

# Surveying an Electricity Tower



Company	Israeli Electric Company
Country	Israel
Job Type	Survey an electric tower
Drone	DJI S1000
Pattern of flight	Vertical
Number of Images	31
Accuracy	Better than 2cm (0.05 ft.)
DatuSurvey™ savings	40 min in the field instead of 2 days using prism and prism-less Total Station 4 hours at the office instead of 1 day

## Project Description

The Israeli Electric Company needed to survey a quad pod electricity tower and draft a 3D CAD plan with accuracy better than 2cm (0.05ft).

The estimated effort, using conventional surveying techniques, was 3 days:

- 2 field days using both prism and prism-less Total Station devices.
- 1 office day to draft the detailed CAD plan, based on the Total Station measurements and a sketch done in the field.



## Data Acquisition

### Acquiring Images

The tower was photographed using a regular Sony NEX-7 camera (24-megapixel resolution) with a 16mm wide-angle lens, mounted on a small quadcopter that flew at 35 - 45 meters (120 to 150ft) above ground.



A total of 31 images of the tower were captured, from the perimeter around the tower toward its center, with an image taken about every 15 meters (50 feet).

### Acquiring Ground Control Points

A total of 27 points were measured on the electricity tower and around it, using a prism-less Total Station device. 10 of these points were used as control points for geo-referencing the images.

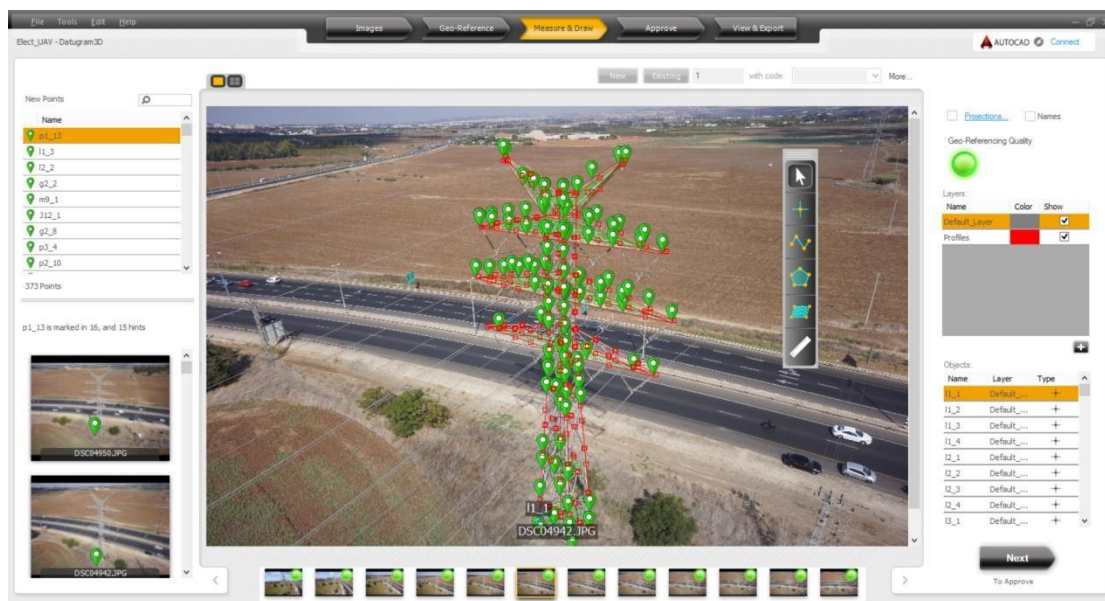
The chosen control points were high-contrast, well-defined objects, such as corners of the tower, devices mounted on it, etc.

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### Savings

The actual time to survey and draft a 3D CAD model of the electricity tower was less than 1 day:

- 40 minutes in the field: 10 minutes to photoshoot the electricity tower, and additional 30 minutes to measure control points around it.
- 4 office hours to geo-reference the images and draft the 3D CAD model of the electricity tower directly on the images.

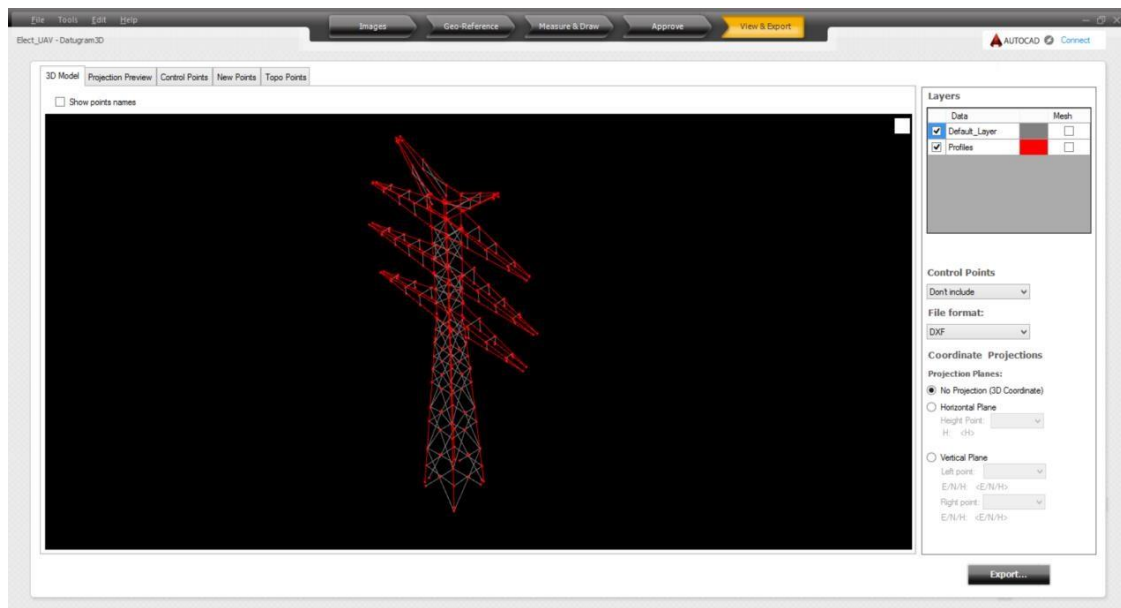


## Achieved Results






A 3D CAD model, in DXF format, was generated by drafting directly on the images, using the DatuSurvey™ Professional (formerly DatuGram™3D) photogrammetry software.

A list of all measured points, in PNT format, was generated. This included point names, codes, descriptions, coordinates, and their measurement accuracies in all axes.

373 new measurements were made using the images. The measurement accuracy of all points was better than **2cm (0.05 ft.)** in both position and elevation.



## DatuSurvey™ Professional (formerly DatuGram™3D) Benefits

 <p><b>AUTOMATED, INTUITIVE &amp; SIMPLE</b> User interface that follows surveyor work process</p>	 <p><b>STAY SAFE</b> Employ aerial and ground images</p>	 <p><b>SAVE TIME &amp; CUT COSTS</b> Save up to 30% office time</p>
 <p><b>PROFESSIONAL, SURVEY GRADE</b> High Precision &amp; reliability</p>	<p><b>CONTACT US</b></p>	
 <p><b>MONETIZE YOUR BUSINESS</b> Manage more projects, grow your business</p>		

