

Modifying Root Zone Depth To Improve Putting Green Playability

The Club at Ravenna
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Issue

Many of the putting greens at The Club at Ravenna were originally built with severe slopes that rendered large areas unusable for hole locations. A three-dimensional contour map indicated that some putting greens only had 20 percent of the surface available for fair hole locations. Slowing green speeds from 11 feet to 10 feet, as measured by the USGA Stimpmeter®, helped improve playability for players on the putting greens. However, this adjustment did not provide enough relief for players navigating the severe slopes on their approach and recovery shots. The putting green contours would have to be adjusted to achieve the desired playability.

Action

Ravenna hired a golf course architect who developed a plan for recontouring the most severe putting greens by redistributing several inches of root zone from the upper slopes to lower areas. [USGA-funded research](#) conducted at Michigan State University indicates that modifying root-zone depth within certain thresholds – a minimum of 8 inches of mix on upper mounds and a maximum of 16 inches in lower portions – can still allow for a properly functioning sand-based putting green. The maintenance team probed the root-zone depth on select putting greens in a 10-foot grid pattern. Then, the depths were compared with the slope percentages to determine if recontouring would provide a feasible solution.

In all, three putting greens were carefully modified; one required substantial alterations and two others needed minor changes. The work was performed by an in-house crew equipped with a skid-steer and mini-excavator. The first step in the process was removing sod from the work areas and storing it nearby for re-use. Once the contours were softened, mix depths were rechecked and the sod was replaced in its original location and orientation.



Severe contours on several putting greens were modified to make the course more enjoyable, distribute traffic and improve turf conditions.

Results

This method of softening contours proved to be very effective for modifying Ravenna's putting greens at minimal cost, and with minimal disruption to golfers. It was possible to re-open the two putting greens where only a single mound was modified in as little as two days. The one putting green that required a large area of disturbance to tie the new grades into the surrounds required a project time of five days. Recontouring selected putting greens with the existing mix proved considerably less expensive than completely rebuilding them. Using an in-house team to perform the work added to the savings.

With more surface area available for hole locations the putting greens have improved playability, with added challenge and variety in each golf round. From an agronomic point of view, the maintenance team noticed less wear on the modified putting greens because additional hole locations allowed them to better distribute golfer traffic. Modifying the mix depth did not affect their ability to maintain uniform moisture across the putting green. Golfers applauded the new hole locations and the improved golfer experience.