

One-Stop Competent Service

We at **ArcTron** are breaking new ground with our innovative methods for recording three dimensional objects. Our engineering department specialises in rapid and highly accurate three dimensional laser scanning. Our services range from the precise 3D recording of small objects to large area landscape recordings, all achieved through the deployment of three different 3D scanning systems.

Our areas of expertise include topographical recordings, open-cast mine and quarry documentation, architectural, interior and cavity surveying as well as the documentation of industrial facilities. As long standing specialists in the fields of art and architectural heritage as well as archaeology, our main areas of activity lie in the 3D documentation of art monuments, listed buildings and archaeological sites. In this field (archaeology) we have also been developing market-leading software solutions for professional surveying, 2D and 3D CAD plan creation and database- assisted 3D mapping for more than 10 years.



We also use a highly precise stripe-light scanner with an accuracy of 1/10 millimetres to document even the smallest objects such as industrial products, statues, works of art etc.

Cost-effective Evaluation of 2D & 3D Data

3D laser scanning provides clear advantages of cost resulting from reduced time in the field and a reduction in surveying expenses. Once the one-time job of data collection has been performed, all further measurements are carried out on the model. Further surveys on location are not required.

Our team of experts specialise in the areas of CAD and GIS-supported data evaluation, 3D visualisation, animation and virtual reality and can prepare the retrieved data for various technical, scientific and planning-related evaluations. The data is made available in established standard formats. We can also augment your project by developing multi-media solutions or sophisticated computer animations for effective public presentations. We are able to rapidly develop plans, elevations, building sections and rectified orthophotos from the scanned data as well as all other basic elements of comprehensive 3D visualisations.

Working in collaboration with our clients, we develop made-to-measure concepts for the preparation of the complete survey data and for graded data evaluation. Any further conversions of the data can be easily accomplished. This could include for example, converting data into tachymetrically surveyed inventory documentation or it's inclusion in a CAD, GIS or Facility Management System.



Photo-realistic Object & Spatial Geometries

The 3D recording of objects using laser scanning techniques provides us with a highly effective resource for creating three dimensional recordings of object and spatial geometries. It provides a maximum of information and an almost unsurpassed accuracy (to within a few millimetres). Hands-free recording also enables us to document hazardous areas from a convenient distance of more than 100m. By combining these methods with the use of a high-resolution digital camera, the 3D data can be simultaneously converted into accurate, photo-realistic 3D representations.

We provide new solutions for complete 3D object recordings, conservation of evidence for temporary objects, planning visualisations and inspection of models.

ArcTron

3D-Vermessung & Softwareentwicklung GmbH

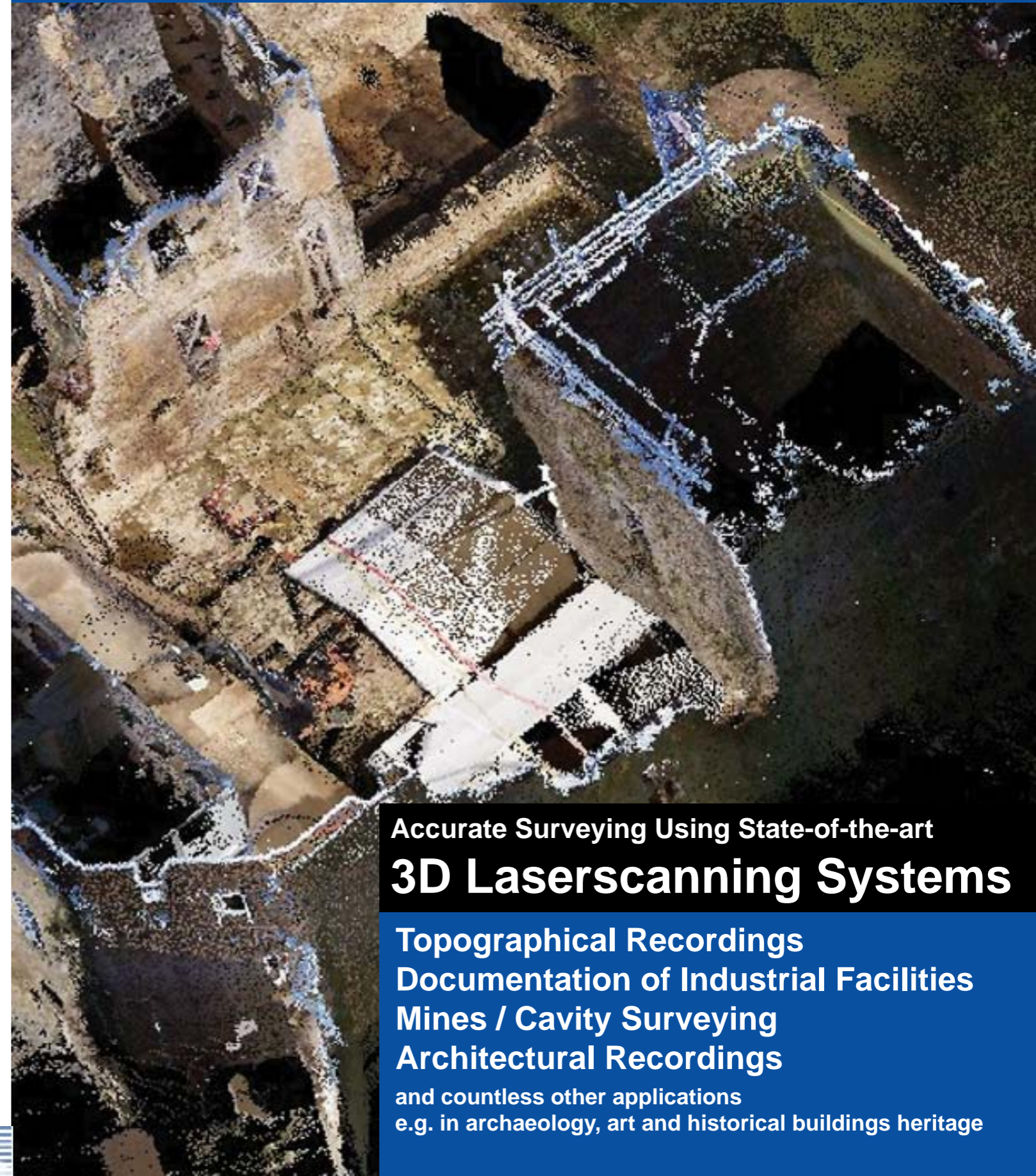
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ArcTron

Engineering Services for 3D Surveying & Software Development



Accurate Surveying Using State-of-the-art
3D Laserscanning Systems

Topographical Recordings
Documentation of Industrial Facilities
Mines / Cavity Surveying
Architectural Recordings
and countless other applications
e.g. in archaeology, art and historical buildings heritage

• Topography



Saalburg, Hessen

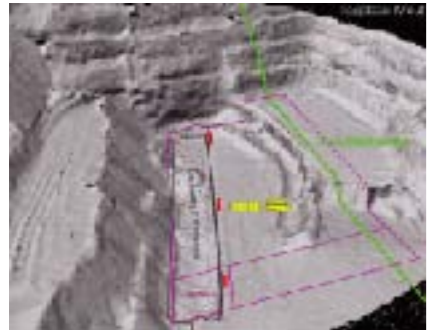


Bartholomaeberg, Austria

Using our mid-range laser scanner (Riegl Z210), we are able to produce detailed, large area topographical recordings in record time. We can document up to around 15 hectares per working day depending on the nature of the terrain. In this way, terrestrial terrain laser scanning provides a highly

progressive alternative to time-consuming and expensive aerial photography (e.g. airborne laser scanning) when recording landscapes. The scanner data is then processed using specialist software to produce standardised topographical plans, contour line maps and 3D models.

• Mining



Open-cast mine Suedchemie AG, Bavaria



Historical Mining Gallery, Austria

The combination of laser scanning and 3D documentation provides a reliable and rapid method of creating accurate plans for use in the retrieval of raw materials from open-cast mining facilities (open-cast mines, quarries, sand and gravel pits, spoil heaps etc.). These plans supply information concerning the status of the mine and exact calculations of volume and mass. The same surveying methods can also be used for

underground mines and other, more complex cavities (galleries, caves, wells, cellars etc.). The laser scan surveys are quickly accomplished with only a few stationings of the equipment. The values measured during these surveys are then processed and data is recovered concerning the edges of gradients and extraction areas. We can also generate digital terrain models (DGM), contour line maps and complex 3D cavity models.

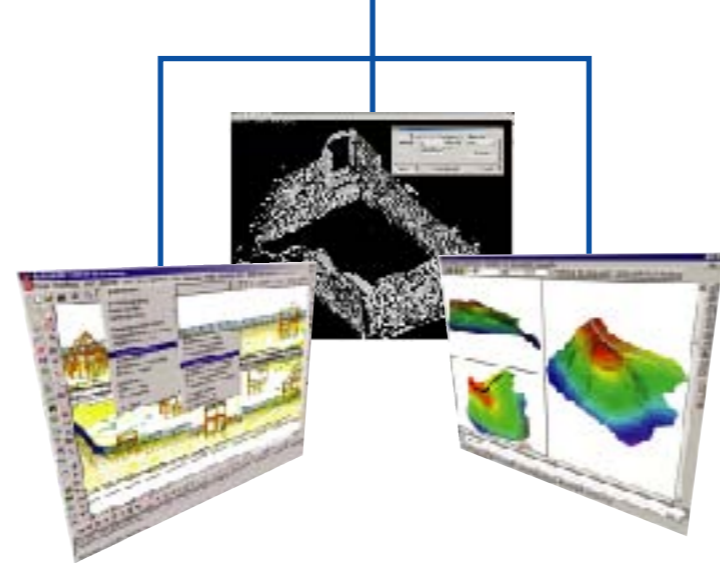
• Industrial Facilities



Arbed Blast Furnaces, Luxembourg

Detailed and accurate 3D recordings provide all necessary basic and spatial planning requirements when working with industrial facilities and Facility Management. We employ a highly accurate mid-range scanner in conjunction with a high-resolution digital camera (Riegl Z360). We use this combination to colour the 3D point clouds using the

accompanying photographic information and create true-to-scale, photo-realistic 3D documentation. In this way we can survey entire production complexes in very little time. During data processing, the geometric data of piping systems or machines etc. is extracted and converted into CAD models using specialist software.



Surveying Objects •



Monumental statue Bavaria, Munich



Roman Grave Stone, Hist. Museum Regensburg

We are able to produce high-resolution 3D scans with sub-millimetre precision, employing a stripe-light scanner developed by the Fraunhofer Institute for Graphic Data Processing. Smaller objects can be accurately recorded in three

dimensions using this close-range scanner. These 3D scans are then converted into photo-realistic 3D models and provide the basis for reproductions (e.g. using rapid prototyping technologies).

Architecture & Monuments •



Historical Riding Arena, Luxembourg



Competition Entry Visualisation

3D scanning technology provides an outstanding facility for the rapid generation of reliable inventory documentation in civil and structural engineering as well as for architectural recordings, especially in the heritage field. We deploy mid-range and close-range scanners, depending on the complexity of the object, to ensure a high-resolution 3D recording even when dealing with intricate facade sculptures or ornaments. The fact that we use scanning

systems that are 100% compatible with our software means that we are able to guarantee an exact evaluation of the raw data, resulting in a high-resolution 3D model. The measurements can also be converted into 2D and 3D CAD data (all current standards) with plan views, elevations and sections which enables you to use the data directly in your own software environment.

Archaeology •



Castle Useldange, Luxembourg



Inner City Excavation, Ulm

As specialists with over a decade of experience in archaeological 3D surveying, we can provide complete, photo-realistic 3D documentation of even the most complex archaeological excavations. Thus, we are able to realistically visualise excavations in all their various stages and in three dimensions. ArcTron have developed a 3D information system

specifically for use in archaeology which comprises of a 3D CAD application with GIS functions and a specialist database. By employing this information system, complex scientific analyses and problems can be resolved and visualised directly on the 3D model.