PRESERVATION CONNECTICUT

TALKING ABOUT PRESERVATION: THE SUSTAINABLE HOME

A series of noontime forums hosted by Preservation Connecticut

Who is Preservation Connecticut?

Staff on today's call include:

- Jane Montanaro, Executive Director
- Circuit Riders
  - Brad Schide bschide@preservationct.org
  - Stacey Vairo svairo@preservationct.org

Continuing our mission…

To preserve, protect, and promote the buildings, sites, and landscapes that contribute to the heritage and vitality of Connecticut communities.

To help educate the public on the most important topics in preservation today

To introduce you to experts in the field of preservation and provide you with resources

Most importantly - it's to hear from YOU!

The Sustainable Home

Marena Wisniewski, State Historic Preservation Office

June 24, 2020

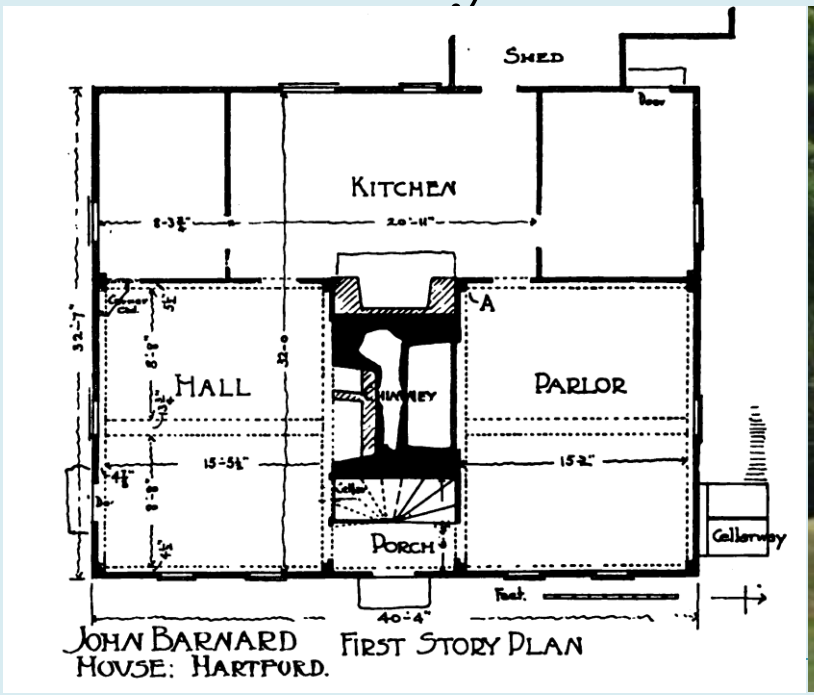
Goals

- Lower utility costs
- Use less energy/fossil fuels
- Contribute less to landfills
- Keep my home historic

What's My Resource?

- Character Defining Features
- Inherent Energy Efficiency
- Embodied Energy
- Site as Part of Plan

Inherent Energy Efficiency



Lucas Karmazinas

Inherent Energy Efficiency

Energy Audit

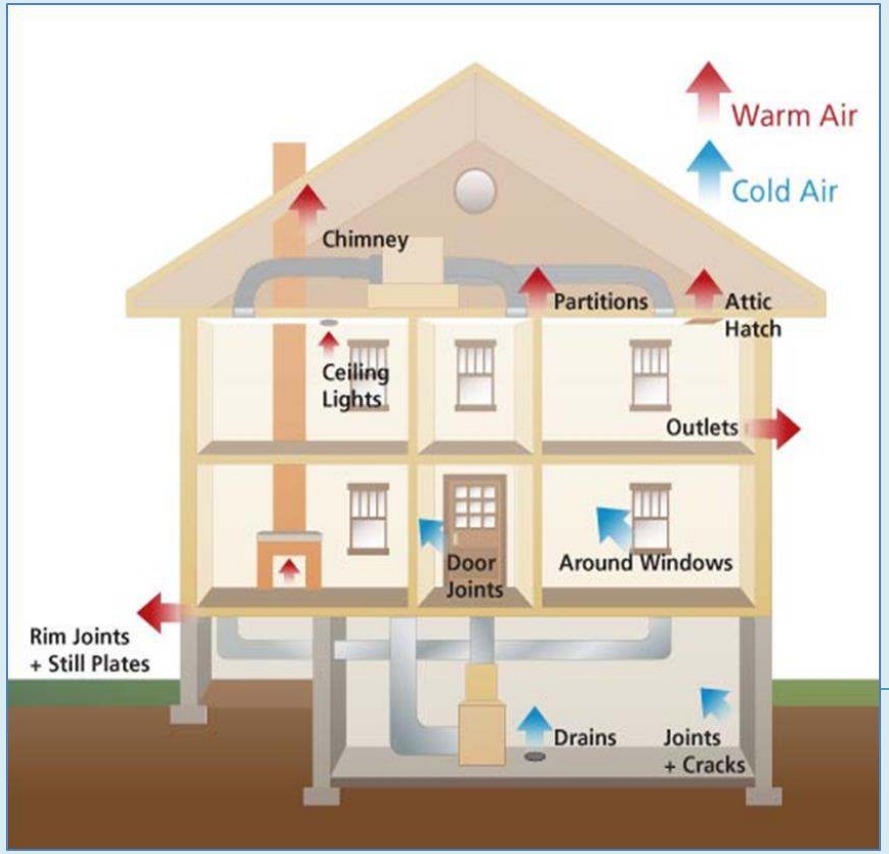
Energy Audit

1. Make sure that the building envelope is solid.
2. There can be no asbestos or vermiculite present—this includes asbestos duct or pipe wrap.
3. Clear areas near attic hatches to allow ladder access or extension of drop-down stairs.
4. Remove belongings from knee walls, crawlspaces, or other wall access hatches to allow for inspection of these spaces.
5. Clear areas near combustion appliances to ensure adequate access to all gas, propane, or oil-fired furnaces, boilers, or water heaters.
6. Remove or wet down ashes in fireplaces and woodstoves to prevent them being blown around during blower-door tests.
7. Close and latch all windows and doors and open curtains and window blinds.
8. Monitor small children and secure pets.
9. Provide the technician with copies of recent energy bills, showing a 12-month history, if you have them.
10. Any major issues with mold must be reported to the technician prior to the start of the testing. If excessive mold is found during an assessment, the blower-door test cannot occur.
11. Be sure to mention if any portion of your house has intact knob and tube wiring, as it could affect recommendations for wall insulation.

Easy To Do's

- Change Lightbulbs!
- "Do I look like I own stock in the electric company?"
- Monitor the thermostat!
- Pipes!

Air Sealing



Marguerite Carnell

Marguerite Carnell

Air Sealing

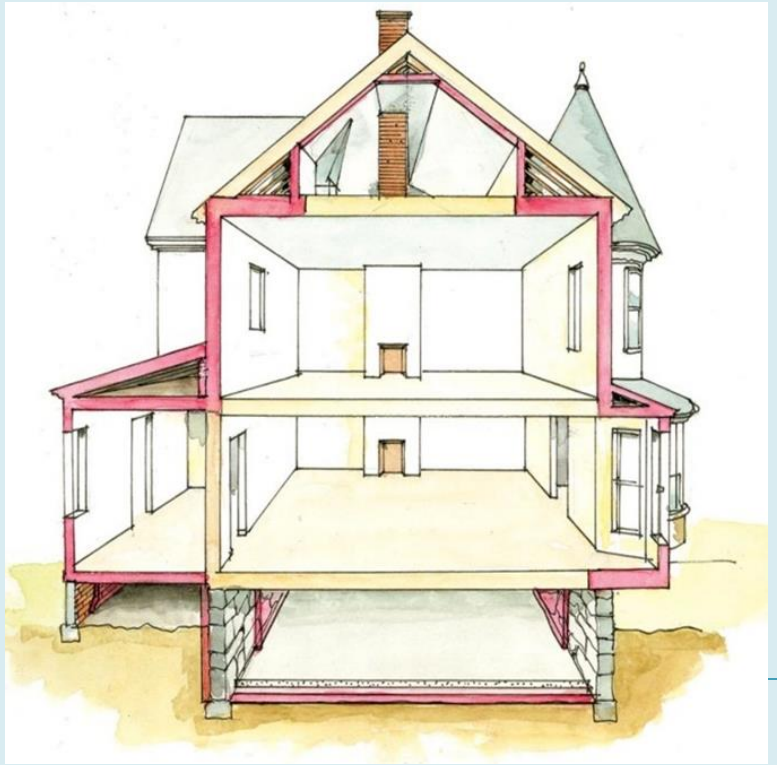
Exterior:

- Corners
- Outdoor faucets and utility inputs
- Joints between siding and chimneys
- Joint between foundations and siding materials
- Door and window frames

Interior:

- Attic doors and hatches
- Attic and basement floors and ceilings penetrated by chimneys
- Vents (e.g., plumbing, stoves, exhaust fans)
- Corners and areas where floors, walls, and roofs meet
- Window frames
- Door frames and bottom edges of exterior doors
- Baseboards on exterior walls
- Gaps around ducts, pipes, and wires leading from unconditioned basements to first floors
- Basement windows and bulkhead doors
- Basement structure: rim joists and sill plates where the first-floor structure meet the foundation

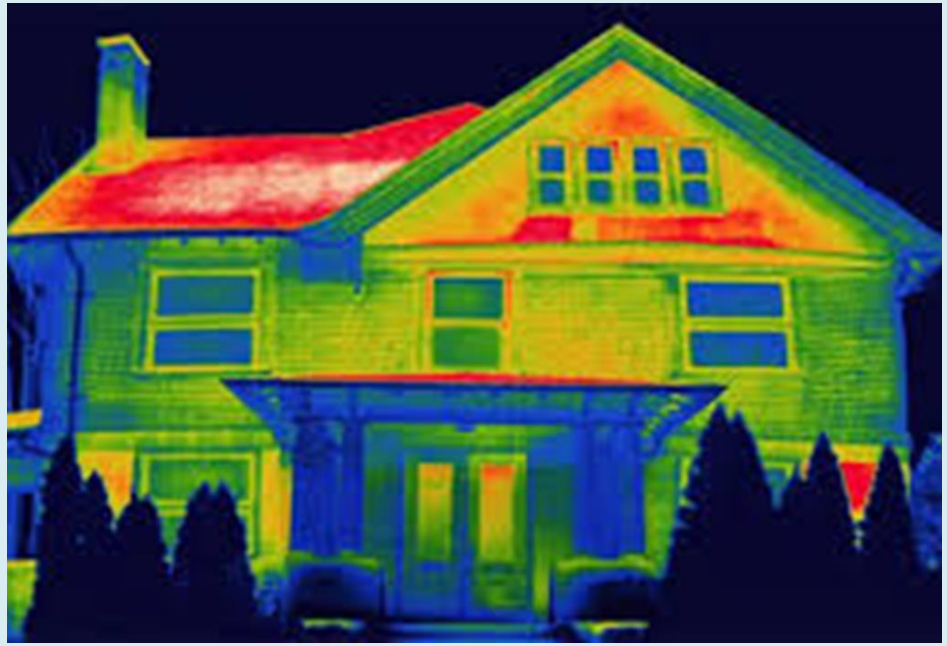
Insulation



Insulation

Where to Start?

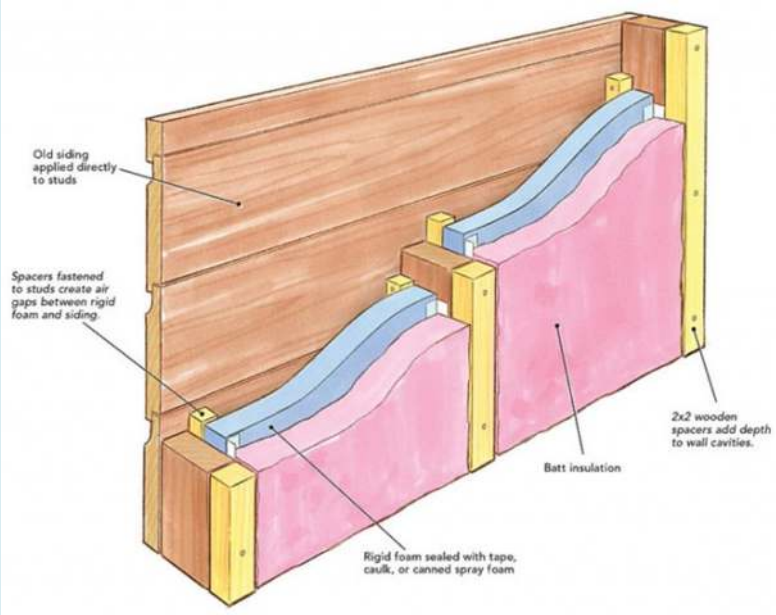
- Basement
- Attic
- Pipes
- Ducts



Insulation

	Material Type	R-Value per inch	Application	Comments
Blanket/Batt				
Fiberglass	mineral	R-3.2 to R-3.8	open floors, walls, ceilings	density varies
Mineral wool	mineral	R-3.2 to R-3.8	open floors, walls, ceilings	average 75% postindustrial recycled content, noncombustible
Sheep's wool	organic	R-3.5	open floors, walls, ceilings	naturally flame and pest resistant, can absorb and release moisture
Cotton fiber	organic	R-3.4 to R-3.7	open floors, walls, ceilings	recycled material, treated with borate for flame retardance and insect repellence
Plastic fiber	chemical	R-3.8 to R-4.3	open floors, walls, ceilings	made from recycled milk jugs
Loose Fiber				
Loose fiberglass	mineral	R-2 to R-2.5	open or closed floor and wall cavities	can fill irregularly shaped spaces more easily than batts
Dense-pack fiberglass	mineral	R-4.2	open or closed floor and wall cavities	can destroy wall plaster if too densely packed
Loose mineral wool	mineral	R-2 to R-2.8	floors, walls	average 75% postindustrial recycled content, can fill irregularly shaped spaces more easily than batts
Loose cellulose	organic	R-3.5	unfinished attics; walls	recycled newsprint, treated with borate for flame retardance and insect repellence
Dense-pack cellulose	organic	R-3.7 to R-4	open or closed walls, floor cavities	recycled newsprint, treated with borate for flame retardance and insect repellence; can destroy wall plaster if too densely packed

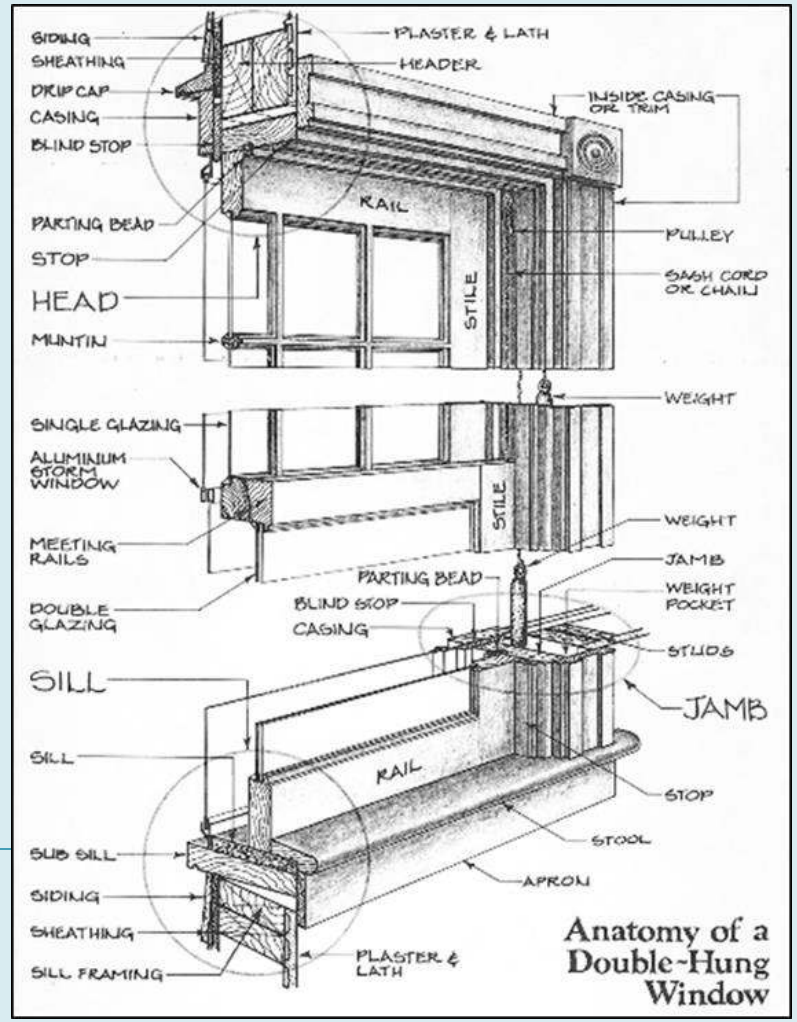
Insulation


Old siding applied directly to studs
Spacers fastened to studs create air gaps between rigid foam and siding.
2x2 wooden spacers add depth to wall cavities.
Batt insulation
Rigid foam sealed with tape, caulk, or canned spray foam

Windows

Windows

Windows


SIDING
SHEATHING
DRIP CAP
CASING
BLIND STOP
PARTING BEAD
STOP
HEAD
MUNTIN
SINGLE GLAZING
ALUMINIUM STORM WINDOW
MEETING RAILS
DOUBLE GLAZING
SILL
SILL
SUB SILL
SIDING
SHEATHING
SILL FRAMING
PLASTER & LATH
HEADER
INSIDE CASING OR TRIM
RAIL
STILE
PULLEY
SASH CORD OR CHAIN
WEIGHT
STILE
WEIGHT
JAMB
PARTING BEAD
WEIGHT POCKET
BLIND STOP
CASING
STUDS
JAMB
RAIL
STOP
STOOL
APRON
PLASTER & LATH
Anatomy of a Double-Hung Window

Windows

Windows

1. Because you really can save 30 percent to 40 percent on heating costs without replacing your old windows.
2. Because your windows were designed to fit your house.
3. Because you appreciate good craftsmanship.
4. Because old windows were constructed using old-growth timber.
5. Because antique glass has character.
6. Because you think a warranty should be more than 20 years.
7. Because vinyl is not the best choice for your house. The production of polyvinyl chloride (PVC) is damaging to the environment, and the gases it emits during its lifecycle have been shown by the EPA to be a health hazard.
8. Because you want more light. Replacement windows are set into the window opening, and the sash is smaller than the originals.
9. Because windows are a functional part of your house.
10. Because as the National Trust for Historic Preservation has been saying for decades, the greenest building is one that is already built.

Windows

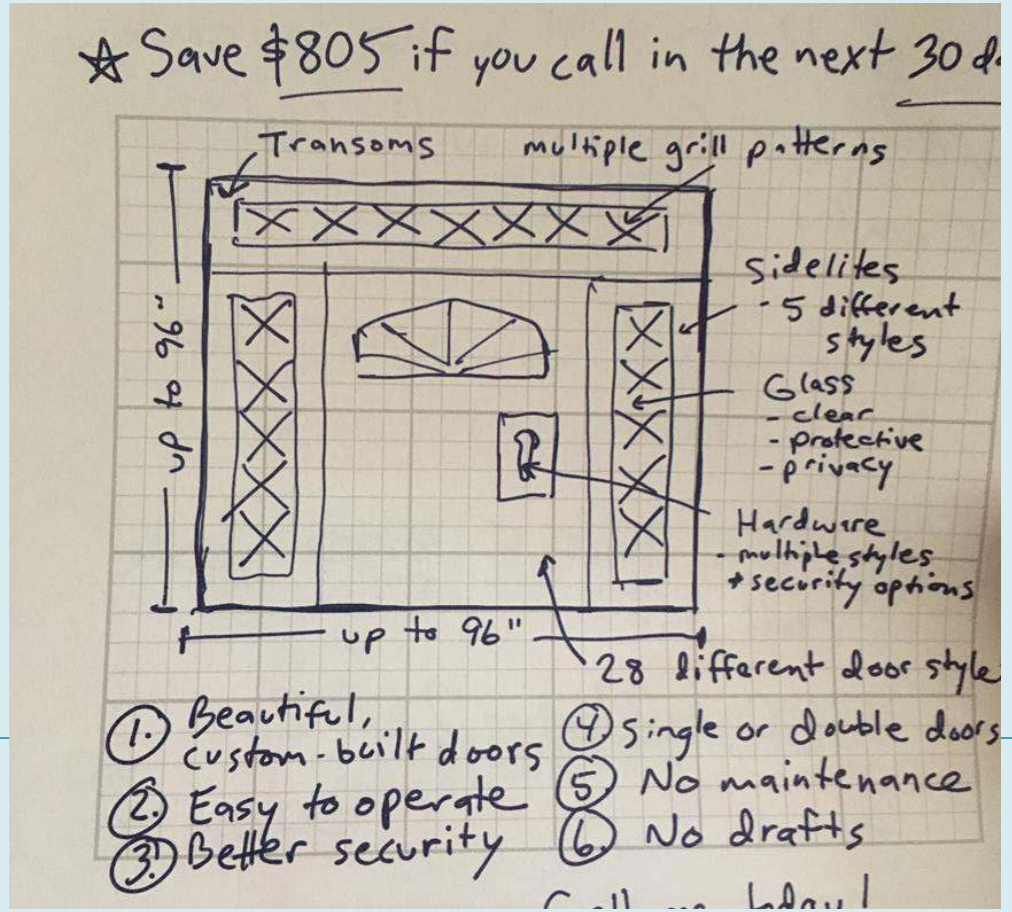
Easy To Do's

- Window Draft Stoppers
- Insulated Shades or Curtains
- Rope Caulk
- Window Draft Shields

Windows

Doors

Doors

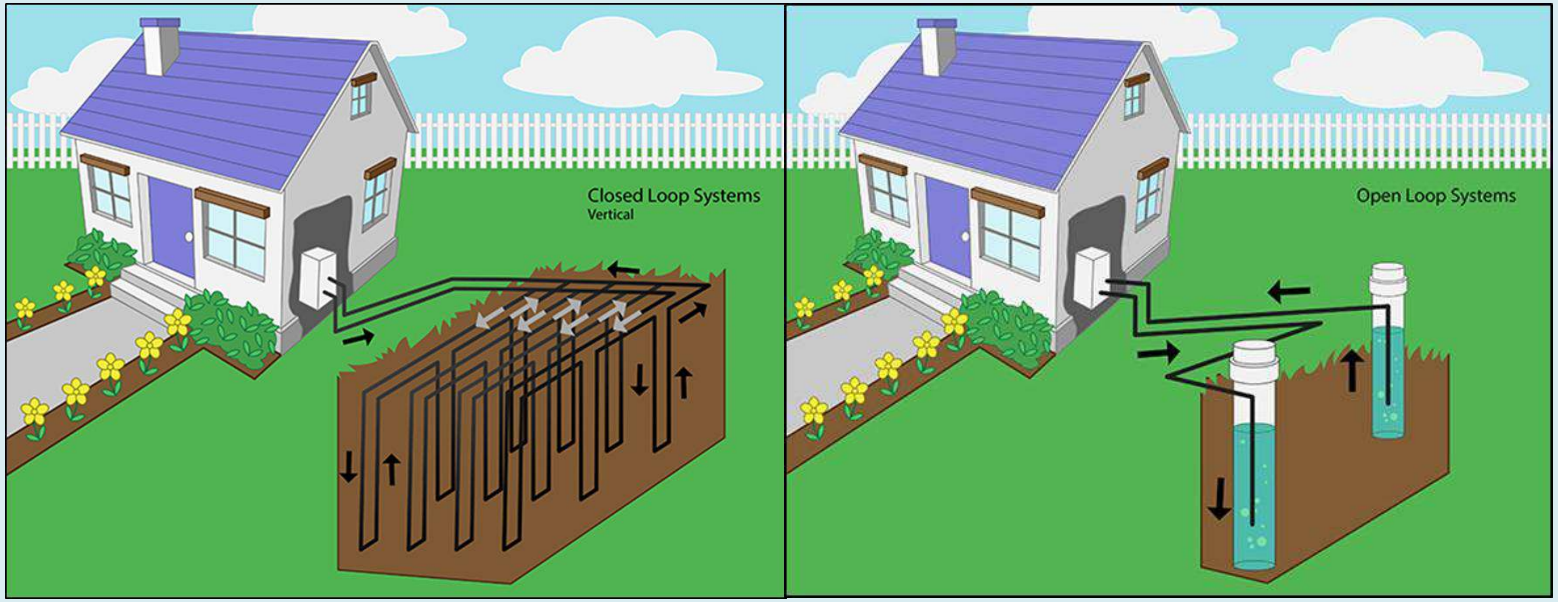

★ Save $805 if you call in the next 30 d
Transoms
multiple grill patterns
sidelites
- 5 different styles
Glass
- clear
- protective
- privacy
Hardware
- multiple styles
+ security options
up to 96"
up to 96"
28 different door style
1. Beautiful, custom-built doors
2. Easy to operate
3. Better security
4. Single or double doors
5. No maintenance
6. No drafts

Doors

HVAC

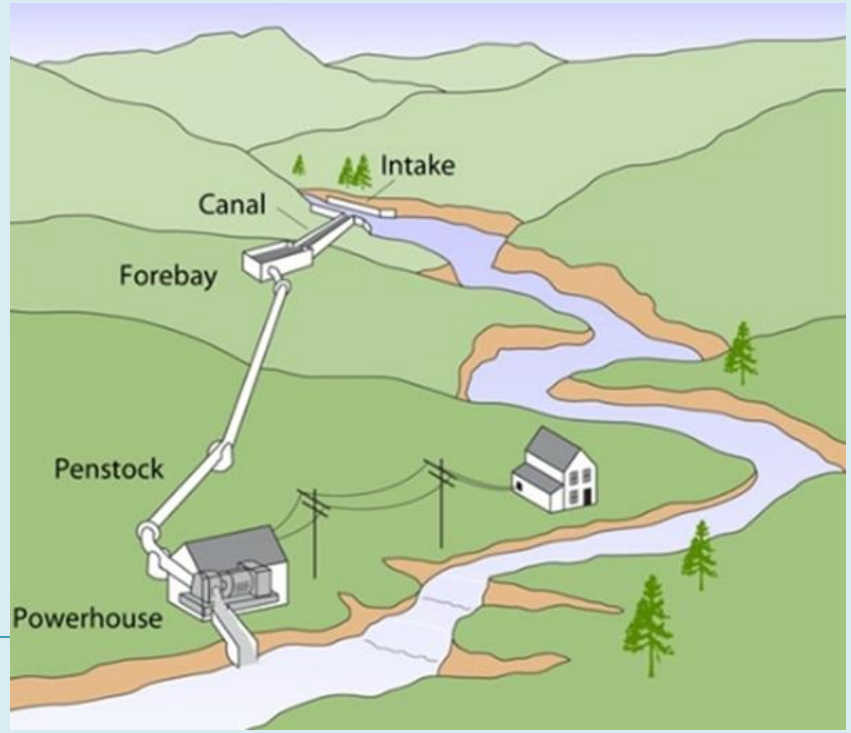
Renewable Energy - Solar

Renewable Energy – Geothermal



Renewable Energy – Others

Jerry Dougherty



Name of the Game

Reversibility—Make improvements that are reversible. Newly developed materials have not been around long enough for assessment of their long-term impacts on historic materials. As a result, they may require unexpected replacement, or may damage historic fabric when removed. Spray-foam insulation is an example of a modern material with some unintended consequences; it can cause moisture problems and may even mask structural problems.

National Park Service

Name of the Game

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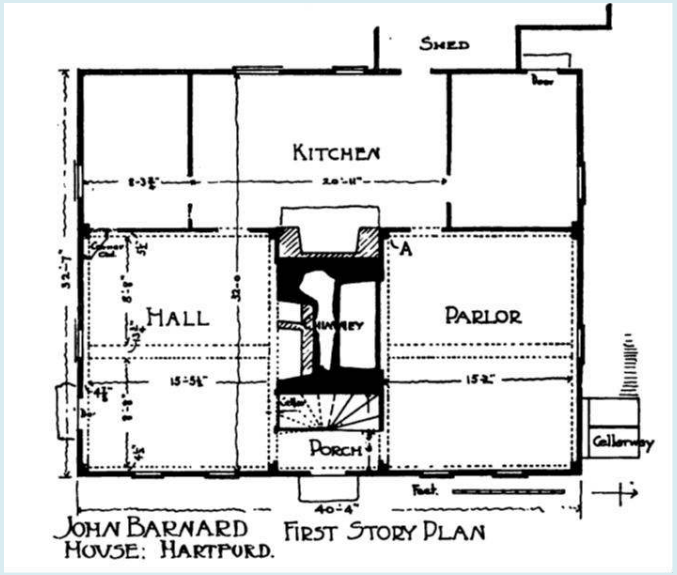
- ✓ Decide what you want to accomplish
- ✓ Understand the historic character of your home
- ✓ Evaluate current conditions
- ✓ Create a holistic plan that is primarily reversible.



No, not that plan!

Questions?

Next week: Program Break followed by Saving Faith on July 8th

Tell us what you'd like to hear about next?

Programs like this are only possible with the support of our members. To show your support for Preservation Connecticut, please consider becoming a member today.

Thank you!

Resources

Secretary of the Interior's Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings
https://www.nps.gov/tps/standards/rehabilitation/guidelines/standards.htm

Sustainability Resources from the National Trust for Historic Preservation
https://forum.savingplaces.org/learn/issues/sustainability

Connecticut Green Bank
https://ctgreenbank.com/

State Historic Preservation Office
https://portal.ct.gov/DECD/Services/Historic-Preservation