

EECBG Case Study #6

Historic Buildings



southeast michigan regional
energy office



Historic Building Retrofit



Municipality:	Ray Township
Population:	3,887
Governance:	Township Board
Grant Allocation:	\$ 50,000

Lessons Learned

- Restoration rather than replacement preserves historic character and durable materials
- Historical buildings and materials can be made nearly as energy efficient as new

The Takeaway

Finding qualified contractors who have experience with historic restoration, rather than just replacement, is essential for doing energy efficiency retrofits in historic buildings.

Restoring windows rather than replacing them can cost more upfront (labor costs) but over the long run saves money as historic materials are more durable than newer available materials, such as vinyl or aluminum.

Specify what you want to get out of the retrofit upfront, so that contractor understands the need for both energy efficiency and historical accuracy.

Scope of Work

Ray Township is improving energy efficiency in its three municipal buildings: the Offices, Fire Hall, and Public Library through the following measures:

- Addition of insulation in the attics/ceilings
- Lighting and electrical fixtures retrofit in both buildings.
- Upgrades to the HVAC and plumbing systems in the Library
- Sealing/insulating the crawlspace. (Library)
- Window Restoration, including complete stripping and reinstallation of sashes, as well as construction of new wooden storm windows.
- Upgraded HVAC system, with new duct system to run under the floor in the crawlspace.
- Historic Pendant Lighting to replace the T12 fluorescent lighting in the Library.



Historic Windows were painted shut, had broken panes, and were missing the original storm windows.

Project Results

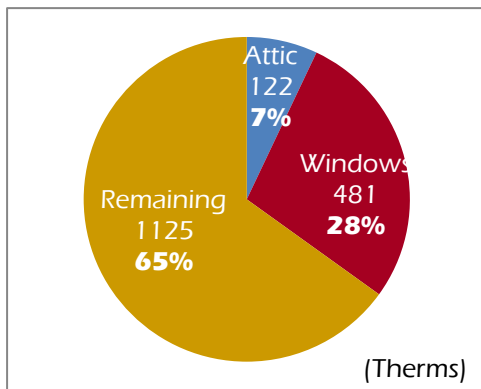
Results of the project will be:

- Increased thermal comfort for users of all buildings
- Restored historical appearance of the 1863 school building (library)
- Lower heating costs for all buildings.
- Better lighting quality and lower electrical costs for all buildings
- An in-service on home energy efficiency for residents of Ray Township

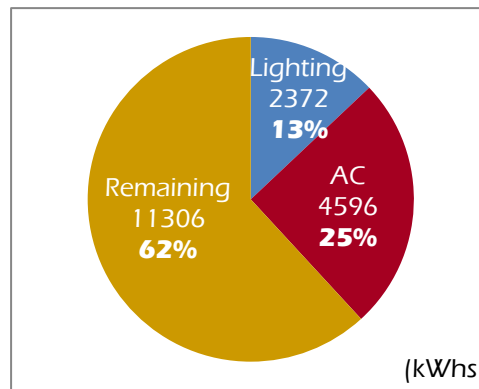


Restored original windows and storm windows installed.

Estimated Annual Heating Savings



Estimated Annual Electrical Savings



Challenges Overcome

- Determining the exact specifications for all aspects of the project and coordinating the work of the contractors
- Meeting the requirements of the State Historic Preservation Office
- Finding qualified professionals who can do historic renovation and energy efficiency work.
- Figuring out what “best practices” are in doing energy efficient, historic retrofits.

Further Resources

National Park Service Technical Preservation Services: <http://www.nps.gov/history/hps/tps/briefs/presbhom.htm>
Michigan Historic Preservation Network <http://www.mhpn.org/>
Clean Air Cool Planet's Guide for Historic District Commissions http://www.cleanair-coolplanet.org/for_communities/HDCGuide.pdf

WARM Training Center <http://www.warmtraining.org/>
Southeast Michigan Regional Energy Office <http://www.regionalenergyoffice.org/>
Clean Energy Coalition <http://www.cec-mi.org/>
Michigan Energy Options <http://www.michiganenergyoptions.org/>

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