



High Environmental Performance Housing for NY State

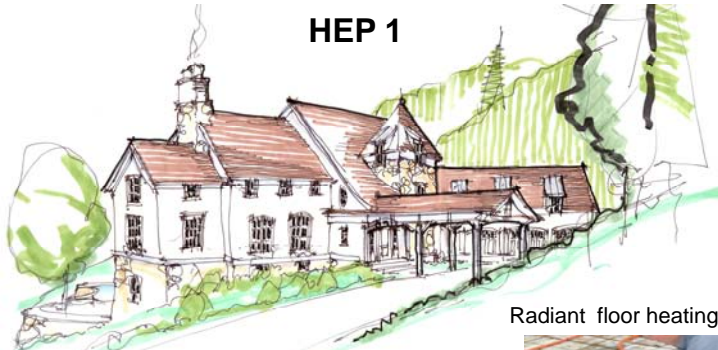
Hugh Henderson, CDH Energy Corp. / Mark Bomberg, Jensen Zhang, Syracuse University / Kevin Stack NNH / Terry Brennan Camroden Associates

SPONSORS:

- New York State Energy Research and Development Authority (NYSERDA)
- U. S. Department of Energy (DOE)

A team representing four areas of expertise reviewed the design and construction process identifying options for integrating mechanical services (HVAC) with the building enclosure and cuts in energy. To assist material selection some tests were performed at the Syracuse University

HEP 1



Spray polyurethane foam (SPF) in roofs and some walls

Radiant floor heating



Brackets for hanging the joists (left) support plates (center) and bracing for corners (right side).

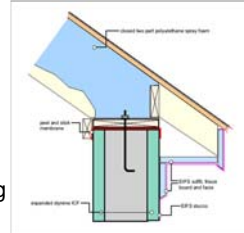
ICF details



Extruded polystyrene strip between the rough opening And the ICF blocks



Sealant foam application between the rough opening and the concrete



Tested airtightness of the whole house (and of bonus room with SPF) in²ELA/100ft² enclosure 0.62 (0.30) while EEBA, LEED multi-family platinum is 1.25
The HEP house exceeds all target levels of public programs.

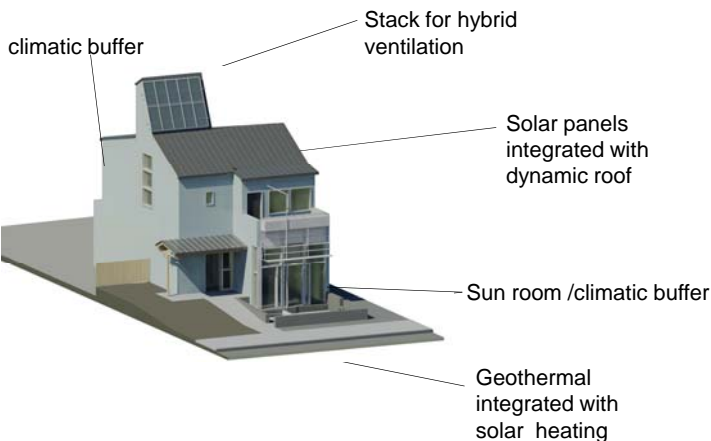
Predicted energy use is being compared to one monitored over 12 month of controlled service

HEP 2 – design stage / HEP affordable housing

Timothy Stenson – Architecture SU / Mark Bomberg, Jensen Zhang, Mechanical Eng. SU / Lingo Lovell & Utpal Roy, Manufacturing SU

SPONSOR:

- Center of Excellence SU



HEP 3 – Re-engineering 6 other designs

Hugh Henderson, CDH Energy, Mark Bomberg, Ed Bogusz, Syracuse University / Kevin Stack NNH / Terry Brennan Camroden Associates

SPONSORS:

- New York State Energy Research and Development Authority (NYSERDA)
- Center of Excellence SU