

# Balancing preservation and energy efficiency

Published on **5 Jul 2013**

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Fay House at the Radcliffe Institute for Advanced Study

The Radcliffe Institute for Advanced Study recently achieved LEED-NC v3 Gold certification for its renovation of the **historic Fay House**, making it the oldest LEED certified building in the United States (the **oldest LEED building in the world** was built in 1453 and is located in Venice, Italy). Since its construction in 1807, the building's lifespan has included use as a private residence for a succession of families, a girl's boarding school, the beginning of Radcliffe College and its current use as the administrative center of the Radcliffe Institute for Advanced Study.

Since this was a major renovation to modify the interior to meet programmatic needs, current code and energy goals, the project provided a prime opportunity to closely evaluate the often synergistic, but occasionally competing priorities of historic preservation and sustainability. While Fay House has not undergone a major renovation since the 1890s, the building's surroundings have developed and changed dramatically – from farmland and apple orchards to bustling Harvard Square. Similarly, design and construction priorities have expanded – the importance of maintaining historic architectural fabric and the imperative to address a building's contributions to climate change are prominent topics of discussion.

Early in the project, during an initial sustainability goal-setting workshop, the project's various stakeholders defined the key goals in alignment with Harvard's Green Building Standards and the University's aggressive **greenhouse gas reduction goals**. Preservation of the existing materials, which not only recognizes the significance of the architectural fabric, but also embodied energy, is an obvious synergy. The exterior façade was restored and over 85 percent of the building fabric was maintained. Evaluation of the envelope and structure was the most significant area where preservation and sustainability were carefully considered – such as restoring windows to maintain the aesthetic while improving efficiency, modifying interior walls to increase daylight, weatherizing the envelope and evaluating the feasibility of insulating the building. To avoid obtrusive mechanical equipment such as cooling towers, ground source heat pumps were selected as the means of heating and cooling the building. **'Renovating Radcliffe's Historic Fay House'** and **'Historic Fay House Achieves LEED Gold'** provide further detail on the process of balancing preservation and energy efficiency.

Fay House is Radcliffe's third LEED certification and the 85th LEED certification at Harvard. A case study and LEED scorecard for this project, as well as Harvard's other LEED certified projects, can be found on the **Harvard Green Building Resource**.

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