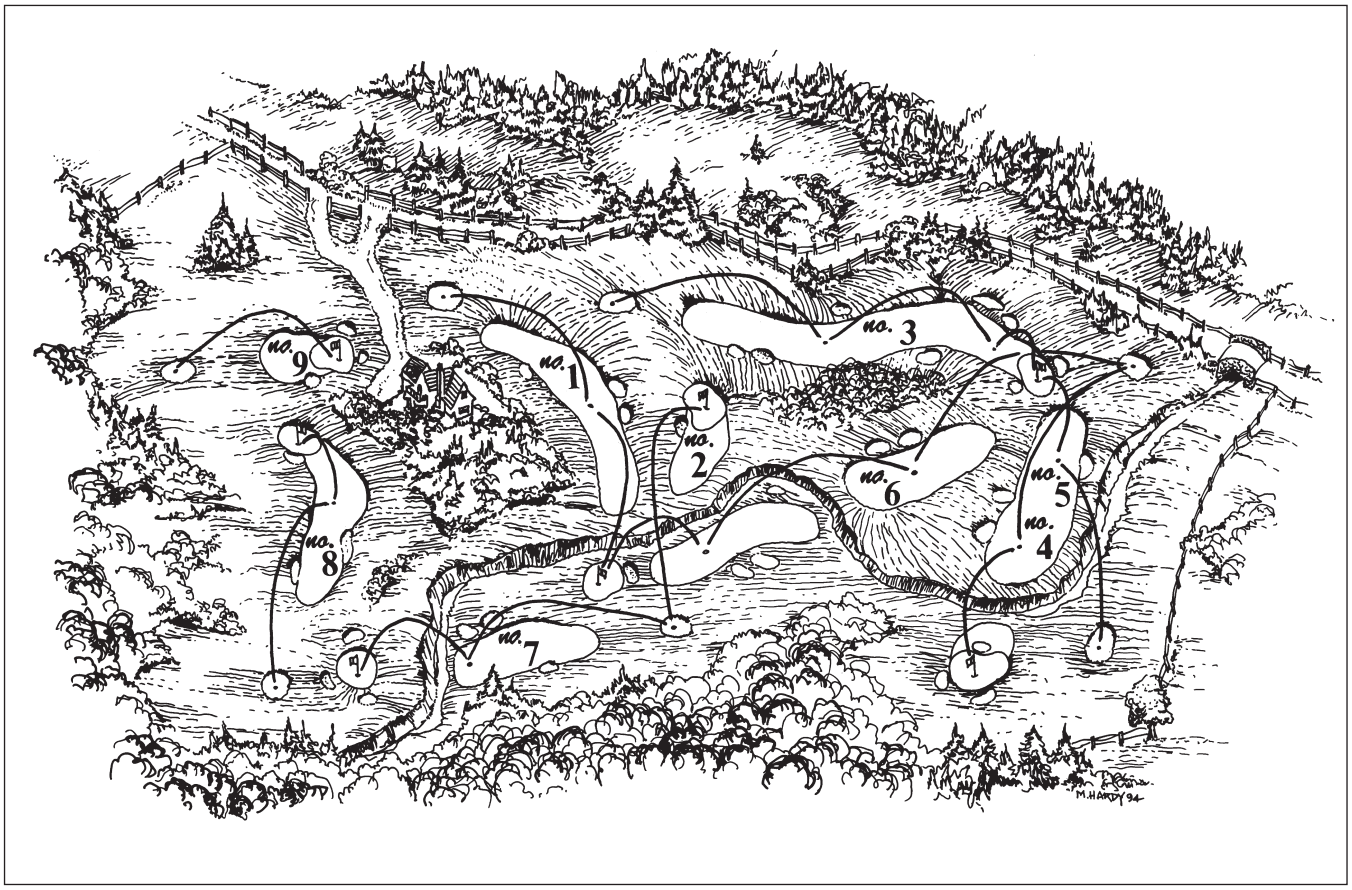


Figure 1-2 Early golf course routings had crossing holes, but as more people played the course, the danger of crossing holes was recognized and eliminated. (Artist: Mark Hardy)

the designer could simply put in stakes to designate the greens and tees, or use a crude map indicating the starting and ending points, with a line connecting them to designate the proposed line of play, often with crossing holes *(see Figure 1-2)*. Golf courses could be laid out quickly and built inexpensively using just a few workmen and hand tools. Grooming the native grasses into golf course turf took years of cutting, topdressing, and other general greenkeeping practices of that period. These methods worked well on gently rolling linksland of sandy soils, which had established grasses and few trees or obstacles.

When land was selected for a golfing ground that wasn't as naturally well adapted as linksland, golf courses had to be built, which meant modifying the existing site conditions. This could involve tree clearing, earthmoving, drainage, feature construction, planting of grasses, and numerous other tasks. Obviously, building a golf course was more complex, costly, and time-consuming than laying one out. This often meant drawing plans that showed the existing site conditions and how they were to be modified to achieve the golf course designer's intent *(see Figure 1-3)*. The master golf architects who developed this more methodical and formal method of practice included H. S. Colt (1869–1951), C. H. Alison (1882–1952), Donald Ross (1872–1948), and William S. Flynn (1890–1945), to name a few. These practitioners had to learn to read and draw maps, developed detailed plans of what they wanted and how these should be constructed, and write specifications or instructions to builders or on-site supervisors. Having such plans, and perhaps their own on-site construction supervisor, freed the architect from the necessity of being constantly on site. It also created the need for an architectural associate to handle such details, such as J. B. McGovern (–1951) for Donald Ross, Seth Raynor (1874–1926) for C. B. Macdonald (1870–1934), and William P. Bell (1886–1953) for George Thomas (1873–1932) *(see Figure 1-4)*.

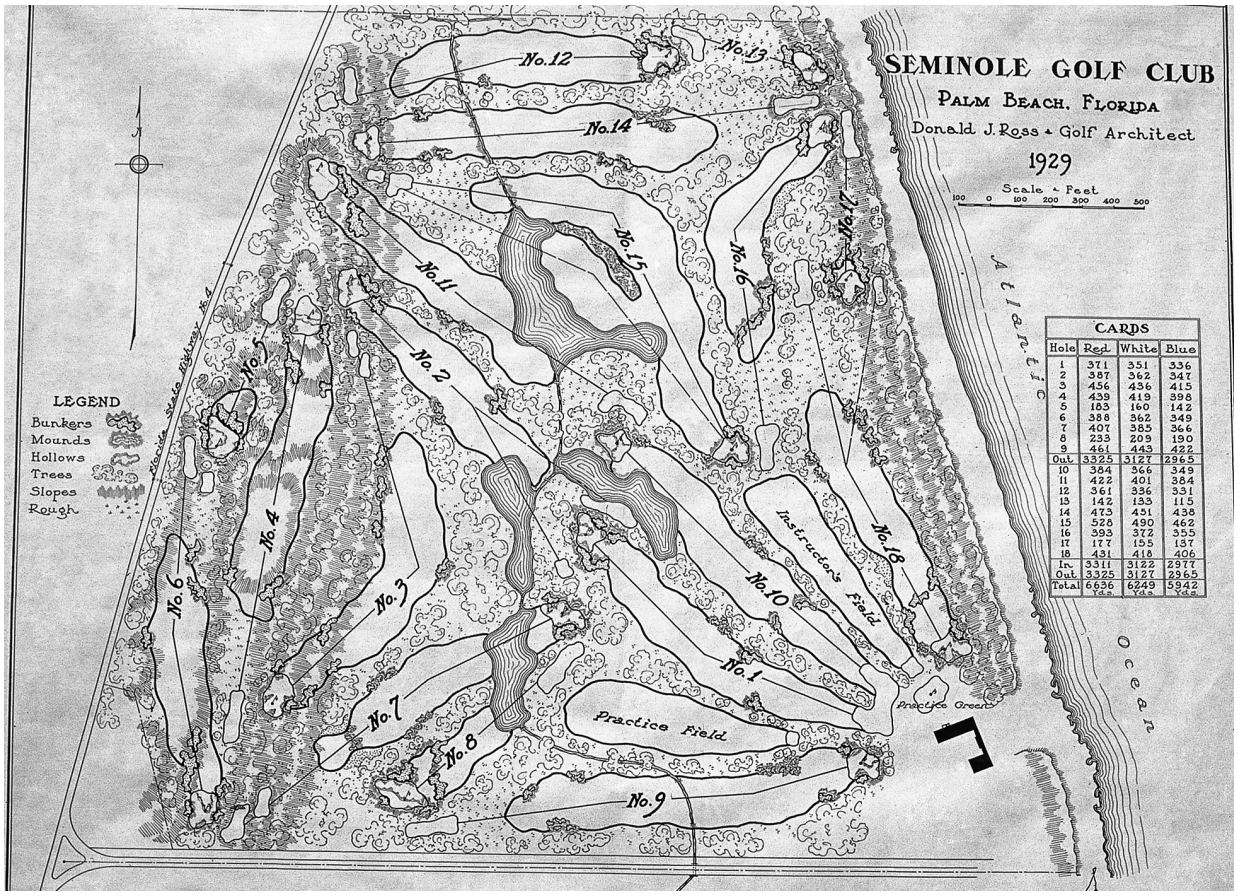


Figure 1-3 Donald Ross's era began the practice of drawing detailed routings so that the field foreman could build the course without day-to-day inspection by the designer.

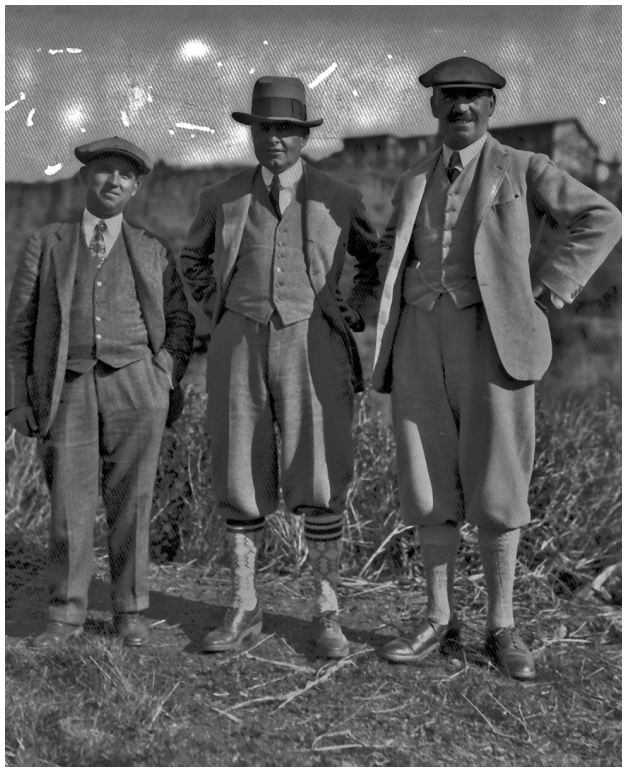


Figure 1-4 From 1913 and into the 1920s, golf course architects began hiring associate designers to handle construction details. This is a rare picture of (left to right) Bill Bell, George Thomas, and Dr. Alister MacKenzie, three men who had a profound and lasting effect on modern golf course architecture.

BUILDING A GOLF COURSE

This concept of "building" a golf course began in the late 1800s and got a boost when, in 1908, C. B. Macdonald used detailed plans and notes to re-create 18 of the greatest holes of Europe for the National Golf Links on eastern Long Island. Macdonald had employed a civil engineer, Seth Raynor, to assist him and thus began the practices and processes that are used today. But since this was at a time before powerful earthmoving equipment existed, the prevailing methods of construction were horses and mules to pull heavy equipment, steam-powered shovels, and large forces of laborers with hand tools to finish and plant golf courses. By the mid-1920s, golf course construction had become a bit more sophisticated and used crude tractors in addition to horses, but it was still mostly limited by the amount of money the developers wanted to spend to alter a site for golf *(see Figure 1-5).* Some spectacular golf courses were built during this so-called golden age of golf course architecture.

With both world wars came industrial and scientific innovations designed for warfare, but later adapted to peacetime pursuits that advanced the art and science of making a golf course. Tanks were originally created to counter the tactics of trench warfare as fought during World War I. These armored and continuous track vehicles could advance in the face of hostile small arms gunfire and cross dug or constructed earthworks that would stop wheeled vehicles. After the war, this track technology was applied to farm tractors to pull heavy and large-scale agricultural tools. Near the end of the 1920s, someone added a more powerful engine to the track tractor idea and put a blade of steel in front of it that could be raised, lowered, and angled to create the bulldozer *(see Figure 1-6).* Various permutations of this machine clearly advanced the art of earthmoving over the limited mobility of steam shovels of the previous era. Today, advanced earthmoving equipment is an indispensable part of golf course construction and gives designers nearly unlimited freedom to alter a site.

CONTEMPORARY GOLF COURSE ARCHITECTURE

A post–World War II adaptation was the technology of high explosives that in peacetime replaced the inconsistent and often weak performance of old-fashioned dynamite and blasting powder. The new explosives were more powerful, safer, less expensive, and more predictable in their effects. So, the golf course architects of the mid-1940s and beyond had two powerful tools, earthmovers and high explosives, that their predecessors did not *(see Figure 1-7).* They could build golf courses on sites and on a scale unimaginable by early

Figure 1-5 Before the era of the internal combustion engine and powerful earthmovers, horses and men built golf courses with rather crude tools.

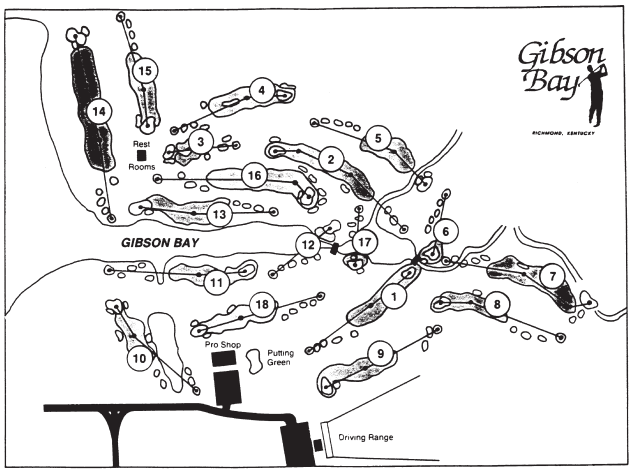
Figure 1-6 World War I technologies of tread vehicles called "tanks" evolved into pulling tractors in the 1920s, and pushing tractors or bulldozers by the early 1930s.

Figure 1-7 Another wartime weapon that found useful peacetime application was high explosives for blasting of rock that otherwise could not be moved.

Figure 1-8 Robert Trent Jones not only became the "signature" name in golf course design, but was also responsible for transforming the craft of golf course design into the profession it is today.

golf architects. However, employing these tools often required much more extensive plans and specifications than the plans of the 1920s, so it became more common to describe the golf course design process as "architecture." These "architected" golf courses began with men who were trained as civil engineers, landscape architects, or land planners, such as Frederick Law Olmsted (1822–1903), William Langford (1887–1977), and the team of William Flynn and Howard Toomey (–1933), and who knew how to draw detailed plans. This increasing use of plans continued after World War II and produced golf course design luminaries such as Robert Trent Jones (1906–2000), Robert Bruce Harris (1896–1976), Dick Wilson (1904–1965), and a group of younger, formally trained designers who would lead the advances and proliferation of golf course design for the next 40 or 50 years *(see Figure 1-8).*

Today, the array of technology used to design, incorporate into the golf course, and to build the golf course would stagger these early architects. In addition, the process today is further complicated by the diverse and often ill-adapted quality of contemporary golf course sites, the myriad regulations and restrictions one must respect to get building approvals, and the ever-rising cost of construction. All these factors have complicated and slowed the growth of golf.



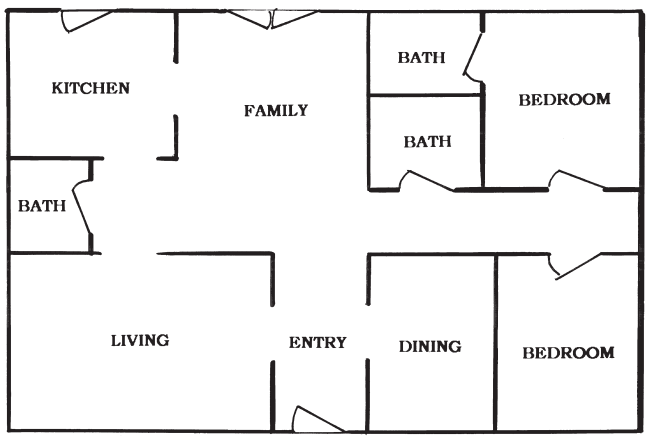


Figure 1-9 The routing plan of a golf course and a floor plan of a house show only spatial relationships, not design details. (Artist: Mark Hardy)

GOLF COURSE DESIGN AS A DISTINCT DISCIPLINE

Today more than ever, golf course architecture is a separate and distinct profession from landscape architecture, civil engineering, land planning, and structural architecture *(see Figure 1-9)*. It resembles parts of each of those allied professions in the nature of the design process, as well as in the similarities of the plans and specifications required to formally design and build a golf course, but it is distinct, for none of those other professions have all of the skills and know-how necessary to create a golf course. Golf course architects of the new millennium have extremely diverse backgrounds and training, but all have learned the unique and specialized skills required. There is such a low demand for new golf course architects worldwide that institutions of higher education have not found it worthwhile to develop new curricula to produce degree students. I once wrote that a person's chance of becoming a golf course architect is less than that of being struck by lightning, and I still endorse that comparison. A few schools, such as the Edinburgh College of Art and Design, offer a diploma and a master's program in golf course design, but the chance that even those few students will become golf course architects is not assured. Becoming a golf course architect requires a lot of preparation, perseverance, and luck.

Golf course architecture is similar to the allied design professions mentioned earlier because all design seems to follow a logical sequence or process. That process is:

Phase 1	Research and analysis
Phase 2	Schematic design
Phase 3	Design development
Phase 4	Master or illustrative plan
Phase 5	Permits and approvals
Phase 6	Preparation of construction documents
Phase 7	Bidding or contracting
Phase 8	Construction
Phase 9	Postconstruction care
Phase 10	Maturation
Phase 11	Long-term consulting

Although that process is generally common to all designing professions, the difference, or devil, is in the details. It is the golf-specific details that free golf course architecture from subjugation to other professions. For example, most other disciplines do site grading and drainage plans, and to the casual observer they may all appear to look alike. But to the trained eye the differences are substantial, for golf course

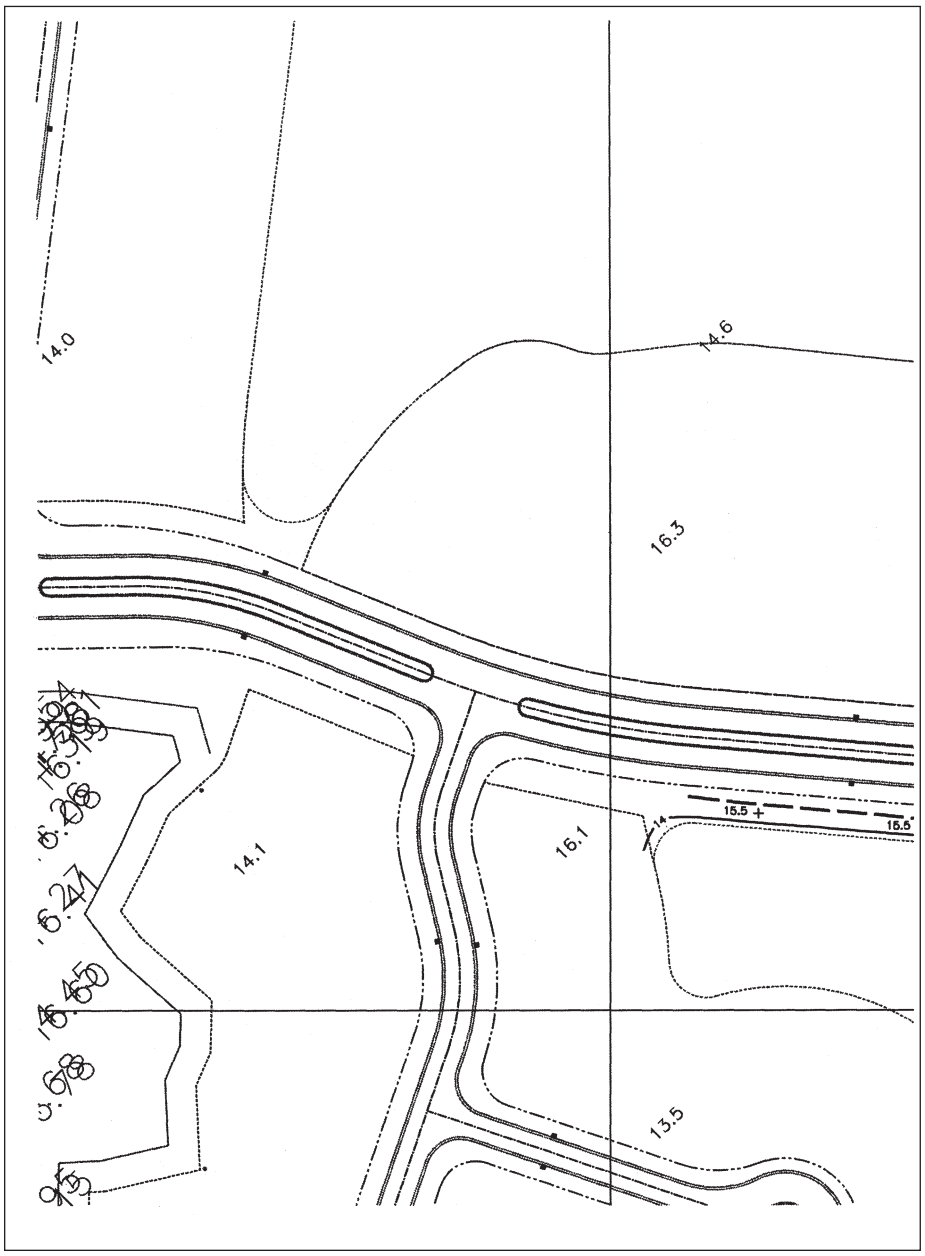


Figure 1-10 The grading and drainage plans for a golf course are much more complex and specialized than those for a building and paved areas shown, and are some of the main differences between architecture, engineering, and landscape architecture compared to golf course design.

grading and drainage are specifically designed to accommodate golf market expectations and long-term maintenance as projected in the analysis phase *(see Figure 1-10).* These include the frequency, size, and location of drop inlets and the percentage range of acceptable surface slopes, which in turn are based on the type of turf to be grown, the texture of the root-zone, microclimatic factors, irrigation water quality, water quantity, and the construction budget. Granted, on forgiving sites with well-drained soils, mild climates, excellent irrigation water quality, and robust construction and maintenance budgets, it doesn't take a genius to develop a golf course grading and drainage concept. But on more formidable sites with multiple

constraints and challenges, it takes a skilled veteran who thoroughly understands golf course maintenance to do it right the first time *(see Figure 1-11)*. This is just one example of the hundreds of design decisions that are golf course specific. These skills don't come from a textbook but rather from years of mentoring, trial and error, critical observation, and continual application of advancing technology.

Similar areas of specialty unique to golf course architects involve safety issues, environmental impacts, construction techniques, maintenance practices, marketing strategies, permit and approval restrictions, and knowledge of how the game of golf is played today and into the future. There is no educational program that adequately covers those topics and adequately prepares a student to easily integrate into the highly competitive profession of golf course design.

BECOMING A GOLF COURSE ARCHITECT

So, how does one become a golf course architect? In Chapter 9 of the first edition of this book, I discussed the skills I believe are required to be an ideal golf course architect *(see Figure 1-12)*. That list has not changed much, but the emphasis and priorities have shifted a bit due to the increasingly competitive nature of the profession. I would now place a higher value on

Figure 1-11 Another major difference between novice and skilled golf course architects is the latter's knowledge of how to balance design expression against long-term maintenance concerns.

Figure 1–12 Only highly seasoned and skilled North American golf course designers are qualified to become members of the American Society of Golf Course Architects. The Ross family's red tartan jackets pay tribute to one of its founders, Donald Ross.

contract and liability law, ecology and environmental law, and graphic and oral presentation skills than I previously did, even over basic skills like drafting. To design a golf course you must first have a client, and without the ability to sell yourself in a competitive situation, you may not succeed, no matter how gifted a designer you believe you are. People and business talents now take precedence over design skills and creativity.

This has happened because of the misconception that golf course architecture is about playing strategy and not much else. The competition between developers to distinguish their products has brought celebrity designers into the golf market *(see Figure 1-13).* The marketing appeal of celebrity designers coupled with the incredible skills of today's golf course builders make it tough on extremely professional designers who lack name recognition or visibility. This means that, in many instances, the traditional skills of golf course architects are less needed today than a decade or two ago, because golf course builders are so talented and clients are not so budget conscious. There are dozens,

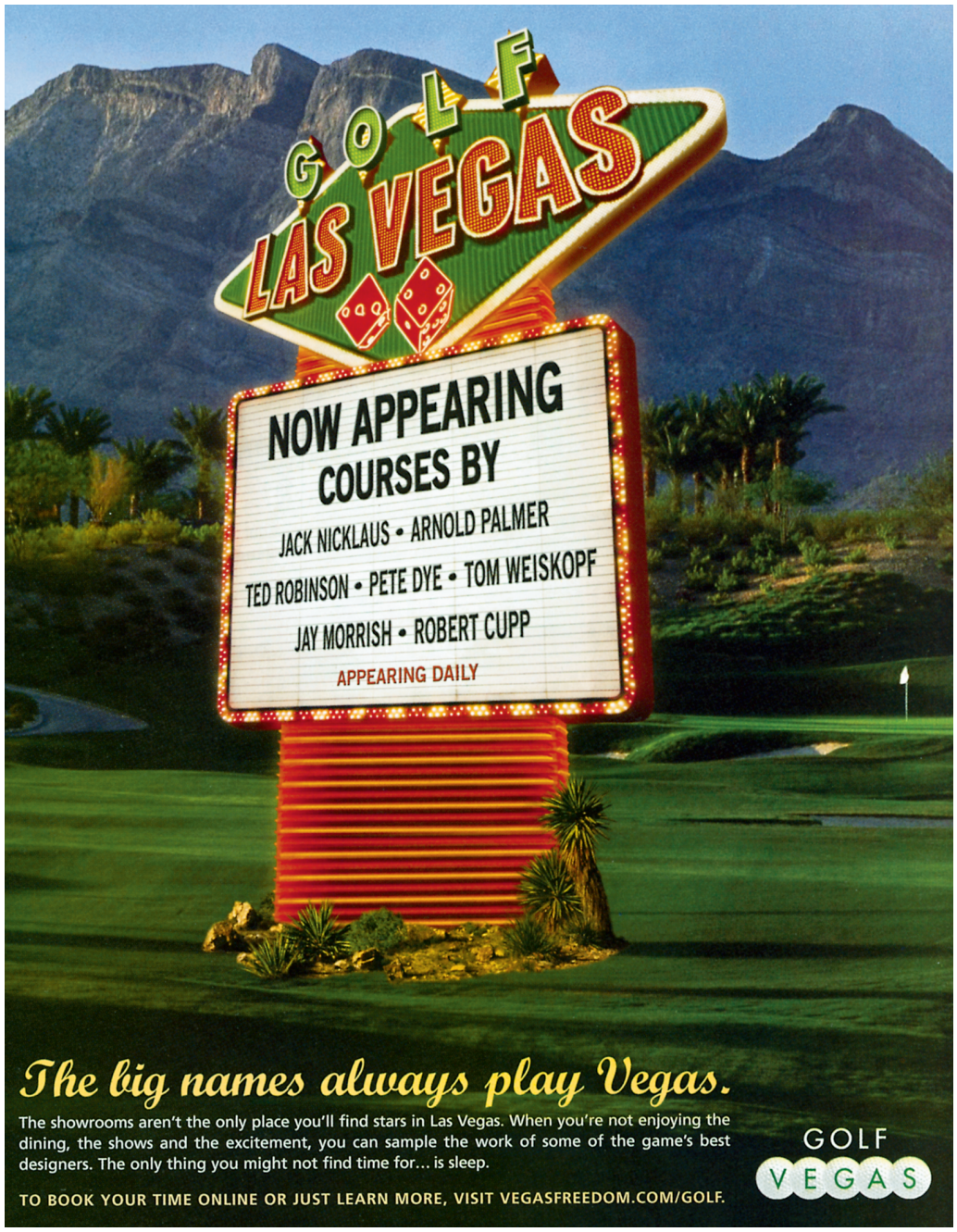


Figure 1-13 The names of certain celebrity golf course designers have been used to market and distinguish contemporary golf courses. The idea is to connote that their courses provide a special quality to the golf experience.

if not scores, of golf course builders who need only the sketchiest of plans to produce a wonderful golf course *(see Figure 1-14).* That's because they have built so many golf courses for so many traditionally skilled designers that they know exactly the right way to build, thus eliminating the need for detailed plans and specifications unless new technology is involved. The celebrity designer doesn't need to know much about grading, drainage, irrigation, rootzones, or planting techniques because the contractor does. In addition, contractors know what looks good and what doesn't. Most contractors are golfers, some are very skilled golfers, and they are not going to let an amateur designer, who shows up every once in a while, build a freakish golf course. The client sees the marketing advantage of a big-name designer, the golf course looks great, and although he may have paid a lot more for the product than he should have, what the hey—welcome to the

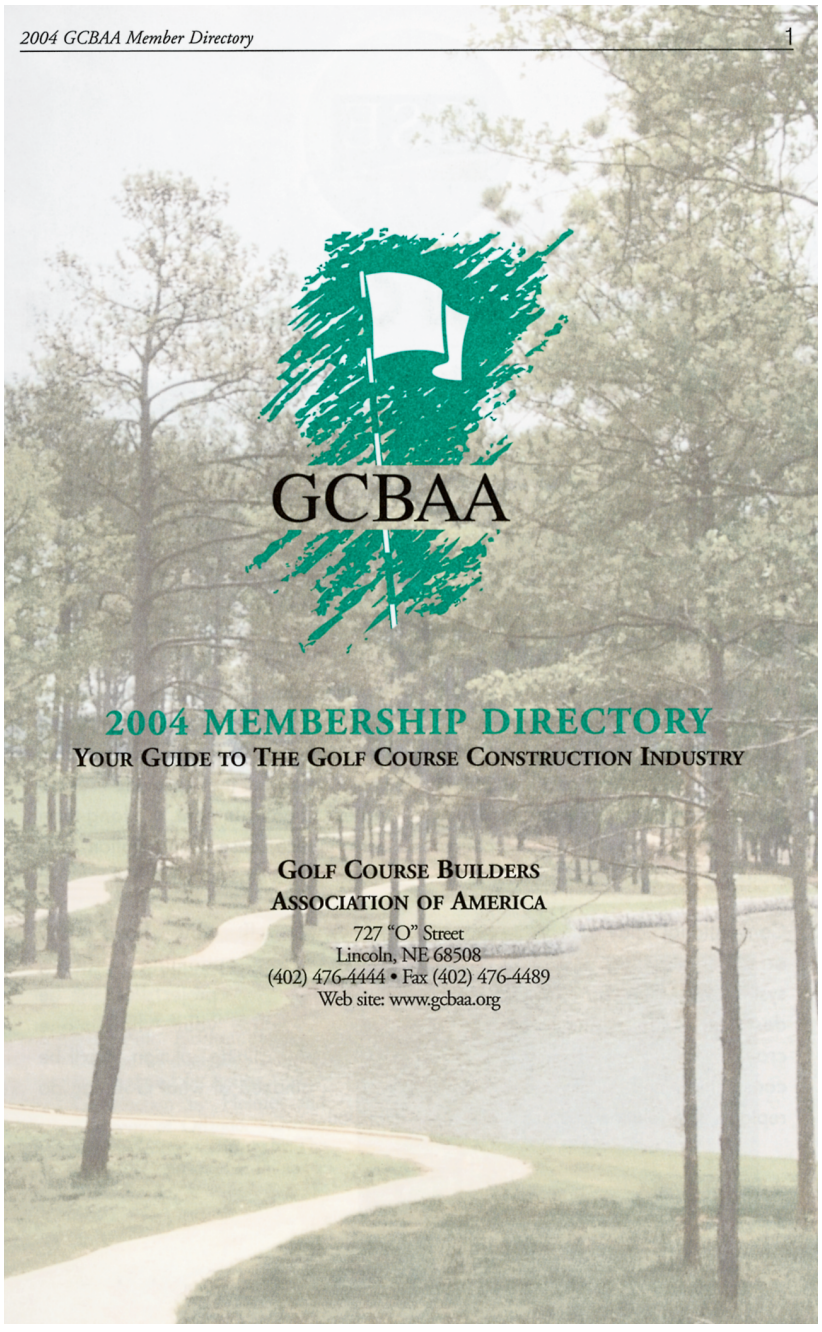


Figure 1–14 The Golf Course Builders Association of America is a very large and powerful professional organization whose members are the most experienced and talented craftsmen ever to build golf courses. (Photo: GCBAA)

ego and marketing game. However, nothing is a problem until there is a problem, and if the financial and/or legal system gets involved with a troubled project, then the real price of not using professional architectural practices can be finally assessed, albeit too late and perhaps at a far greater cost than if used initially.

On the other hand, many celebrity firms do recognize the professional skills needed and employ some wonderfully talented designers, who provide all the services of the most competent firm in the industry. Their work can withstand any kind of scrutiny and compare favorably to that of others. But not all celebrity firms are like that, so there remains the timeless truth of "buyer beware." The point of this discussion is not to criticize big-name personalities who love the game so much that they are fascinated with the prospect of designing a golf course, but rather to point out how the profession is evolving and why it is so dif-

Figure 1-15 The competitive worldwide practice of golf course design has favored larger firms with diverse skills over the single practitioners of early times. Shown is the Hurdzan/Fry staff of (left to right) Jason Straka, Mike Hurdzan, Bill Kerman, David Whelchel, and Dana Fry.

ficult for dedicated students to feel certain that they can prepare themselves to be golf course architects and have the security of succeeding *(see Figure 1-15)*. Today there are more people willing to design golf courses than clients who want a golf course built.

I estimate that there may be about 1,000 individuals or members of firms offering golf course design services. Assuming that the worldwide demand for new golf courses is 400–500 per year, the number of designers exceeds the demand. During boom times, large firms take on new associates to fulfill all of the obligations of their contracts, but during lean times they release these folks, who often can't find another design firm to employ them, so they start their own golf course design practice out of a home office. There is nothing wrong with that except that the larger firms have a fair amount of overhead and must charge higher fees than a one-person shop. This can be good for clients because there is pressure for designers to charge low fees to get the project, or partner with a celebrity designer, and not worry about long-term consequences to the profession. The result is that some firms can demand and get $2 million design fees, while others are thrilled with a $125,000 contract. Even the bottom figure seems like a lot of money, but not for the designer who must also pay taxes, health insurance, overhead, and travel, and, hopefully, have something to put in a retirement account. This can often amount to self-imposed financial starvation. But as the guy said about shoveling out the elephant stalls at the circus, "It ain't much, but I'm still in show business."

How should people prepare themselves to be reasonably successful as a golf course architect? I believe that there are four essential areas of study and experience:

1. Be able to manage the design process and the expected products or deliverables from each phase of design.
2. Have a comprehensive working knowledge of golf course maintenance practices, products, and problems.
3. Be experienced in all phases of golf course construction.
4. Find a mentor or market niche that you can develop to distinguish yourself from your competition; produce as impressive a marketing piece as you can afford; take any job, no matter how small, to build a list of clients; meet as many people in the golf industry as is practical; and hope for a strong national or international economy.

If a person is willing to spend the 7 to 9 years necessary to do this, I believe he or she will have mastered all of the skills necessary to be a forward-thinking, competent golf course architect *(see Figure 1-16)*. Some of the most gifted golf course designers I know got a 4-year degree in a design curriculum, went back for another 2-year degree in turfgrass management while working in golf course maintenance, and then worked for a golf course contractor for several years on several projects. These men and women have all of the skills not just to practice golf course design, but to also advance it with innovative techniques and applications of emerging technology. They don't fear things that are new because they have the background to determine what works and what does not. To corrupt a marketing phrase, "They don't just make golf courses, they make them better."

If 7 to 9 years seems like a long time to prepare to enter the profession, remember that one can stay active in the craft for as long as one's health permits. Seventy-year-old designers are not uncommon; and they will become more common in the next few decades.

PUTTING IT ALL TOGETHER

Once a person has completed some variation of training in the first three areas listed above, the last step to professional actualization is mentoring by an active and progressive individual and/or firm *(see Figure 1-17)*. This means entering a golf course design office that is dynamic and constantly challenges each individual to become even more competent. It means giving and receiving a sensitive but critical review of each work product to see if it can be made better. It means assuming authority and responsibility for projects or portions of projects and being held accountable for the results.

Figure 1-16 Becoming a golf course architect can take many paths. Regardless, it takes a long time. This diagram shows the ideal way to become fully qualified.

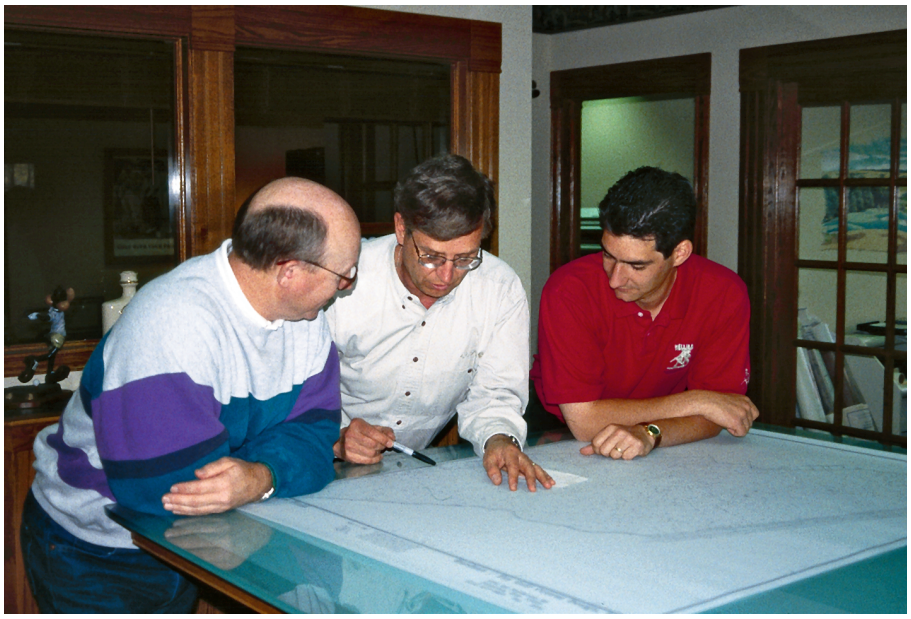


Figure 1-17 Mentoring and constructive criticism are important parts of becoming a skilled golf course designer.

Figure 1-18 Who is the best golf course designer? This is a rhetorical question at best, but it is sure to result in lively and passionate viewpoints. (Artist: P. J. Barton)

Figure 1-19 Pebble Beach was basically the only design of Jack Neville and Douglas Grant, but with many renovations over the years it has remained one of the world's best golf courses.

It means demonstrating how to be a team player, not just in words but also in deeds. It means a willingness to listen to and accept new ideas or concepts that make collective sense. And finally, it means developing a creative atmosphere to encourage self-expression and personal growth with some of your best friends in the world: your office mates. Anything less will stifle or retard the designer's ability to push to the limits and continue to be creative and fresh. Golf course architecture is not a job, it is a passion, and the true payment for that enthusiasm is the pride you take in your creations. The pay is not spectacular, the travel becomes problematic, the stresses are many, there are no residuals, but it is still the greatest profession in the world.

All of this brings us back to the question "What really is golf course architecture?" Is laying out a golf course more or less difficult than designing or architecting one? Was Old Tom Morris more or less than a golf course architect than Donald Ross? Can H. S. Colt be compared to Robert Trent Jones, or trend-setting Pete Dye (1925–), or the contemporary king of design, Tom Fazio (1945–) *(see Figure 1-18)*? Obviously, these are rhetorical questions that could be debated while producing no possible winners, losers, or conclusions. So, this begs the question of how one defines golf course architecture. The most common answer among practicing golf course designers would be "my way."

METHODS OF PRACTICE

Golf course architecture is undoubtedly the most nonrestricted, freely expressive profession in the world. Anyone is entitled to call himself a golf course designer, with no educational requirement, licensing or testing procedures, or mandatory registration of any kind. All that is required is to have a client willing to spend money to make a place to play golf. There are historical instances of men or women designing their perhaps one and only golf course and have it considered one of the best in the world. H. C. Fownes (1856–1935) created Oakmont, George Crump (1871–1918) designed Pine Valley, and Jack Neville (1895–1978) and Douglas Grant (1887–1981) did Pebble Beach *(see Figure 1-19).* But these are exceptions rather than the rule, for the

world's most recognized golf course designers honed their skills over many years and in many projects before they produced their best work. Thus, it could be argued that as long as a golf course design is not a threat to public health, safety, or welfare, it is an acceptable expression of how a person views the essence and elements of golf. To restrict or narrowly focus the rights or ability of persons to artistically express their view is not in the best interest of golf or the evolution of golf course architecture. So, the only true and time-honored requirement for being a golf course architect is having a trusting client. However, if the golf course architect makes a mistake, it could cost him or his client a great deal of time, money, and legal liability.

In Chapter 9, I will further discuss the skills and talents I believe are necessary to find those trusting clients in the future.

EVOLVING GOLF COURSE DESIGN PHILOSOPHIES—MINIMALISM

Golf course design philosophies have evolved in the past 10 or 20 years, and interestingly, in opposite directions. One philosophy involves "minimalists" who believe that "less is more" and that golf course architecture should involve very little construction or disruption of a site *(see Figure 1-20).* This means minimal earthmoving or clearing of nongolf vegetation, as well as bare-bones drainage and irrigation. Minimalists prefer to use materials that might be more reasonably found on the site, such as the more common brown river sand for bunkers as opposed to highly processed, picture-perfect, bright white bunker sand. Minimalists strive to have their golf courses evoke the charm and tradition of European links courses or classic American golf courses of the 1920s. The most widely recognized modern day minimalists are Tom Doak (1961–), Bill Coore (1945–), Donald Steel (1937–), and Gil Hanse (1963–).

On a naturally blessed site like those found in sand belt regions created by wind, water, or glaciers, such as the Sand Hills of Mullin, Nebraska, or the Oregon coast near Bandon, this design philosophy has produced superior golf courses at very low cost. The weakness of this philosophy is that it is site dependent; I have yet to see a minimalist golf course of any note built on a landfill, on flat farm fields, or in a mountainous area. To create a spectacular golf course on those sites requires extensive construction.

Another major weakness is that golfers bring with them expectations of what a golf course should be. If, in the name of minimalism, the designer leaves natural features in play that golfers consider strange, they may overlook the genius of the overall design and instead critically identify the course with the unusual feature. What golfers find acceptable or not involves fine distinctions.

For example, at Devil's Paintbrush in Ontario and at the Fieldstone Golf Club in Delaware, there were building foundations on the sites that dated back over 150 years and were still structurally safe and sound *(see Figure 1-21).* We left those ruins, at the request of local historical organizations and with the approval of our clients, and wove them into the play of the holes as fairly and safely as possible. Golfers seem to understand the reason for leaving those structures and actually comment that they add a unique touch to the holes. However, when purposefully built ruins and columns are added to a golf hole just to make it look historical and try to give the hole some personality, they usually look false and are rejected by golfers as an insult to their intelligence. In other words, pseudo-minimalism is best avoided.

Even the minimalist designer should be willing to compromise his philosophy for the sake of safety or just good golf. For example, leaving blind spots where golfers cannot see the golfers ahead, workers, or adjacent property users invites liability to the course owner, operator, and designer. To voluntarily leave a natural feature that is wonderful to look at but makes the golf hole too difficult for average or poorer players to me seems not in tune with what golf course architecture is all about.

"EXTRAVAGANTISM"

If minimalism is one emerging golf course design philosophy, what is the other? That philosophy could be called "extravagantism" and embraces a Hollywood mentality that imitation is as good as reality. Practitioners of extravagantism seek opportunities to produce spectacular special effects even where they should not logically exist. Creating a 40-foot-high artificial rock waterfall on flat south Florida land is extravagant and not an illusion *(see Figure 1-22).* However, if the illusion is well done throughout the entire course and is isolated from its surroundings, like Tom Fazio's Shadow Creek in Las Vegas, the golfer's response can be overwhelmingly positive. On

Figure 1-20 Minimalism is the design philosophy I applied when I designed Bully Pulpit in Medora, North Dakota. Only 17,000 yards of earth were moved to build the golf course, and most of that amount was on one hole.

Figure 1-21 When a site contains a historic ruin, like this one at Fieldstone in Greenville, Delaware, we try to preserve it as it was found and make it a functional part of the golf course.

Figure 1-22 A waterfall like this looks contrived enough, but when the course is in south Florida, it looks _____! (Fill in the blank.) (Photo: Ron Whitten)

the other hand, when golfers see Donald Trump's extravagantism at Trump International, they usually view it as a reflection of a plastic lifestyle, built on smoke, mirrors, and in-your-face glitz. Although there may be true architectural genius in most of the other golf features, it is the fake stuff that stands out, and people will remember and talk about it. In the short term that may be okay, but it is doubtful that poorly done or illogical illusions will have the timeless qualities it takes to be highly ranked years from now or have future generations of golfers as impressed as the current crop.

"EXTRAVAGANT MINIMALISM"

One variation of both philosophies is what Pete Dye did at Whistling Straits, in Wisconsin, which I would call "extravagant minimalistic illusion." Pete spent a lot of Herb Kohler's money taking a flat, featureless piece of land overlooking Lake Michigan and making it look like naturally formed sandy links, hence giving the golf course the illusion of looking minimalistic *(see Figure 1-23).* I had seen pictures of the course before I played it, and it looked like an Irish coast golf links with native vegetation mixed in with patches of open, wind-blown sand. But the moment I stepped onto the tee, I could tell that the soil was a compact hard clay with no sandy texture. I happened to be with the golf course superintendent, and I asked if just this tee was clay or the whole site. As you may suspect, the entire site was tight clay and the patches of vegetation and sandy waste were there for illusion. If Dr. Alister MacKenzie is credited with being a student of earthwork camouflage, then Pete Dye could be the master practitioner of that art, and Whistling Straits is his opus.

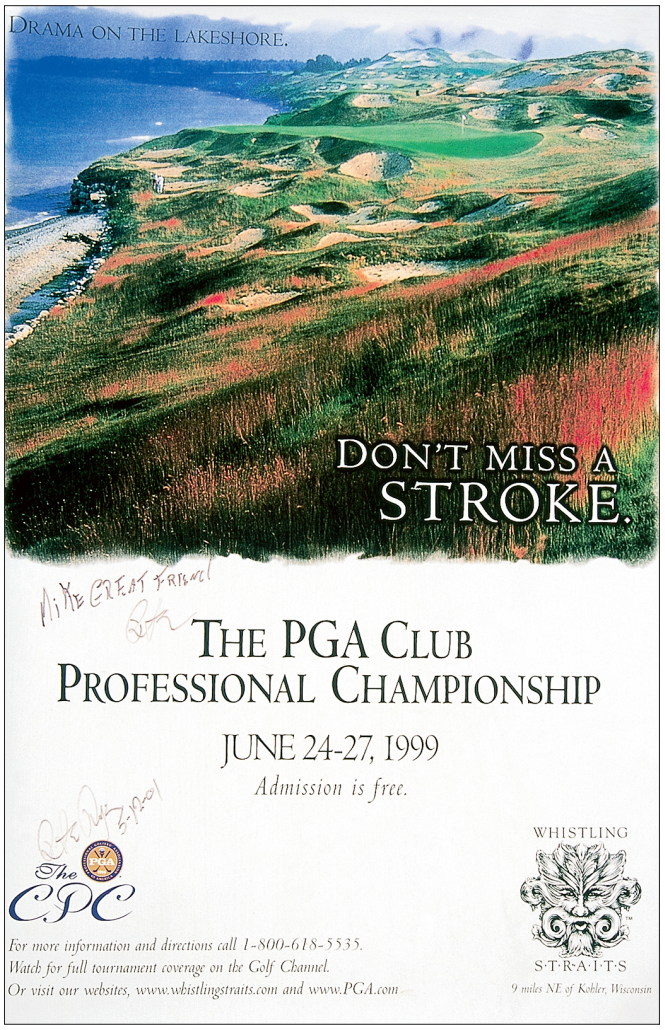


Figure 1-23 This poster shows the artistry of Pete Dye in transforming flat clay farm fields into what looks like natural, sandy linksland along Lake Michigan. (Note: Pete signed this poster twice.)

BLURRING OF DESIGN THEORIES

Just as the methods and philosophy of practice are becoming more blurred, so are the classifications of design theory. Previously, it was much easier to categorize golf holes as being penal (requiring forced carries), strategic (offering multiple play lines), heroic (bite-off-as-much-as-you-can-chew play lines), or freeway (all hazards are side hazards). Because this is a textbook, in Chapter 3 I will discuss these basic design theories in great detail. But I believe that today and in the future, there will be hybrids of these design theories incorporating some elements of each *(see Figure 1-24).* Although these courses may be harder to define and describe, they may be a lot more fun to play. One reason for this blurring of design theories is that many environmental and land use regulations are forcing designers to compromise on pure or traditional design themes in order to get permits and approvals. I say this with some authority, for we have had to design some hybrid (even funky) holes as concessions to get the necessary agency approvals. Sometimes these end up being great holes because we have to think so much about how to make them playable and fun that we often find a stroke of genius in those deliberations.

Figure 1-24
Contemporary golf course designs rarely follow one design philosophy, but rather blend together portions of heroic, strategic, and penal concepts.

VISUAL ARCHITECTS

Another reason for blurring of design theories is that contemporary golf course architects place much greater emphasis on visual aspects of the hole than on the strategy. "Visual architects" place features to create "a look" and will favor the look over sticking to a formal design strategy *(see Figure 1-25)*. In fact, visual designers rarely care about any formal design philosophy involving feature placement and design, and just do whatever inspires them during construction. Golf course architects have always been known to fine-tune or tweak design concepts in the field, but for visual designers, especially ones with big egos and even bigger

Figure 1-25 Visual qualities are more highly valued than the playing qualities of a golf course, but when a course has both, it becomes widely recognized.

construction budgets, this may mean totally rearranging or rebuilding a hole numerous times. Contractors soon learn who these designers are, and I have been told that when they and other experienced contractors bid on their work, they bid it as a 24-hole course, because they know they will totally rebuild at least 6 holes. It is easier to bid the 18-hole project as the 24-hole project and hope that one only has to rebuild 3 or 4 holes and make money, not 7 or 8 holes and lose money.

It would seem logical that the contractor should bid the work as 18 holes and then ask for change orders or extra payment for these field revisions. But golf course architects hate having to approve change orders and raise the total cost of construction for no other reason than a design whim. Most clients see a parade of change orders as an indication that the architect may not know what he or she is doing, or illustrative of a poor design process, or as a sign that the contractors are ripping them off. No one likes change orders, so golf architects usually tell the contractor before the work begins that "there will be no change orders on this job," leaving the contractor no other choice than to bid higher than the work may be worth and try to guess at what extra things he will have to do. Obviously, the client is paying more than he should to get a golf course, but he may not care if it is budgeted for. Unless there are some very unusual site conditions that could not be identified during the planning process, a reasonable total amount of extras on a project that employs the professional approach should be about 5 to 10 percent of the bid price, not the 50 to 100 percent we often hear about. Keeping costs in line is another mark of a competent design firm using conventional industry practices not relying on field changes to get it right.

CATEGORIZING THE GOLF COURSE

With regard to design philosophy (which will be discussed in Chapter 3), instead of categorizing the entire golf course as one type or another, the best process is to categorize each golf hole in terms of whether it is penal, strategic, heroic, or freeway and then let the

Figure 1-26 Whistling Straits along the Wisconsin shoreline of Lake Michigan was the site of the 2004 PGA Championship. I believe all of the competitors were thankful that they didn't have to play to the hole locations shown here. (Photo: PGA of America)

preponderance of hole types dictate the overall philosophy. Besides, it could be argued that design philosophy is theoretical anyway, for unless one is skilled enough to accurately place the ball on each shot, golf becomes a game of trying to make a decent score from wherever one's marginal golf skill causes the ball to end up, and not some predetermined strategy. This is why simply playing a golf course rarely reveals the overall reasons for or sophistication of the designer's intent, for one sees the course only from where one hits the ball. That's why just playing golf doesn't qualify one to be a golf course architect.

To truly understand what was in the architect's mind when a hole was designed, you should know the site conditions before construction, the time and means of construction, the construction budget, what the client wanted the design to accomplish, and if any modifications had been made to the hole since the original design, as well as long-term maintenance procedures that have been used. Any one of these factors could alter the design execution and the finished product that one is trying to analyze. For example, when I played the par 3 12th hole at Whistling Straits, I noticed that a little shelf on the right side of the green was about 2 feet lower than the rest of the green *(see Figure 1-26)*. I asked the superintendent about it. He said that after the course was built, that part of the green settled or slumped down and was never intended to look that way, but since it looked good, Dye and Kohler decided to leave it. Most golfers will see that smallish and very precarious hole location as yet another sign of Dye design genius when actually it was a result of gravity and soil physics.

What is golf course architecture? I would say it is a form of free, artistic expression of the area where golf is played, with the only fixed constraint being the size of the cup, which is 4¼ inches. There is a professional design process that maximizes opportunity, minimizes time and monetary costs, and produces the most consistent quality of product and pleasure for golfers using the course. Anyone is qualified to be a golf course architect, depending upon how one defines golf course architecture. The marketplace will ultimately decide what is good or not so good design. So, for potential clients, the message remains "buyer beware." However, the better prepared a person is in using the standard practices and skills of the industry, the greater his chances of succeeding and being of value to his clients.