



3D LASER SCANNING

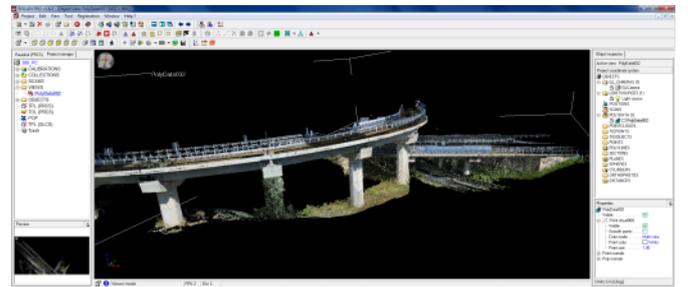
GEOTEC SPA

SOIL INVESTIGATIONS & LAND SURVEYING



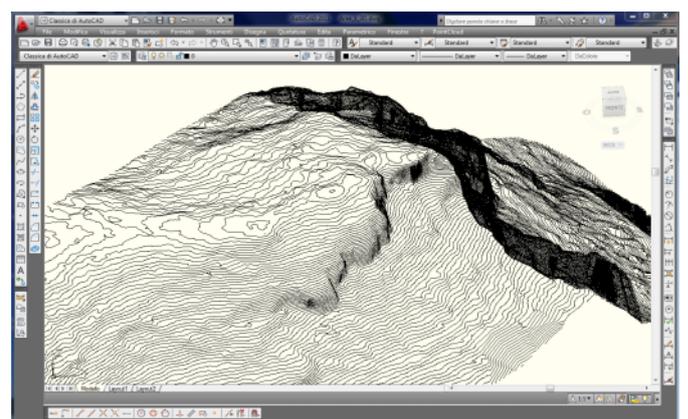
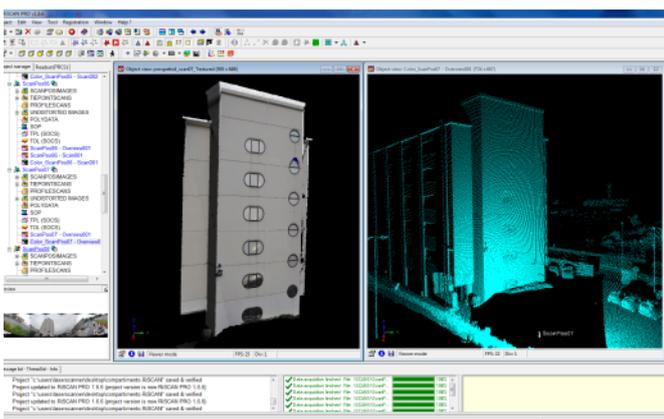
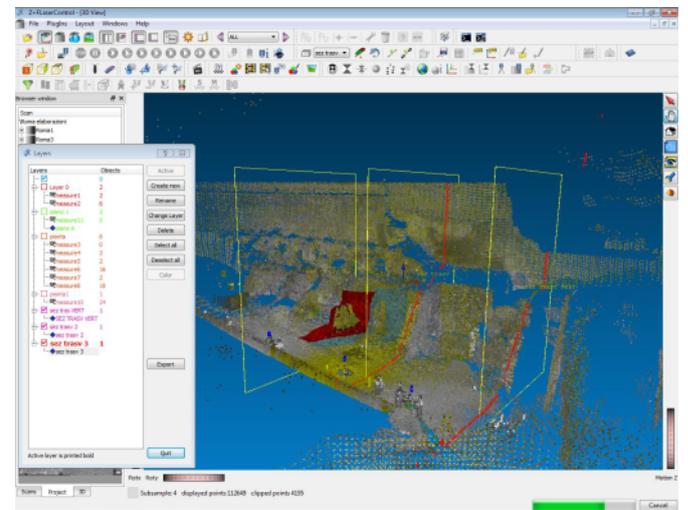
Geotec SpA can provide a professional 3D Laser scanning service

Laser scanning creates an organised, highly accurate, digital representation of a subject quickly and efficiently. This new and emerging technology allows for the 3D digital acquisition of objects in the form of geo-referenced and geometrically correct point clouds. These clouds can then be reconstructed to give them a surface, and rendered with colour or images added to give a realistic texture to the 3D model. The accuracy of the laser together with the precision of high resolution images makes laser scanning surveys realistic and complete. The uses of Laser scanning technology are endless. Real world environments, people, equipment and items are captured in 3D exactly as they are. 3D laser scanning technology can provide a detailed spatial representation of particularly complex objects, in unreachable and inaccessible survey locations. Particularly useful in the survey of cultural artefacts and historical sites and buildings, and in situations which would be otherwise difficult to research.



The raw point cloud data acquired can be used:

- To automatically obtain plane sections and generate plans and section views as well as axonometric projections and 3D models;
- To produce high resolution Digital Terrain Models (DTM);
- To create orthophotos;
- To develop mathematical equations;
- To automatically identify surfaces (meshes), volume, contours, break lines and aspect ratio;
- For environmental, structural, infrastructural and archaeological monitoring;
- To easily integrate the surveys with topography and photogrammetry;
- To navigate virtually;
- To simulate possible solutions, changes and alterations to brightness and colour;
- For conservation and deterioration analysis.



With regard to Laser scanning surveys Geotec S.p.A. can also provide:

- All types of topographical surveys
- Temporary traffic management when scanning on roads
- Made to measure tools by CNC turning experts from our workshop and personalised preparation of the Laser scanning support vehicle according to specific needs
- Preparation of survey locations (excavator, chain saw etc.) that would otherwise be inaccessible



3D scanning services are applied to:

- Civil engineering
- Environmental engineering
- Architecture
- Heritage sites and archaeology

Geotec S.p.A. can offer:

- Planning, analysis and development of the Laser scanning survey
- Topographical land surveys using GPS or electro-optical instrumentation
- Processing and rendering of scan data according to client's needs
- Research and experimentation for innovative Laser scanning applications

Laser scanning experience

Laser scanning services were provided to ANAS S.p.A. – The Italian National Road works Company – in various projects in central Italy and the Abruzzo region. Structures and infrastructures with no previous designs or plans were scanned and subsequently reconstructed. Approximately 200 surveys were carried out of buildings, viaducts and bridges.



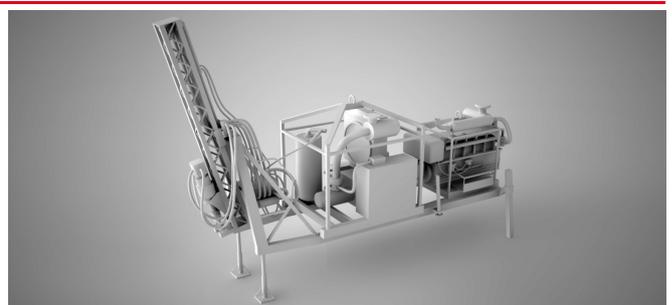
Geotec S.p.A. has also provided Laser scanning services to another Italian company "Società italiana per Condotte d'Acqua S.p.A.", in a project regarding the new Tlelat – Tlemcen railway line in Algeria. A high resolution 3D digital model was created of the slopes where the railway line will pass.



The University of Rome "La Sapienza" also made use of Geotec SpA's Laser scanning services for the Farnesian bastion of "Domus Tiberiana", a very important Roman landmark. Sections, plans and detailed orthophotos were produced and presented as part of a study regarding safety improvements for the preservation of the landmark.



Geotec S.p.A. is also capable of scanning objects and creating digital models. Through the use of 3D printers scale models are reproduced.



Our scanning equipment and software includes:

- Riegl LMS Z390i Terrestrial Laser Scanner
- Riegl VZ400 Terrestrial Laser Scanner
- Zoller+Fröhlich Z+F IMAGER® 5010 Terrestrial Laser Scanner
- External calibrated Nikon D90 Camera
- External calibrated Nikon D700 Camera
- SCHNEIDER KREUZNACH CINECON 1.8/4.8-0902 Industrial Camera
- Leica TPS 1200 Total Station
- Leica Receiver GNSS - GS 15
- Leica Viva CS 15 Controller
- TRIMBLE 5601 DR 200 Total Station
- Riegl RiSCAN PRO Software
- Z+F Laser Control Software
- Point cloud Display Software
- Point tools Software



RIEGL_VZ400 Laser scanner



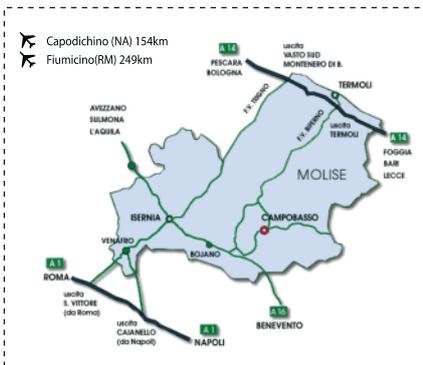
Z+F IMAGER 5010 Laser scanner



RIEGL LMS-Z390 Laser scanner



Geotec SPA's offices



- Administrative headquarters
- Operational site
- Albanian branch
- Sicilian branch

