

Comparison of Sustainable Home Building Rating Systems: An Intra- and Inter-Gap Analysis

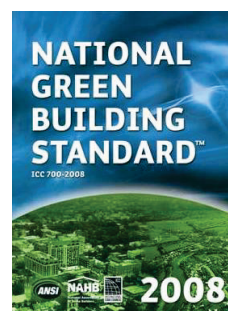
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Abstract

Originally established in 1921, the United Kingdom's Building Research Establishment (BRE) was founded to help standardize and improve the quality of buildings. The organization has continued this mission and with the creation of the BRE Environmental Assessment Method (BREEAM) in 1990, a foundation was laid for building rating systems. While this was a great victory for the natural environment and human health, since the original release of BREEAM a plethora of rating systems have emerged worldwide. Though each of these systems' general intent is to foster stewardship of the natural environment and improve the standards of human health and wellbeing in the built environment, it can prove difficult to decipher the difference between the many sustainable home rating systems available. In the United States alone there are over eighty local and regional sustainable home building rating systems. With such a variety it is hard for both the construction industry and the general public to identify which system is truly "the best."

In order to more fully understand the scope, trends, and limitations of existing sustainable home rating systems, three of the leading national systems were selected for analysis as well as a leading regional system:

- Code for Sustainable Homes (United Kingdom)
- National Green Building Standard (United States of America)
- LEED for Homes (United States of America)
- Scottsdale Green Building Program (Scottsdale, Arizona, United States of America)

While there are a wide range of complex issues associated with each of these sustainable home rating systems, the focus of this dissertation was to identify gaps within each system and identify gaps common to all the systems. Over 460 sustainable home building strategies from these leading systems were compiled into a comparison matrix and categorized in order to identify and analyze the gaps.

In addition to the comparative analysis within and between the selected rating systems, an analysis was conducted based on a case study home. The Beaulieu Hydrogen House (BHH) proved ideal for this exercise because it was designed with best practices in mind rather than being designed and built to a building rating system. By analyzing the BHH, further gaps within the mainstream sustainable home rating systems were identified.