

Re-Siding your Home?



How five home owners seized this golden opportunity to add comfort and energy savings with exterior insulation and window upgrades

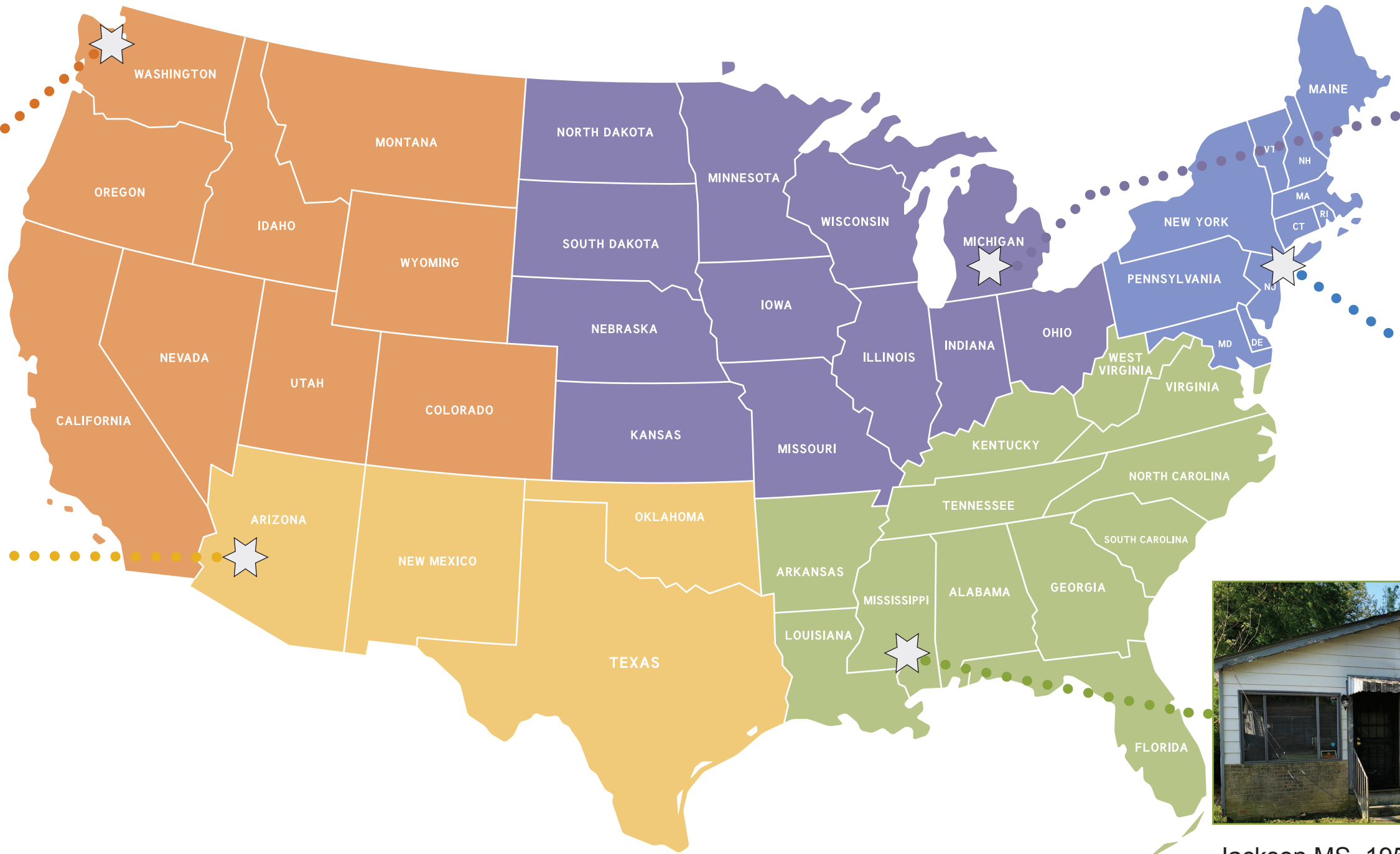
Over a million U.S. homeowners decide to re-side their homes each year. Only a few take advantage of this golden opportunity to add exterior insulation and upgrade the windows while the old siding is off and before the new siding goes on. Pacific Northwest National Laboratory worked with five siding contractors and homeowners around the country who seized this opportunity for greatly improved energy savings and comfort. These case studies paved the way for many more re-siding retrofits.



Bellingham WA, 1970s cedar-sided split-level.



Phoenix AZ, 1940s concrete block



Kalamazoo MI, 1940s kit home



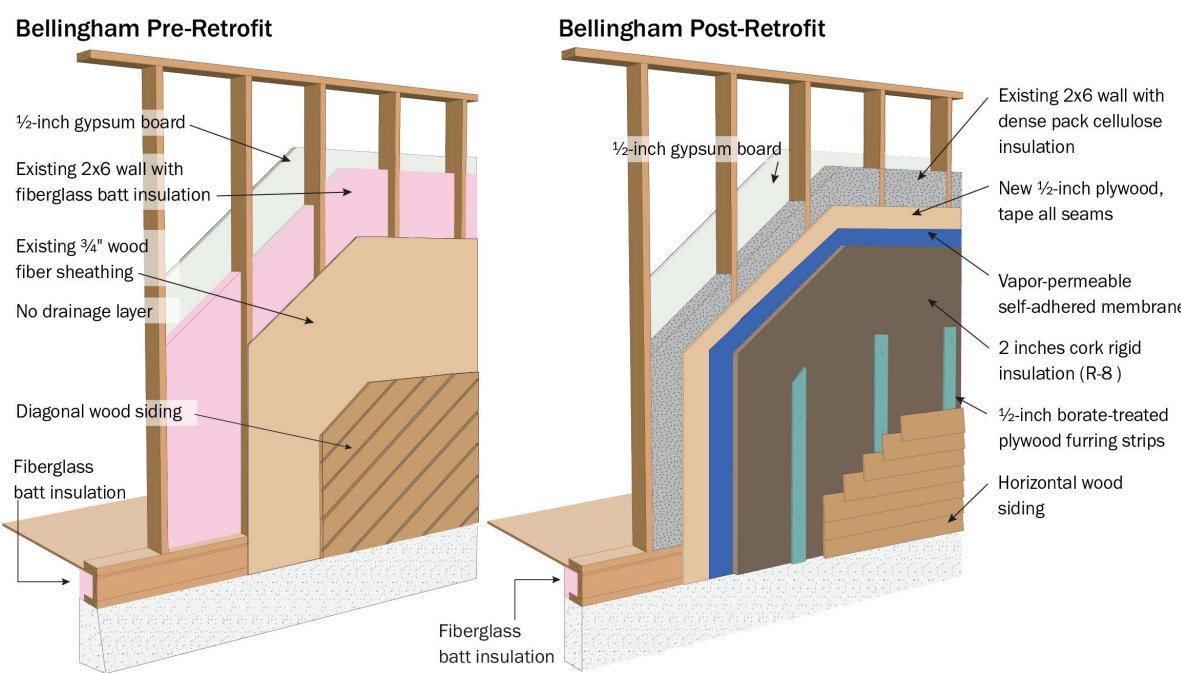
Long Island NY, 1920s stucco two-story



Jackson MS, 1950s bungalow

Bellingham, WA

This 1970s split-level cedar-sided home was experiencing advanced deterioration of siding, trim, and sheathing due to poor flashing details. Removing the siding offered the opportunity to repair extensive water damage then wrap the shell in a breathable weather-resistant barrier topped with 2 inches of cork insulation. New triple-pane windows added to energy savings.

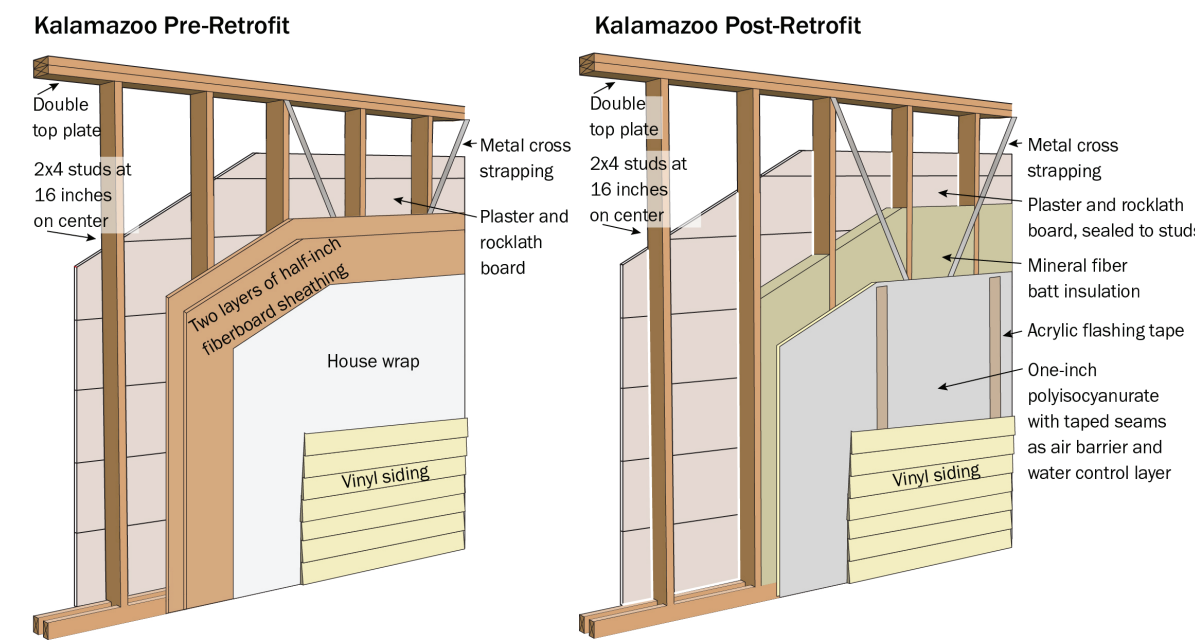


Bellingham	Siding ¹	Windows ²
Planned Material Cost	\$6,800	\$8,954
Planned Labor Cost	\$5,750	\$1,450
Total Planned Cost	\$12,550	\$10,404
Added Upgrade Material Cost	\$3,847	\$3,555
Added Upgrade Labor Cost	\$1,100	\$0
Upgrade-Only Cost	\$4,947	\$3,555
Total Project Cost with Upgrades	\$17,497	\$13,959

1 Add 2 inches of cork rigid insulation.
2 Use triple rather than double pane. No window larger than 3X6 on this project, so no incremental labor cost as installation still manageable with two people.

Kalamazoo MI

This 1946 kit home in Kalamazoo got new exterior foil-faced polyisocyanurate insulation, along with extensive air sealing. Interior storm windows were added to the 15-year-old double-pane windows and dramatically reduced winter-time condensation and ice buildup in this cold humid climate.

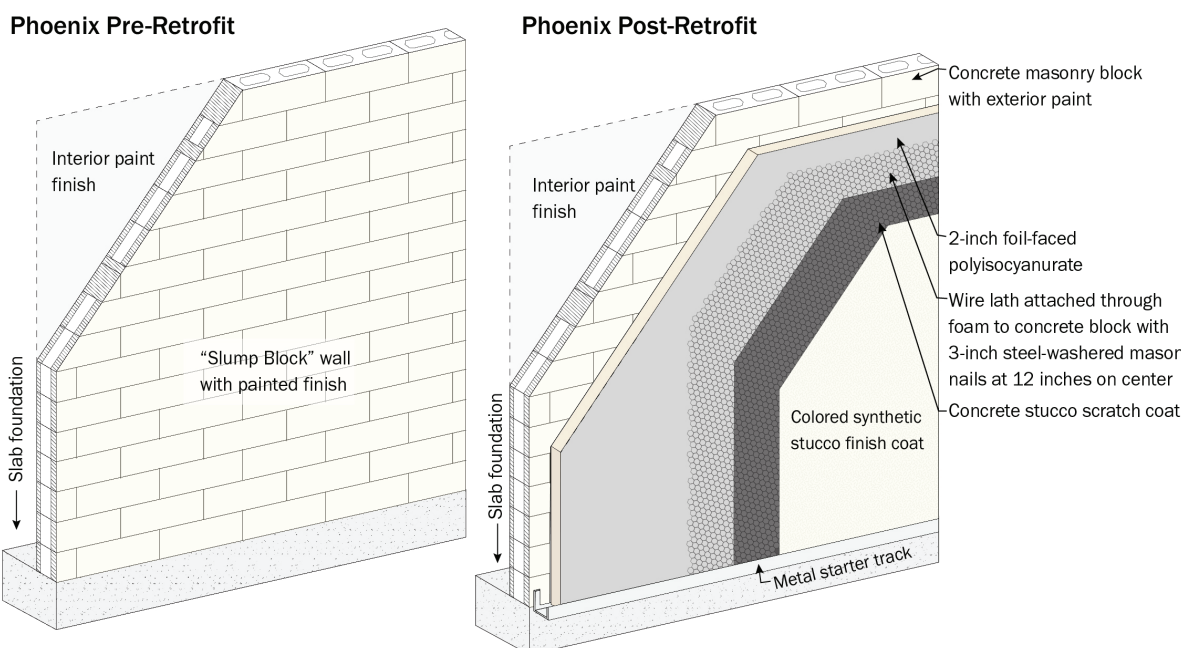


Kalamazoo	Siding ¹	Windows ²
Planned Material Cost	\$2,000	\$0
Planned Labor Cost ³	\$5,000	\$0
Total Planned Cost	\$7,000	\$0
Added Upgrade Material Cost	\$2,600	\$1,594
Added Upgrade Labor Cost ³	\$3,500	\$250
Upgrade-Only Cost	\$6,100	\$1,844
Total Project Cost with Upgrades	\$13,100	\$1,844

1 Add 1 inch of foil-faced polyiso continuous exterior foam insulation.
2 Install interior low-e storm windows.
3 Estimated labor.

Phoenix, AZ

The walls of this 1949 slump block house were concrete block and paint – that’s all. The extensive renovation included adding 2 inches of rigid foam and stucco to the exterior. The double-pane ENERGY STAR windows got exterior-attached solar screens that keep out the sun and provide privacy while allowing views.

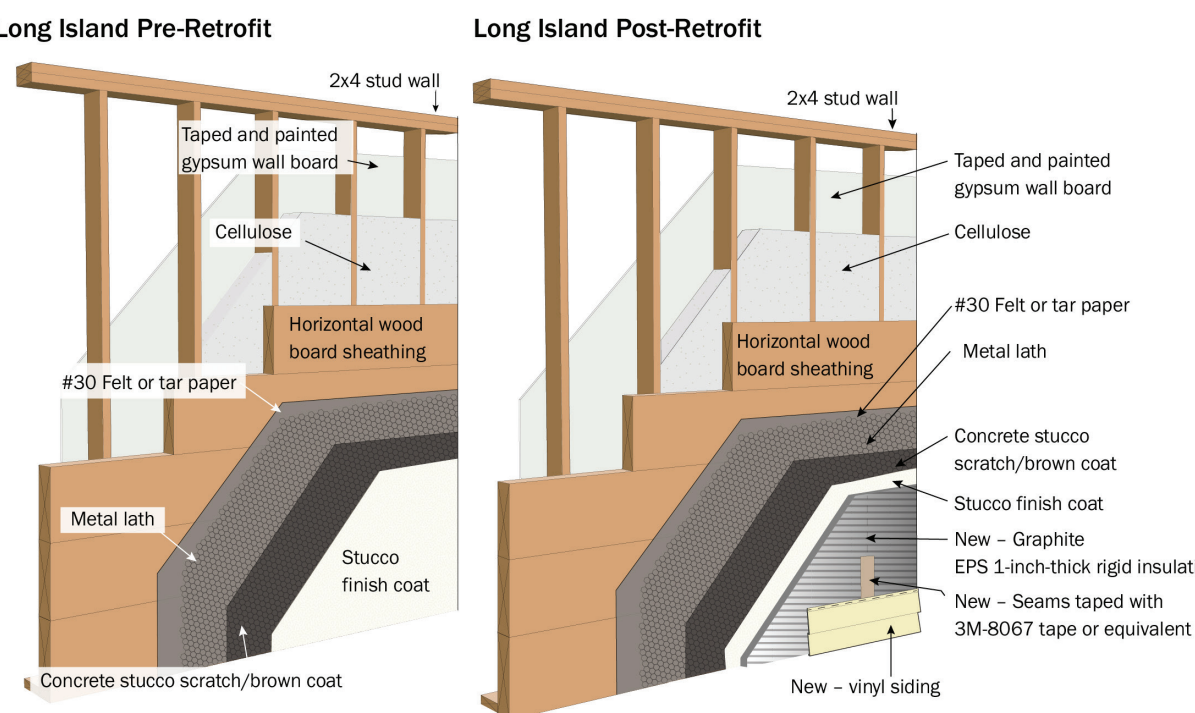


Phoenix	Siding ¹	Windows ²
Planned Material Cost	\$5,338	\$655
Planned Labor Cost	\$12,445	\$275
Total Planned Cost	\$17,783	\$930
Added Upgrade Material Cost	\$1,857	\$2,606
Added Upgrade Labor Cost	\$625	\$400
Upgrade-Only Cost	\$2,482	\$3,006
Total Project Cost with Upgrades	\$20,265	\$3,936

1 Add stucco over 2 inches polyiso insulation.
2 Add solar screens to all windows, and replace one single-pane window.

Long Island, NY

This 1920’s Italianate home still looked elegant but the walls were cold and drafty and the stucco was covered with lead paint. Renovation plans included wrapping the old stucco exterior in 2 inches of rigid foam and new siding and topping the double-pane clear-glass windows with insulating storm windows with low-emissivity coatings to block heat transfer.

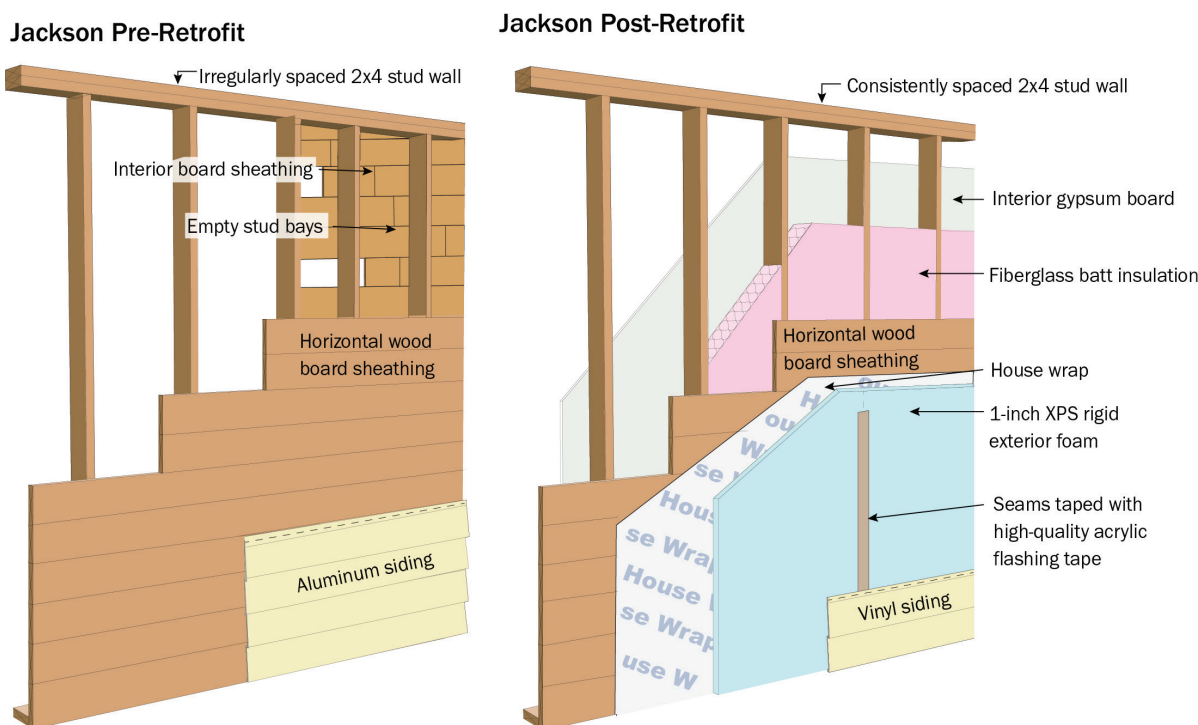


Long Island	Siding ¹	Windows ²
Planned Material Cost	\$5,000	
Planned Labor Cost	\$10,000	
Total Planned Cost	\$15,000	
Added Upgrade Material Cost ³	\$2,500	\$6,400
Added Upgrade Labor Cost ³	\$2,050	\$4,800
Upgrade-Only Cost	\$4,550	\$11,200
Total Project Cost with Upgrades ³	\$19,550	\$11,200

1 Add new vinyl siding over 1 inch graphite EPS with seams taped.
2 Exterior storms. 32 windows x \$350/window.
3 Materials and labor costs are estimates. Retrofit was not completed.

Jackson, MS

The original bungalow, built in 1955, had no insulation, no house wrap, a haphazard foundation, and a hodgepodge of leaky windows, but the home had sentimental value for the new owner, whose great grandmother had lived there. The gut rehab included wrapping the home in an inch of rigid foam and replacing all of the windows with new airtight triple-pane windows to keep out the heat, storms, and sounds from the active railroad tracks 100 yards from the home.



Jackson	Siding ¹	Windows ²
Planned Material Cost	\$2,600	\$3,378
Planned Labor Cost	\$1,600	\$800
Total Planned Cost	\$4,200	\$4,178
Added Upgrade Material Cost	\$975	\$3,524
Added Upgrade Labor Cost	\$3,200	\$0
Upgrade-Only Cost	\$4,175	\$3,524
Total Project Cost with Upgrades	\$8,375	\$7,702

1 Add 1 inch XPS exterior foam.
2 Install triple-pane windows.

