

AT WORK



Nishiura Construction limited company



Robotic Total Station Provides Perfect Solution for Surveying at Steep Dam Construction Sites

“Breakthrough technology allows our surveyors to take charge of two or more job sites concurrently, saving considerable time and labor.”

The Nishiura Construction Company, located in Mimasaka, Okayama Prefecture, Japan, is known for its extensive forest road network and Sabo dam* (sediment control dam) projects in the mountainous region where the company does a majority of its work. The surveying work by Nishiura Construction is mainly done with reflectorless total stations. For the Sabo dam construction project last fall, the company used the Topcon GPT-9000A robotic/reflectorless total station. Its single-operator surveying capability, the industry's longest reflectorless measurement range, and its bright color displays, as well as Topcon's global technical support system, were cited as decisive factors in selecting the instrument. This particular Sabo dam, like other sediment control

dams, was designed to prevent landslides. The dam measures 47 meters (154 ft.) in width and 15 meters (49 ft.) in height. The GPT-9000A was used to set stakes and to determine precise excavation area using its 3D design data. The results from the first use were better than expected. Mr. Nishiura, a company president, said, “The biggest advantage is its robotic capability for single-person operation. That allows our expert surveyor to take a prism and walk around the measuring points by himself, instead of staying at the total station and directing a prism-person.” Mr. Nishiura said he was “extremely pleased to discover the perfect solution for communication problems that can occur with a two-man crew -- one with the prism and the other with the total station.” In most Sabo dam construction sites, there is a height difference of more than 10 meters (33 ft.) between a total station and a prism that can create communications problems. Furthermore, the noise from heavy machinery or wind can make voice communication impossible. Mr. Yamane, a company engineer, said, “With the GPT-9000A, one person can do the surveying. This breakthrough technology makes it possible for our



surveyors to take charge of two or more job sites concurrently, saving considerable time and labor.” The Okayama prefectural government invites a public tender for every construction project of which expense exceeds 10 million Yen. Mr. Nishiura says, “In order to win a tender through intensive competition, we need to achieve higher corporate evaluation points based on our actual outcomes. That's why we are investing in the latest surveying technology that will further improve job efficiency and accuracy and as a result, increases our points.”

* Reference: INTERNATIONAL SABO NETWORK (<http://www.sabo-int.org/>)



Left: Mr. Nishiura Light: Mr. Yamane