Improving Energy Efficiency in Vermont's Older Buildings
Research Guidance

May 2021
Prepared in cooperation by the Preservation Trust of Vermont and Vermont State Historic Preservation Office.

*This is not an exhaustive or comprehensive list of research guides.

General Guidance

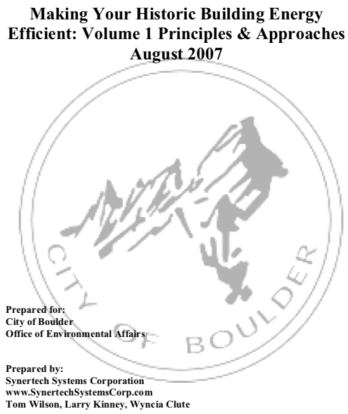
1. **US Department of Energy, Building Technologies Program**
"Energy Performance Techniques and Technologies" (2011)
Guide distributed by the U.S. Department of Energy specifically for contractors.
Describes the process of researching buildings, basic preservation principles, developing plans, and case studies. The case studies are useful for treatments with specific materials or building types. Nationally focused.

WEBSITE:
https://www1.eere.energy.gov/buildings/publications/pdfs/building_america/historic_homes_guide.pdf

2. **National Trust for Historic Preservation and Environmental Protection Agency**
"Energy Advice for Owners: Historic and Older Homes" (c. 2009)
Guide for homeowners prepared by the National Trust for Historic Preservation and distributed by the Environmental Protection Agency. This guide covers an immense amount of information with short definitions of embodied energy, energy codes, and R-value. The quick tip section and outside references are very useful. One of the better guides for energy efficiency upgrades for historic buildings. National audience but with a cold weather focus.

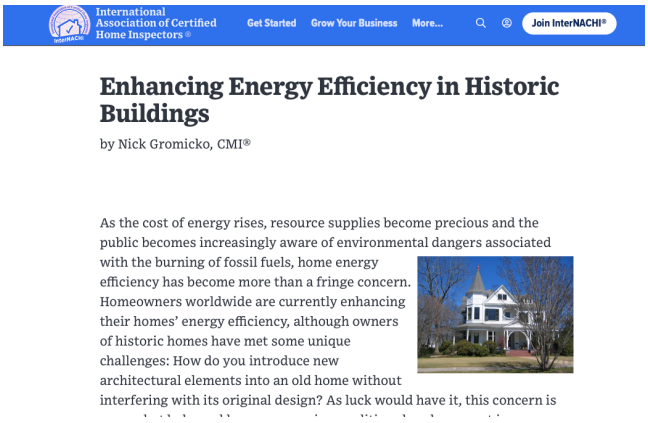
WEBSITE: https://archive.epa.gov/region5/sustainable/web/pdf/energy-advice-for-owners-of-older-homes.pdf

3. **City of Boulder, Colorado**
"Making Your Historic Building Energy Efficient-Vol.1" (2007)
A complete guide for building owners that covers everything from why upgrade buildings to technical details for appliances and monitoring energy usage. This guide is aimed at a moderately informed and slightly experienced audience.



WEBSITE: https://www-static.bouldercolorado.gov/docs/making-your-historic-building-efficient-volume-1-principles-approaches-1-201305201348.pdf?_ga=2.231808735.17174887.1594314388-1564893313.1594314388

4. **International Association of Certified Home Inspectors**
"Enhancing Energy Efficiency in Historic Buildings" (2006)
This is a brief overview of tactics that can be used to upgrade a building's energy efficiency. The guide also includes a section on inherent features that passively make buildings efficient. This is intended for a national audience with a moderate degree of understanding of how houses and building materials work.



WEBSITE: https://www.nachi.org/energy-efficiency-historic-buildings.htm

5. **Historic England, United Kingdom**
"Energy Efficiency and Historic Buildings" (2018)
Great resource that discusses the details and overall theory of improving a building's efficiency. Talks in detail about methods for making improvements. Separates improvements based on their potential risk and levels of difficulty. General guidance for anyone seeking to improve energy efficiency in an historic building, no matter the climate or country.

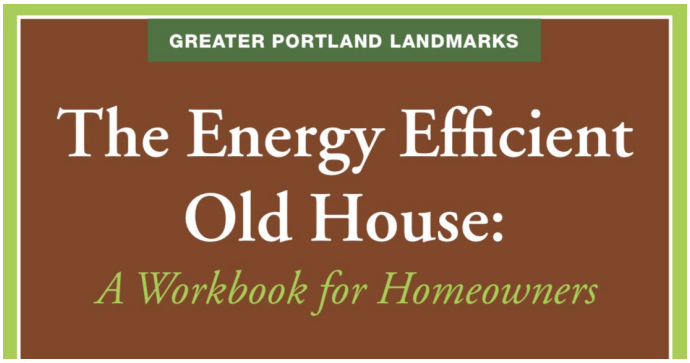
WEBSITE: https://historicengland.org.uk/images-books/publications/eehb-how-to-improve-energy-efficiency/heag094-how-to-improve-energy-efficiency/

6. **The Municipal Art Society of New York, New York City**
"Greening NYC's Historic Buildings" (2012)
Guide to energy efficiency that demonstrated any historic building restoration can and should include energy efficiency measures. A beginner's guide with a narrow audience of owners of attached buildings (rowhouses).

The Municipal Art Society of New York
MASNYC

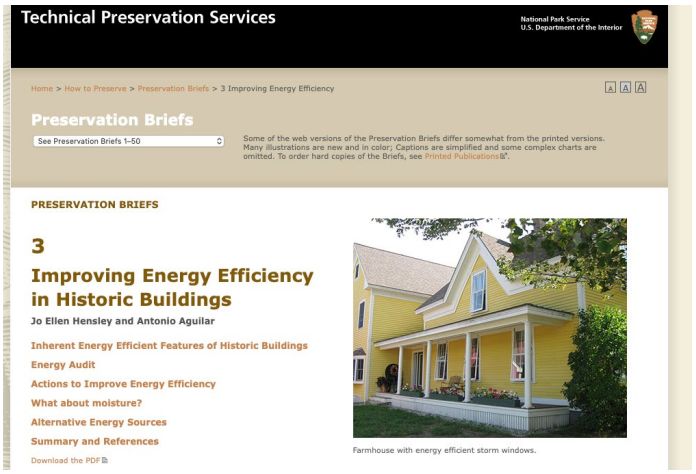
WEBSITE: https://www1.nyc.gov/assets/lpc/downloads/pdf/pubs/Manual%20-%20Greening%20Rowhouses%20-%202012.pdf

7. **Greater Portland Landmarks, Maine**
"The Energy Efficient Old House" (2011)
Workbook for homeowners, which includes checklists for weatherizing. Separates the work based on level of investment and work will requires a certified/trained professional.



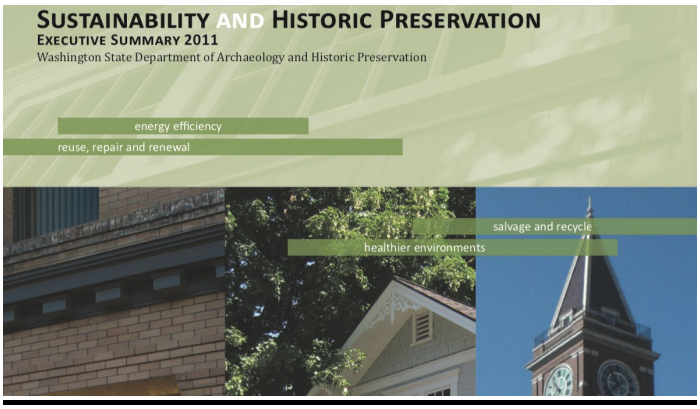
WEBSITE:
https://static1.squarespace.com/static/555c99afe4b027a64d6975df/t/56e6fdd85559866c54bf3de0/1457978846316/EE+Workbook-FINAL%2310.pdf

8. **National Park Service**
"Preservation Brief 3-Improving Energy Efficiency in Historic Buildings" (2011)
One in an extensive series addressing preservation topics, Preservation Brief 3 discusses the basics of energy efficiency improvements for older buildings. It outlines the importance of energy audits and need to create realistic goals for reducing energy usage.



WEBSITE: https://www.nps.gov/tps/how-to-preserve/briefs/3-improve-energy-efficiency.htm

9. **Washington State Department of Archaeology and Historic Preservation**
"Sustainability and Historic Preservation" (2011)
Strong but short guide that demonstrates that preservation of historic buildings is better for the environment because it keeps materials out of landfills and that historic buildings are more efficient because of passive systems. Good use of case studies.



WEBSITE:
https://www.dahp.wa.gov/sites/default/files/209SustainabilityStudy_ExecutiveSummary.pdf

10. **Historic New England**
"Energy Costs in an Old House: Balancing Preservation and Energy Efficiency" (2008)
This is a guide that instructs on the underlying balance between preservation and energy usage for sustainability, using environmental and energy resources in a way that ensures the long-term health and viability of our environment, economy. Addressing insulation of walls and keeping old windows but replacing old furnaces.

WEBSITE: https://www.historicnewengland.org/wp-content/uploads/2016/09/Energy_Costs.pdf

11. **Wisconsin Historical Society**

"Improving Energy Efficiency of Your Historic Building's Walls"
Provides options for consideration when exploring insulation of original plaster walls, sealing exterior leaking areas, and using paint as a vapor barrier.

WEBSITE: https://www.wisconsinhistory.org/Records/Article/CS4207

Specific Topics

12. **Energy Star**
"Attic Insulation"
A beginner's guide to DIY insulating your attic.

WEBSITE: https://www.energystar.gov/campaign/seal_insulate/attic_insulation_project

13. **Historic England**
"Energy Efficiency and Historic Buildings-Solid Walls (2016)
Thorough and complete guide to insulating solid or masonry walls. This guide discusses the potential risks to insulating walls and the importance of air movement and breathability. Gives specific guides to insulating the interiors and exterior of solid walls. Historic England has numerous guides to insulating specific areas of building (pitched roofs, chimneys, dormers, etc.).
WEBSITE: https://historicengland.org.uk/images-books/publications/eehb-insulating-solid-walls/heag081-solid-walls/

14. **Historic England**
"Energy Efficiency and Historic Buildings: Draught-proofing Windows and Doors" (2016)
A great guide to air sealing windows and doors. The guide discusses the reasons why to not replace historic windows, the risks of not enough ventilation, and the various types of sealing materials.

WEBSITE: https://historicengland.org.uk/images-books/publications/eehb-draught-proofing-windows-doors/heag084-draughtproofing/

15. **National Trust for Historic Preservation**
"Historic Wood Windows"
Comprehensive guide to restoring windows. Information on restoration and why restoration is better than replacement. "Winter Tips" section is particularly useful. Good list of further resources.

WEBSITE:
https://www.burlingtonvt.gov/sites/default/files/Historic%20Wood%20Windows%20Tips_0.pdf

Other Sources

16. **Obama White House-Council on Environmental Quality**
Excellent resource on the importance of retrofitting historic buildings and workforce development. Speaks of potential partners and the current roadblocks to more action.

WEBSITE: https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/retrofit

17. Washington State Department of Archaeology and Historic Preservation
"Report on Historic Preservation" (2011)
Sustainability summary report addressing how historic buildings connect with sustainability, their impacts on the environment, energy consumption, impacts of building demolition, and the utilization of the Secretary of the Interior's Standards for Historic Rehabilitation.
WEBSITE: https://dahp.wa.gov/sites/default/files/sustainability_SummaryReport.pdf

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The Improving Energy Efficiency in Vermont's Older Buildings Study, inaugurated in 2020, has been financed in part with federal funds from the National Park Service, U.S. Department of the Interior. The contents and opinions do not necessarily reflect the view or policies of the Department of the Interior.