SUSTAINABLE PRESERVATION

HISTORIC PRESERVATION AND SUSTAINABILITY

The U.N. World Commission on Environment and Development's 1987 report, "Our Common Future" defines sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs." Historic preservation is inherently a sustainable practice. “The greenest building is the one that’s already built,” stated architect Carl Elefante.

Retention and adaptive reuse of older and historic buildings promotes sustainability by reducing the consumption of natural resources and energy (and associated production of greenhouse gasses) required for the construction of new buildings. The National Trust for Historic Preservation’s study, The Greenest Building: Quantifying the Environmental Value of Building Reuse found that “it takes 10 to 80 years for a new building that is 30 percent more efficient than an average-performing existing building to overcome, through efficient operations, the negative climate change impacts related to the construction process.” Additionally, older buildings last longer than newer buildings because they are constructed of more durable materials like old growth wood.

Although California Historical Building Code Section 8-901.5 exempts "Qualified Historical Buildings" from California Energy Efficiency Standards (with limited exceptions), energy and resource conservation in historic buildings can be accomplished without reducing the buildings’ historical integrity.

ENERGY EFFICIENCY AND SOLAR ENERGY SYSTEMS INSTALLATION RECOMMENDATIONS

Below, are abridged recommendations to improve energy efficiency and install solar systems on historic buildings. For more information on rehabilitating historic buildings sustainably, see the Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings at www.nps.gov/tps/standards/rehabilitation/sustainability-guidelines.pdf

1. **Conduct an energy audit** to determine the building's current thermal performance and identify any deficiencies in the building envelope or mechanical systems before implementing energy improvements.
2. **Develop a weatherization plan** based on the results of the energy audit. Weatherization means implementing cost-effective measures to make a building's envelope more energy efficient. Weatherizing a historic building requires undertaking those measures in ways that have minimal impact on the historic building's design and materials.
3. **Insulate attics, basements and crawl spaces.** However, do not use wet-spray (spray-foam) or other spray-in insulation that is not reversible or may damage historic materials.
4. **Repair, weatherize and retrofit windows.**

   Repairing, weatherizing and retrofitting historic windows is more cost effective than replacing the windows because the materials of historic windows are often more durable than new windows constructed of materials such as vinyl.

   Original windows are character defining features of a historic building and should not be replaced unless they have deteriorated beyond repair. If existing windows are too deteriorated to repair, install compatible and energy-efficient replacement windows that match the appearance, size, design, proportion and profile of the existing historic windows.

   Weather strip and caulk historic windows, when appropriate, to make them weather tight.

Retrofit historic windows with high-performance glazing or clear film.

Install clear, low-emissivity (low-e) glass or film without noticeable color in historically clear windows to reduce solar heat gain.

Repair or reopen historically-operable interior transoms to improve air flow and cross ventilation.

Install interior or exterior storm windows or panels that are compatible with existing historic windows.

Maintain existing, reinstall or install new, historically-appropriate shutters and awnings.

Professionals qualified to repair and fabricate historic windows are included in Los Angeles Conservancy's Professional Services Directory at www.laconservancy.org/find-professional.

5. **Change lightbulbs** to High Efficiency Incandescent (HEI) lamps which reduce energy by 50 to 75%, use only 25% of the energy that regular incandescent bulbs use and don't alter the appearance of historic light fixtures where the bulbs are visible, like LEDs do. Otherwise, LEDs are a good option when the bulb is obscured by opaque shades or lenses.
7. **Install programmable thermostats, attic and ceiling fans, louvers and vents**, where appropriate.
8. **Plant deciduous trees** that will shade the building in the summer to keep it cool and allow sunlight to the warm it in the colder months when the trees' leaves have fallen. For guidance on tree species and planting, see the Tree Planting Guide and with Species List at www.planning.lacounty.gov/tree.
9. **Upgrade the Heating, Ventilating and Air Conditioning (HVAC) system** to an energy-efficient system that does not adversely impact the interior or exterior historic character of the building, if the energy audit determines that the existing system is inefficient and the system's efficiency cannot be improved.
10. **Install solar energy systems** in a manner that does not damage historic roofing material or negatively impact the building's historic character and is reversible. Solar devices should be installed so they are not visible or are minimally visible from the public right of way.

Your local utility company may offer free energy audits, weatherization and minor HVAC repairs to improve energy efficiency. However, they may use techniques or products not appropriate for historic buildings, such spray-foam insulation.

TAX CREDITS

Weatherization and mechanical system upgrade projects that improve energy efficiency of a historic building may be eligible for federal tax credits. For additional information, see www.nps.gov/tps/tax-incentives.htm.

ADDITIONAL INFORMATION

For additional information about historic preservation and sustainability, see:

- State Office of Historic Preservation: Sustainability
  www.ohp.parks.ca.gov/sustainability/
- National Park Service (NPS): Sustainability
  www.nps.gov/tps/sustainability.htm
- NPS: Weatherizing and Improving the Energy Efficiency of Historic Buildings
  www.nps.gov/tps/sustainability/energy-efficiency/weatherization.htm
- Southern California Gas Company's Historic Building Energy Efficiency Preservation Program. Includes a list of energy efficiency contractors.
  www.socalenergyupgradecontractors.com/hbeep