



How does historic preservation contribute to sustainable development?



Many people already practise the 3 Rs, by REDUCING, RE-USING and RECYCLING materials such as metal, paper, glass and plastic. Re-using historic buildings is a significant way to practise the 3 Rs on a much bigger scale, and new life breathed into old buildings helps to reduce urban sprawl, conserve energy and promote sustainable communities.

The following terms and definitions summarize the connection between sustainability and the preservation of historic buildings. These concepts play a key role in reducing energy and materials consumption.

Life Cycle Assessment

Life cycle assessment (LCA) quantifies energy and material usage and environmental releases at each stage of a product's life cycle.

LCA examines impacts during a building's entire life, rather than focusing on environmental impacts at a particular stage.

LCA indicates that retaining and rehabilitating buildings is more environmentally friendly than new construction, especially in cases where a building is replaced entirely and the old structure is sent to a landfill.

Waste Generation

Preserving buildings diverts waste that would typically go to a landfill.

- ✗ Demolition of housing produces an average of 115 lbs of waste per square foot.
- ✗ Demolition of commercial buildings generates approximately 155 lbs of waste per square foot.
- ✗ Annual construction and demolition debris accounts for roughly 24% of the municipal waste stream (U.S. figures).

Historic Preservation Spurs Economic Development

- ✓ Numerous studies indicate that preservation serves as a catalyst for additional investment in communities. Indirect benefits are attributed to spending on goods and services by industries that produce the items purchased for a historic preservation activity.
- ✓ Induced impacts are created by the workers who are involved with a rehabilitation project and spend money on goods and services.



Preservation Reduces Sprawl

Continued use and revitalization of our existing community reduces pressure for development on the urban fringe. This reduces accompanying environmental impacts of sprawl, such as:

- ✓ Loss of natural habitat
- ✓ Increased reliance on automobiles
- ✓ Development of environmentally and economically costly infrastructure

General Operating Efficiency

It is often alleged that historic buildings are energy hogs, and therefore should be demolished rather than rehabilitated. In fact, some historic buildings are more energy efficient than more recently constructed buildings.

While some historic buildings may indeed perform poorly, data suggests that is not always the case. Aspects of traditional designs which take into account natural airflow, heat retention and cooling mean that some historic buildings actually outperform modern buildings.

Numerous green rehabilitations of historic buildings also prove that where building energy performance is lacking, it can be improved in a way that is sensitive to historic fabric.

Embodied Energy

Embodied energy is defined as the amount of energy associated with extracting, processing, manufacturing, transporting and assembling building materials.

Conserving buildings preserves embodied energy, and reduces the need for new materials. Studies conducted in the 1970s concluded that preservation is more energy efficient than demolition and reconstruction.

Calculations concerning the embodied energy in a typical building show that if a building were demolished and partially salvaged and replaced with a new energy efficient building, it would take 65 years to recover the energy lost in demolishing a building and reconstructing a new structure in its place. That is longer than many modern buildings survive.

Resources:

Patrice Frey, *Making the Case: Historic Preservation as Sustainable Development*, A Draft White Paper presented in advance of the Sustainable Preservation Research Retreat, National Trust for Historic Preservation, October 2007.

Brad James and others, *Testing the Energy Performance of Wood Windows in Cold Climates: A Report to the State of Vermont Division for Historic Preservation and the Agency of Commerce and Community Development*, Burlington, VT, 1996

Kim K. Del Rance, LEED AP, *Preservation and Sustainability: The Greenest Building is the One Already Built*, Newsletter on the Committee on the Environment (COTE); The American Institute of Architects, Spring 2007

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