



Machine Guidance System Reduces the Site Preparation Cost by More Than 50 Percent

'Pocket-3D is Very Easy to Use, Ideal Software for Our System'

Sugadaira-Doken Company Ltd., a company specializing in site preparation and landscaping works, is located in Sugadaira-highland. This area is one of the most popular summer camp sites for sport trainings due to the pleasant climate as well as the good access from Tokyo and other major cities.

Sugadaira-Doken undertook design, surveying and site preparation for more than 50 football fields among approximately 100 fields in this area. For the construction of the 101st football field, Sugadaira-Doken introduced the Topcon GPT-9000A robotic total station and Pocket-3D software to configure an economical machine guidance solution. "We were inspired by the innovative concept of the



Kikuo Tokida, president of Sugadaira-Doken



ICT-Aided Construction*¹ that MLIT**² is promoting," said Kikuo Tokida, president of Sugadaira-Doken. "Ten years ago, we built up our own machine guidance system 'ICT-Excavator' incorporating a manual total station and self-developed software."

Tokida said, "The new GPT-9000A automatically tracks the prism on the bucket installed with the special brackets we made. Using the 3D positional data taken by GPT-9000A and the predetermined bucket angle, the Pocket-3D software provides real-time guidance by comparing actual bucket position and blue-print data. The machine operator can work with the clear, real-time guidance on the FC-200 field controller's display."

"Before we implemented this system, the hardest job



was to set the stakes and strings onto the rock grounds or steep slopes. With this innovative system, we can work without any string, enabling us to complete the excavation with fewer workers in far less time."

Tokida said, "We have reduced the cost by more than 50 percent, including all expenses for surveying, designing and construction."

"Pocket-3D is very easy to use, ideal software for our system. GPT-9000A also increases work efficiency in other surveying tasks. We foresee the possibility that this combination can be utilized for dozers as well," said Tokida.

*1 ICT-Aided Construction: Construction methods that make use of Information and Communication Technologies (ICT) to increase work efficiency and quality.

**2 MLIT: The Ministry of Land, Infrastructure Transport and Tourism