



## Understanding BIM – What does it mean and what can it be used for

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### Abstract

BIM, or Building Information Modelling, is all the rage these days. But even spelling out the acronym does not necessarily lead to an understanding of the term. In many cases, the lack of expert knowledge surrounding BIM can create the impression that it is just an extension of CAD.

BIM is a planning and design method for the construction sector where information from various sources active in the design and building process is collected in one centralised model – or database. Data that may become relevant during the service life of the structure can also be included. The method can be applied to varying degrees. Phrases like ‘little BIM’ and ‘big BIM’ exist but which need further explanation. Using this method requires additional tasks which require description. Applying BIM requires changes in the design processes and especially more discipline in how projects are organized. The actual advantages of the BIM method, however, can only be explained using examples taken from practice.

This paper explains the terminologies used in BIM in order to provide an idea how this method can change the whole construction industry. It shows how a design process can be made BIM compatible and its step-by-step implementation. Finally, applications are discussed which illustrate the advantages of this method and which explain to the reader which added value can be created in the entire supply chain of designing, erecting, maintaining and managing by using the BIM method.

**Keywords:** BIM, Building Information Modelling, design method, planning management, information management, collaboration, 3D model, life cycle

### 1 Introduction

Nowadays, construction projects are almost exclusively planned and designed using software for drawing and calculating. Innovations and improvements in the planning process are as a rule introduced by continued development of the software. Thus when hearing BIM – which stands for Building Information Modelling – one always tends to expect a piece of software behind it. It has been shown, though, that problems in the planning/design process usually do not occur because of inadequate software but because of incorrect work methods. The unstructured exchange of project information and data between design teams results either in the loss of information or

in it being overlooked. Converting planning data from one system to another leads to additional problems as well as loss of information and data. The BIM approach is therefore a totally different one:

**Building Information Modelling means a collaborative work method that creates and uses digital models of an asset as a basis for the consistent generation and management of information and data relevant to the asset's life cycle as well as for the sharing or passing on of such information and data between the participants for further processing by way of transparent communication [1].**