Real-Life Solutions

HOW TO BUILD A COURSE ON MINE SHAFTS

Mining for Golf

Builders faced a “hole” lot of challenges while constructing Stewart Creek, a new course located on top of old mine shafts in the Canadian Rundle Range

BY ANDREW PENNER

The beautiful mountain town of Canmore, Alberta, was originally known for coal mining. Beginning in 1886, thousands of miners kissed their loved ones goodbye and disappeared into the bowels of the earth for up to 12 torturous hours at a time. Of course, with the inherent dangers of underground coal mining, some of them would go down and never see the light of day again.

Since the mines closed in 1979, another use was found for the land. Now, on the eastern slopes of the Rundle Range near Canmore (a 15-minute drive from Banff), a spectacular new golf course called Stewart Creek parades overtop of many of these long forgotten mine shafts. Fortunately, nobody lost his life while constructing the course.

However, with numerous mine shafts still crisscrossing the terrain, construction crews were faced with difficult challenges as they built the course.

Designed by Alberta architect Gary Browning, Stewart Creek has quickly become recognized as one of Canada’s premier mountain golf destinations. A runner-up finish in Golf Digest’s “Best New Canadian Course” category last year hasn’t hurt either. While some of the game’s finest connoisseurs are taking notice (and players with a zest for high-altitude golf are filling the tee sheets), the openings have been reconstructed with new timber and serve as excellent rain shelters.

Interestingly, the final 18-hole product at Stewart Creek incorporates a number of refurbished mine entranceways that add some authenticity to the course’s setting.

Stewart Creek incorporates a number of refurbished mine entranceways that add authenticity to the course’s setting. The openings make great rain shelters.

Problem

How do you build two fairways that are located on tunnels that were formerly part of a coal mine? The glib answer is “very carefully,” but there’s more to it than that.

Solution

Bring in the geo fabric, which was used as underlay to strengthen the ground on the two fairways. The geo fabric shows “amazing strength” when woven together as a textile.

The theory behind it, of course, is that if ground underneath the fabric settles, the people on top will be protected by the grid and the ground should remain solid. “Hypothetically, you could have portions of a golf hole that are actually suspended by the fabric, with nothing but hollow ground underneath,” says Al Draper of Evans Golf.

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Course Construction and the project manager for the work done at Stewart Creek.

“The areas of most concern were on fairways No. 2 and No. 4,” cites Draper. “Consequently, those were the two fairways where we needed to install the geo fabric.”

The second hole (a par 5 nearing 600 yards) and the fourth hole (a par 4 nearly 480 yards) were completely lined with the tensor-like fabric. In fact, the second hole features four layers of the fabric, while the fourth hole has two separate layers.

Understandably, what made the process difficult for the workers was not the installation, but the excavation which was the first step. In order for crews to have enough room for the soil to house irrigation heads, pipes and cable, the ground had to be excavated a meter in depth.

“Being in the Canadian Rockies, we hit plenty of rock,” Draper recalls. “In some areas, it simply wasn’t possible to get down a meter so we built areas up instead, adding enough soil on top of the fabric to have sufficient room for the irrigation and to ensure the fabric went taut.”

As ironic as it seems, heavy equipment was constantly at work above these sensitive areas. Naturally, the process was a measure required by the government of Alberta through a specially assembled board of safety officials that no longer exists.

Bringing their own first-hand expertise to the site was a number of mine engineers who assisted Draper at Stewart Creek. “The engi-

**If ground underneath the fabric settles, the people on top will be protected by the grid and the ground should remain solid.**

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ric, which came in rolls
15 feet wide, was simply
laid overtop the exposed
rock and soil. From there,
the irrigation was placed on
top of the fabric and cov-
ered with the removed soil
and a mixture that was pre-
pared nearby. As an added
challenge, there was no soil
readily available.

Fortunately, a layer of
peat was discovered on one
of the natural plateaus on
the course. Also, silt de-
posited close to Stewart
Creek was available for use.
Draper combined both en-
tities to form an appropriate
growing medium.

Because the region had
been so heavily used in coal
mining, there were additional
concerns regarding past min-
ing activity. “There were areas
that we simply had to stay
away from when routing the
course,” Browning says.

A constant reminder,
and an area that is strictly
out of bounds for the
maintenance team and the
golfers alike, is readily seen
beside the 10th fairway. A
gaping open pit mine is
just yards off the fairway
and signs warn anyone who
ventures too close.

“The area is environ-
mentally sensitive as the elk
and sheep are drawn to the
naturally forming salt and
mineral deposits in the
mine,” says superintendent
Sean Kjemhus. “The area is
simply off limits.”

With coal a relatively
low-in-demand resource, it’s
not likely the tunnels under
the course will ever be illu-
minated by a miner’s head-
lamp again. Today, the black
coal-lined tunnels have been
replaced with lush green
networks of Kentucky blue-
grass — a sign of the times.
In addition, the local miners
have exchanged their pick
axes for golf clubs.

As for Sean Kjemhus
and his maintenance team,
they get up early in the
morning and kiss their
loved ones goodbye. And
with the smell of coal still in
the air, they put on their
hard hats and venture into
dangerous terrain.

Penner is a free-lance writer
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