

Contour considerations

Despite the maintenance limitations of greens design, there's still a need to design greens for strategy, putting and playability – and there's always a debate about it.

For all the diversity of greens, most golf course architects likely will have a similar design process to arrive at the end result. We tend to settle big issues first, such as the orientation, size and shape of the green, bunker placement, and basic contours as they affect play. Then we focus on smaller issues, such as contour subtlety, to finish the design. We shape the green – within the confines of maintenance issues – considering the following play issues.

Natural land slope

The green shape, orientation, contours and any backdrop contours usually follow natural slopes. Running water uphill is always difficult, looks unnatural and usually requires catch basins above the green because the natural drainage patterns are disturbed.

While most greens slope from back to front to hold shots and improve vision, the natural spot for a reverse-slope green or at least a flat green is on a reverse-slope site, preferably on a downhill shot where the green is visible still, and preferably where architects can design enough room in front for run-in shots.

Flat sites get flatter greens, and steep sites require steeper slopes to make the entire green complex fit in, whether that slope is front to back or from one side to the other.



The 17th hole at Cowboys Golf Club in Dallas shows the difficulty of seeing a green for an uphill shot.

Vision

Good design allows golfers to see all or most of the green, with a few exceptions. If the hole is gently uphill, a steeper green upslope (near the 3-percent maximum) might assist vision. On uphill holes, even a slight ridge in the green might block visibility, so a simply contoured, flat-plane green often works well.

On steep uphill approach shots, architects often flash portions of the green (using steep slopes as much as 20 percent) toward golfers for vision. They can create rolling back edges, steep false fronts or steep tiers dividing sections of the interior of the green.

Conversely, downhill shots offer a chance to make greens flatter because vision is usually more readily attainable.

Holding shots

Most golfers need the course to help them a bit. Therefore, most greens should be higher at the back for green visibility and to help average players stop shots. Greens sloping upward at least 1.33 percent stop most good shots. Most golf course architects also help golfers by designing concave greens about equal to the upslope to kick shots to the middle of the green instead of to hazards.

For vision, the "steeper-for-uphill, flatter-for-downhill" theory also works naturally to create greens that hold shots. Downhill greens tend to have higher approach shots and can be flatter. Uphill greens often have lower-angled approach shots with reduced backspin requiring steeper slope (and possibly more depth) to hold shots. Downwind, downhill lies and uphill approaches benefit from slightly more upslope assistance. Uphill lies and headwind shots naturally stop faster, so they can have less upward pitch and/or be shallower. The side-to-side concave assistance contours might vary, typically increasing on both sides with approach length and surrounding hazards, and perhaps on one side with side hill lies, crosswinds, etc.

However, the goal isn't to create the exact same receptivity for consistency or easier play. Typically, when considering all factors affecting green contours, the greens will vary quite a bit in their ability to hold shots. Knowing some greens hold better than others, or others are steep enough to roll a high spin shot back off the green or down to a certain pin position is an integral part of golf.

Sunday pins

On most greens, varying degrees of difficulty among pin positions is desired. One or two pin positions per green are guarded using ridges encroaching from the edge of the green that kick short shots back or long shots forward. Golfers might play toward the pin or the middle of the green, leaving a longer putt and dramatically reducing birdie chances. These ridges can intrude as little as 10 feet on to the putting surface (which doesn't affect cup space) or can taper out midway across the green for more visual and putting drama.

Any small, precision approach green (less than 4,500 square feet) must be nearly all minimum slopes to maximize cup setting areas. Any greens with interior decks, valleys and rolls splitting the green into two or three targets also need to have flatter cupping areas to help stop runaway putts from upper to lower tiers.

Challenge, practicality

Short putts can be aimed directly at the hole without reading the break. This leads to green slopes flatter than an old tire.

While the range of contours is smaller, I still vary the basic slope of consecutive greens from 1.5 percent to 3 percent to keep golfers guessing about break. Within each green, I might vary the slopes in different areas, perhaps with a flatter front section and steeper back areas, or vice versa to make each green putt differently with different pin positions. Generally, a gently rolling green with many pin positions and the randomness of approach shots will yield enough diversity of putts to keep most golfers challenged.

Most greens should only do one thing well. It's best to avoid incorporating too many of the green committee's ideas into one green and let your golf course architect create balanced challenges throughout the round. It's also important for most greens to be balanced to the needs of all golfers, knowing a green designed to challenge top golfers severely will likely cause four times the problems for the rest of us.

While there are many theoretical ways to design a green correctly, the debate should end when the bulldozers start running. It's important to get them right the first time to deter a future green committee from temptation to rebuild again.

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