



G L O B R I N



CASE STUDY

Integrated Environmental Solutions (IES)



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Sustainable 3D Building Design, Architecture Software.

Company Profile

IES is an innovative company at the forefront of the use and development of powerful software simulation tools which help architects, engineers, facilities managers, and all those involved in the development and management of building design and maintain truly sustainable properties.

Business Challenges

The company's product <Virtual Environment> is a tool for assessing Building Performance. It analyses energy, carbon, daylight and solar parameters in the building plan so that an environmentally sustainable design can be achieved.

Although one of the most advanced analysis tools available <Virtual Environment> has limited facilities for model construction. It can nevertheless interpret and analyse data prepared by other sources in a standard format.

IES had identified Google SketchUp as a popular tool used by architects for preparing building models, however a SketchUp model data consists only of 'faces' and 'edges' and lacks the concepts of Rooms, Spaces, Doors and Windows required by <Virtual Environment>.

Google SketchUp is a free 3D modelling application which has an easy-to-use intuitive user interface for creating 3D models of anything. Our challenge was to convert the Sketchup models to a format which could be analysed by <Virtual Environment>.

Solution

Essentially the solution was obtained by the analysis of all the faces and edges in a model.

SketchUp provides an interface to the Ruby Computer Language making this possible.

The analysis uses techniques of geometrical and topological inference specially formulated for this particular project to produce a compatible transformation of the design for input to the IES product.

Additionally new User Interfaces were created to plug into the SketchUp application. These allow the input of environmental, climatic and building material data as well as illustrating the "Rooms" or Spaces of the model.

Benefits

As a result of the initial release of the SketchUp Interface the company has confirmed new orders for its <Virtual Environment> product.

