



21CR Project 605-30010

State-Of-The-Art Review, Whole Building And Building Envelope Simulation And Design Tools

Updated 25 June 2002

Objectives:

- (1) Achieve a top-level assessment of the state-of-the-art in whole building simulation methods, envelope modeling tools, and actual practices of design professionals (i.e., consulting engineers, architects, and design-build contractors)
- (2) Relate the findings to a vision for an ideal set of whole-building simulation and design tools that encourage integrated whole-building design, energy efficiency improvements, comfort, and indoor environmental quality

Information/items are expected to result from this project:

The project characterizes existing whole building simulation and design tools. Included is an assessment of the additional research or modifications that would facilitate the systems integration effort, particularly in small commercial buildings.

How are the results likely to be applied and by whom:

This work aids in identifying tools to assist engineers and architects in obtaining an “integrated” assessment of a proposed structure and the associated building systems including HVAC and lighting in order to maximize energy efficiency.

Research subcontractor:

Architectural Energy Corporation, Boulder, CO (Principal Investigator: Peter C. Jacobs, P.E.)

Status:

This project was concluded in the second quarter of 2002 and a final report approved for release. The final report is available free for downloading from the ARTI website.

One combined report includes the results from *State-Of-The-Art Review, Whole Building and Building Envelope Simulation And Design Tools* (Project 605-30010) and *State-Of-The-Art Review, HVAC Component And System Simulation and Design Tools* (Project 605-30020).

Responsible 21CR Subcommittee: System Integration