

BIM *Building Information Modeling*

SOFTWARE TOOLS

BIM is a process which is implemented and managed across different technologies which, depending on needs, must interact together. It is therefore not possible to buy a pre-packaged "BIM"; BIM is deployed and managed to suit your needs by carefully choosing software and hardware.

BIM SOFTWARE TOOLS

The market has a considerable amount of BIM software which can deal with and provide solutions in the management of various BIM stages. Software programs exist for the production of models, for cost estimation, for controlling models, for display and for planning. Various software can be very specific and focused on one topic or be able to handle a very large number of cases. For orientation purposes, following is a non-exhaustive list of the main types of software:

BIM Authoring software

Programs for the design and implementation of data models (Building Information Model) for different uses. Often they appear as three-dimensional design CAD systems; they actually manage not only the graphic appearance of the project data, but also all non-graphic information associated with items included in the project.

What falls into this category, for example, is architectural design software such as Autodesk Revit, Nemetschek Allplan, Graphisoft ArchiCAD; for the infrastructure sector, as an example, SierraSoft Roads and SierraSoft ProSt; for Tekla structures.

The choice of software has to go through evaluation and quality of the following features:

- **"Pure" design features** : The software allows the designer to do and to obtain that which he or she wants.
- **Data modeling capabilities**: The software allows you to manage not only graphic information but also non-graphical information which define in detail the elements being designed.
- **Interoperability features**: The software has to handle the import and export of project information (graphical and non-graphical) using standard and open data models such as IFC (Industry Foundation Classes).

BIM Analysis Software

This category contains a whole series of data analysis software, obtained from different sources, pertaining to analyses which cover the entire life cycle of construction.

These include energy performance analyses, vehicle traffic analyses, roundabout capacity analyses, etc.

File-sharing e Collaboration Software

One must think about file-sharing, collaboration and document management as a whole. These tools are at the heart of the BIM field. The ideal system leverages the Cloud for storage of data which is then accessible from a desktop computer, the internet and mobile devices.

Construction Management Software

This type of software is more focused on the 4D aspects of BIM for execution scheduling management.

We can also place software that turns project information into data which may be directly utilized by machinery in this category, such as the machine control systems Topcon, Leica and Trimble.

Model viewers and checkers Software

This type of software allows you to view the models designed with BIM author software, to check information, perform clash-detection tests (interference control and verification) and to validate model objects. Some of these types of software can also create realistic images of the model and exploration videos of the model following freely defined paths.

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DETAILED INFORMATION 04

Quantity takeoff and Estimation Tools

BIM authoring software has features for exporting information for budget preparation and model and construction accounting. This information is then used by BIM software specialized in the preparation of bills of quantities and job accounting and scheduling management.

Software such as STR Vision CPM, Vico Office and Primavera Software fall into this category.

QUESTIONS AND ANSWERS/THINGS TO KNOW

There are important issues, and necessary clarifications for those approaching the BIM world with an interest in its implementation. Here we have summarized some questions with important answers which are worth citing.

What is the main difference between designing with CAD software and with BIM software?

The main difference is that CAD software is used to create drawings, whereas BIM software is used to create data models and ensures information sharing, collaboration and communication.

Is a BIM only for large companies and for large projects?

No, a BIM is for everyone, from small to large companies, for small and large projects. The types of problems are always the same, it is the size that changes. BIM allows greater control and optimization of processes and costs.

Is a BIM expensive?

Implementing a BIM has a cost in terms of time and money, but the benefits in the medium to long term more than offset investment.

Does the BIM affect productivity?

Switching to a BIM is neither easy nor quick. In the implementation phase and in the first period of use, there will be a decline in productivity, as is the case with any introduction of new work methods. In the medium to long term, however, there will be an increase in productivity, efficiency and quality.