Technical Information DistToPlan

The following pages give an insight into to the operating mode of DistToPlan. Please contact us for further questions and suggestions.

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Q1 What is DistToPlan?

DistToPlan is an AutoCAD application that allows for a measured building survey with a hand-held laser-meter. It contains an online interface for hand held laser instruments that have a Bluetooth inside. On site the hand held laser is connected to a laptop on which AutoCAD or AutoCAD LT has been started. The measurement values are transferred directly to the CAD system and are immediately available for the construction of the plan. Supplemented by numerous functions for the building measurement, DistToPlan allows a fast and simple generation of as-built drawings on site.

Q2 What do you need to work with DistToPlan?

- Laser distance measurement instrument with Bluetooth interface
- AutoCAD or AutoCAD LT
- Laptop (requirements according to the used AutoCAD version). From our point of view a tablet PC or convertible PC with active pen has been well-proven.

Q3 What is required by the user for the use of DistToPlan?

DistToPlan supports the user and helps him to fulfill routine jobs in an effective way. But the result still depends on the experience and the expert knowledge of the user though. According to our experience the following two qualifications contribute to a good and effective work with DistToPlan:

- Understanding of the construction and the relations of the object to be measured.
- Basic knowledge of working with AutoCAD (the better you know AutoCAD, the faster you will be able to use the advantages of DistToPlan).

Q4 How does the hand held laser cooperate with the software?

The measurement functionality of DistToPlan has been integrated completely transparent into AutoCAD. With the familiar AutoCAD commands you generate an as-built drawing on site. Every time, any AutoCAD geometry command expects a linear measure as input, you can capture this by using the hand held laser for the measurement.

A simple example:

You want to capture the contour of a square room as an AutoCAD line. In this case you simply draw the line with AutoCAD using the ORTHO mode. You click the first point and pull the mouse cursor into the direction of the first line segment. Instead of entering the length of the line into the command line, you simply measure the distance with the hand held laser or select the value from the previously generated measurement value list. The line will be generated with the according length automatically. This way you may draw the run of the wall continuatively.

When measuring a square room for example, the following dialog will be executed within the AutoCAD command line:

Command: **Line**

Specify first point: *(Click the first point of the line with the mouse.)*

Specify first point: **4.223** *(Pull the cursor into the direction of the line. Initiate a measurement. The measurement value will be sent to the command line.)*

Specify next point or [Undo]: **5.728** *(Pull cursor again, initiate next measurement.)*

Specify next point or [Undo]: **4.220** *(Pull cursor again, initiate next measurement.)*

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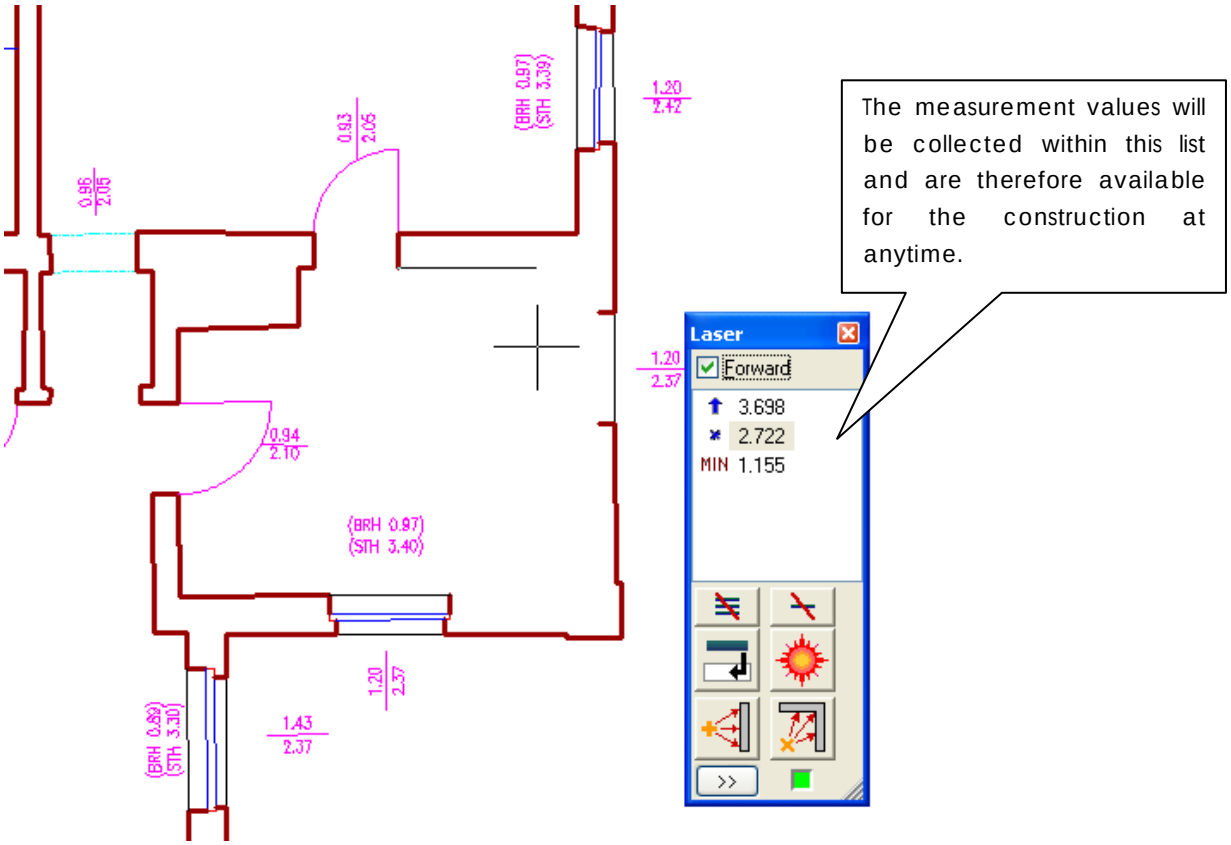
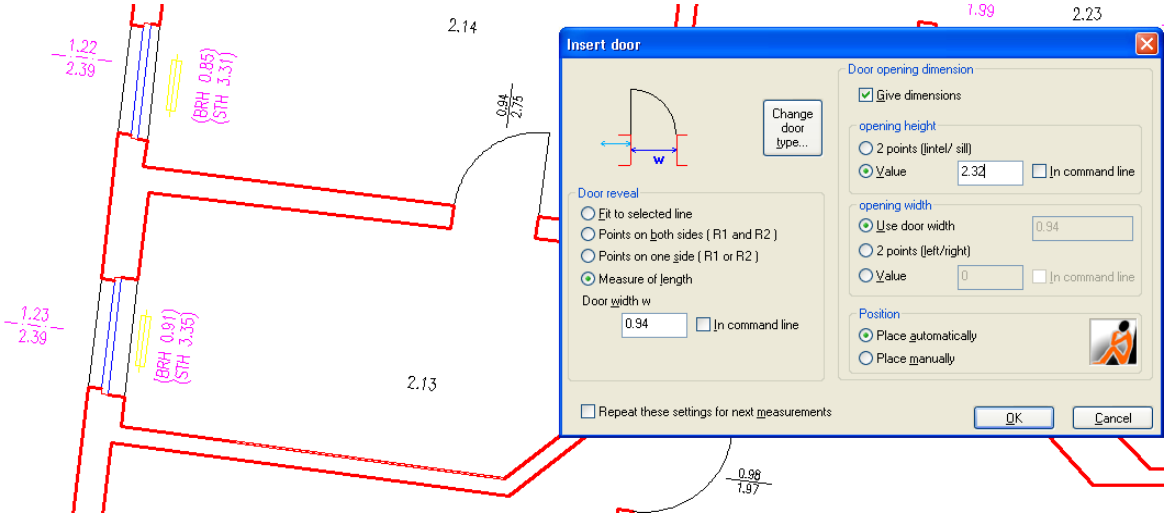
Instead of using the 'Line' command you may use any other AutoCAD command, as long as this command "asks" for a distance. You could also send the measurements to dialog fields. Even commands, which are defined by other AutoCAD applications, may be used without any problem.
Optionally the measurement values of the hand held laser can be collected within a list and be called up from that list later. This procedure is especially suggested for a "one person measurement".



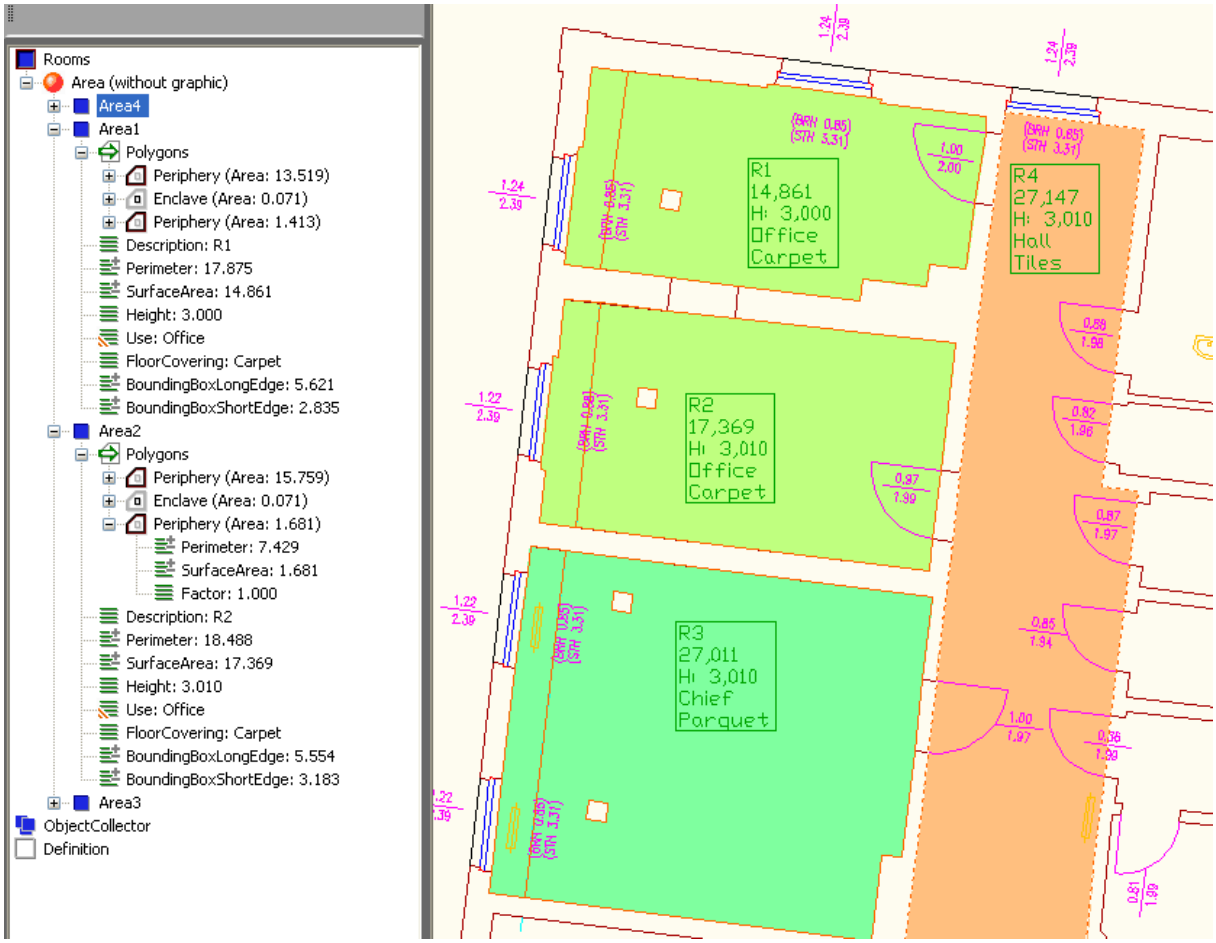
Q5 Which additional functionality does DistToPlan supply for the building measurement?

The following list gives you a first overview on the most important functions. The basic principle of all commands is to generate ready to use presentations with as few entries and measurements as possible.

- The **DistToPlan hand held laser interface** enables the measurement with a Bluetooth laser distance measurement instrument and may be used by all AutoCAD commands (see also F3).
- **Measurement tools:** Different commands enable you to generate certain building specific elements through a combination of measured and supplemented measurement entries (e.g. commands for the optimized calibration and dimensioning of doors and windows).



- **Construction tools:** The regular AutoCAD commands are ideal for the biggest part of the drawing work. DistToPlan supports certain recurring situations of the manual measurement with additional functionality (e.g. straight and rectangular extension, arc intersection, spatial join of lines).
- **Plan analysis:** Tools for the detection of double lines, small gaps and very short lines help to generate precise drawings.
- **Area data management:** Different commands enable a structured collection of area and object data as well as a fast and comfortable generation of spatial polygons. According to our data collection software hylasFM, a configurable area view, which is set up like a structure view, will be recorded parallel to the drawing. The recorded area data may be exported by the push of a button.



- **DistToPlan programming interface:** User adaptations and external applications have complete access to the measurement functions.
- **Importing coordinates:** Coordinates may be imported from an ASCII file into DistToPlan. That way the manual measurement can easily be combined with a tachymetric measurement.
- **Layer functions:** Different commands for the efficient work with layers alleviate the work flow.

Q6 What are the advantages of DistToPlan compared to conventional procedures?

DistToPlan combines the advantages resulting from the use of modern surveying instruments with those of the conventional mapping on site. While measuring on site, the user has access to all functions of a fully developed CAD system (in this case AutoCAD or AutoCAD LT). That speeds up the measurement, ready to use plans are generated directly on site and the necessary post-processing at the office are reduced to a minimum.
Several tasks are completed within one single work step because DistToPlan overrides the separation of measurement and editing/construction. To do so, the most effective mode of measurement for each case is applied. If a measurement is best being taken with a folding rule, it may be taken with the folding rule. You have the immediate on site control of accuracy and completeness. When you leave the measurement object, you can be sure, that everything has been recorded and is in best order.

Q7 May DistToPlan be extended individually?

Via the programming interfaces AutoLISP and VBA of AutoCAD you can easily integrate the measurement functionality of DistToPlan into your own functions. If needed, we will support you during this process. You may, of course, refer to any other AutoCAD developer.
It is often advisable to use a tachymeter (total station) for large measurement projects with complex geometries. For those cases, we offer our reliable online tachymetric survey system **TachyCAD**. All DistToPlan commands are included in TachyCAD - next to many additional functions. With an upgrade you may easily extend your DistToPlan with the TachyCAD connection.

Q8 I do not work with AutoCAD. May I use DistToPlan anyway?

YES! Generally, DistToPlan is an AutoCAD application that means it is essential that you have an AutoCAD or AutoCAD LT license in order to be able to work with DistToPlan. The results may be processed in any other CAD system though.
If you work with another CAD system, we suggest the combination of DistToPlan and the inexpensive AutoCAD LT. Regard the combination of AutoCAD LT and DistToPlan as an independent survey solution, where we extend the graphic surface of AutoCAD LT with the survey functionality.

We have chosen AutoCAD as basic platform, since it is a fully developed CAD system, which offers many basic functions that may outstandingly be used for the measurement. The integration of one single fraction of those options or even the adaptation possibilities of AutoCAD into independent measurement software would mean to double the effort in a technical and a financial way. Since DistToPlan is based on the basic functionality of AutoCAD, it is, for us, possible to concentrate on the development of the specific requirements of surveying. As we think, an intelligent division of work. Another important fact is that you need only little experience in using AutoCAD in order to be able to use DistToPlan without any problems.

Q9 How to try DistToPlan

Everyone who is interested in our software is given the chance to try it on a concrete project. This trial version is free of charge and without any obligations. Upon your request we support the trial with an introductive training session. By trying the software you will find out if DistToPlan meets your demands. As we think a fair offer and, for us, one that goes without saying. Part of the documentation is a tutorial, which shows, on the basis of introductive examples, the basic functioning of the program. The needed sample data are provided on the installation CD.