

## High-speed 3D Data Capturing Increases Measurement Efficiency and Reduces Construction Costs

Kobayashi Consulting Company, a surveying and consulting company relied on by construction contractors, implemented Topcon's latest 3D laser scanner, the GLS-1000, in an as-built survey during the construction of a Sabo\* dam (sediment control dam).

A number of contractors had been working in each construction territory during different time periods. This made it necessary to collate design data with the present survey data. In addition, the high-density measurements were essential in accurately estimating the volume of concrete to be used. Mr. Kobayashi, the president of the company, informed us of the reason why they invested in the GLS-1000: "We received more and more demands the quantity of materials required in the construction for high-density, high-resolution 3D measurements from our clients. We took this opportunity to set ourselves apart from our competitors, so we started considering the adoption of 3D laser scanners. After looking into several popular models, we finally selected the GLS-1000, as the Japanese-language software was the easiest to learn and Topcon provided the best technical support." In addition to the as-built survey described above, they use the GLS-1000 for other new applications, including road surface profile measurements for

maintenance and repair purposes.

He says, "This unit can quickly obtain vast amounts of 3D data with a density and resolution that was previously impossible with conventional methods. It enables us to obtain accurate outcomes in a shorter time frame. Our clients rate our technical proposals very highly." They give their clients a simple viewer of the point clouds, which is quite useful for as-built checks.

Mr. Kobayashi points to another advantage of using the GLS-1000: "In cross-sectional and longitudinal profile surveys, we can take any cross-section as needed from the 3D model created by the point clouds. This makes it possible to accurately calculate



Mr. Kobayashi



and that saves costs." He adds, "When you're dealing with steep slopes, you can take all measurements from a distance. This offers great benefits in terms of safety and work efficiency."

When monitoring displacement and subsidence, we can measure the "whole surface," instead of "a few points," enabling comprehensive observation. The 3D laser scanner doesn't simply increase efficiency and reduce costs, but it also allows for the possibility of entirely new measurement methods. Mr. Kobayashi says "I would like to propose a measurement technique in which we integrate the aerial photos taken by our photo balloon and data captured using the GLS-1000." He looks towards the expanding possibilities of the 3D laser scanning technologies.

\* Reference: INTERNATIONAL SABO NETWORK



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