NJIT New Jersey's Science & Technology University

Center for Building Knowledge

Opportunistic Retrofitting
Deane Evans

Re-Side Tight
Re-Side Right
Renew-Wall

Re-Side Tight

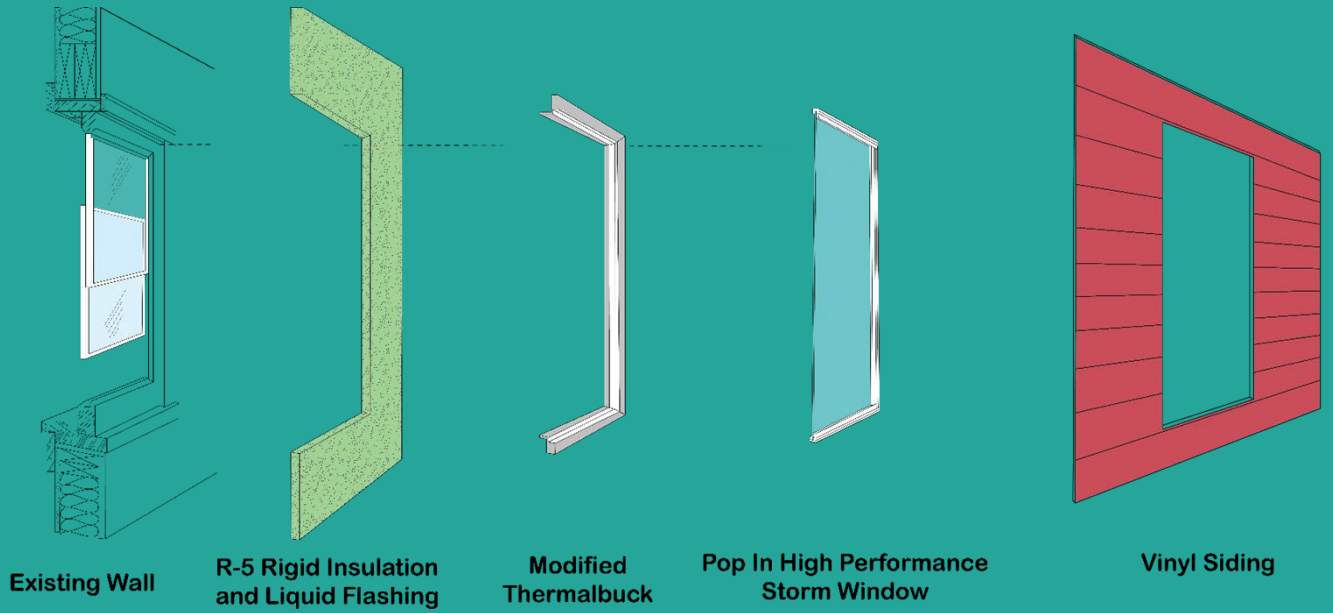
Install the WRB as an intact air barrier during a standard re-siding job

Re-Side Right

Install rigid insulation as the WRB and air barrier during a standard re-siding job

Renew-Wall

Addresses entire wall area by adding high performance storm window and thermal buck



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Building AMERICA U.S. Department of Energy

Re-Side Right

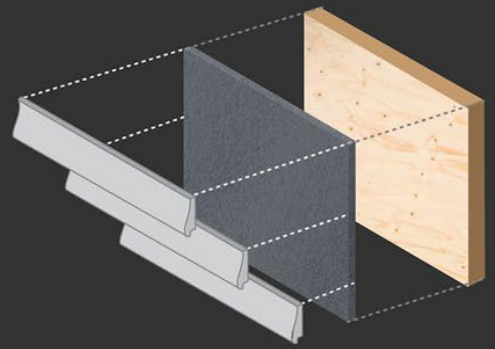
Principal Investigator - Christine Liaukus, RA

BASF We create chemistry

United Way United Way of Long Island 55th ANNIVERSARY


RE-SIDE RIGHT: Add R5 Insulation and air sealing when re-siding existing homes for improved performance at a low incremental cost.

RE-SIDE RIGHT



Re-side Right enhances a typical re-siding job by adding continuous insulation that also serves as a WRB and air barrier

The Re-Side Right Field Research Process

STEP 1

Contractor screening and selection

STEP 2

Develop homeowner survey instrument

STEP 3

Convening of contractors for pre-retrofit informational session

The Re-Side Right Field Research Process

STEP 4

Test house recruitment, selection and participation

STEP 5

Document pre-siding conditions at 10 test houses

STEP 6

Install Re-Side Right package on 10 houses

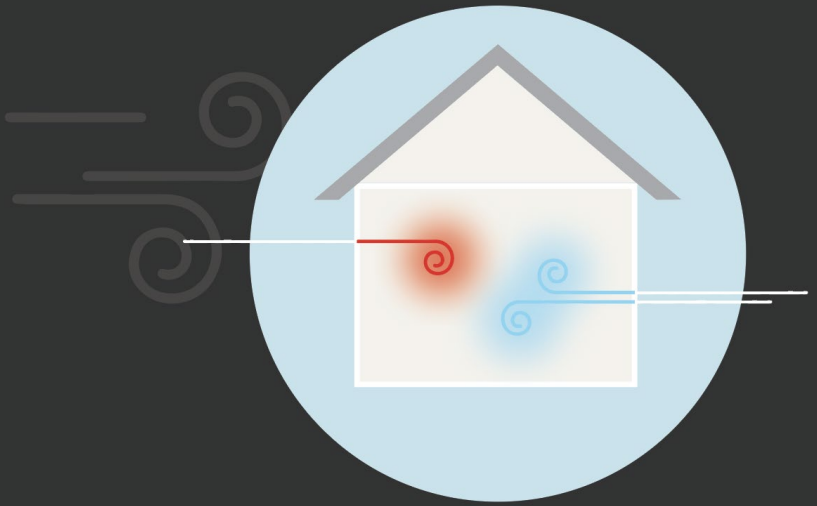
The Re-Side Right Field Research Process

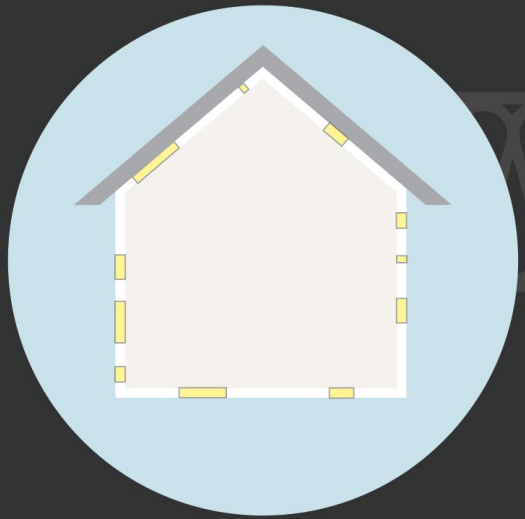
STEP 7

Construction observation and video documentation

STEP 8

Document post-siding conditions





Most houses leak a lot of air

This leads to drafts, energy loss, and compromised building durability. Reducing the leakage helps minimize these issues.

&

Could use more insulation

Added insulation reduces heat loss in the winter & heat gain in the summer. Adding continuous insulation on the exterior also reduces thermal bridging through the walls, further enhancing thermal performance.

Insulation without an air barrier is like wearing a sweater when riding a bicycle in the cold weather: the air gets through and you don't stay warm.

If you put a wind breaker (air barrier) over the sweater, the air flow is diminished and the sweater (insulation) keeps you warm.

As explained by Henry Gifford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Combustion Safety Testing

The Building Performance Institute protocol for shell improvement

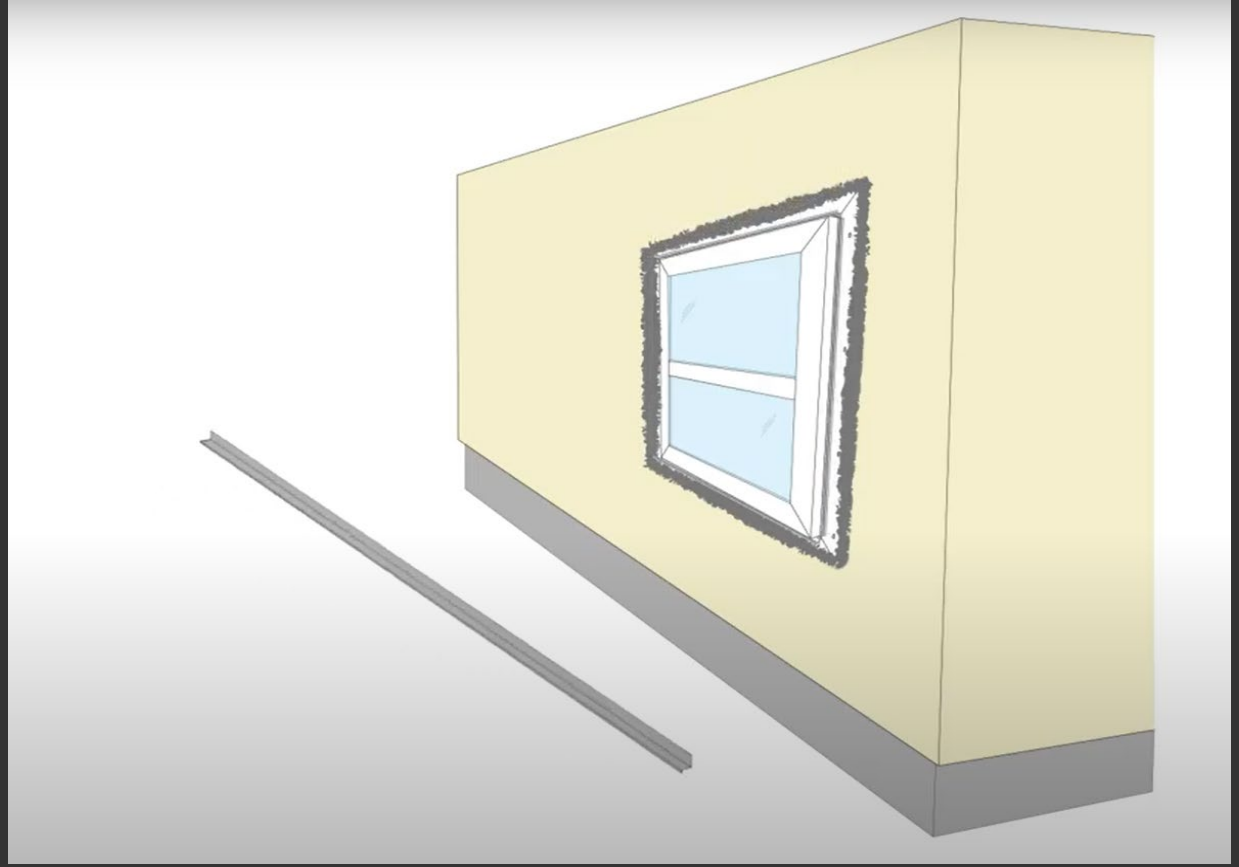
Whenever you tighten a home, do combustion safety testing to be sure you are not creating or exacerbating an unsafe situation

INSTALLATION PROCEDURES

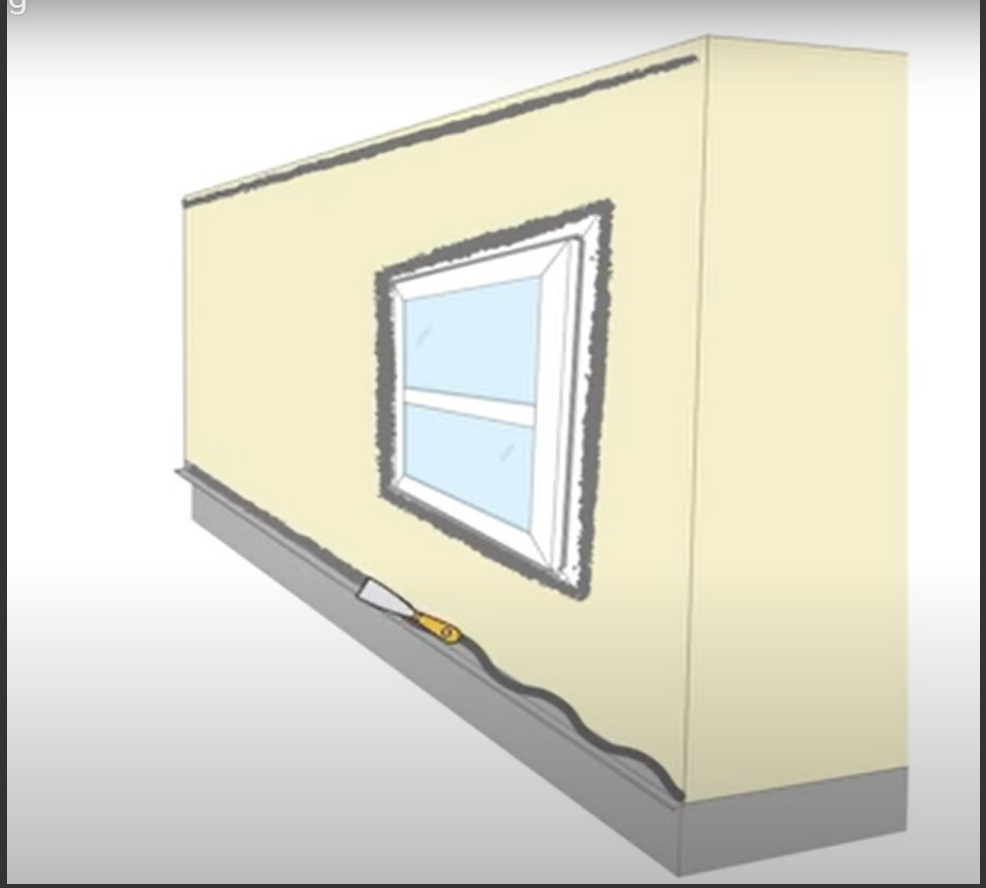
1. Tear off siding

2. Repair substrate, fill large openings

3. Seal between foundation and framing as needed



4. Install drip edge at sheathing base



5. Install liquid flashing at sheathing top, base and around windows and doors

Liquid flashing application at window jamb

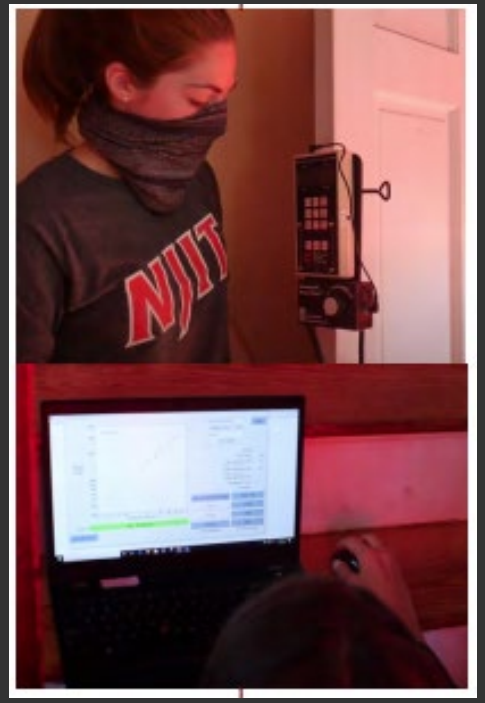
6. Install 1” rigid insulation with cap nails or an auto feed screw gun

7. Tape all joints with construction tape

Tape is pressure activated and needs to be rolled

8. Install self-adhered flashing at jambs and head of windows/doors

9. Install siding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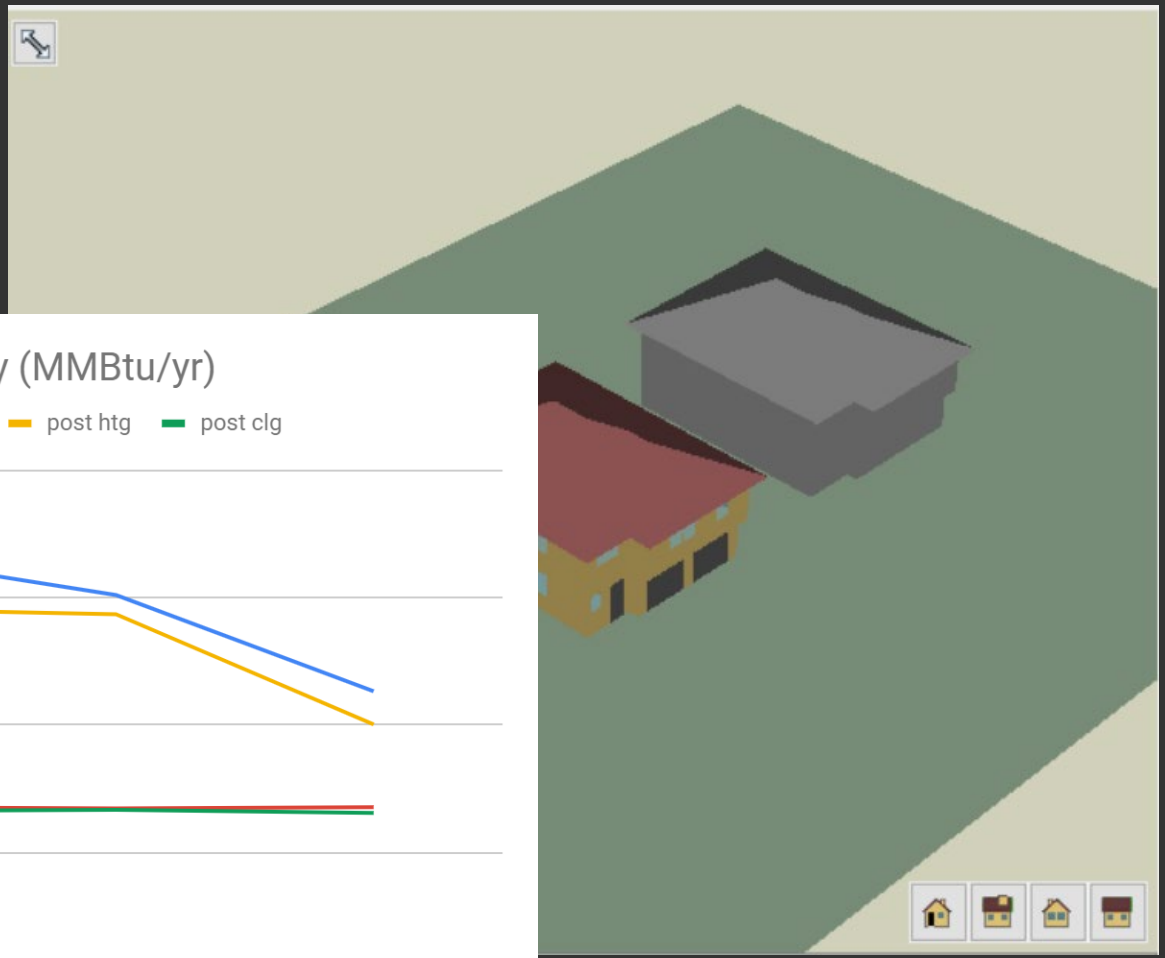
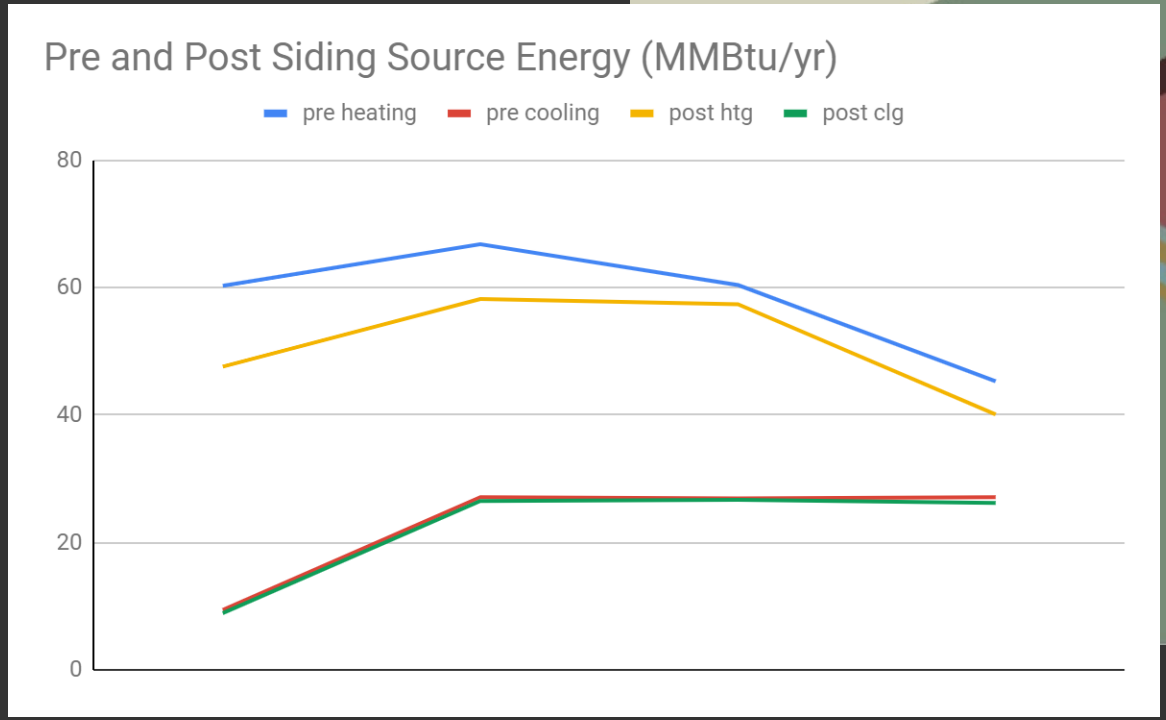



Pre and Post Siding Source Energy (MMBtu/yr)
pre heating
pre cooling
post htg
post clg
80
60
40
20
0

Re-Side Right

1. In what town do you live?

2. How long have you lived in your house?

- ◯ Less than 1 year
- ◯ Between 1 year and 5 years
- ◯ More than 5 years

3. Since the completion of your siding job, have you noticed any comfort changes in your home?

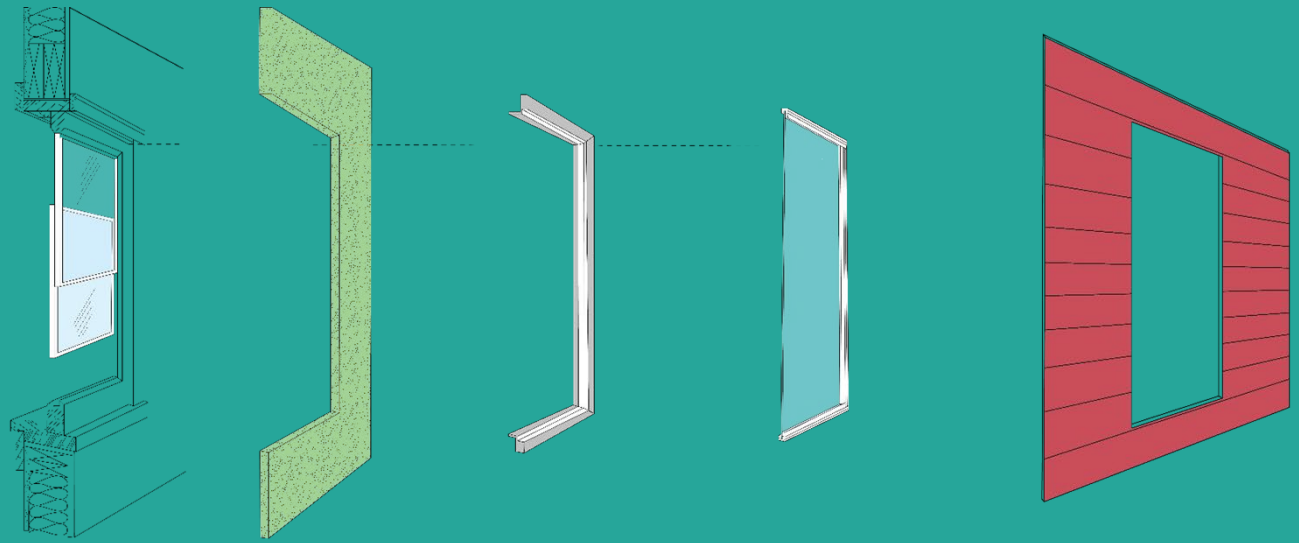
- ◯ More comfortable
- ◯ No change
- ◯ Less comfortable
- ◯ Not sure

4. Have you noticed any difference in the acoustic performance of your home?

- ◯ There is less noise from outside
- ◯ There is no change in noise from the outside
- ◯ There is more noise from outside
- ◯ Not sure

Renew-Wall

Addresses entire wall area by adding a high performance secondary window and thermal buck

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RYOBI

Opportunistic Retrofitting

Leveraging standard building upgrades to optimize energy performance and resilience.