

The Emerging DER and Residential Baselines in Eastern Massachusetts

Presentation by Henry MacLean, March 13, 2013 COTE Meeting , BSA

This session will examine a renovated 1905 Bungalow DER in Quincy MA that completed both the National Grid DER Pilot program and the ACI 1000 Home Challenge after one year of energy monitoring. In addition to the significant transformation of the building architecturally, we will review the series of options and systems the project team considered to meet the needs of the client, the goals of the DER protocol and the THC energy threshold. How can the combined efforts of all building professionals help secure this effective and relatively new building type so that it can take its proper place in a shifting and competitive housing market?

We will review the systems of the DER including insulation, windows , air tightness, heating and cooling systems, heat exchangers, radiant floors, solar PV and thermal, gas vs. electric, and the myriad other concerns during design and construction and operation. In addition we will see how these elements compare to the energy star home , a house to code, and the typical energy utilization of an average home in the Boston area. In addition, we will explore a number of community efforts to set targets for residential efficiency and renewables, and how these size up with the goals of Architecture 2030 and the Mass Clean Energy and Climate Plan for 2020.

Learning Objectives:

Objective 1:

To understand the additional costs over code house for the DER project protocol.

Objective 2:

To set targets for overall energy savings with respect to additional foot-print of building.

Objective 3:

To explore options with mechanicals systems and the renewable energy component re energy ratings and costs.

Objective 4:

To explore innovative strategies in design, engineering and construction.

Henry MacLean AIA, LEED AP is an architect, educator, and principal of his firm Timeless Architecture. He has been actively promoting green design with civic and educational institutions in the northeast since 1987. Henry has been an adjunct faculty member at Wentworth Institute of Technology and the BAC where he is currently teaching with the Sustainable Design Institute and the Master's of Design Studies program. His articles and project have appeared in several publications including the Boston Globe, the Northeast Sun, Architecture Boston, and Preservation Magazine. He lives and practices in Milton, MA where he serves on the Town's Alternate Energy Committee.