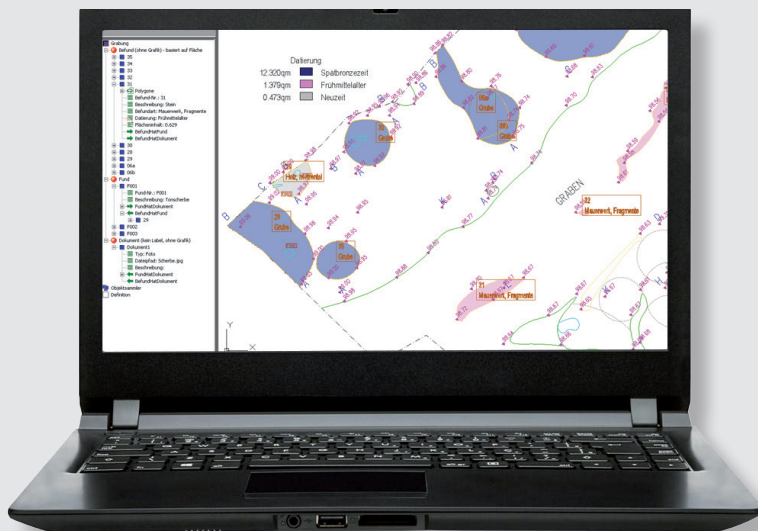# TachyCAD Archaeology
Leave the excavation or construction site with a finished plan

FARO®

An example for an area excavation with object data, collected on site.

Advantages

- Missing and inconsistent measuring values are detected immediately.
- Leave the construction site with a finished plan.
- Rework at the office is reduced to a minimum.
- The complete range of functions of AutoCAD is available.
- Gain of time by measuring, constructing and collecting object data at the same time.
- Non-proprietary when choosing hardware and measurement instruments.
- Free choice and combination of the measurement procedures: surveyor's tape, folding rule, laser distance meter, tachymeter.
- Realistic automated solution for typical tasks.
- Support at no charge.

Application areas

TachyCAD Archaeology is suited for area excavations as well as for complex three-dimensional excavation situations (e.g. city core excavations with wall fragments). Next to the graphic documentation in 2D and/or 3D it is also possible to collect object data for the features and finds in an intelligent way.

TachyCAD is a system solution for the CAD supported inventory data collection. The measurement results of different common surveying instruments will directly be converted into geometry. According to the requirements, floor plans, sections and views or 3D objects will directly be generated as AutoCAD drawing on site. TachyCAD is an additional application for AutoCAD or AutoCAD LT and is offered in three different line versions: TachyCAD Building Survey and TachyCAD Archaeology.

The Tachymeter turns into a mouse pointer

With TachyCAD it is possible to transfer measurement data wireless from a tachymeter to a notebook. When triggering a measurement the measurement data will automatically be transferred to the notebook. With these data TachyCAD calculates the 3D coordinates of the measuring point. It will immediately be available for drawing and constructing in AutoCAD, just as if you had clicked with the mouse or had entered the data manually.

Optimised operating cycles in detail

An extensive range of commands, especially for the archaeological excavation documentation amends the AutoCAD functionality. The basic principle of all commands is always to generate finished illustrations by using as few entries and measurements as possible.

Structured feature management

Next to the CAD plan a feature list can be kept.
In optimised work procedures the graphic objects, contained within the drawing, will be linked with the object data of a structure view. On the basis of measured graphic but also of rectified photos or scanned plans, qualified data base-compatible structured mappings will be generated. Data can be exported into data bases without any difficulty.

When triggering a measurement the data will automatically be transferred to the notebook

Technical Requirements

Platform	AutoCAD and AutoCAD LT as well as side products basing on it, like Civil 3D, Architecture or Map 3D starting with the 2013 versions. Please contact the FARO 3D Software sales department when you are using older Autodesk products.
Operating system	Depending on the used AutoCAD version (see „FARO 3D Software compatibility list").
Hardware requirements	Notebook, equipped with the qualities needed for the mobile use on site, especially with good battery power. Performance parameters as suggested by Autodesk for the according AutoCAD version. An integrated Bluetooth is suggested but not a requirement.
Required measurement technology	Customary tachymeter of one of the established manufacturers, e.g. Leica, Trimble, Topcon, Sokkia, Nikon, Pentax and others. Please contact the FARO 3D Software GmbH in order to check the suitability of your tachymeter for TachyCAD.

Important features

3D coordinates from tachymeter measurement values
- Interface for all current tachymeter types
- Calibrating, defining and navigating (searching) control points
- Station determination with statistical adjustment, different geodetic stationing procedures
- Measurement and construction tools excavation plan
- Universal measurement tools for contours and building elements: wall runs, round or square columns, steps, irregular curves.
- Construction tools: plumbing measurement point down on line, setting measurements down on line, extend lines 3D or horizontally, stretching and stubbing for 3D lines, turn cross-hairs.
- Automatic profile scan
- Define UCS for vertical views and slope planes
- Construction planes: Generation via three or more points with adjustment, determination of intersections or intersection lines of several planes, generate USC of planes
- Measure profile section pins
- Measure in height above datum: absolute and relative height reference, subsequent change of reference heights, adaptation of symbol and type face of the height blocks
- Triangle intermeshing for the calibration of irregular shaped surfaces (e.g. vaults), generating intersection and profile lines
- Commands for the plan completion and definition:
- Plan analysis: Detection of small gaps, line residues and double lines
- Flatten drawings: reducing the measured 3D data to a clean 2D plan
- Insert coordinate frame
- North arrow

Administer feature data with MonuMap
- Software for the digital mapping of features and finds.
- Collect additional object data in a data base-compatible way.
- Define contents to be collected yourself and save them as structure master.
- Automatic area calculation taking enclave polygons like columns, pillars, etc. into consideration
- Clear presentation of the data in a structure view, direct linking of the data objects within the drawing.

- Manifold export functions: Excel- and ASCII tables, XML, HTML, AutoCAD blocks, data base-compatible polygons
- Visualization of the drawing according to the wanted object attributes (e.g. different colour hatching according to the type of feature).
- Secure and efficient methods for the data collection: Attributes with definable selective lists, completion control, definition of reasonable standard values, mass processing with the help of an object collector.

TachyCAD programming interface
- User adaptations and external applications have full access to the measurement functions.

Geodetic methods
- Surveying made easy: Important measurement and calculation methods have been edited, so that non-surveyors will also understand them.
- Stake out of points from the drawing on site
- Net adjustment for a high accuracy for large area projects
- Helmert-transformation for subsequent joining of plan parts
- Alternative measurement methods for situations with bad measurement conditions: intersection, plane intersection, horizontal eccentricity

Other
- Import of coordinate lists from ASCII tables, export of coordinates into ASCII tables
- Detailed manual with tutorials
- Different license models
- Flexible adaptability of all used symbols (blocks), fonts and descriptions

References
- TachyCAD is used world wide, e.g. from:
- State offices for Archaeology in Lower Saxony, Saxony and Saxony-Anhalt
- Office for Excavations and Documentations Heyse
- University of Bonn, Institute for Prehistoric and Protohistoric archaeology
- Municipal archaeology Lübeck, St. Pölten, Vienna
- Austrian Academy of Sciences

Free trial!
TachyCAD programs can be tested free of charge and without obligation. Visit www.FARO-3D-Software.com to send in a request form or simply call by phone.

www.FARO-3D-Software.com
Freecall: 00 800 3276 7253
info@faro-3d-software.com