

# Solving the puzzle

Routing is the ultimate puzzle for a golf course architect, with multiple elements needing to be assembled correctly for a club to thrive. Toby Ingleton learns more about the process.

The routing of a golf course can make or break a facility. Done by an expert, it will enhance the golfer experience, help increase revenues for the club and avoid unnecessary expenses—both during construction and beyond.

It's a task that golf course architects thrive on. "There's nothing I get more joy from than developing a routing," says ASGCA Past President Steve Forrest, ASGCA. But it is a complex puzzle with many pieces, which vary from project to project depending on the features and constraints of the site, and the ambitions and desires of the client.

So where do you start? Ideally, with a topographical map. "It is very difficult to appreciate several hundred acres without shrinking the view to something that fits comfortably on a table," says Forrest

Richardson, ASGCA. "This is the way we take an expanse of land and get it to a point where it can be managed between the ears.

"The topo map becomes the worksheet to capture constraints—the limits of the property, environmental zones, drainage patterns, areas of dense vegetation, soil conditions and, of course, elevation changes," he continues.

The topo map also helps to identify the unique features that could be captured in the design of the course. ASGCA Past President Doug Carrick, ASGCA, says: "Upon visiting the site for the first time, I will have a better idea of how some of the unique features can be incorporated into the design, along with any other features or prominent views that are evident during my visit."

"We can eliminate two to three weeks of work if we get a

topographical map first," adds Forrest. "We can then develop a routing and it's a lot more fun when you get to the site. You have a better sense of scale, particularly if it's a wooded site, where it is extremely difficult to judge yardages."

That two-dimensional, scaled-down view allows golf course architects to comprehend the extent of their canvas, and be fully prepared for a site visit.

## Walking the site

"When we first set foot on any property we ask ourselves, where would you want to go?," says ASGCA Past President Steve Smyers, ASGCA. "How would your body naturally move about the property if you weren't even thinking about it, if you were simply reacting to the land you saw in front of you?"





"If you were to drop someone onto a property by helicopter—a piece of land where they had never been before—they would naturally gravitate to powerful places. It might be a bluff with a long vista. It could be a convergence of environments or maybe it's an edge, like a forest, lake or ocean. These are places where we're just naturally drawn."

"You look for unique and dynamic features that can be incorporated into the routing and golfing experience," adds Art Schaupeter, ASGCA.

"Examples can range from the bold and obvious like water shorelines to the more subtle like interesting grade breaks or slight high points of ground, which can make for good green sites, landing areas or teeing areas."

"It's mandatory to become intimately familiar with a site," says Smyers. "Not just a topo map, but the land itself. It's

the only way you can lead the golfer on a journey that exposes dominant landscape settings within the property in a rhythmic, cohesive way. And when a routing does that, whether the golfer consciously realizes it or not, it all feels right."

#### Assembling the pieces

Once the golf course architect has a complete picture of the site, its features and constraints, the hard work of solving the routing puzzle really starts.

There are many pieces to consider. "How do we access the site? Where is the best spot for the clubhouse? What about an entry road and parking? A range—ideally playing north—and practice area, first and tenth tees and ninth and eighteenth greens?" These are the critical elements that Forrest tries to fit

together first. "Once we have those elements in place," he says, "we are 75 percent of the way there."

"On more difficult sites, we may have a tight corner that needs to be considered first," continues Forrest. "There may only be room for a short par four in and a par three out, and it becomes a case of plugging key holes in first and filling in the rest from the clubhouse. And where the constraints are so numerous, you may need to be creative or concede certain aspects of the design. For example, have two par threes back to back like at Cypress Point."

"The actual routing process varies from project to project," adds Carrick. "Sometimes a unique or spectacular hole will be located first, followed by the holes that connect in and out of that particular location. Sometimes it may be a sequence of interesting



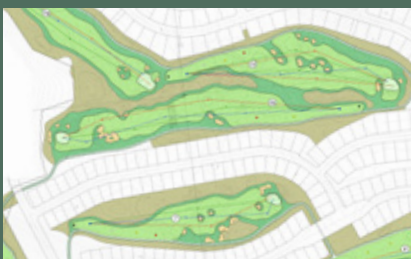
## CASE STUDY: TPC COLORADO

**Changing priorities**

Routing will often evolve over time. Art Schaupeter, ASGCA, began work on what would become the TPC Colorado layout in 2005. But in 2015, when it was decided that the layout would become a TPC course, some of the development parameters were modified to allow the golf course routing to take more of a priority.

Schaupeter highlights two big changes to the routing that have dramatically improved the layout and will create a better golfing experience: “Firstly, the original holes 7 and 8 had housing on all sides. They were re-routed, along with holes 14-16, to create a block of five golf holes, a ‘core’ golf experience. The result is fewer road crossings, less distance between holes and housing restricted to the perimeter of the block of holes.

“Also, the original holes 1 and 2 were switched with a development parcel, moving the golf holes over to the edge of a large lake. This created a better setting for those holes, and allowed the overall golf layout to be re-numbered to give the course a four-hole finish adjacent to the clubhouse,” he explains.



The TPC Colorado routing was modified to give a more ‘core’ golf experience

holes located in the middle of the golf course that are located first, or other times I will locate the clubhouse first, followed by the starting and returning holes for each nine. Sometimes an unusual shape or configuration of a property may require special attention in order to use the land efficiently, or some difficult topographical features may have to be negotiated a certain way in order to produce a good routing.”

**Dealing with complexity**

“Small or compact properties require great efficiency in how the land is used in order to get the most out of a small site, while producing a safe and playable layout,” says Carrick. “Rocky or rugged terrain requires a routing that is sensitive to the natural elevation changes, in order to minimize extensive earthmoving or blasting. On sites with dramatic changes in elevation it is important to devise a routing that climbs up softer slopes gradually, while descending over the steeper terrain. Flat sites, while easy to work with, present the most challenge in terms of creating interest on the golf course, and introducing variety in the length and direction of holes helps to provide a good framework for the course design. Environmentally sensitive sites often impact the connectivity and playability of the golf course, and it is important to minimize the distances between the green of one hole and the tee of the next hole as much as possible.”

“Literally hundreds of decisions are being made all at once,” says Richardson. “A move in one corner means something gets shifted over in another area, and then there are the ‘givens’ such as the practice range—the largest of all puzzle pieces. Add to this whatever ‘standards’ the golf architect wants to uphold, criteria such as par and length, and the way those factors get distributed.”

The puzzle is further complicated if the golf course is driven by a larger development master plan. “Designing a golf community or golf resort presents another degree of complexity to the routing process.



Home sites, roads, accommodations and other amenities have to be integrated efficiently and safely with the golf course,” says Carrick.

“Developers want to keep the golf course on as small a footprint as possible to maximize development opportunities,” explains Schaupeter. “I try to strike a balance between golf course acreage and golf course frontage by routing holes adjacent to each other wherever possible. This will reduce some of the development frontage but it will also reduce some of the acreage requirements for the golf course. Golf holes routed adjacent to each other will take up a little less ground than holes routed individually through adjacent developments. This also improves the golf experience as golfers aren’t playing through a





Photo: Michael Cooper



Photo: Forrest Richardson & Assoc.

Clockwise from top left: ASGCA Past President Steve Smyers, ASGCA, walking the site at a new project near Orlando, Florida; Art Schaupter, ASGCA, with Steve Wenzloff of the PGA Tour at the TPC Colorado site; Forrest Richardson, ASGCA, considers how to configure a routing for a course that will need to be set above landfill layers that cannot be disturbed; Recording GPS points for possible green sites so they can be studied later in detail when routing options are developed

narrow corridor of golf surrounded by houses on both sides.”

“The most complicated routing assignments get that way due to the list of constraints becoming nearly endless,” says Richardson. “Since the late 1970s we have seen more

best if it can be accommodated. This is not to say that good routings cannot be created on less than ideal land—many great courses have. But it makes the assignment infinitely more difficult, and the golf architect must be extremely clever.

never been a course there in the first place. We may have water reservoirs, existing neighborhoods, roadways and even cherished trees to preserve. Overall these can be the toughest to work out.”

## // Literally hundreds of decisions are being made all at once

and more golf courses proposed on denigrated land. That list includes old landfills, low-lying land prone to flooding and land that is leftover after housing or other development. It is not always that the golf course gets its choice of land, although that is usually

“The other category of difficult routings is when we go to re-route existing courses, as in the case of the total makeover. While we already have a canvas to work upon, it is almost always sprinkled with even more constraints than if there had

### Bringing it all together

It’s possible to have all the elements in place, but for the puzzle to remain incomplete.

“You can have 18 good golf holes and still not have a good golf course. By that, I mean that everything has to evolve from a greater context. Holes must emanate from the land. So, as architects, we have to resist any inclination to impose a hole onto the land if the design of that hole doesn’t work in harmony with its environment,” says Smyers.



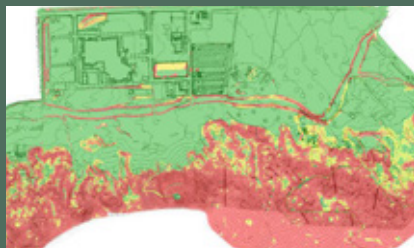
CASE STUDY:  
THE JOURNEY AT PECHANGA

## Coping with constraints

Designed by Hills & Forrest and built on a Native American Indian reservation as an amenity to the Pechanga Tribe's casino, The Journey at Pechanga golf course in Temecula, California is situated on a beautiful piece of property with rolling terrain located at the base of the mountains.

However, portions of the dramatic site were very steep and unsuitable for golf, and there were multiple cultural areas and protected live oak trees that needed to be avoided. The first step to developing the routing was to identify the areas of the site that were not useable for the golf course.

Holes were then weaved around the multiple points of interest, turning areas that had been constraints to the golf course layout into features of the golfing experience.



The first step was to eliminate areas that would be unsuitable for golf (top images) before routing golf holes that would weave around points of interest

"You have to establish solid landscape 'rooms' so that as you traverse the property, you bring the golfer into landscape settings that may look and feel different from one another, but always feel in harmony with the natural environment of the site. We understand that we need a variety of shot values to test players throughout a round of golf. But for players to respond well to the golf course, to the property itself and to the overall experience, we need to take players through different landscape settings.

"Of course, if you don't have a strong site with strong natural features, you should create them. If you don't create strong features first, you're going to have weak holes—maybe not weak from a shot value standpoint, but you'll have weak holes from a memorability standpoint. That's because, in any great golf course, the landscape features don't come from the holes; the holes come from the landscape."

"Almost always it is the case that numerous routings are created for a piece of land," says Richardson. "We go back into the field to walk the land again, and sometimes over and over until we sense the routing will be enjoyable from many perspectives. The list is long. Flow, pace of play, vistas, downhill holes, uphill shots, reasonable safety and even the way the holes interact with each other—or not. It is very similar to writing a piece of music. There is structure, and it is defined by movement, bridges, melody and crescendo. I suppose the only real rule is that what goes out must always come back."

### Changing demands

As the golf industry evolves to address the common challenges of time and difficulty, have golf course architects changed their approach to routing?

"I do try to present clients with a wider range of routing options for them to consider," says Schaupeter. "That might include shorter formats either incorporated into a longer course or as a completely separate layout for their evaluation. Clients



An extract from the routing ASGCA Past President Steven Carrick created for Maridoe in Dallas, Texas. Below, field notes by Forrest Richardson, ASGCA, giving direction to shape the routing.



Image: Forrest Richardson & Assoc.

usually have a specific idea of what they are wanting to develop when they hire me, but I tell them that I will wander out 'into left field' with initial concepts, routings and ideas so that they can fully evaluate all of their options before we get committed to a final plan."

"When the opportunity presents itself, I will try to return a number of holes in close proximity to the clubhouse so that golfers can play a loop of three, six or nine holes," says Carrick. His new design at Friday Harbour Resort in





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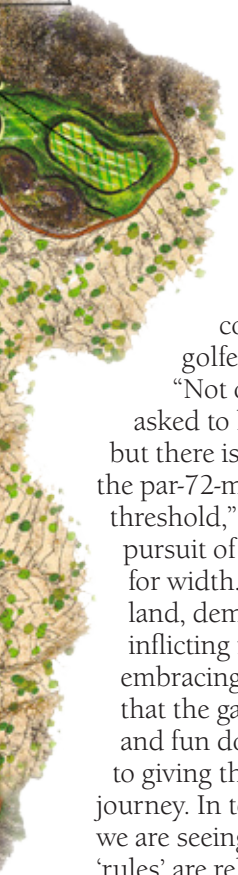


Photo: Clive Barber

The clubhouse at Copper Creek Golf Club in Kleinburg, Ontario, was the first feature to be located on the routing plan developed by ASGCA Past President Doug Carrick, ASGCA, creating a dramatic backdrop and views over the ninth hole

Big Bay Point, Ontario, which is currently under construction, will give golfers that option.

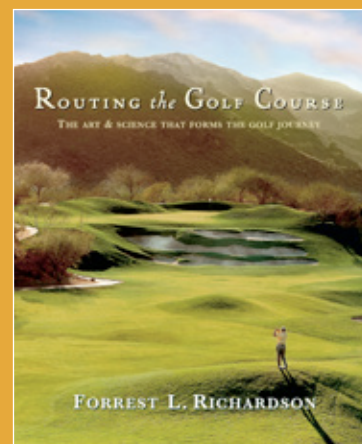
“Not only are we more often asked to look at shorter formats, but there is a genuine shift away from the par-72-must-be-above-7,000-yard threshold,” says Richardson. “The pursuit of length led to the need for width. That led to using more land, demanding more time and inflicting more cost. Today we are embracing clients who understand that the game is supposed to be fun, and fun does not always translate to giving the golfer a long and tiring journey. In terms of routing this means we are seeing more courses where the ‘rules’ are relaxed. Old presumptions are being replaced by innovative ideas. Solutions no longer need to conform as much as they need to perform.”

But in a changing marketplace, it is important not to lose sight of the factors that have made golf appealing for hundreds of years.

“To keep the youth of tomorrow interested in the game, we have to build golf courses that hold their interest,” says Smyers.

“Even a hundred years ago, the legendary Alister MacKenzie understood the importance of forward thinking in course design. As he put it: ‘Unless we provide golf courses full of intricate problems, players will get sick of the game without knowing why they have gotten sick of it and golf will die from a lack of abiding and increasing knowledge.’ That quote has been on my office wall since I started my own design firm in 1984 because I believe it is as true today, maybe even more so, as it was in MacKenzie’s era.

“That’s why I have always felt an obligation to stay true to what made the game of golf popular when it began hundreds of years ago and what remains its most alluring quality today—the challenge of playing a demanding game over an infinite variety of landscapes.” ●



*Routing the Golf Course* by Forrest Richardson, ASGCA, covers the early history of how courses came to be formally routed, as well as the process and considerations that go into developing routing studies and final plans.

The book is available to purchase via [www.cswebstore.net/gcsaa](http://www.cswebstore.net/gcsaa)