



Historic Windows and Energy Conservation

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Architectural
Resources Group

Topics we'll discuss

- Best practices for historic windows
- Historic windows and energy conservation



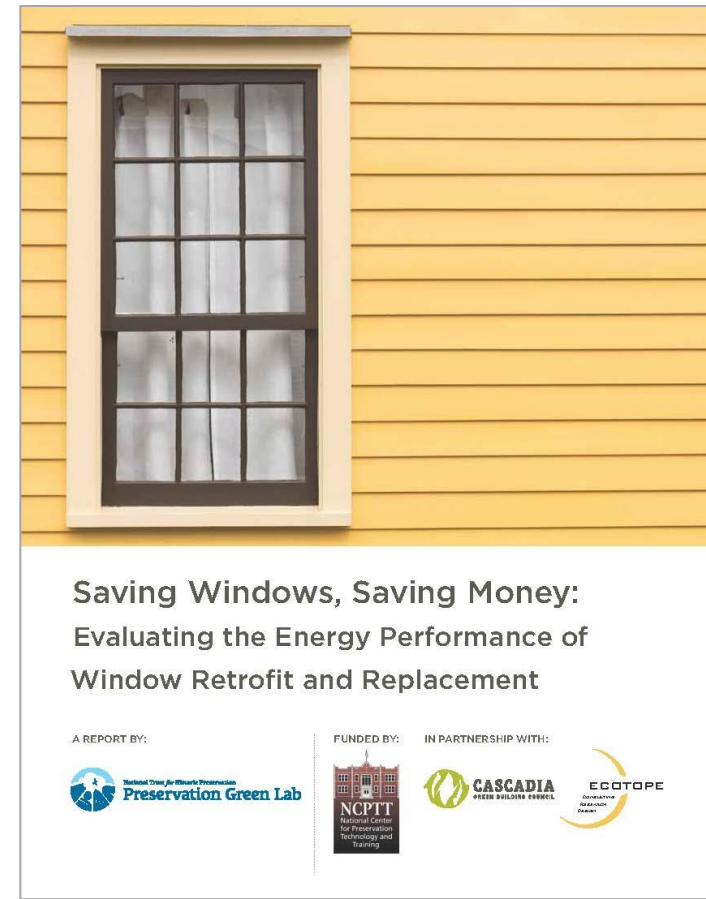
Historic Windows and Energy Conservation

- Why windows?
 - Important to the historic character of the building
 - Visible from the public right-of-way
 - A frequent topic of discussion



Historic Windows and Energy Conservation

- Preservation Green Lab Report: Key Findings
 - Less invasive window retrofit measures can achieve performance results comparable to new replacement windows
 - Almost every retrofit option offers a better return on investment than replacement windows



Window Retrofit Options

- Insulating cellular shades
- Storm windows
- Interior window panels
- Weather stripping
- Low-e glazing
- Laminated glass



Insulating cellular shades. Courtesy <https://www.housetrends.com/room/its-curtains-for-you-or-maybe-blinds-shutters-shad>.



Low-e glass replacement (before and after). Courtesy City of Phoenix, Planning and Development Department, Historic Preservation Office.

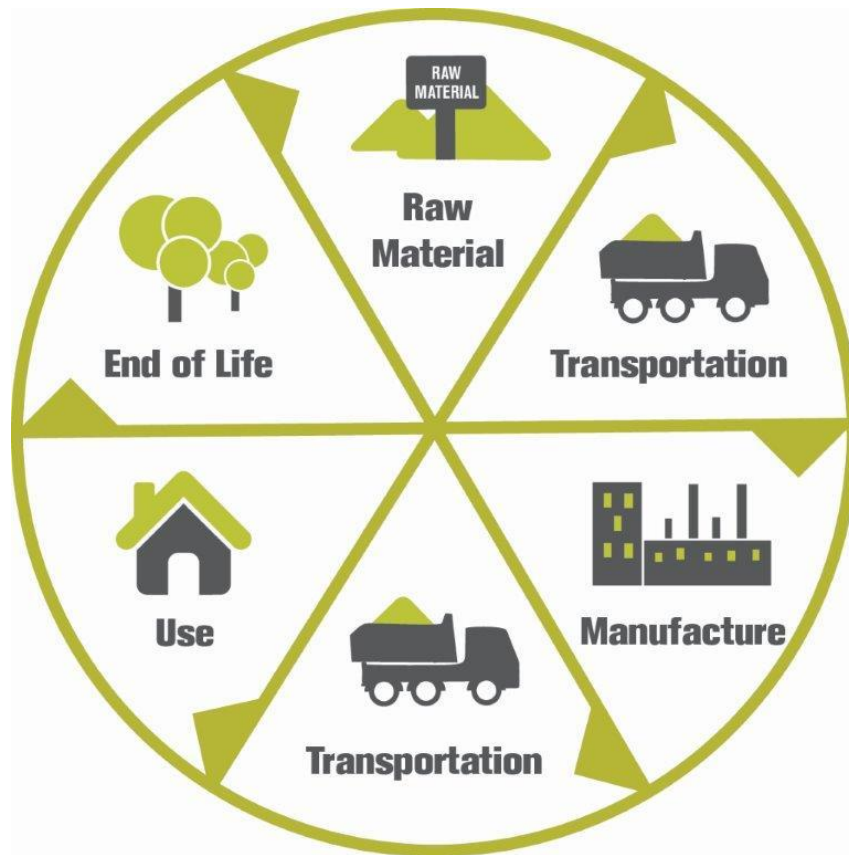


Other Environmental Impacts

- Life cycle analysis
 - Extraction
 - Production
 - Transportation
 - End-of-life disposal
- Availability of resources
- Durability and Repairability



Life Cycle Analysis



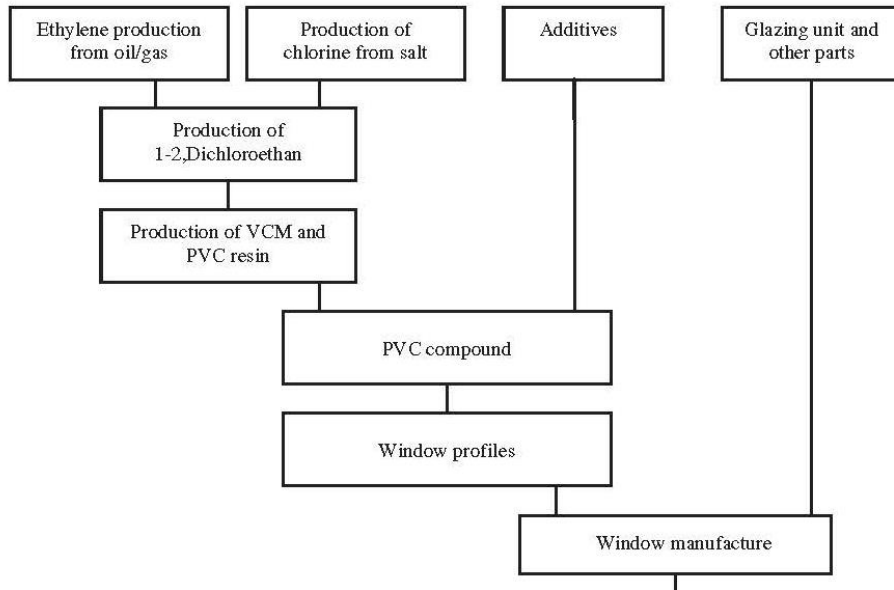
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Courtesy http://blog.splashpackaging.com/wp-content/uploads/2016/03/Graphic_CycleOfLife.jpg.

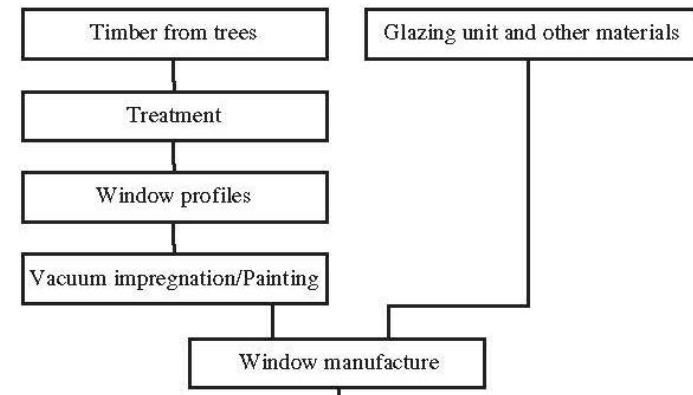


Availability of Resources

Vinyl Windows



Wood Windows



Durability and Repairability

<i>Window assemblies and maintenance schedule</i>		
	Existing Wood Window	New PVC Window
Size	36" (W) by 56" (H)	36" (W) by 56" (H)
Style	Double-hung	Double-hung
Sash Assembly	Single-glazed with storm	Double-glazed with Argon
Length of Service	100+ years	24 years
Maintenance	Every 5 years: <ul style="list-style-type: none">• Caulk;• Paint (exterior). Every 25 years: <ul style="list-style-type: none">• Paint (interior);• Reglaze. Every 50 years: <ul style="list-style-type: none">• Weatherstrip;• New storm window.	Every 5 years: <ul style="list-style-type: none">• Caulk.

Courtesy the Associated Schools of Construction, 50th Associated Schools of Construction Annual International Conference, 2014



<http://www.preservationcenter.org/historic-window-restoration>



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