

Questions and Answers

Autodesk® Green Building Studio® web service helps architects and designers to conduct whole building energy analysis, optimize performance and efficiency, and achieve carbon neutrality earlier in the design process.

An open analysis tool based on the robust data exchange of the Green Building XML (gbXML) schema, Autodesk Green Building Studio technology is interoperable with Revit® Architecture and other compatible energy analysis software. Architects and designers can use the Autodesk Green Building Studio web service to evaluate building components for effects on energy consumption and better maximize economic and environmental performance. With more tools for energy analysis of building design proposals, architects and designers can think sustainably, plan proactively, and build better.

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1. General

1.1 What is Autodesk Green Building Studio?

Autodesk Green Building Studio is a web-based service that includes industry leading building energy and carbon analysis tools. Green Building Studio tools enable architects and designers to evaluate the energy profiles and carbon footprints of various building designs. Files are shared between engineering software programs and among engineers and architects early in the design cycle, making sustainable design more efficient and cost effective.

1.2 What is Green Building XML (gbXML)?

The Green Building XML schema (gbXML) was developed to facilitate intelligent information exchange, enabling integrated interoperability between building design models and a wide variety of engineering analysis tools available today. Autodesk Green Building Studio relies on the gbXML file format to securely transfer building information between design tools such as Revit Architecture and its web-based whole building energy analysis engine DOE-2.

2. How to Buy

There are two options to purchase Autodesk Green Building Studio: either as a subscription entitlement to qualifying Autodesk products and suites; or as a standalone web service.

2.1 Purchase subscription with a qualifying Autodesk product

Customers who add subscription to [Autodesk® Ecotect Analysis®](#), Revit Suites, or other qualifying products and suites, can access whole building energy analysis capabilities via the web-based technology provided by Autodesk Green Building Studio®. Contact your reseller for information on the current qualifying products www.autodesk.com/reseller.

2.2 Purchase Green Building Studio as a Standalone Web Service

To subscribe to Green Building Studio as a stand-alone web service, register at www.gbs.autodesk.com.

More detailed information is available at www.autodesk.com/greenbuildingstudio.

3. Technical Capabilities

3.1 Can I use the Autodesk Green Building Studio web service to import material properties from my BIM tool?

You can use Green Building Studio to import material properties, if your BIM tools are enabled to export that information to the web service through the gbXML file (for example Revit MEP). However if you are using a different BIM tool that does not have this capability, regional code-compliant default material assemblies are used instead for the baseline energy simulation. These defaults can then be modified on the web service either through Design Alternatives or by using the Project Defaults from Your Project List page.

3.2 How does the Autodesk Green Building Studio web service choose the material assemblies, schedules, etc. required for whole building energy analysis?

Green Building Studio determines the appropriate defaults based on where your building is located, the building type, and the size of your building. The majority of construction, schedule and equipment defaults are ASHRAE 90.1-2007 compliant.

3.3 Can my building information modeling tool import the changes I make in the Autodesk Green Building Studio web service?

Today's building information modeling tools are not yet designed to accept gbXML input files, so presently changes made in Green Building Studio cannot be automatically incorporated back into the building information model.

3.4 Can I use the Autodesk Green Building Studio web service to study daylighting or create rendered views of my project?

The Autodesk Green Building Studio web service currently does not perform daylighting or rendered studies, but those capabilities are already available in leading building information modeling tools such as Revit Architecture.

3.5 Does the Autodesk Green Building Studio web service only analyze commercial buildings?

Green Building Studio can be used to analyze residential, commercial and institutional project types.

3.6 Is the Autodesk Green Building Studio web service only suited for new construction projects?

Existing buildings can also be analyzed using Green Building Studio, provided that there is a building information model to submit that approximates the building's geometry.

3.7 Have the results of the Autodesk Green Building Studio web service been validated?

The Autodesk Green Building Studio web service simulation results were evaluated under ANSI/ASHRAE Standard 140-2004, Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs, and certified by the U.S. Department of Energy.

4. Design Process

4.1 How much detail is needed in the building information model to perform accurate whole building energy analysis?

In general the main exterior walls, windows, roofs, floors and interior partitions separating the building's thermal zones are ideal for energy analysis. More detail tends to add time and complexity to the model without improving simulation accuracy.

4.2 How do I model engineering details such as framing factors and infiltration rates using the Autodesk Green Building Studio web service?

Green Building Studio is a schematic design tool for architects to evaluate the energy profiles and carbon footprints of different building forms. It is not designed to capture highly detailed engineering effects.

4.3 Does the Autodesk Green Building Studio web service perform LEED reporting?

Green Building Studio provides guidance on the LEED Daylighting 8.1 Credit and LEED Water Efficiency Credits 1, 2 and 3. It also uses the DOE-2 hourly energy simulation engine as

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required by LEED Energy and Atmosphere Credits 1 and 2. The web service is useful for assessing goal viability for the first LEED charrette; however, it is not a compliance tool and does not produce the required LEED submittal documentation. It is intended for use early in the process when design changes are conceptually easy to make.

4.4 What does it mean for a building to be "Carbon Neutral"?

A carbon neutral building as defined by the Autodesk Green Building Studio web service is one which reduces its power consumption and substitutes renewable energy by a quantity equal to the percentage of electricity and onsite fuel usage for which fossil fuels are the feedstock.

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