

# AT WORK



Machine Control  
Winter 2008



## Excavator system speeds up hill-climb track construction



Goldsmith Civil & Environmental principal  
Cameron Goldsmith and daughter Sienna

**A**ustralian contractor Goldsmith Civil & Environmental recently completed a complex hill-climb motor racing track. The Haunted Hills track was designed for Gippsland Car Club, an organization formed in the early 1960's by a group of Australian motor sporting enthusiasts, to replace the track that the club used since the early 1970's. Tru Energy, the electric company for the area, resumed coal mining activities on the land where the previous track was located, leaving Gippsland Car Club to establish a new site.

Goldsmith Civil used the Topcon X63, fitted to a Komatsu PC200-8 excavator, to ensure that the excavator was cutting accurately to the designed layout for the new Haunted Hills track – described by the club as the best and most modern hill-climb track in Australia.

According to Cameron Goldsmith, principal of Goldsmith Civil & Environmental, a combination of excavator, grader and dozer, plus Topcon 3D systems were used for stripping the site, cutting it to level and then boxing out the roadway.

In addition to the Topcon X63 system, two Topcon GR-3 multi-constellation receiver rovers were used to check the levels for the bulk earthworks, where a Komatsu D65EX-15

**Company:**

Goldsmith Civil and Environmental

**Location:** Melbourne, Victoria - Australia

**Project:** Haunted Hills track

**Location:** Haunted Hills, Victoria - Australia

**Topcon Products:**

X63 3D GPS+ excavator control system  
GR-3 multi-constellation receivers

**Topcon Dealer:**

Position Partners  
Australia

[www.positionpartners.com.au](http://www.positionpartners.com.au)

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'That's really been one of the highlights of this investment from my perspective; that our people are enjoying what they're doing.' – Goldsmith Civil & Environmental principal Cameron Goldsmith



LEFT: Goldsmith Civil and Environmental's Komatsu excavator was fitted with Topcon's X63 system. RIGHT: Position Partners Matt Brown and Bob Bent (orange vests) with Robert McKenzie.

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dozer and GD655-3 grader were used to get the initial levels. "It was a difficult site to work on with hilly terrain and many grade changes. The combination of rover, GNSS and excavator has been excellent," he said.

"With the excavator operation, it was most advantageous to have the multi-constellation system because the operator was working on a site where there were not huge amounts of cut, but there was lots of detail due to the topography of the site.

"With this system, he was able to see what was going on in real time," said Goldsmith. "He wasn't relying on our surveyor to come onto site and do any setup; instead he was actually doing the setup himself and producing a finished product then and there."

Goldsmith said that since purchasing the Topcon 3D GPS+ systems, he'd noticed the supervisors and operators taking more "ownership" on projects.

"They feel as though they're contributing more, and they really enjoy the fact that they are adding value to what they are doing. That's really been one of the highlights of this investment from my perspective; that

our people are enjoying what they're doing," he said.

Robert McKenzie, Goldsmith Civil & Environmental's supervisor on the hill-climb project, said "having the rovers and excavator-based GPS made the project much easier and faster.

"On this project, we had one-in-one batters and, if you didn't get it right, the whole thing wouldn't work, it wouldn't come to plan," he said.

"The GNSS with the GR-3 rover, gave me really fine detail, where to pinpoint the batters, the toes and the center of the road, which made my job a lot easier, and it also helped the operators know exactly where the points were.

"There is no way without this equipment we could have completed the project in the time we did, as it would have required hundreds of pegs, and a lot of extra effort marking out the batters, toes, centers of roads and culverts that we put in," he said.

Excavator operator Keith McKie said that having the Topcon X63 on the machine doubled productivity and made his job of cutting out the roadways much easier, as he did it on his own, and didn't need others to do levels and pegs for him.

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## Topcon's X63

### 3D Machine Control for Your Excavator

**Topcon's X63 provides the operator with all the information needed to expedite excavation tasks.**



Unlike laser excavator systems, X63 enables the operator to "see" his machine's exact position in relation to the site, enabling precise positioning over utility centerlines. In real time the operator can also see the position of the teeth of the bucket compared to the finish design which is very helpful in deep cuts, blind excavations or when working around structures.