

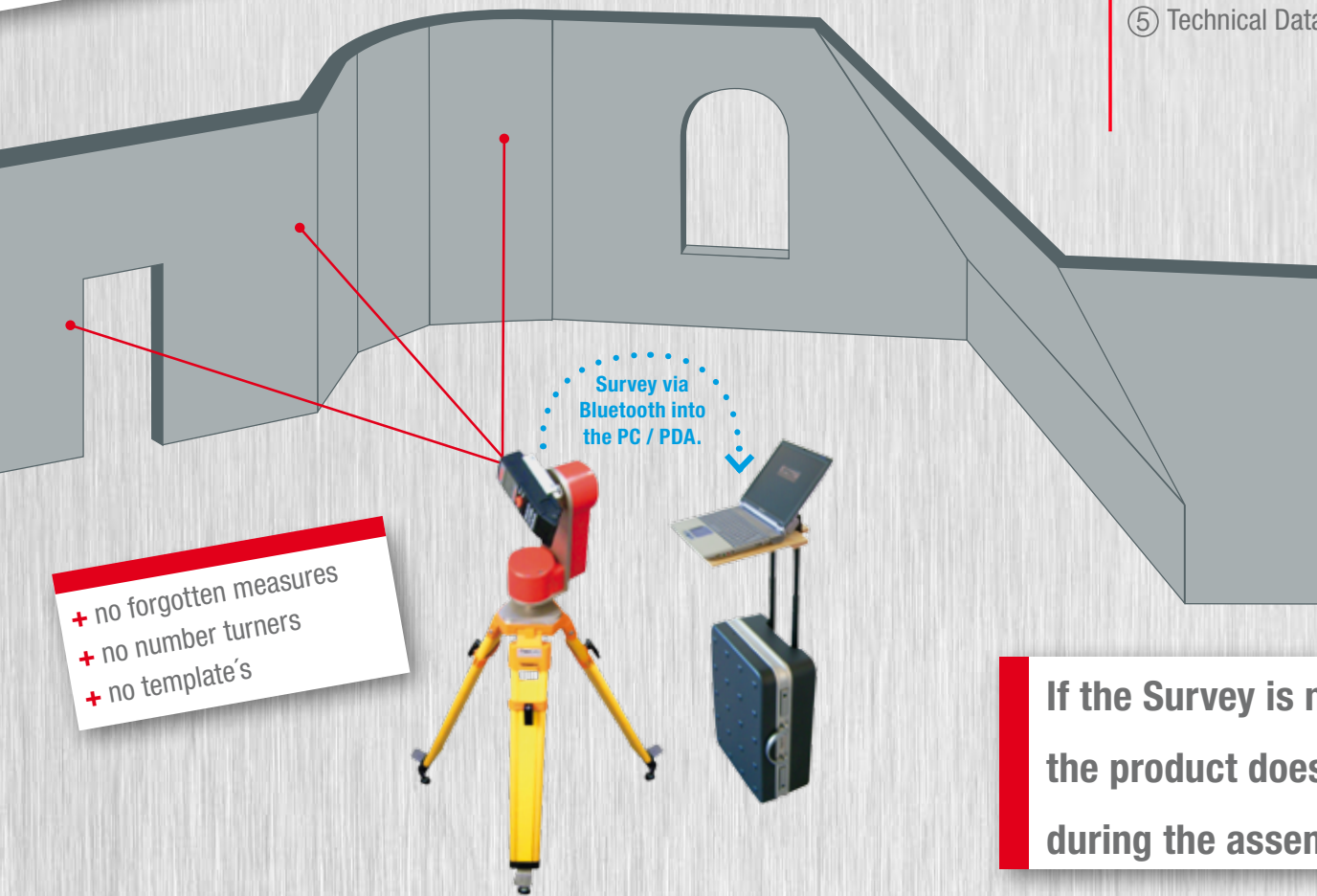
•TheoCAD 3D Survey Solutions

Measures manually note Adé!

Survey by Lasers-Click at the Wall - fast and safe into the CAD.

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Interior



Steps & Handrail



Staircase



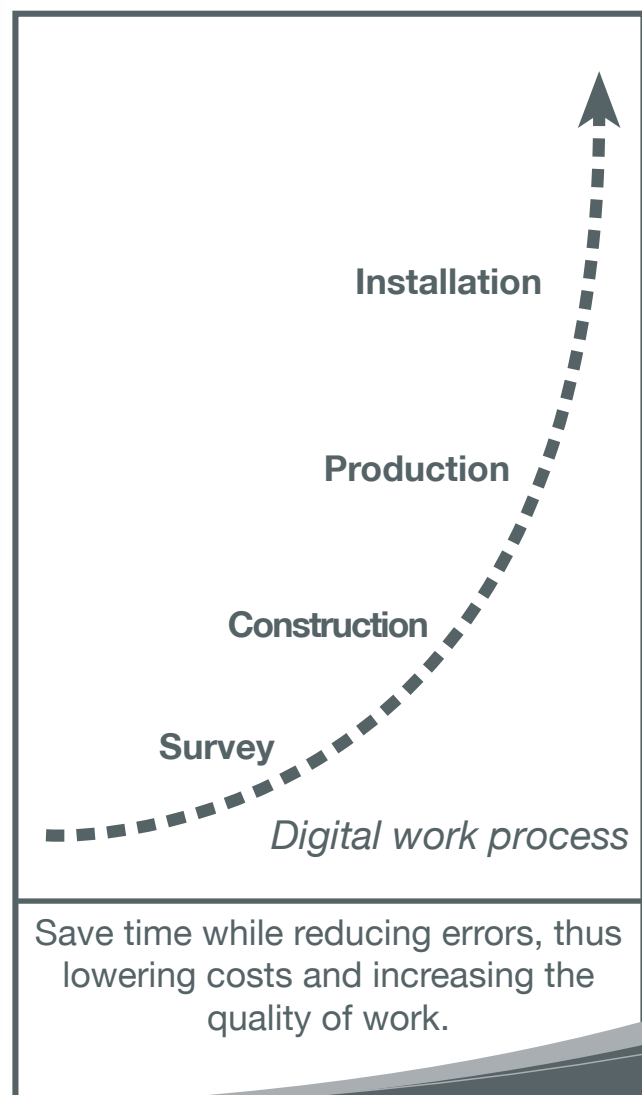
Window & Door

① Overview

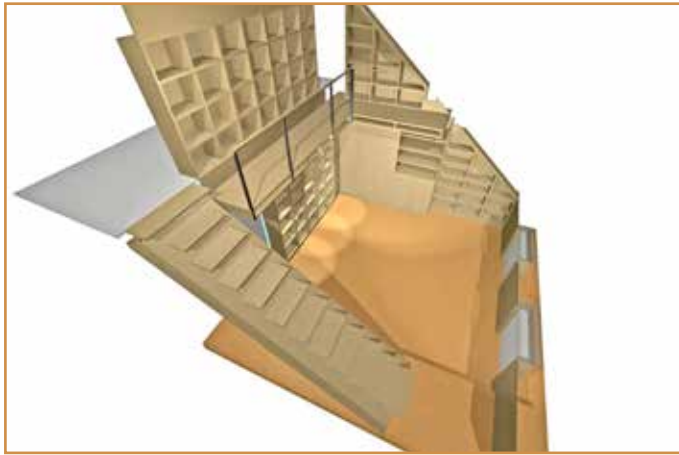
If the survey is incorrect, then it does not matter how detailed the construction plans are or how skilful the workers are: the various components will simply not fit together properly while being installed.

- Measure room dimensions with a laser
- CAD supported survey
- Better databases for processing meteorological information

IN ONE STEP FROM SURVEY TO CONSTRUCTION



Save time while reducing errors, thus lowering costs and increasing the quality of work.



② Example: Attic Extension

CONSTRUCTION DESCRIPTION

An attic with roof dormers that was partially being used was extended to create a storage room and a music room in a listed terraced house.

Construction year: 1911

This example involves a historical monument which is on the list of historical buildings.

All steps had to be coordinated with the authorities in charge of preserving historical buildings.

CONSTRUCTION STEPS

The roof dormers and intermediate rafters were installed as well as heat insulation.

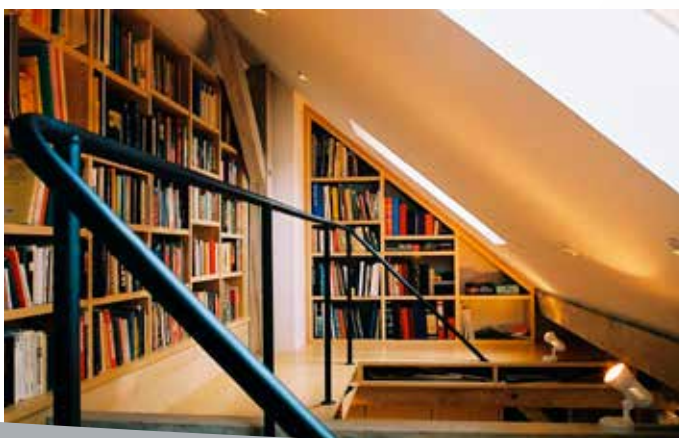
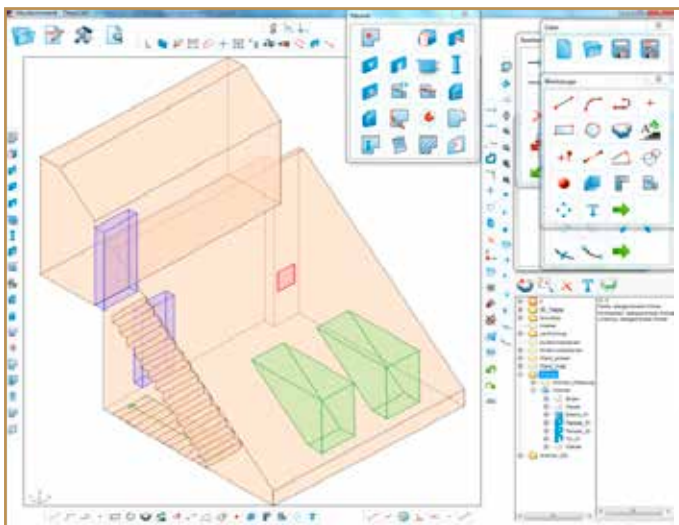
A visible roof-truss was made.

Dry construction work was done on the walls, floors and ceilings. The walls and ceilings were covered with fireproof paneling. The F30-extension was completed by adding a dry, jointless floor with TSD and a wooden parquet floor. Extensive Interior Fitting Work was then carried out involving precisely tailored furniture, a staircase and a gallery.

A THEOCAD SURVEY

For most of the time, this survey was able to be conducted from just one position. In about 30 minutes, this survey did the essential measuring for the planning and construction phases.

After the tripod and survey equipment have been set up (this takes about 2 to 3 minutes), the survey can begin. As it measures a room's dimensions, TheoCAD creates a 3D CAD drawing. After the survey has been completed, the drawing can then be transferred as a DXF file into other CAD programs, which can be used for the planning and construction phases.



③ System Characteristics

Bluetooth
Storage Battery
Suitcase
Rubber Feet



TheoCADBluetooth

The Bluetooth antenna of TheoCAD allows for wireless communication between the survey equipment and the notebook.

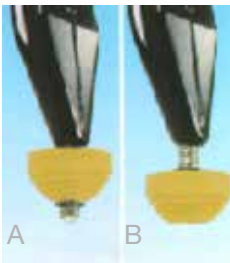
TheoCAD Internal Storage Battery



An internal storage battery can be used for the power supply of the survey equipment. With this storage battery, it is possible to work between 10 and 12 hours. While recharging the storage battery, the survey equipment can still be used. The recharging can be done with a car adapter either at 220V or at 12V.

TheoCAD Tripod + Rubber Feet

Using rubber tripod feet is highly recommended if the TheoCAD is going to be used on floors that can easily be scratched like marble or parquet for instance. At the same time, the rubber feet prevent the tripod from slipping. If other survey equipment need the tripod tip, then in such a case the rubber tripod feet just need to be screwed back on.



TheoCADSuitcase

The suitcase for the survey equipment, notebook and accessories can optionally be used as a table for the notebook.

The suitcase can be carried using the handle or can be moved using the shackle handle and its wheels.

④ Financial Considerations

A Survey done with TheoCAD
An Example of Interior Fitting

Explanations of the Categories

SURVEY DURATION

You can decrease the survey duration through simple and quick measurements conducted by means of a laser. This is especially the case when there are complicated rooms with arch-shaped walls or high ceilings for instance. There is no need to measure any additional diagonals besides the basic lengths of the room to complete the survey. Nor is there any need for “climbing” up on the wall to record the measurements of the ceiling area.

CREATING THE TEMPLATE

The template does not have to be created because a “digital template”, which has been measured by the laser, is directly available on the computer in the TheoCAD Survey System. Besides creating the template, it is also necessary to transport the template material.

TRANSFER OF THE SURVEY INTO CAD

There is no transfer of the survey data from paper into CAD because at the construction site the data is already being directly transferred into CAD via TheoCAD. It is often the case that wrong measurements are only detected as they are being manually transferred into CAD. This results in another visit to the construction site to check the measurements. Such visits as well as transferring templates into CAD are no longer necessary.

FORGOTTEN DATA

With the help of the graphic control (CAD) in TheoCAD, it is possible to check at any time which outlines (e.g. the ground plan of the room) have not yet been recorded because the outlines are not fully closed.

WRONG MEASUREMENTS

Because the measurements are not recorded by hand, there is no possibility for numbers being mixed up due to incorrectly writing down or reading the data.

| at 45 €/h | Hours per month | Hours per year | Usage in € | |
|--|-----------------|----------------|-----------------|--|
| Survey Duration | 1,5 | 18 | 810,00 | |
| Transfer of the Survey into CAD | 1,5 | 18 | 810,00 | |
| Forgotten Data | 2,5 | 30 | 1350,00 | |
| Wrong Measurements | 3,5 | 42 | 1890,00 | |
| Creating the Template | 2 | 24 | 1080,00 | |
| Survey with one Person | 2,5 | 30 | 1350,00 | |
| Customer Satisfaction | 1 | 12 | 540,00 | |
| Preproduction and, consequently, a shorter Installation Time | 3,5 | 42 | 1890,00 | |
| Sum | 18 | 216 | 9.720,00 | |

The data used here are only for providing an example and can vary from case to case.

SURVEY BY ONE PERSON

Following the survey principle “one measures while the other writes down the information,” two people are necessary. With TheoCAD just one person is necessary. Sometimes even 3 people are needed for a manual survey (e.g. cutting templates for larger arches and the multiple radiuses needed for wall covers).

PREPRODUCTION

With the help of a detailed survey, less or even no fitting work at the construction site is required. The result is a higher level of quality and a shorter installation time. While the fitting work is being done, there always remains the risk that pieces will be cut the wrong way and will need to be ordered again.

CUSTOMER SATISFACTION

Using TheoCAD also provides the customer with a sense of confidence, knowing that state of the art technology is seeing to it that all the components will be properly installed and that no deadlines will be missed due to incorrect measurements.

⑤ Technical Data

Type

A 3D survey system with a visible red laser

Measurement Area

0.30 m. to 30 m *

The area that can be measured is limited by the laser range of the range-finder. Depending upon the range-finder, the laser range can amount to anywhere between 100m. and 200m.

Measuring Time

1- 4 seconds *

If the surface is light, then the measuring time will amount to about 1-2s. and if the surface is dark, then it will be about 3-4s. If the surface is very dark, then sometimes the measurement cannot be carried out.

Distance Precision

Bosch DLE Connect +/- 2 mm *

Leica Disto D3aBT +/- 1,0 mm *

Leica Disto D8 +/- 1,0 mm *

Angle Precision

0,0025° *

Weight

3.8 kg *

The weight does not include the tripod and the suitcase.

Operating Temperature:

-5°C to 50°C *

*ADDITIONAL AND MORE PRECISE INFORMATION AND EXPLANATIONS CONCERNING THE TECHNICAL DATA CAN BE FOUND IN THE APPROPRIATE MANUALS.

