

Building Information Model (BIM) and Measuring Techniques

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SUMMARY

In CAD software digital drawings are modeled with lines, surfaces or solids in order to specify the dimensions of a building. Layers are used to structure the graphical elements according to appropriate criteria. In contrast to CAD, the BIM method offers a rich semantic model of building elements. Typical object types are wall, door, ceiling, etc. Using BIM, dimensions of building elements are specified by parametric modeling. Parametric modeling hardly uses coordinates, whereas engineering surveyors typically use point coordinates and derive graphic elements of higher dimension (line, face, solid) from measured points, which are imported to the CAD software. In the case of as-built-documentation the BIM method will change the way measurements are used to derive digital models: In this paper some practical investigations are shown: How to use point-clouds (both structured, e.g. as from a total station, and unstructured, e.g. as from a laser scanner) and manual measurements with the BIM method. Examples are given with Autodesk Revit, which is a frequently used BIM program.