

3D Modelling / BIM

This section of the website has been set-up to give guidance and to illustrate how the use of intelligent three dimensional (3D) models, within the construction industry, is helping to shape the future.

3D refers to objects (in this case, structures) that are constructed on three planes (X, Y and Z). To illustrate a structure in 3D and to interactively rotate it to obtain various views, etc., it must be created using a three-dimensional, real-time, dynamic building modeling software program.

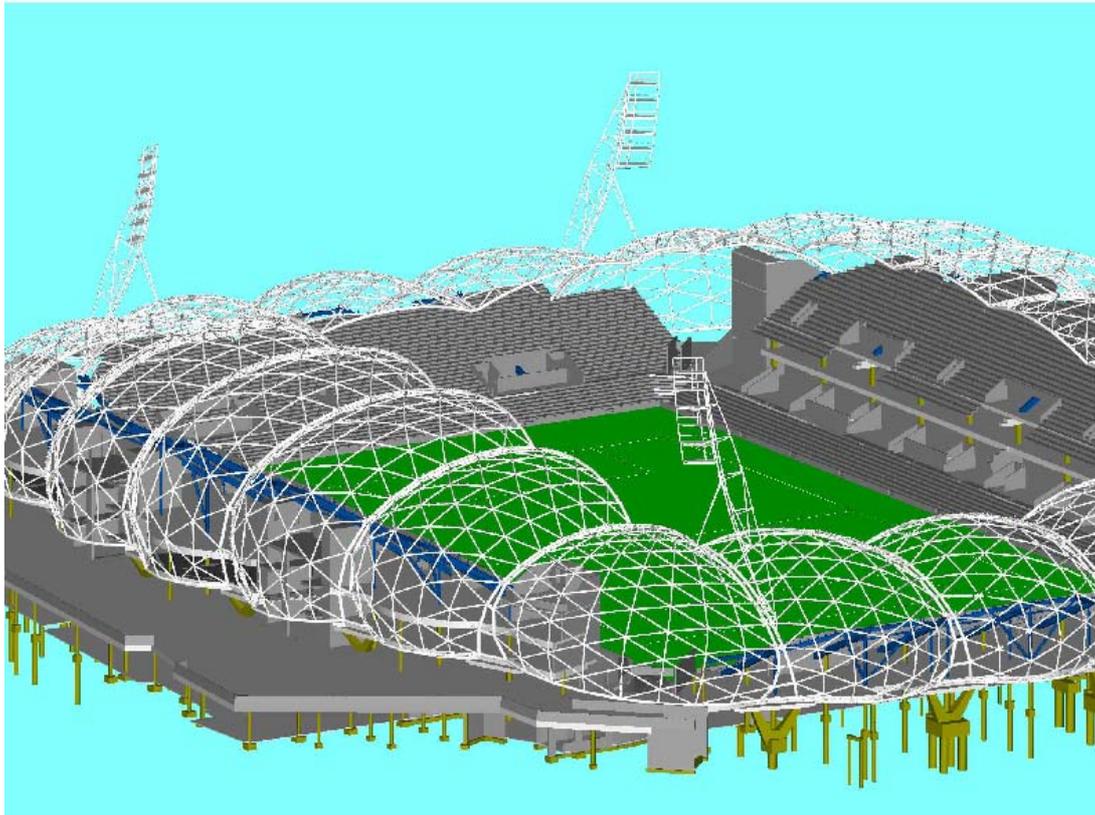
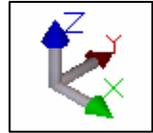


Image courtesy of: Cocciardi P/L

The 3D model that this software generates, encompasses the structure's geometry, spatial relationships, geographic information, along with quantities and properties of all its components.

This model can also be used to store all the data from construction planning through to facility management along with monitoring performance from design to supply and installation.

This process is referred to as Building Information Modeling (BIM), which is the process of generating and managing building data. BIM can be used to demonstrate the entire building life cycle including the processes of construction and facility operation.

Quantities and shared properties of materials can easily be extracted. Scopes of work can be isolated and defined. Systems, assemblies, and sequences are also able to be shown in a relative scale with the entire facility or group of facilities.

The process produces the Building Information Model (also abbreviated to **BIM**), which is the common name for a digital representation of the building process to facilitate exchange and interoperability of information in a digital format. These models contain valuable data as attributes for the entire steel value chain.

The interoperability requirements of construction documents include the drawings, procurement details, environmental conditions, submittal processes and other specifications for building quality.

BIM is utilized in the integration process to bridge the information loss associated with handing a project from design team to construction team and to building owner/operator by allowing each group to add to, and reference back to, all the information they acquire during their period of contribution to the BIM model.

Integration between the 3D models, which are generated by the various disciplines, is generally handled by using standard protocols (CIS/2, IFC, DSTV, DXF, DWG...), where the attributes of a model in one type of software can be exported to and/or imported from another type of software.

The site is separated into 3 areas:

- Overview of Discipline
- Market Sector Use
- Software Examples & Application

The overall objective is to afford a high level of confidence to designers involved in the development of steel structures.