

Architectural Surveying and Visualization Using “Photo-Tacheometry”

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SUMMARY

In architectural surveying it is much more effective to closely integrate different surveying methods than to use them side by side. Based on this experience, new hardware and software as well as corresponding new measuring tools were developed. The hardware is based on a computer-notebook-directed robot-tacheometer capable of reflectorless measuring. It is a so-called intelligent tacheometer, enabling the device to run several new and innovative measuring functions. In combination with an additional digital camera the instrument may be used in many more possible ways. This working-mode is called “photo-tacheometry”.

It, for example, offers the possibility to direct the instruments telescope by mouse-clicking on a photo being displayed on a computer notebook’s screen, and thus to exactly measure the coordinates of the point indicated by the cursor. In this operation-mode, the image may be taken from an arbitrary position or a camera integrated into the total station. This technique makes it quite easy to do online rendering or to establish a virtual model.