Size
Approx 8000 sq/m

Scan time
10 -15 mins per scan

Location
Théoule-Sur-Mer, France

Industry
Surveying

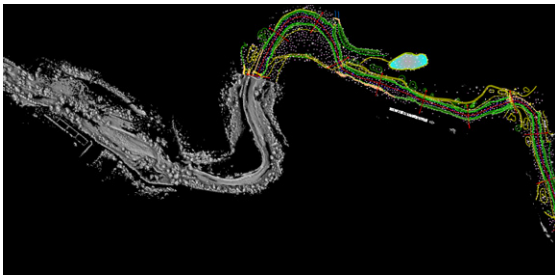
Scanned
French Villa

Using the ZEB Horizon for property remodelling

As mobile laser scanning becomes faster, more cost effective and accurate, surveying companies are finding them to be one of the most efficient tools for capturing the spatial details of a building in 3D. Pointclouds are being used more and more in the property renovation and architecture markets, where the use of LiDAR and SLAM are driving down cost and increasing efficiency.

CEP David Pierrot is a surveying company based in the South-East of France, in both Cannes and Mandelieu. Since beginning their business in 1965, his company has worked on over 21,000 projects in the Alpes-Maritime and surrounding areas, and they continue to work on over 800 projects per year.

The company is represented by 2 expert surveyors, David Pierrot and Robin Bruna. They understand the value in using the latest hardware and software technologies to achieve the best results for their clients. In recent years David and Robin have adopted GeoSLAM scanners into their arsenal of tools, due to their speed and precision. They began working with the ZEB Revo RT, and have since incorporated two ZEB Horizons into their business.



Pointclouds captured by CEP David Pierrot using GeoSLAM scanners

The company was recently tasked with completing a survey of a villa on a steep hillside, in Théoule-Sur-Mer. The goal of the project was to create a detailed topographical map of the existing building and surrounding area, working closely with an architect who will use the map to plan and conduct new construction work. As the surveying experts, they establish whether the site is suitable for the planned construction work, and the architect uses the 3D/2D vector to put together plans for the construction work.

The GeoSLAM ZEB Horizon was chosen to conduct this scan because of its speed of acquisition, precise measurements, range, and versatility. A large part of the scan took place on a steep hill leading up to the house, so a handheld scanner was the ideal choice.

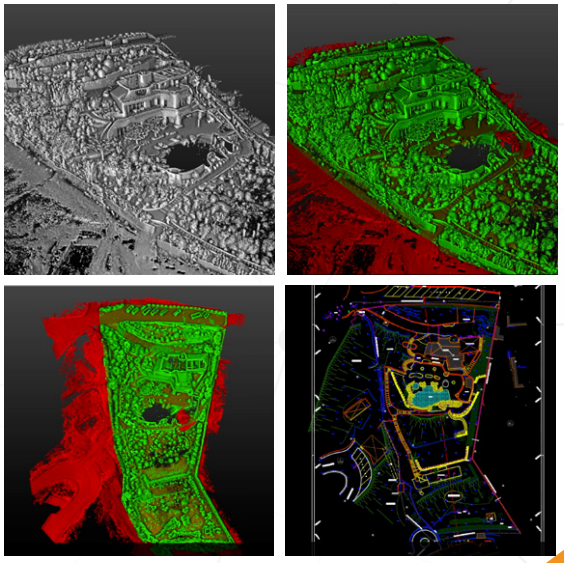
The surveyor in charge of this scan, Robin Bruna, was able to walk and scan, cutting down the time it took to capture the entire area, whereas a static scanner on a tripod would have taken far longer due to the tough terrain. The entire scan was conducted using only the GeoSLAM ZEB Horizon.

> **“The ZEB Horizon scans points at 40-50m, which allows for a much better trajectory than other mobile scanners.”**

The area of land scanned, including the house, totalled 8000 sq/m and the whole area was captured in just 4 scans. Each scan took approximately 10-15 minutes to complete, so the team were able to capture useable pointcloud data in approximately one hour!

The separate scans were then processed using GeoSLAMs HUB software and merged into a complete 3D pointcloud before being georeferenced. The team then took the pointcloud through a classification process to get a better understanding of the land, before beginning the creation a 3D/2D vector map in Autocad.

They also created longitudinal cuts in the cloud to provide the architect with reliable and visual information about the incline of the hill. The maps created will help the architects carry out landscape insertions and plan out new construction work to the lower part of the property.



Pointcloud and vector map

The use of the ZEB Horizon meant that the team could not only carry out the entire scan with ease, but due to the speed of data acquisition, they were able to get the pointcloud into the post processing stage far quicker than if they had used a static scanner, thus saving them time and money.

The digitlisation of the land makes it possible for the architect to check the feasibility of construction, without needing to re-visit the area. Finally, in line with the “ordre das geomitics-experts”, David and Robin set up a process that allows the inspection of the measurement accuracy.

To learn more about some of the projects CEP David Pierrot have been involved with, visit them at **www.cabinetpierrot.fr**

Robin Bruna | Géomètre Expert Ingénieur

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