



## Stake-out without coordinates data!

### LN-100 is effectively used for installing bases of solar panels

Company YOUSUN, in Tsu, Mie, Japan, is an equipment installation construction company that specializes in general civil engineering works, as well as installation projects of water and sewer and social infrastructure equipment. Recently, they are expanding business to solar panel installation and tried using the Layout Navigator, LN-100 on the job site.

#### Issues on speed and cost of their works

Yoshihiko Okada, senior managing director, pointed out problems in their stake-out jobs, "So far, we have been using manual total stations for the stake-out portion of the work. In many cases, the installation design drawing indicates only dimensions and not coordinates, which is a popular and traditional method.

However, with such drawing data, we need to define a base line, then each alignment line by moving the instrument, which is very time consuming and inefficient. Sometimes we needed to outsource such stake-out jobs to other surveying companies that use the mentioned method and its cost was not ignorable. We were, therefore, looking for a more efficient product which can improve the work efficiency and found the LN-100," he said.



Yoshihiko Okada  
Senior Managing Director

#### Stake-out in "Topo measurement" mode Speedy measurement of 5 seconds per 1 point, with minimum instrument transfer

Sinji Ito explained how using the LN-100 improved efficiency. "We have applied the LN-100 for the preliminary phase of installing bases for the solar panels in a large area. This project employs a new construction method, without using concrete bases, to install total 10,000 solar panels, which required to stake out 20,000 points. The LN-100 enabled us to stake-out the large number of points while still maintaining high accuracies. Comparing with the conventional method, the speed of stake-out work became 10 times quicker, which is 1 point in 5 seconds. This resulted in accomplishing the stake-out of all 20,000 points in 4 days." Ito addressed the procedure for accomplishing the task. "We used the As Built measuring function of TopLayout software. For instrument setup, we used the Reference Line anywhere (measuring the origin point and a point on the reference line) function. In the As Built measuring mode, 3D coordinates (X, Y and Z) of the prism, along with the defined reference line, are always displayed on the screen, as long as prism is locked to and measured. The indicated dimensions on the drawing can be, directly or by simple manipulation, transferred to the XY coordinates, which matches on the coordinate system defined by the above setup and



Sinji Ito  
Construction Dept.

reference line, and height values on the drawing can be simply replaced as Z coordinates. Also, moving the instrument, which was repeatedly required in the former method to define each alignment line, is not required with LN-100, therefore, the work process was greatly simplified. Even when the LN-100 is transferred for better line of sight, by measuring the same origin point and a point on the reference line, the instrument set up can be simply completed with a good accuracy, and measurement/stake-out can be resumed in the same coordinates system," he said. "We are very satisfied with achievable efficiency and accuracy of measuring works," Mr. Okada continued. "It offers a large improvement from a project cost point of view. With the LN-100, the site where we can stake-out by ourselves has increased. Since outsourcing cost can be cut down, we can get a large cost savings."

#### Getting more orders with increased work reliability!

Mr. Okada said in conclusion, "We are using the LN-100 not only for stake-out jobs but also for Topo measurements necessary within the site. We are now able, with the LN-100, to handle Topo measurements quickly by ourselves, therefore, we are getting more confident with our clients which leads to increased receiving orders." The LN-100 is helping this company to improve work processes as well as to expand their business.

Company: YOUSUN Co. Ltd.  
Product: Layout Navigator LN-100  
Location: Tsu City, Mie Prefecture