

DesignView

A computer software tool that provides the ability to view and modify a 3D CAD Building Information Model.

An industry need

A plethora of expensive CAD packages exist in the market place today. There is a need for an inexpensive 3D CAD Building Information Model viewer that allows simple and flexible viewing of a building model, no matter what package it was initially created in.

Building Information Models coming out of 3D CAD packages do not always have sufficient information for subsequent analysis activities that users may wish to perform. An interface into the Building Information Model is needed that allows additional data to be attached to the building elements in the model and modifications to be made in preparation for further analysis.

What is DesignView?

⇒ **DesignView** is the core application of Construction Innovation's Building Information Model Workbench. A suite of other applications are in development as plug-ins to the central DesignView application.

⇒ **DesignView** provides the ability to view and modify a 3D CAD Building Information Model that has been exported from a 3D CAD package as an IFC file.

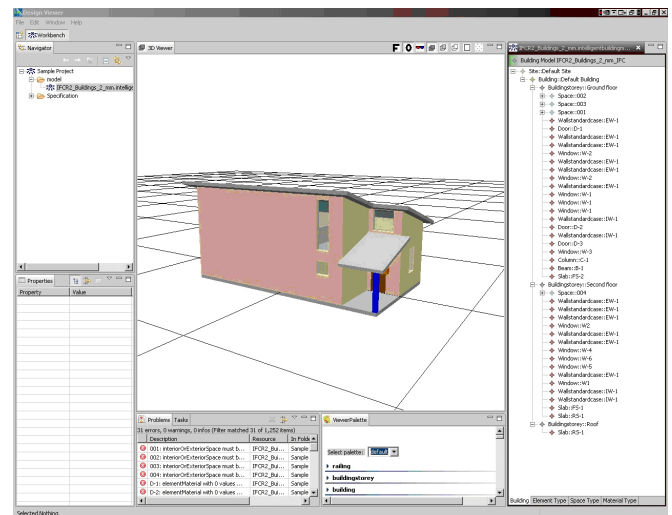
⇒ **DesignView** allows a Building Information Model to be explored in a number of ways: by building element hierarchy (site, building, storey, etc.), by element type, by space type, and by material type.

⇒ **DesignView** allows building element properties to be viewed. Some properties may be modified, including element type, material, element name, and notes

⇒ **DesignView** highlights missing or erroneous data in the Building Information Model.

⇒ **DesignView** allows a Building Information Model to be displayed in a number of different ways including fully rendered, wireframe, point cloud and plan view. The camera can be controlled in "first person" mode or "orbital" mode.

⇒ **DesignView** allows a user to change the way a building element or group of building elements is displayed. Building elements may be displayed or hidden, have their colours changed, or transparency adjusted.



DesignView provides the above Workbench Perspective as a default arrangement of views consisting of:

- 3D viewer
- Model outline
- Viewer palette
- Problems and tasks
- Properties
- Navigator

Benefits of Using DesignView

Enables users to view a 3D CAD model without needing to buy an expensive CAD package.

Enriches Building Information Model by allowing addition/modification of building element type, materials, and name.

Enriches Building Information Model by allowing addition of free-form notes relating to a building element.

Plug-ins are under development that facilitate analysis or further enrichment of the Building Information Model in various ways.

PLUG-INS

DesignSpec enables creation and modification of building specifications and links them to building elements in the building model.

LCADesign analyses a building model in terms of its environmental impact.

Automated Estimator generates a bill of quantities and cost estimate. [Under Development]

Likely users of DesignView

- Architects/Designers
- Building contractors
- Subcontractors
- Quantity Surveyors
- Planners
- Academics/Educational Institutions

CRC for Construction Innovation

DesignSpec has been developed by the Cooperative Research Centre (CRC) for *Construction Innovation*. Construction Innovation is a national research development and implementation centre focused on the needs of the property, design, construction and facility management sectors. It takes ideas and turns them into collaborative research to produce industry-relevant results for our partners and the whole industry.

Partners in progress

DesignSpec is supported by CSIRO, Brisbane City Council, Queensland Department of Public Works, Rider Levett Bucknall, and Woods Bagot. NATSPEC was also a core contributor to this project.

Cooperative Research Centre for *Construction Innovation*

9th Floor, L Block, QUT Gardens Point
2 George Street, Brisbane QLD 4000

Email: enquiries@construction-innovation.info

Web: www.construction-innovation.info

Telephone: +61 7 3138 9291