

Boston Society of Architects
Research Grants in Architecture 2010

Title: Energy Modeling for Housing

This proposal is to perform a comparative study of energy modeling software platforms for accuracy and ease of use in housing design and development. This study is an extension of an energy performance evaluation project conducted by the same team for the Department of Energy, Building America Program. The researchers are currently evaluating the performance of 14 workforce units designed and built to achieve improved energy efficiency by 50% above code standard. In order to determine the actual energy efficiency of the houses over a year, two prototypical units have been selected to instrument and monitor the performance of the passive strategies, high R-enclosure, geothermal, PV and solar hot water systems for their contribution to the holistic energy efficiency.

Under the BSA grant, the researchers will simulate the houses and compare the energy performance measured to actual energy performance in order to determine the software accuracy. In addition to accuracy, the software will be evaluated for accessibility. The following energy modeling programs will be assessed and compared:

- E-Quest DOE-2
- Energy Plus
- Ecotect Analysis
- Passive House Planning Package 2007
- REM Design
- Energy 10

Requested Amount: \$10,000