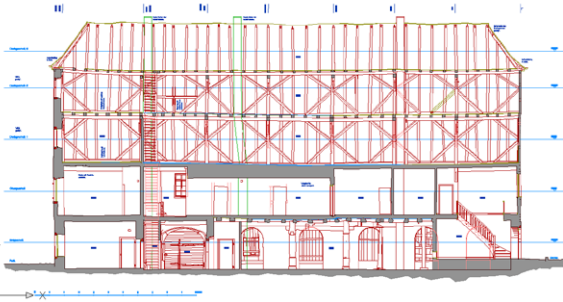


TachyCAD Building Survey

The AutoCAD application TachyCAD is a solution for CAD-based inventory data collection. Measurements from common survey instruments are deployed immediately as CAD geometry. Depending on requirements, floor plans, sections, elevations or 3D objects are created locally as an AutoCAD drawing. TachyCAD is offered in three industry solutions: TachyCAD Building Survey, TachyCAD Plant Survey, TachyCAD Topography and TachyCAD Archaeology.

The total station is your AutoCAD cursor



TachyCAD enables transmission of measurement data from a total station to a notebook. At measurement initiation, the data is automatically transferred to the notebook. TachyCAD calculates and plots the 3D coordinates of the point. The survey data is made available for AutoCAD drawing and design processes in the same way as pointing with a mouse or

by manual data entry. Measurement by Bluetooth-enabled hand lasers, total stations or GPS receivers can be passed wirelessly to AutoCAD for immediate use.

Optimized workflow in detail

An extensive range of commands specifically developed for building survey are added to AutoCAD functionality. The basic principle of all commands is to achieve, with as few inputs and measurements as possible, the final presentation drawing.

Area Calculation in Parallel to the CAD plan

Space/area reports can be created quickly and easily in one convenient and customizable tree structure, the areas can be provided with additional information such as volume, asset locations and space usage. Room footprints and visualizations (e.g. different NRV depending on type of usage) can be produced on demand. Export of the FM attribute database is possible as well.



Benefits

- Leave the site with a finished plan
- Spot and rectify errors such as missing and inconsistent readings immediately
- Rework in the office is minimized
- Complete AutoCAD toolset is available for survey action.
- Saves time by simultaneous measurement and construction of property data
- Open choice of equipment and instruments
- Open choice and combination of measurement methods: measuring tape, ruler, hand laser, total station or GPS
- Automated real-world solutions for typical tasks
- Free support

Applications

TachyCAD building survey can be used anywhere where building plans are drawn or CAD-detected objects need to be combined with factual data. Creating 3D drawings is easily possible. Applications include:

- 'As built' data acquisition for plans of existing buildings
- Room schedules for facility management
- Inventory of historic monuments and conservation records

the picture:

A TachyCAD measured FM plan. Geometric information on individual rooms such as area and volume is calculated automatically. Collected data can also be assigned to selected subject areas.

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kubit GmbH has been developing software for surveying and documentation since 1999.

Serving a broad group of users, these field proven solutions combine sophisticated measurement technologies with established CAD functionality.

From real world to CAD

Requirements

Platform	AutoCAD and AutoCAD LT as well as vertical products, such as Civil 3D, Map 3D, Architecture, from 2007 on. You should check with your local kubit distributor for info on Autodesk compatibility with older AutoCAD versions.
System Requirements	Depending on the AutoCAD version requirements.
Hardware-Requirement	Notebook suitable for mobile use on survey sites, especially with good battery performance, possibly Bluetooth. Performance parameters for running AutoCAD (version of customer choice) recommended.
Required measurement tools	Commercially available total station from current manufacturers such as Leica, Trimble, Topcon, Sokkia, Nikon, Pentax, Zeiss and others. To clarify the suitability of your total station for TachyCAD, contact kubit. Optional laser rangefinder with Bluetooth interface. Supports Leica, Hilti and Bosch.

Key Features

3D coordinates from Total Station/Disto measurement

- Interfaces to all common total stations
- Coordinates are available in real-time for the implementation of any AutoCAD command
- Survey control function: measure control points, import station lists, define and orient to station positions
- Network control with least squares adjustment

Measurement and design tools for building plans

- Measuring and drawing of building elements: doors, windows, stairs, ceiling grid, niches
- Common detail measuring tools: Wall sections, round and square pillars levels, curves etc.
- Design tools: setting out / staking out, online division, place points and perpend on a line, 2D lines, or horizontally extend, stretch, and set up connections for 3D lines, align crosshairs for offset
- Determine and plot dimensions for drawing annotation
- Define views by UCS on vertical and inclined planes: vertical sections, façades, or any oblique views are controllable: streamlines UCS creation allows you to work with user oriented drawing layers
- Geometry auto-closing to determine hidden corners and edges: generation of distributed error adjustment, identification of the intersection or intersections of multiple levels
- Level annotation: with level symbols for absolute and relative height reference, post survey adjustment of reference levels, customize annotation symbol and lettering in the height blocks
- Triangulation to produce irregularly shaped surfaces from measured points (eg, vaulting), section and profile lines

Hand measurements

- Wireless transmission of measured values of laser distance meters via Bluetooth to AutoCAD
- Measured distances for all AutoCAD commands available.
- 'Handlaserbox' – distance stack list to collect and access measurements
- Triggering the measurement at the hand-held laser or notebook is possible.

Special hand measurement commands support graphic measured drawing methods:

- Rectangular rooms: measure and auto-close (using the arrow keys on hand-held laser)
- Geometry by diagonal bracing, Arbitrary measure space (square using the arrow keys on hand-held laser or diagonal)
- Check distance/dimensions
- Control point determination by resection (optional as a transparent command within other AutoCAD commands)

Commands for plan completion and detail

- Plan Analysis: Identify small gaps, remove double and redundant lines
- Drawing flattening: reduction of the 3D data measured on a clean 2D map at user determined heights

- Dimension tools: door, windows, stairs, beams, folded, vertical arc in the plan view
- Coordinate frame insert
- North Arrow

Manage floor-plan data

- Database of attribute data records compiled at measurement
- user definable content for attributed records with time-saving structural template
- Predefined templates for spatial structure inventory schedules in accordance with DIN 277 and gif MF-G
- Intelligent method for detecting rooms/space polygons
- Automatic area calculation, taking into account of island polygons such as columns, pillars, etc.
- Clear presentation of data in tree structure, linking the area objects in drawing
- Multiple export functions: Excel, ASCII tables, XML, HTML, AutoCAD blocks, CAFM or just footprint
- Visualization of the drawing to the desired object attributes (e.g. different plots of rooms by type of use)
- Safe and efficient methods for data collection: Attributes with definable pick lists, failsafe default values, customizable attribute tagging

TachyCAD programming and customization

- User customization and third-party applications have full access to the measurement function

Geodetic methods

- Surveying made easy even for non-surveyors by clearly structured measurement and calculation
- Stakeout of drawing points in local or defined coordinate system
- Network adjustment for high accuracy in large-scale projects.
- Helmert transformation for subsequent joining together of parts of plan
- Alternative methods for situations with poor measurement conditions: forward-section, plane intersection, hidden points

GPS (additional option)

- Direct transfer of GPS coordinates determined in real-time kinematic method, interface with Trimble software TSM

Other

- Import coordinate lists of ASCII tables, export of coordinates in ASCII tables
- Detailed manual with tutorials
- Flexible licensing
- Open customization all symbols (blocks), fonts and labels

Trial versions

You may test the programs without obligation, free of charge. You will find more information including a request form at www.kubit-software.com. Or just send an e-mail or call us!

References

English Heritage
Jerry MacNeil Architects
Krueger International
Langan Engineering

Measure Masters
Pace Compumetrics
University of Mary Washington
...And many more!