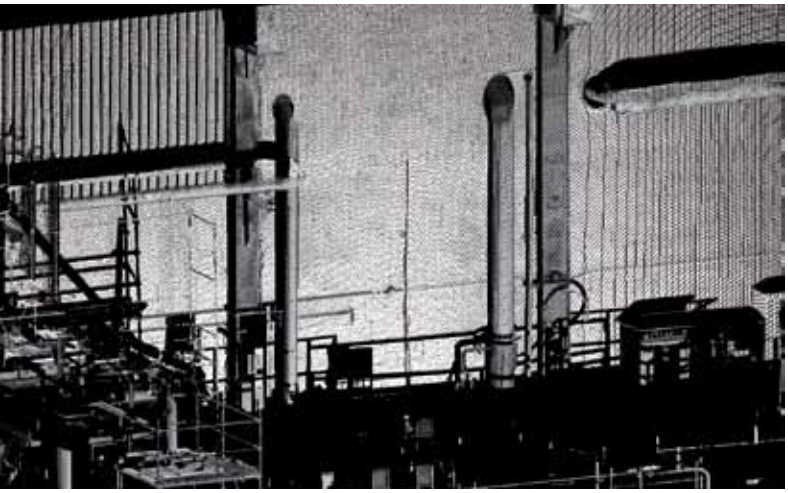
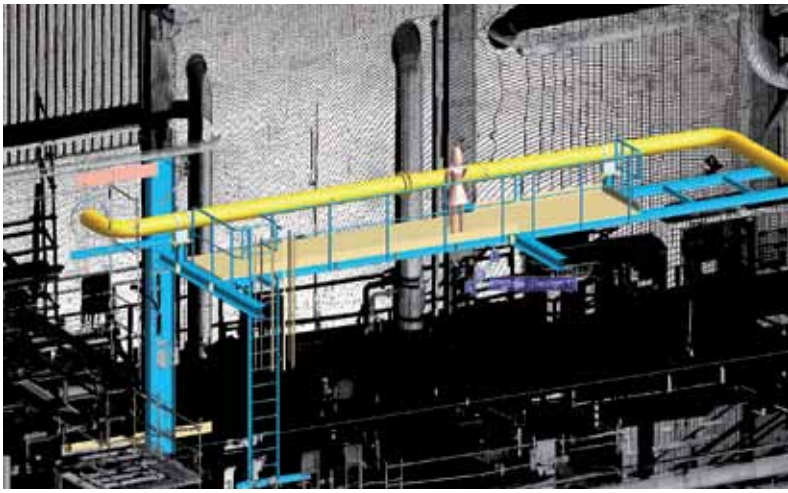
ENERGOPROJEKT–KATOWICE SA

3D SCANNING





For more than 65 years are we one of the largest, well established design and engineering companies in the power industry and also one of the largest across all industries. We employ over 500 persons with high expertise in designing and construction of **conventional power plants, combined heat and power plants**, and heat generating plants, and in solving problems related to **broadly defined power engineering**. We also employ the best specialists in the following industries: technological, building, electrical, environmental protection, I&C, and economic industry, including a group of specialists involved in the complex implementation of **photovoltaic power plants on a "turn-key" basis** in the existing and planned buildings, and on the ground (photovoltaic farms).

We have a scanner produced by Zoller+Fröhlich, model Imager 5010C. **We successfully use this equipment to support our specialised branches and provide services to external entities**. It allows to scan with high accuracy up to approximately 1 million points/second, which results in a point cloud, which in addition to coordinate information, provides data on the reflection intensity (therefore, a cloud is in shades of grey). **The scanner also allows capturing panoramic images with the resolution of 80 mega pixels in a large dynamic range (HDR)**, and thanks to a built-in flash, it is possible to take pictures in dark rooms which can be used to colour a point cloud. **It is possible to create an orthophotomap, cross-sections out of a point cloud. With the 'TO GO' application it is possible to share scanned objects with interested persons** for taking a look at pictures or performing simple **measurements on a point cloud**.

LASER SCANNING TECHNOLOGY

A laser scanning is a non-contact technology which consists in obtaining information on a shape of an object. A scanner emits a laser beam, which after being reflected from individual elements and recorded by a receiver, provides data on distances, and horizontal and vertical angles of a laser beam deflection. So obtained data make up a set of points called a point cloud which represents real objects in a virtual space. By using an additional camera, a point cloud can be realistically coloured.

ENERGOPROJEKT-KATOWICE SA
Poland, 40-159 Katowice, ul. Jesionowa 15, skr. poczt. 315

phone: +48 32 208 95 00, +48 32 208 92 15
fax: +48 32 259 88 20, +48 32 259 95 25
epk@epk.com.pl, www.epk.com.pl

ENERGOPROJEKT–KATOWICE SA

3D SCANNING

ADVANTAGES

- fast method of measurement;
- high accuracy of measurement;
- application in many industries;
- non-contact and non-invasive method of measurement;
- measurements can be performed in hard to reach places;
- wide use of a point cloud;
- multiple use possible.

BENEFITS

- significant reduction or even elimination of design errors;
- number of revisions reduced to minimum;
- no conversions needed;
- reduced process downtimes;
- reduced return site visits;
- support for fabrication and assembly.

APPLICATION

A point cloud, which is a real representation of objects in a CAD environment, can be used, among others, to:

- document all structures "seen by a human eye" along with their natural colours;
- modernise facilities;
- develop as-built documentation;
- design new components;
- archive spatial data;
- perform analyses and visualisations.

A point cloud can be used to develop:

- 3D CAD models;
- reconstruction documentation;
- deformation analyses;
- comparisons with theoretical models;
- views, cross-sections, and profiles;
- animations and visualisations used for simulations, and others.

A free point cloud viewer, which can be delivered on any data carrier, e.g. a flash drive, enables people, who have no specialist CAD software, to view laser scanning effects, also before developing a final document. **A user is able to perform simple measurements, read coordinates, and virtually walk around a scanned facility while viewing high-resolution panoramas**. As a result, people involved in a project (for example, architects or designers) do not need to waste time on long trips, because they have access to data on an on-going basis.

ENERGOPROJEKT-KATOWICE SA
Poland, 40-159 Katowice, ul. Jesionowa 15, skr. poczt. 315

phone: +48 32 208 95 00, +48 32 208 92 15
fax: +48 32 259 88 20, +48 32 259 95 25
epk@epk.com.pl, www.epk.com.pl