

The February 2014 Release of Green Building Studio (GBS), Version 2014.2.32.3978 (DOE-2.2-48r, passed the Vasari and Revit conceptual mass model energy analysis results regression tests. Changes in the energy results between the previous release and the new release are all due to the adoption of the new version of DOE-2.2 simulation engine.

This release of GBS web service now uses the newest 64-bit version of DOE-2.2-48r, which includes Autodesk code enhancements. Revisions to the DOE-2.2 software result in some changes to the GBS energy analysis results (thereby affecting [Revit](#) and [Vasari](#) energy analysis results). Refer to the [DOE-2.2 New Features documentation](#), and the [Description of Cumulative DOE-2.2 Version 48r Bug Fixes](#) documentation for more details.

### Main purposes of the test

The Green Building Studio (GBS) QA team performs regression tests for the energy simulation results component of Vasari and Revit conceptual mass models to ensure stability against the baseline. The regression tests are performed weekly and for every release of GBS. The tests are designed to test whether or not any changes to how Revit and Vasari write gbXML files affect the GBS energy results. When differences do occur, the QA team investigates if any changes in energy results are expected.

### Two main components of the tests:

1. API Server side: The energy analysis data within the Revit and Vasari Results and Compare (R&C) window is compared against the baseline. Types of data delivered by APIs include all the images and values rendered in the R&C window and weather statistics.
2. Analytics: The energy results written to the gbXML file by the energy simulation are compared against the previous release baseline.

Weather Data Source	Number of Building Types	Number of Locations	Number of Models
Autodesk Climate Server	8	14	186

**Acceptance criteria:** +/- 1% difference tolerance unless changes are expected. Any changes are investigated in detail to assess their acceptability.

#### Building Types:

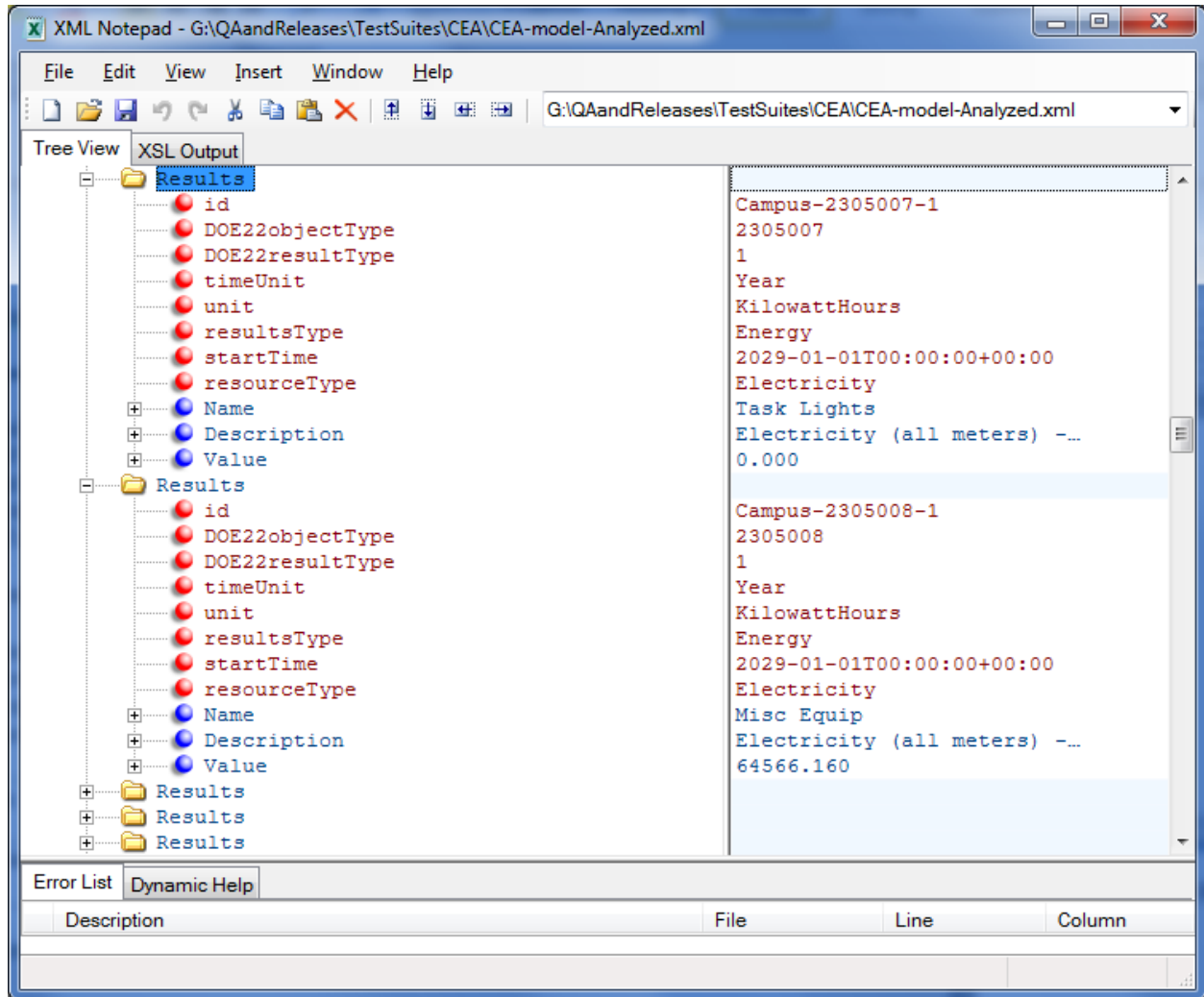
- Office
- School or University
- Single Family
- Religious Building
- Sports Arena
- Multi Family
- Police Station

#### Locations:

- Raleigh, NC, USA
- Seattle, WA, USA
- Boston, MA, USA
- Manchester, NH, USA
- Amsterdam, Netherlands
- Columbus, OH, USA
- Sydney, Australia
- Des Moines, IA, USA
- Annandale, VA, USA
- Stockholm, Sweden
- Tuscaloosa, AL, USA

Validation of the quality of energy results are performed by other GBS tests. Evaluation of the GBS building energy analysis computer program, using the ASHRAE/ANSI Standard 140-2011, is also performed for every release. Because of the range of other sets of tests, a limited number of building types and locations are suitable for the purposes of the Vasari/Revit Regression tests.

Test Component 1: API server side: Revit Results and Compare Window



Test Component 2: Analytics, comparison of gbXML file Energy Results