

Surveying 9 Acres Roof



Company	GeoPoint Ltd.
Country	Israel
Job Type	Roof Surveying
Project Date	October 2015
Project Size	40,000 sqm (9acres)
Number of Images	800
Accuracy	better than 2 cm (0.065 ft)
DatuGram™3D savings	9 field days instead of 36 days 22 office days instead 45 days

Project Description

Survey a big roof of 40,000 [m²] (9 acres) including its facilities and objects and create a detailed map of the roof. Fieldwork, using conventional surveying techniques, entailed several major challenges: safety, complex structures and obstructions.

The estimated effort using conventional surveying techniques reached 81 Days:

- 36 field days, using a crew of two people using Total Station measurements and RTK.
- 45 office days to create a CAD model of the roof and its facilities, utilizing the Total Station and RTK measurements, and the field sketch.



Data Acquisition

A regular Samsung NX Mini 20MP camera was used. The camera was mounted on an 8-meter (24 foot) high telescopic pole, and was controlled via a smartphone using a remote control Wi-Fi app.

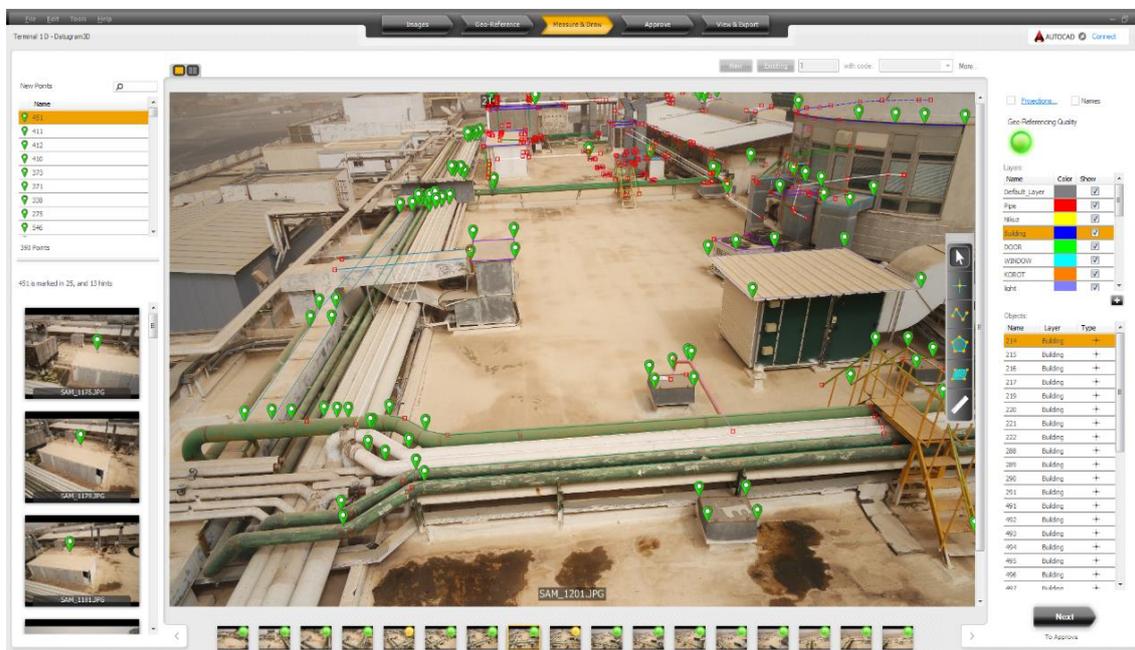


The area was divided into 16 sections and each section was photographed in a circle pattern.

DatuGram™3D Savings

The actual effort to survey and create an accurate 3D CAD model was 31 days (instead of 81):

- Total of 9 days in the field (instead of 36)
 - ✓ 6 field days to set targets, survey them and measure 200 control points in the area. Control points were measured using a prism-less Total Station device and RTK.
 - ✓ 3 field days to photograph the site using a telescopic pole (due to UAV flight restriction in the area).
- 22 office days (instead of 45) to geo-reference the data (overall 16 DatuGram3D projects), generate an accurate 3D CAD model, and create more than 2500 new 3D points.



Achieved Results

A 3D CAD model in DXF format was created. It included air condition facilities, pipe arrangements, roof structure and all other objects on the roof. The model was generated by drafting directly on the images using DatuGram™3D.

A point file, including names, codes, descriptions and coordinates of all new points, was also generated. Overall, more than 2500 new points were drafted directly on the images.

The measurement accuracy of all the points was **better than 2 cm (0.065 ft.)** in both position and elevation.



DatuGram™3D Benefits



Intuitive & Simple
Enjoy a user friendly interface for the entire field-to-plan process



High Precision & Reliability
Reach survey grade accuracy using a regular camera



Save Time & Cut Costs
Increase productivity, save precious field & office time, and reduce inaccuracies & mistakes



Grow Your Business
Manage more projects and monetize expedited delivery

