What makes great greens?

Richard Humphreys asks ASGCA members how they go about selecting green sites and crafting putting surfaces.



The eighteenth green at Saadiyat Beach G&CC in Abu Dhabi, designed by Gary Player's firm; Jeff Lawrence was the lead architect on the project

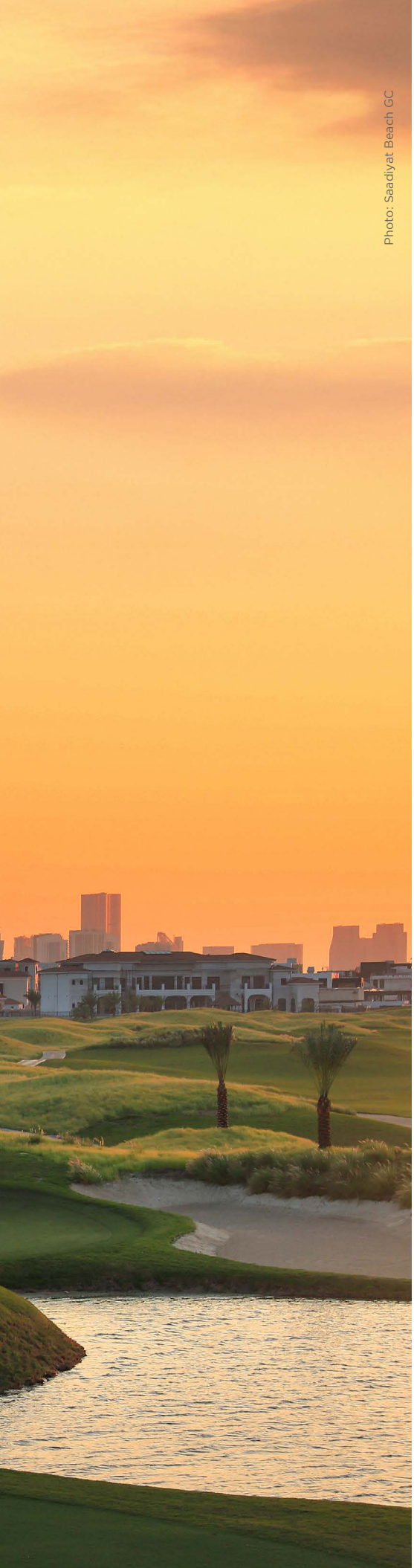


Photo: Saadiyat Beach GC

Greens often command more attention than any other feature on a golf course – from players and architects alike. As the ultimate target on every hole, their placement, size and contour influences strategy, aesthetics and the rhythm of the round.

Before a green can take shape, however, architects must first determine where it belongs – a decision guided primarily by the land itself.

Location, location, location

Most architects agree on one point: the land itself dictates where greens should go.

"Finding potential green locations for a new course consists of finding flat spots on steep sites and undulating spots on flat sites," says Thad Layton, ASGCA. "Once these points of interest are located then it's a matter of connecting them across the landscape in an unforced manner via the routing."

Stephen Kay, ASGCA, says: "With a property of 150-to-180 acres, green locations are contingent upon the routing plan, however if the property is big like I had at the Links of North Dakota, and has wonderful topography, then the green locations become important. The first and most important factor is that the green is not located in a low area or where there will be a significant flow of water during a rain event."

Jeff Lawrence, ASGCA, believes the most compelling green sites are those with memorable natural features – topography, water, vegetation, rock outcroppings, or scenic backdrops. "The strongest opportunities lie in enhancing what Mother Nature has already established, allowing the design to feel both natural and inspired," he says. "In contrast, sites with minimal natural character present a greater challenge, requiring a more intentional approach to create something that is equally captivating and memorable."

ASGCA Past President Erik Larsen agrees. "Mother Nature best brings out beautiful, unique and memorable attributes, so I look for great natural places to locate greens," he says. "I try to cluster greens as best as possible – they are easier to build when close together and it creates fun socializing, watching another player or competitor."

He also considers how each green works with the rest of the hole. "I generally align the green toward the inside of a dogleg, with players that successfully negotiate the

> "The strongest opportunities lie in enhancing what Mother Nature has already established"



Erik Larsen likes to reward shots that challenge primary hazards with softer slopes on those areas of the green. On the third hole at Atlantic Beach CC, contour is gentler near the bunkering and more severe in the front-right area of the green

fairway hazard rewarded with an opening to the green, yet those that play safe away from the hazards are left with a tougher shot to the green either through a carry or disadvantaged angle."

For renovation projects, unsurprisingly, the approach is different. Layton explains: "When renovating a course, green sites are likely immovable. From there, our approach is to leverage adjacent contours to anchor the green in its natural landscape."

All shapes and sizes

Once green sites have been chosen, the next challenge is determining the size each green should be and what form it should take.

"I try to keep it simple and honor risk and reward," says Larsen. "You don't just build the green; it's not separate from the surrounds. You have to tie it in; it has to feel like it's part of the whole area, not just the putting surface. That blending is key – strategically and aesthetically."

Larsen typically works within quite broad parameters, designing greens between 2,000-to-15,000 square feet, with at least 25 feet of pinnable area. "I greatly vary the size and shape of greens as played in sequence," he says. "It is as much about creating interest through this variety as it is influenced by the difficulty of approach shots. I always vary hole lengths and create hole strategy at the beginning when routing. That parlays into green size and shape.

"The goal is always to create a balanced collection of greens that offer variety, intrigue and memorability"



Photo: Erik Larsen



Photo: Thad Layton

Before breaking ground on a project, Thad Layton reviews the full set of greens designs and then makes any final modifications

"Of the greens I have designed, my favorite set is at Atlantic Beach CC in Florida – greens ten to fifteen are 3,100, 7,800, 4,000, 7,000, 2,900 and 10,100 square feet. Variety creates interest, and interest creates fun. That's really all we are trying to do, create fun, beautiful playgrounds."

Green size inevitably has a significant effect on playability and maintenance. Which means the pattern of play is always an important factor.

"It depends on whether it is a private course with not too many rounds or a daily-fee course that has or will have a lot of rounds," says Kay. "Most golfers think that a very short par three or par five should have small greens, but, in those cases, large greens can be better to handle the amount of ball marks. Shape and contour will then flow from the design."

"Roundish greens reduce the amount of pinnable area, and they don't require as much skilled shotmaking as straighter shapes and particularly greens with corners," says Larsen. "Squaring off a corner may allow a pin ten feet deeper into an area of a green, making it much more challenging to get close."

Lawrence emphasizes knowing who the course is for. "I place a strong emphasis on understanding the end user – whether it's a resort guest, private member, tournament player or municipal golfer," he says. "This helps to guide the appropriate design style for each project.

"On renovations, I prefer to keep my design intent within the course's overall character. While green sizing should remain relatively consistent throughout the course, the shapes and internal contouring offer opportunities for creativity. Each green should feel distinct, with contouring and orientation that varies in interest and challenge yet has a cohesive theme."

Experience is a key factor, too. Over his career, Lawrence has encountered a wide range of sites. "This diversity has allowed me to adapt to different site conditions, design goals and player expectations, ensuring each green contributes uniquely to the overall golf experience," he says. "The goal is always to create a balanced collection of greens that offer variety, intrigue and memorability. Above all, the design must feel like a natural extension of the site and thoughtfully align with the needs and expectations of its users."

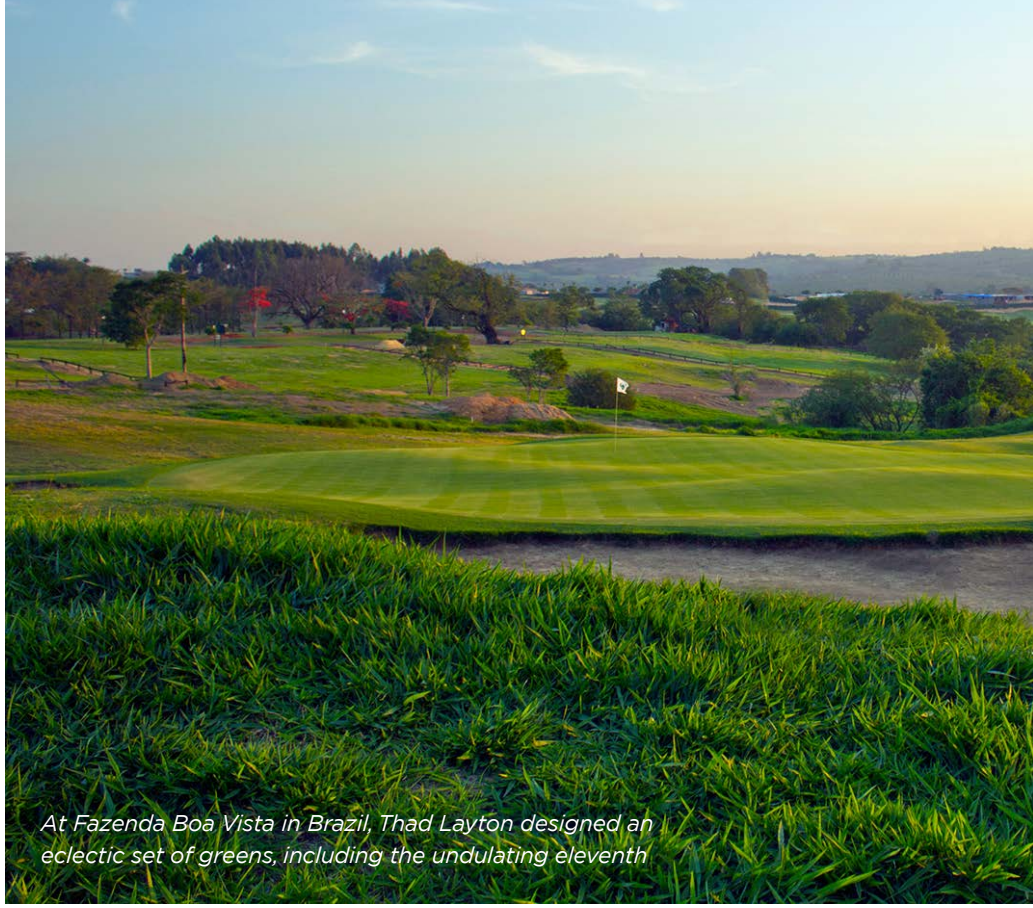
Layton says his approach has evolved over time. "I used to think it was crucial to build greens in direct response to the likely shot being hit into the green," he says. "You can see how this formula over time could nudge a course toward a predictable procession of bland holes. While I still think shot values should be considered, I think it's more important to build greens in relationship to their surroundings; creating something of beauty

and interest first, before working backwards to set up strategy."

Balancing variety with consistency

"I try to design so all 18 greens are different and memorable by shape, but more so by internal contours and creating quadrants," says Kay. "Recently, I redesigned a course – Weequahic in New Jersey – and to add interest and challenge to the greens, which average just under 5,000 square feet, we put a lot of movement in, with each green having its own distinctive movement."

Layton points to the Palmer course at Fazenda Boa Vista in São Paulo, Brazil, as an example of varied yet cohesive green design. "We created an eclectic set of greens from flat to wildly undulating, ranging in size from 2,200 to 12,000 square feet," he says. "Within that broad spectrum, the green complexes coalesced into a coherent theme of letting the land lead."



At Fazenda Boa Vista in Brazil, Thad Layton designed an eclectic set of greens, including the undulating eleventh

He believes some courses err too much in the direction of consistency. "I think it's more common to see too much consistency in a set of modern greens versus too much variety. If you take your cues from the landscape, then you stand a decent chance of creating a collection of interesting greens that have a common thread that ties them together."



Stephen Kay has introduced more subtle movement on greens at Weequahic GC in New Jersey, which average just under 5,000 square feet

Photo: Stephen Kay

Lawrence points out: "It's easier to maintain consistency than it is to create meaningful variety. Once a design concept is established, my role as a golf course architect is to introduce variety within that framework. I start with the green's orientation and let that guide the development of more defined features such as contouring, bunkering and the surrounding shaping – all tailored to the specific green site and designed for strategic impact. Often, it's the subtle nuances and slight variances that offer the greatest value, adding intrigue without overwhelming the player.

"I prefer to design greens with subtle to moderate movement – forms that are visually inviting yet create just enough uncertainty to challenge the golfer's perception and decision-making."

Larsen's approach begins at the tee. "Drives that successfully



Photo: Thad Layton

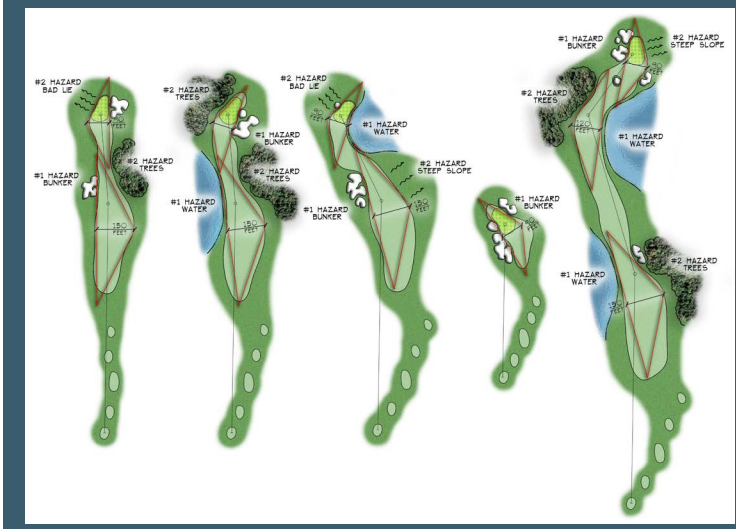
challenge the primary hazard are rewarded with the easiest opening to the green," he says. "I use that philosophy in green grades and slopes. I generally keep the putting surface relatively flat at a constant slope of less than 1.5 per cent immediately adjacent to a greenside hazard and put more extreme slopes and undulation on the other side of the green. Successfully challenging the greenside hazard results in a more makeable putt. Conversely, on the bailout side of the green, I often put slopes over five per cent, which may even cause the ball to roll off away from the centerline.

"Too often golf course architects create too much slope, rendering much of the putting surface useless for pin positions. Your pinnable areas have to be consistently two per cent or less. Past that, though, you can do what you want to do with grade. But remember, if your green is 10 on the Stimpmeter, for every foot that the ball goes down that slope, it's going to run out 10 feet. Consistency is only in the green speed and construction method.

"Creating perplexing subtleties – not flagrant steps, pedestals and ramps – is the sign of a good designer."

Double-triangle theory

ASGCA Past President Erik Larsen explains one approach to fairway and green design.



The double-triangle theory helps determine where to create landing areas at both the fairway and the green. The 'fat' area of the triangle represents where the average player typically lands their drive, and the fairway narrows toward the centerline, increasing difficulty for better players. Ultimately what we're trying to do is make the golf course fun for the shorter hitters and challenging for longer hitters.

I then reverse the triangle so that you have the long, flat side on the inside of the dogleg and then it narrows as you go down the centerline. This concept lets me place hazards that skinny up the fairway. I usually place hazards up the inside, with players rewarded if they successfully negotiate that hazard line.

Even on a straight hole, the double-triangle theory basically helps create a dogleg – by flipping the fat side over at the green and hazarding up the other side. And as you get deeper into the green, where an average player has less ability to fly the ball to, it gives me the dimensions by which to hazard up the depth of the green as well. But it leaves short of the green open for the average player.

I'm effectively building two golf courses in one with these triangles. It's all based on risk and reward – I'm giving the lesser player fatter areas to play and allowing running shots onto greens, and for the better players, the further you hit it, the better you have to hit it – so it compounds the game's skill.