Case Study
Arbor Dev. 30 Seneca St. Hornell, NY

EA$Y ENERGY USA

Building Performance
20 Large Apartments
Envelope Common Areas

Customer:
Arbor House Development

Location:
Hornell, NY

Initial Emissions:
- **CO2: ? tons/year**

Work completed:
- **Insulated thermal boundary walls**
- **Insulated 2nd & 3rd floor walls**
- **Air sealed & insulated b and joist**
- **Air sealed & insulated attic**

Final Emissions:
- **CO2: ? tons/year**

- **Annual savings:**

TBD per year

Background

20 apartments complex in the 2nd and 3rd floor plus common hallways and stairwells. Heating method is electric baseboards

Key Reasons for Project

Skyrocketing utility bills and drafts in multiple areas were noted as key issues.

Getting Started

Ray Hahn, building manager, hired Bob Kahabka to perform an energy assessment. Bob performed whole-building diagnostic tests to find out what was causing the comfort and energy issues. Bob modeled an energy solution and wrote a specification:

- **reduce air infiltration from balloon framed walls**
- **increase levels of insulation in all of the thermal envelope walls**
- **reduce thermal conduction loss in rim band joists with spray foam insulation**

reduce fire spread potential by spraying intumescent paint over spray foam

- **reduce air exfiltration from the attic of the thermal boundary**
- **increase levels of insulation in the attic**

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Implementation

Implementing the modeled solutions was easy when Arbor Development chose Easy Energy USA, a BPI Accredited contracting company, to do the work.

Work began March 14, 2011 and was finished ahead of schedule on April 7th, 2011.

While still on the job , five tenants commented on a noticeably warmer apartment.

The rest of slideshow will highlight the details of how the work was accomplished and include work pictures of some of the crew.

Summary of Benefits

Energy improvements, reduced air leakage, lowered energy bills, increase in savings, mitigated health issues, improved environmental impact, etc.

Results

Infiltration level reduced. Insulation levels in attic improved to R-50 from R-8. Insulation levels in walls increase. Band joist air sealed and insulated thermally and fire protected. Drafts ceased. Warmer tenants and lower utility bills.

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Existing Third Floor Plan

N

0 5' 10' 20'

plan ARCHIT.STDIO
plan
Architectural Studio, PC
Main Place Building, Suite 102
45 Exchange Street
Rochester, New York 14614
t. 585.454.4250
f. 585.454.4373
www.planpc.com

ARBOR DEVELOPMENT
ALTERATIONS TO
SENECA STREET STATION
SENECA STREET
HORNELL, NEW YORK

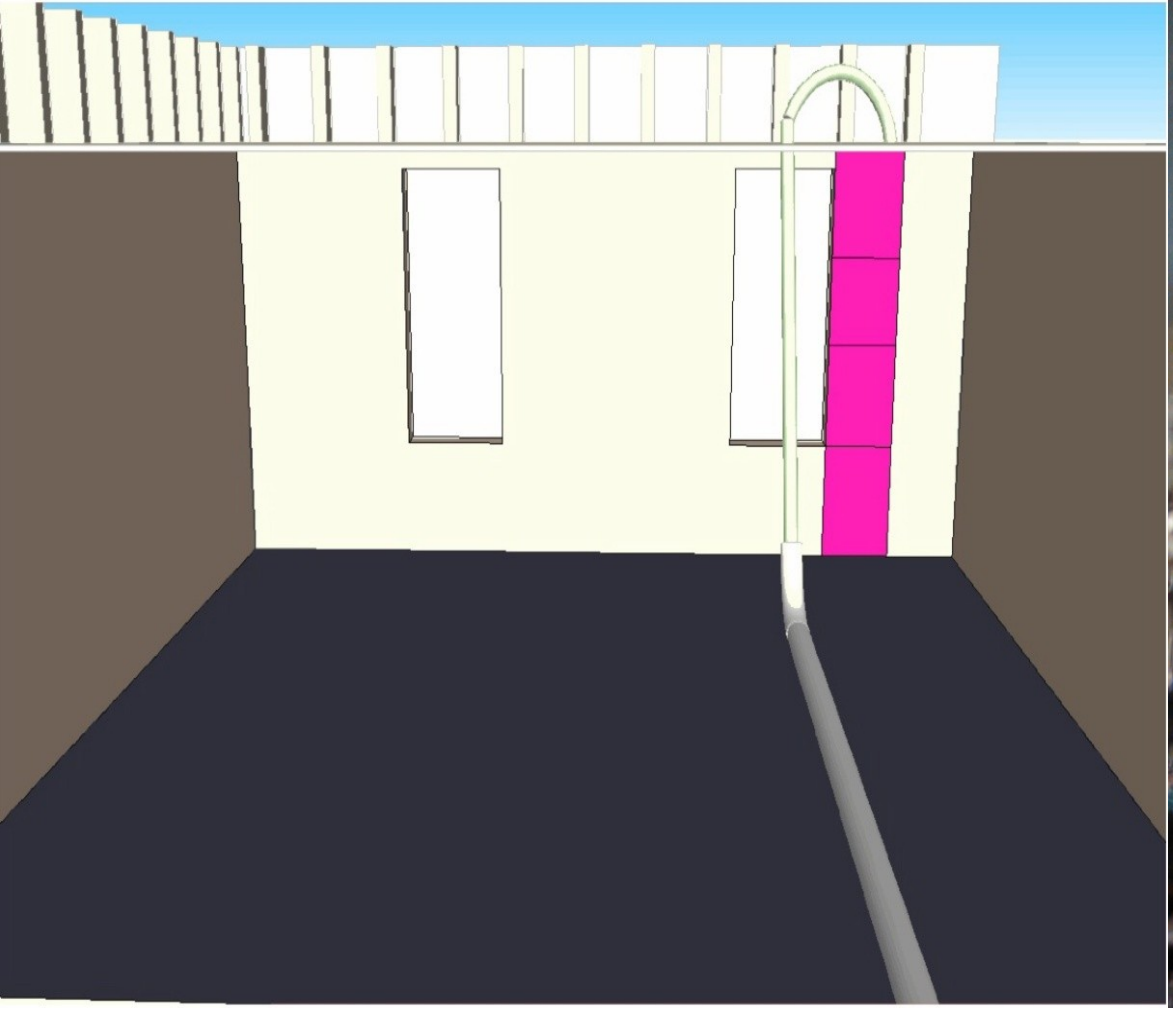
EXISTING THIRD FLOOR PLAN

DHCR SUBMISSION

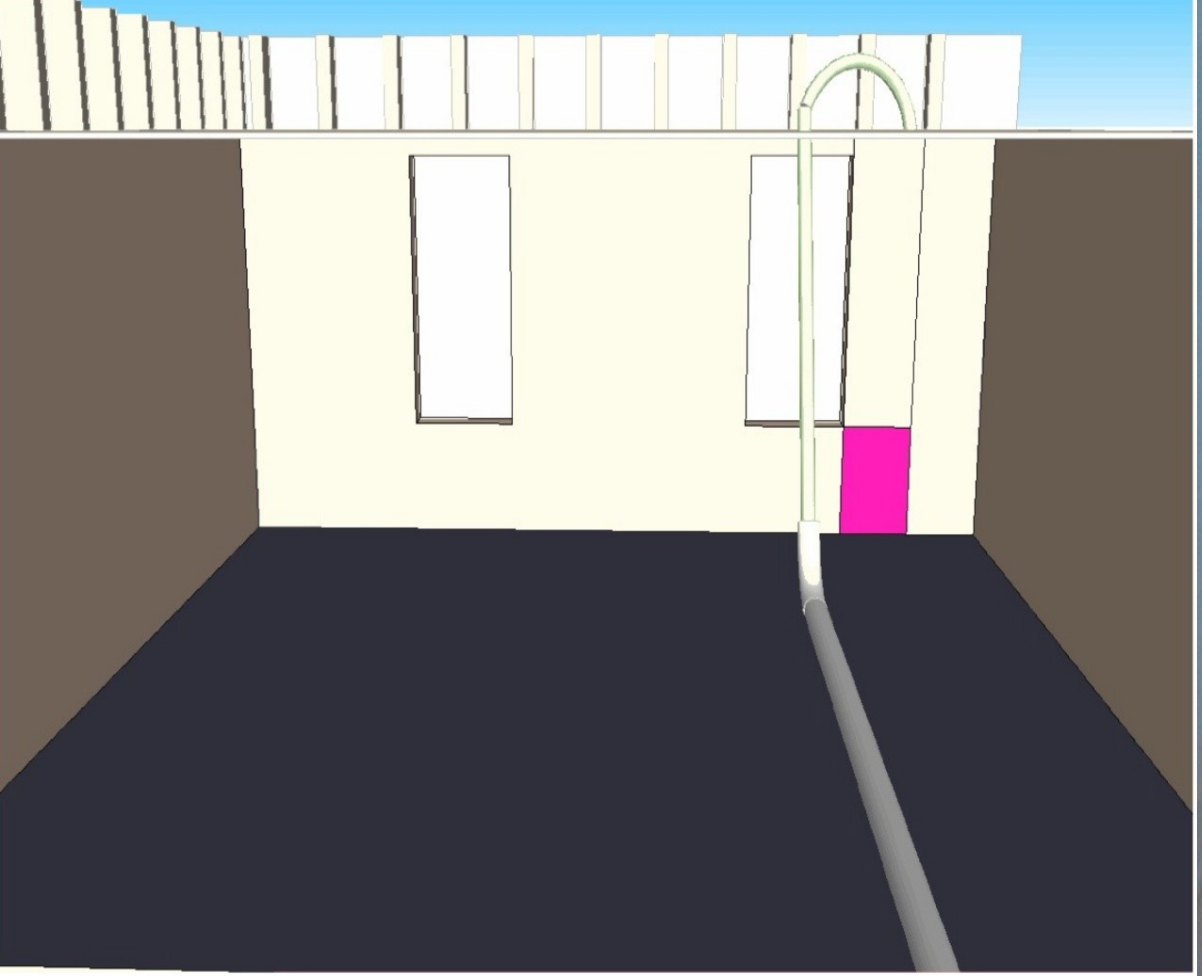
PLAN PROJECT No.
046.08.02.01

DATE
10.01.08

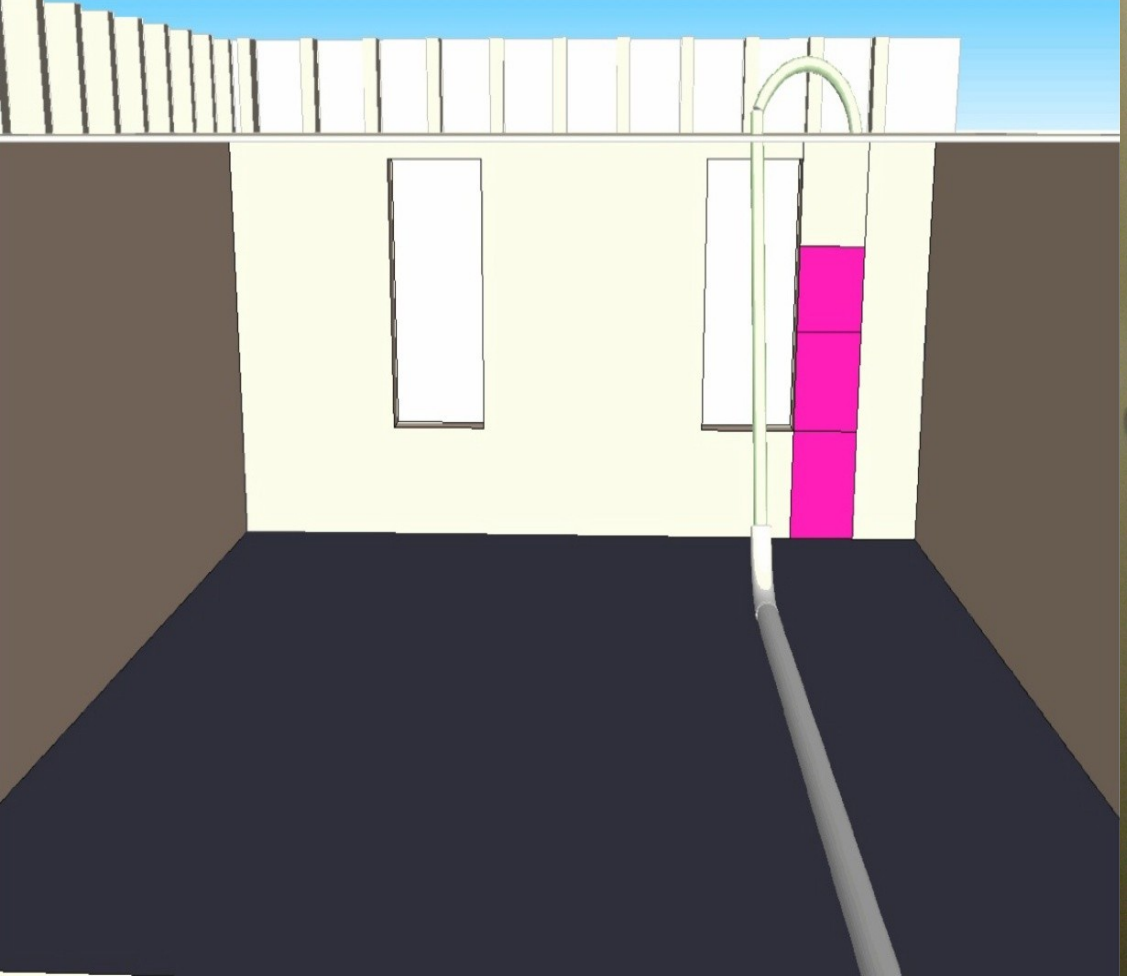
a003



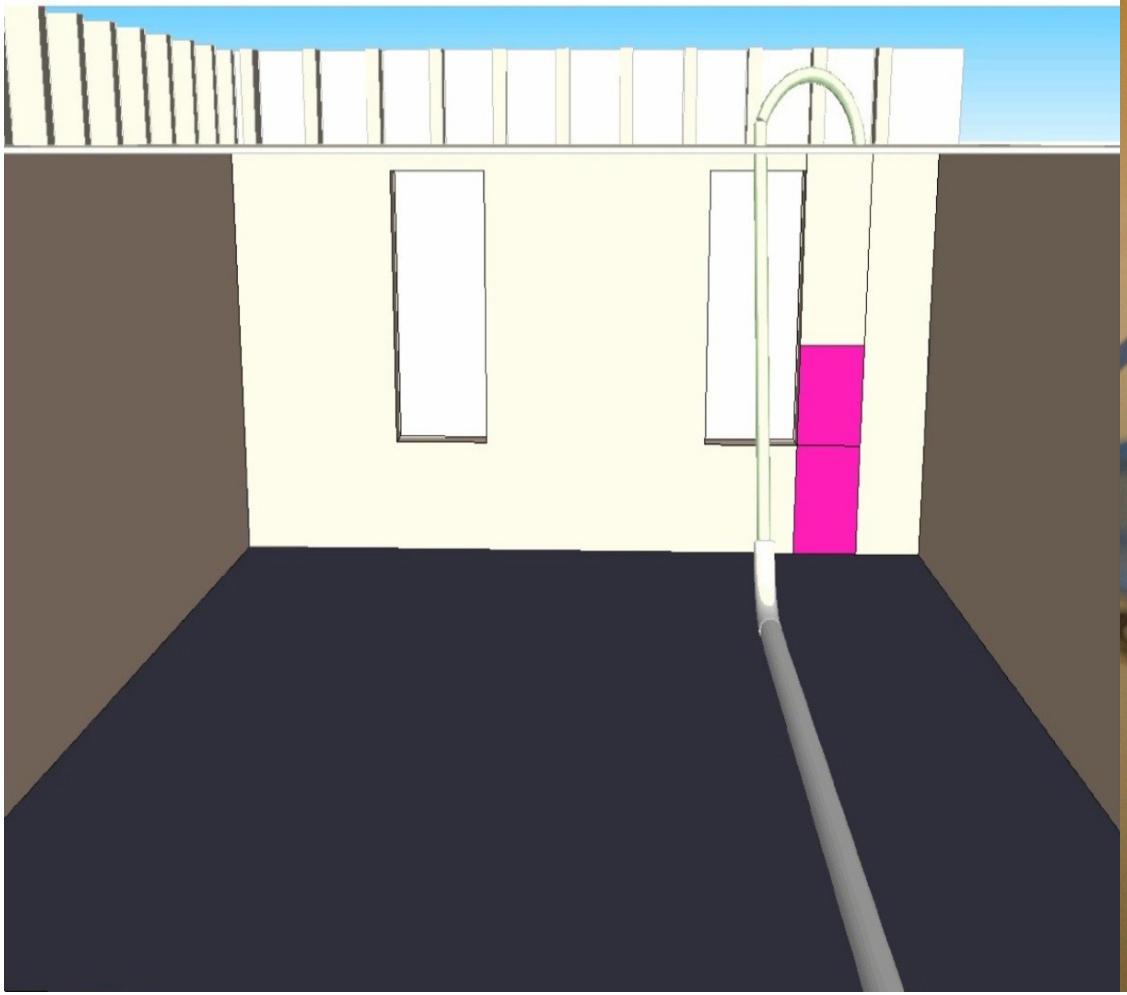
Containment areas were constructed to protect tenants' possessions from dust.



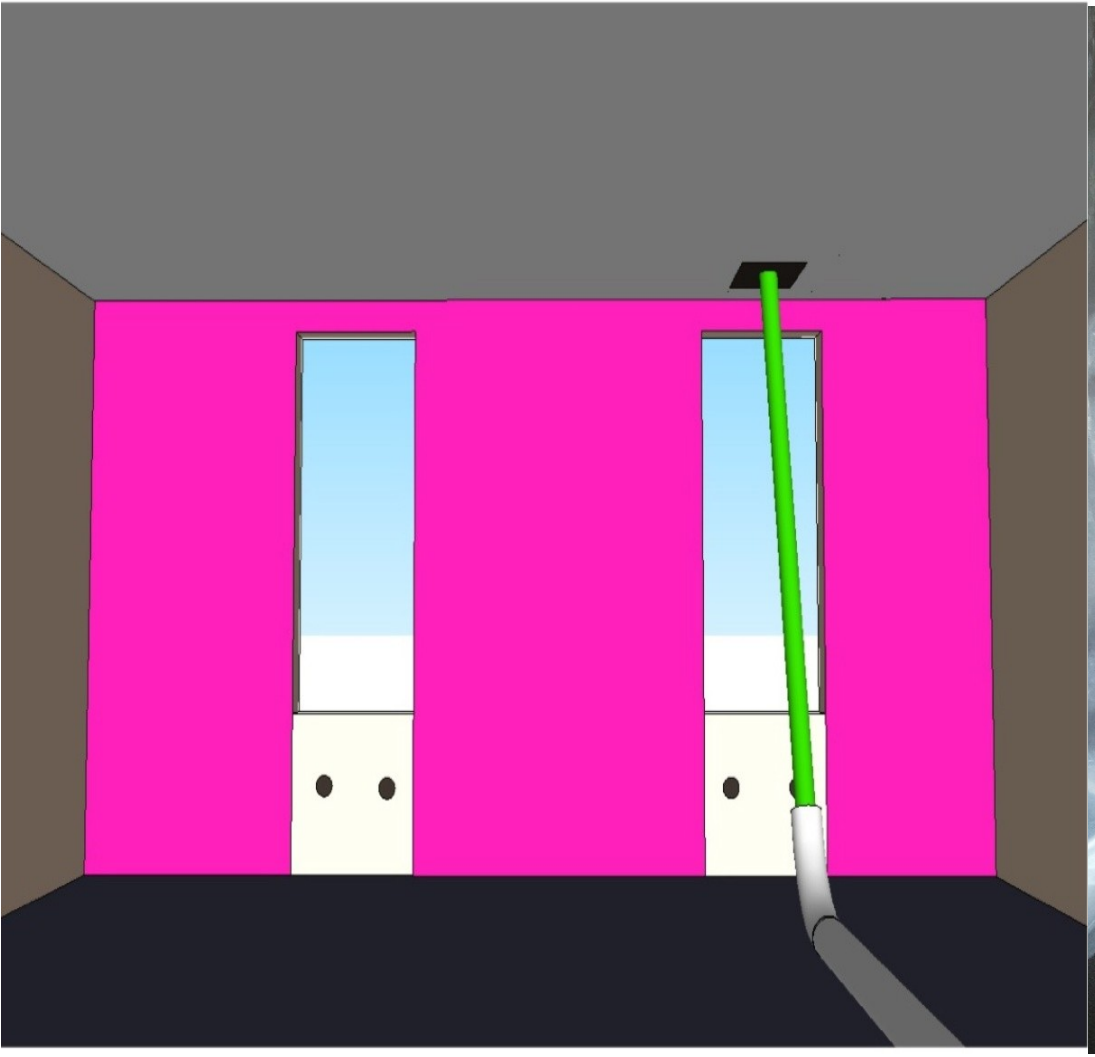
16” x 16” or smaller hole was cut into the ceiling . This was our entrance, and a hose was through the ceiling and down into the wall cavity.

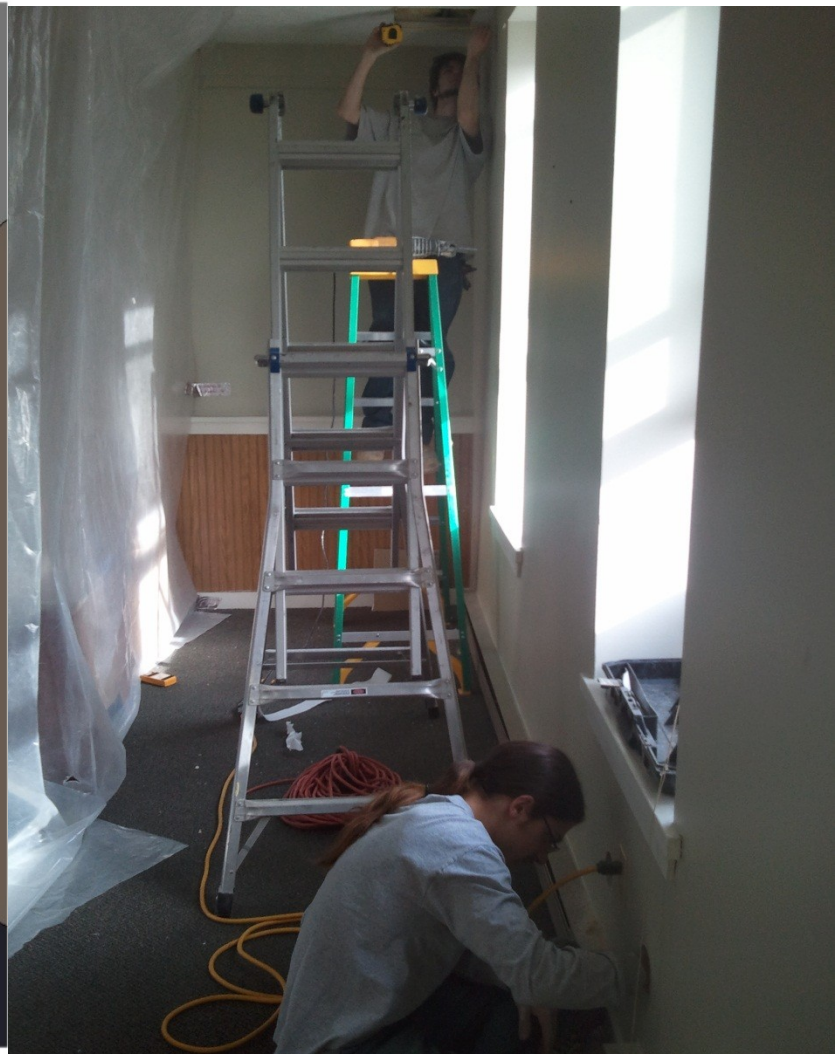


Access from above was not always feasible, so 3” holes were drilled into the walls, and they became our access.

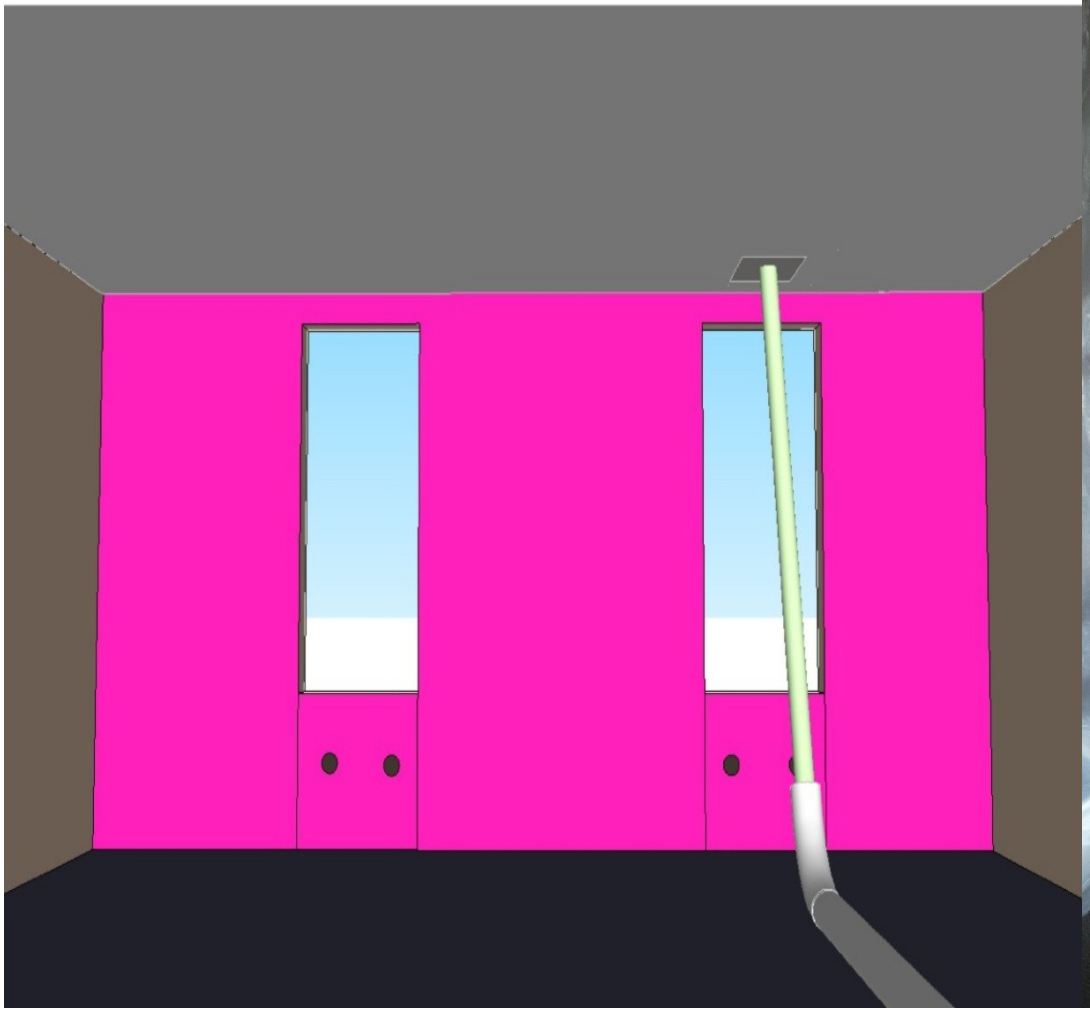


Blown insulation run from the hallway & dense packed into wall cavities.

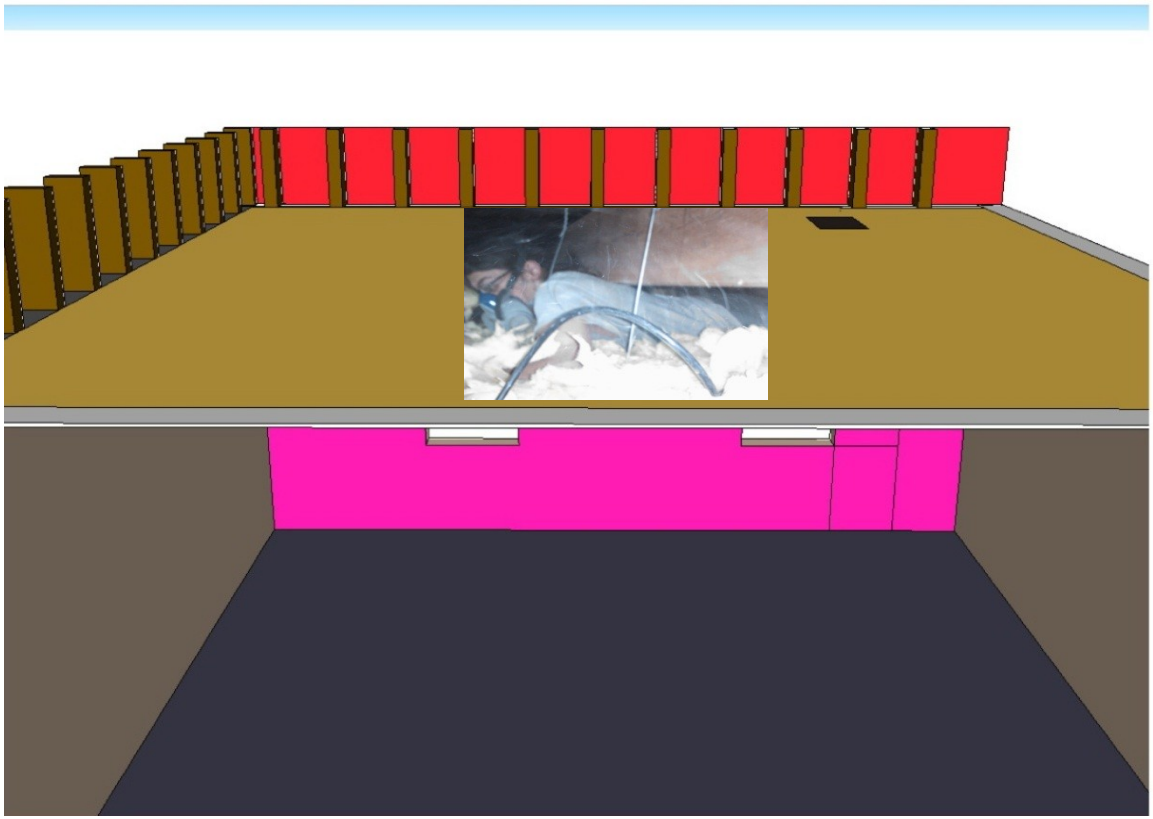




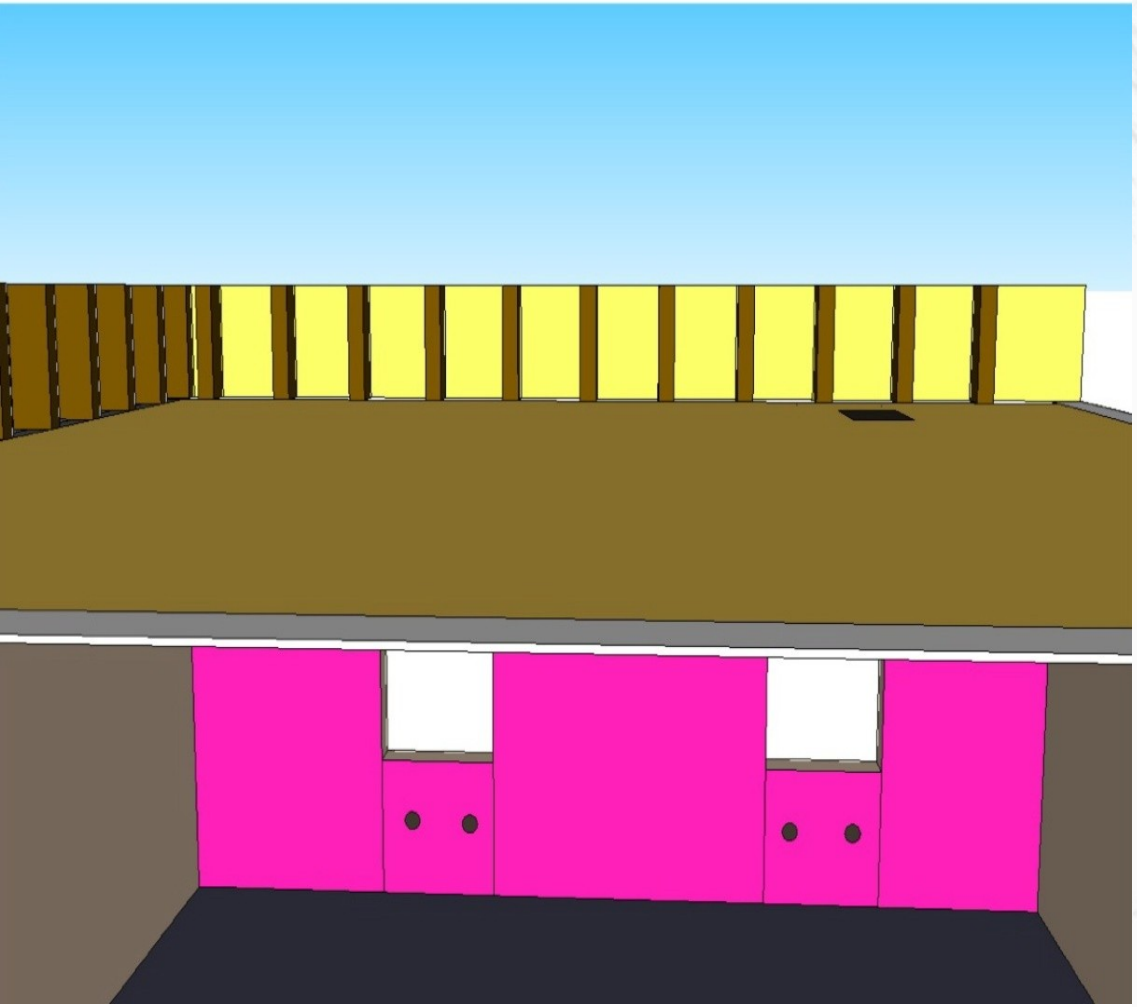
This process was repeated until all cavities were full & dense packed.



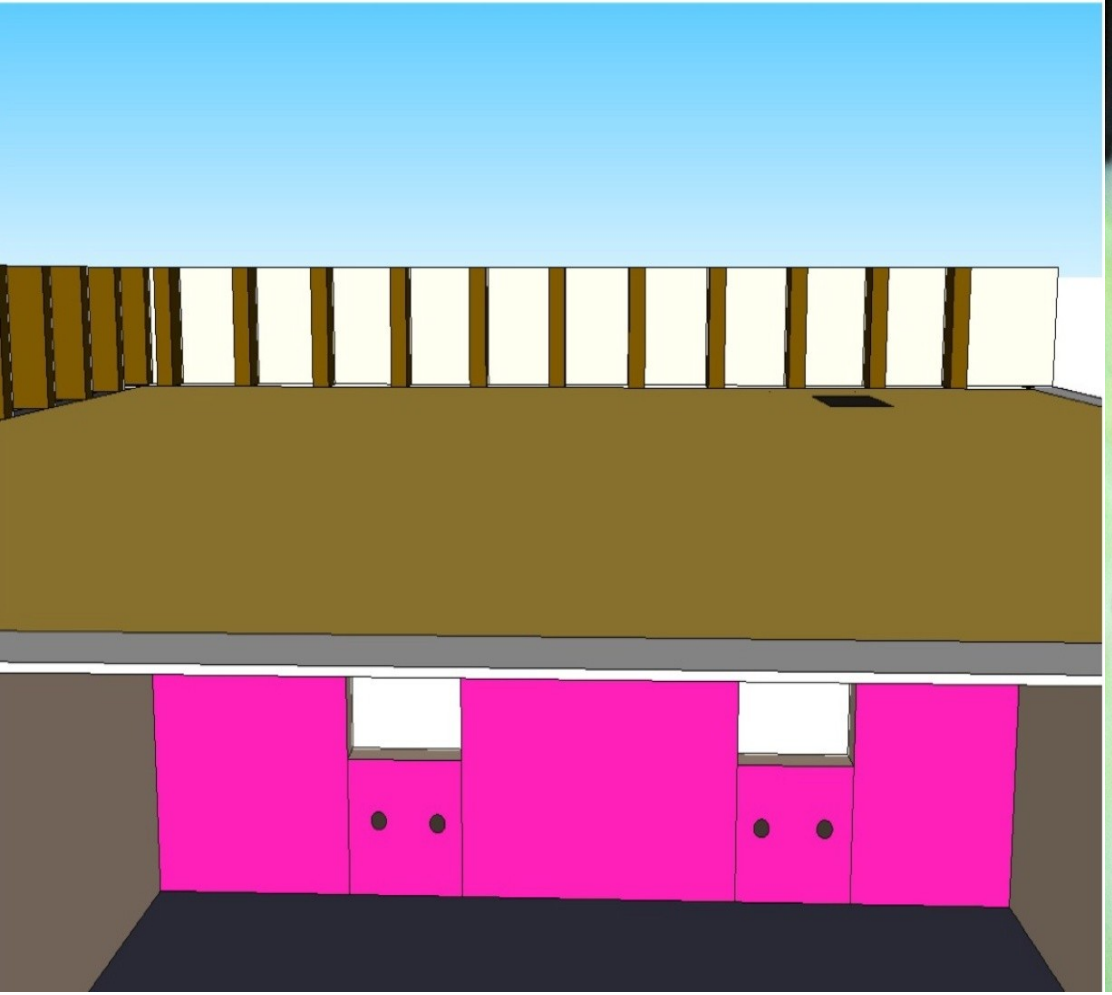
Wall areas beneath windows were dense packed via 3” holes drilled into each cavity.



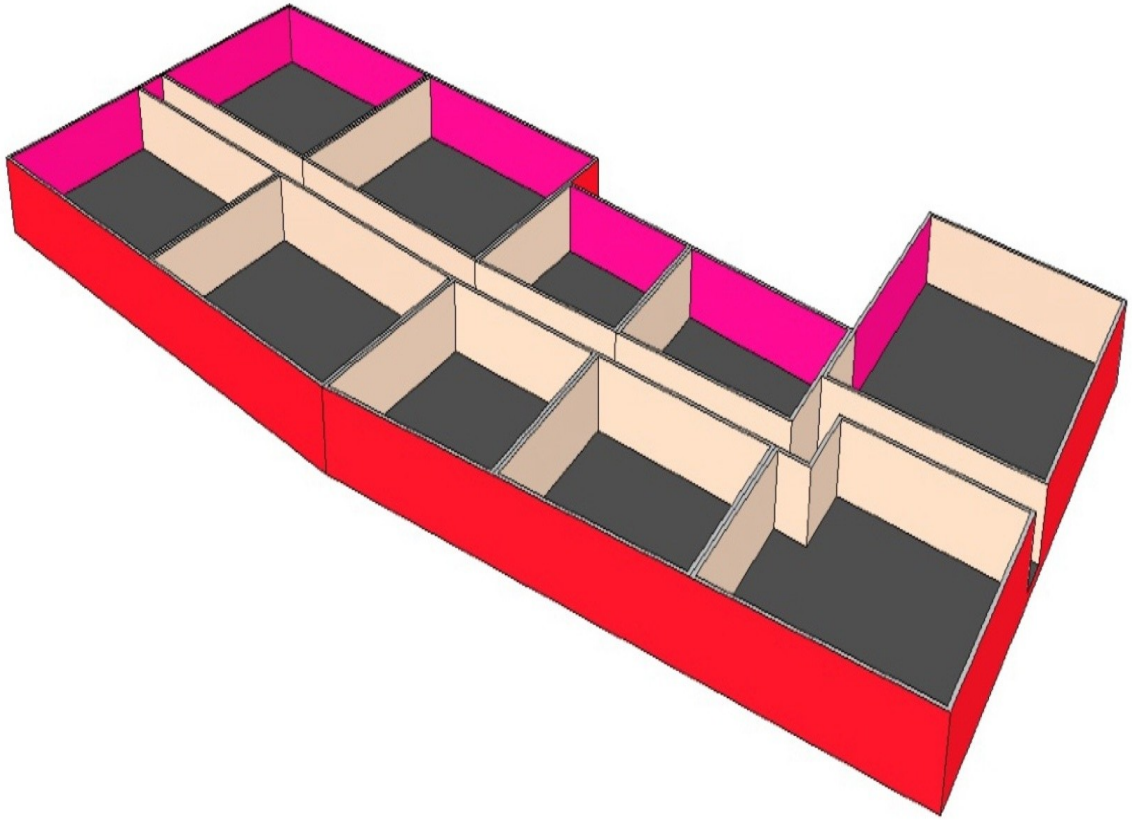
Welcome to the rim/band joist.



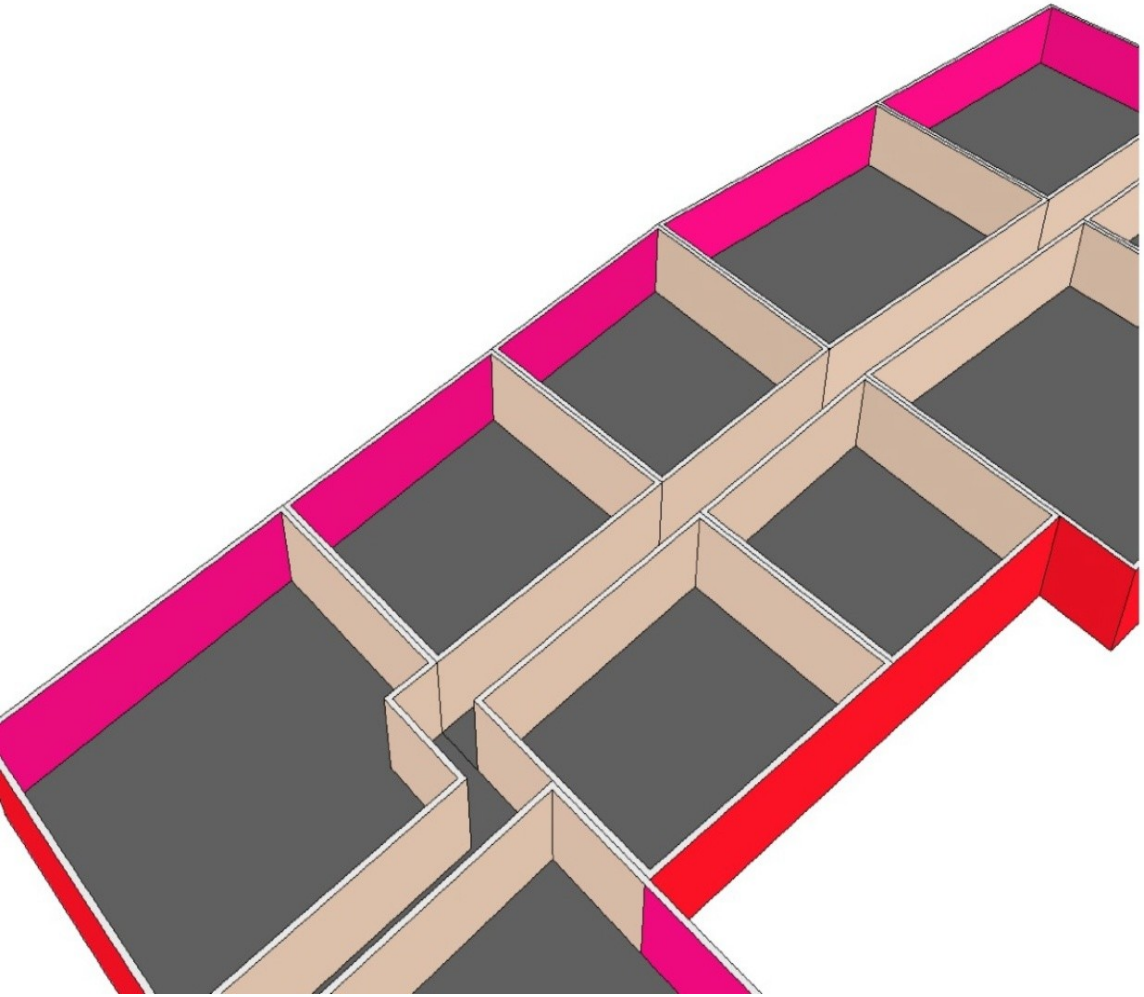
Once in the rim/band joist, spray foam was applied from top to bottom, end to end. (note color change)



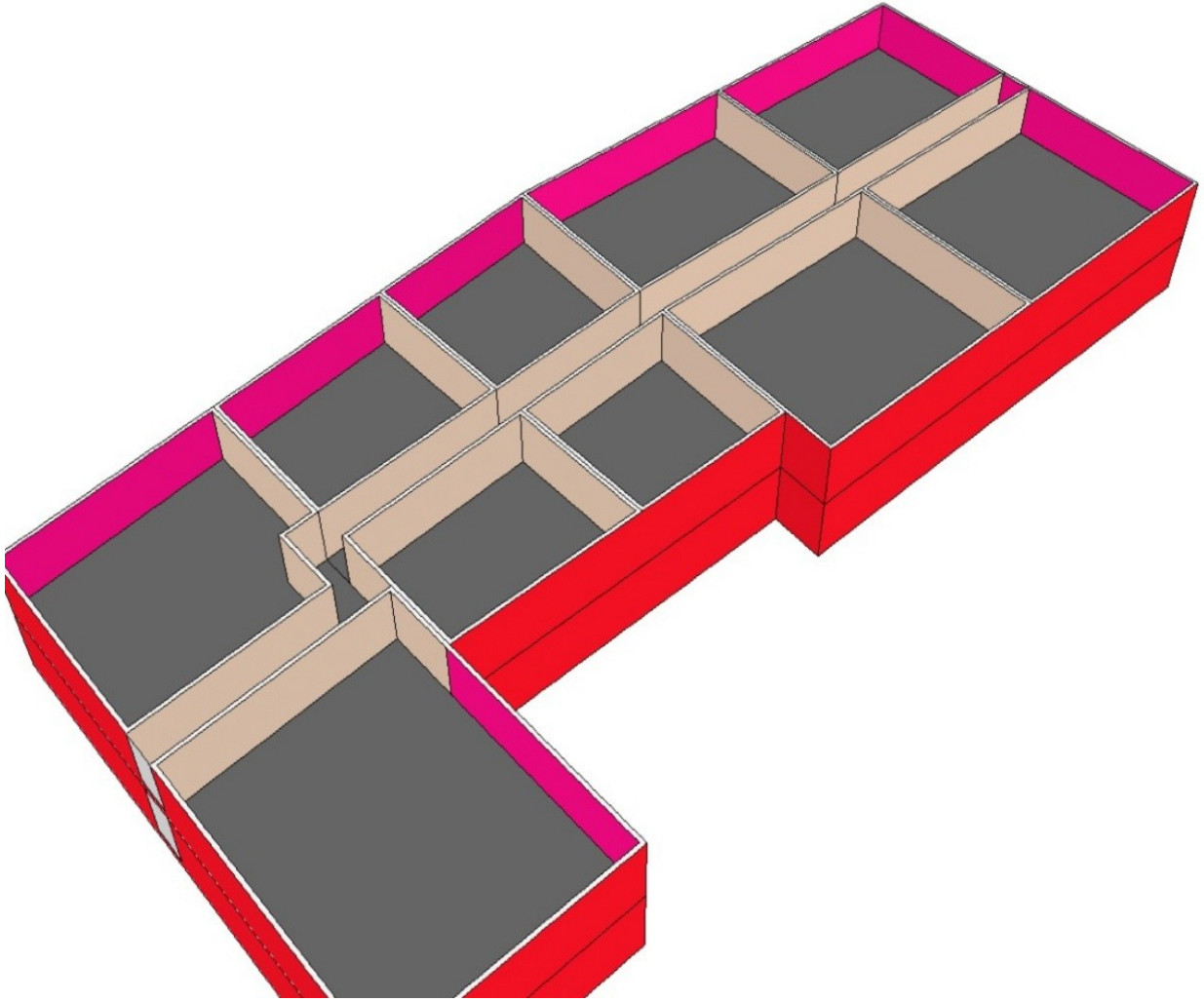
While still in the rim/band joist, after the spray foam application, intumescent fire guard paint was applied over the spray foam (note color change)

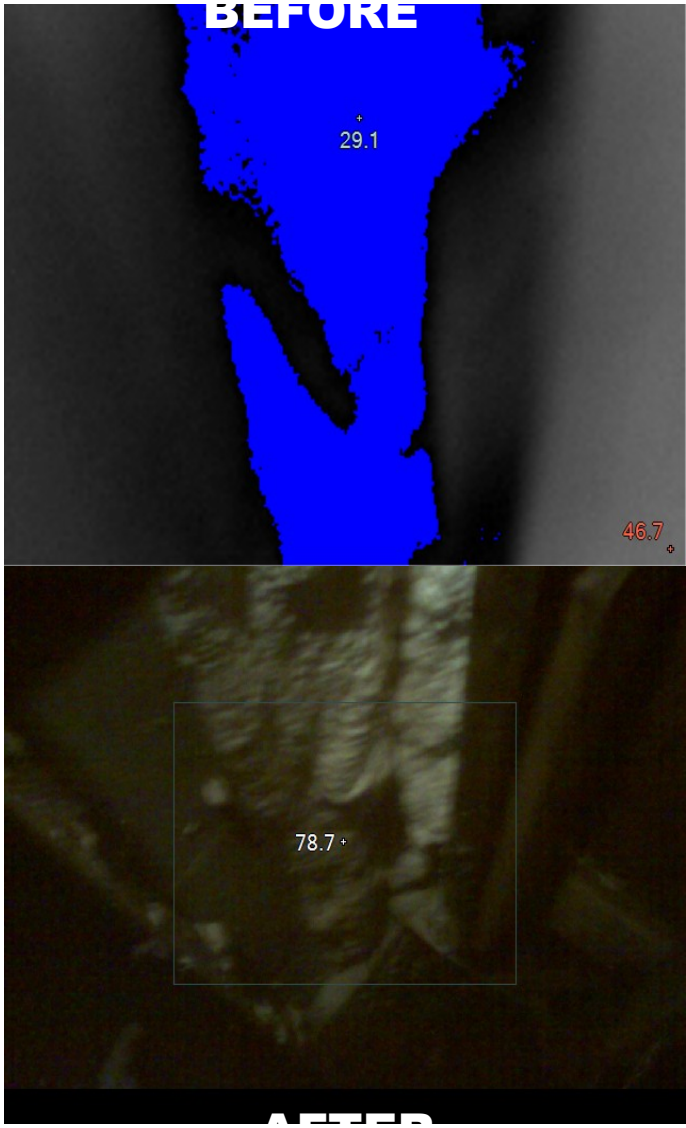


Over 3 tons of blown fiberglass insulation was installed as each apartment received the same remedy around the whole building.

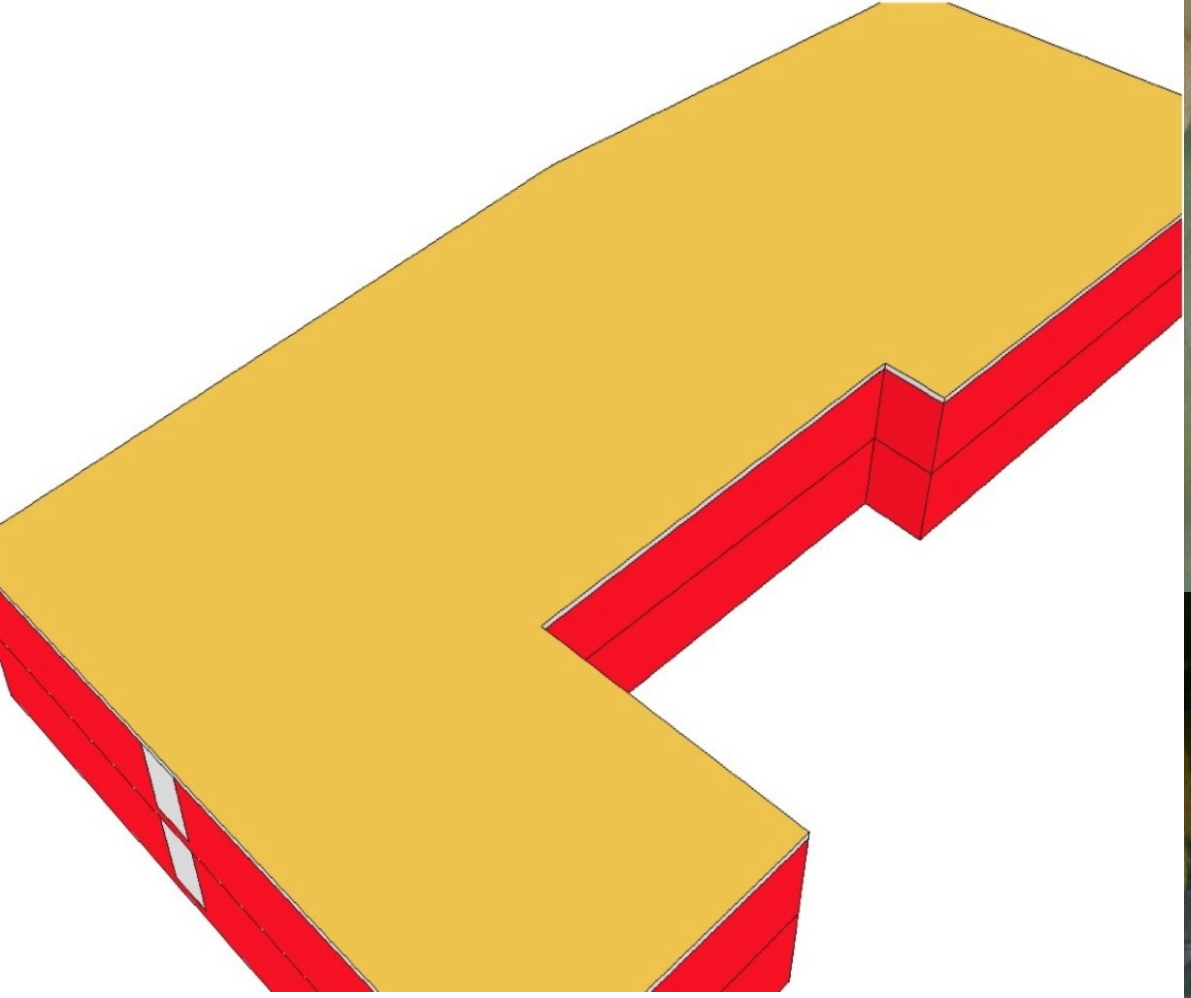


Thermal imaging was used to ensure all cavities were filled.

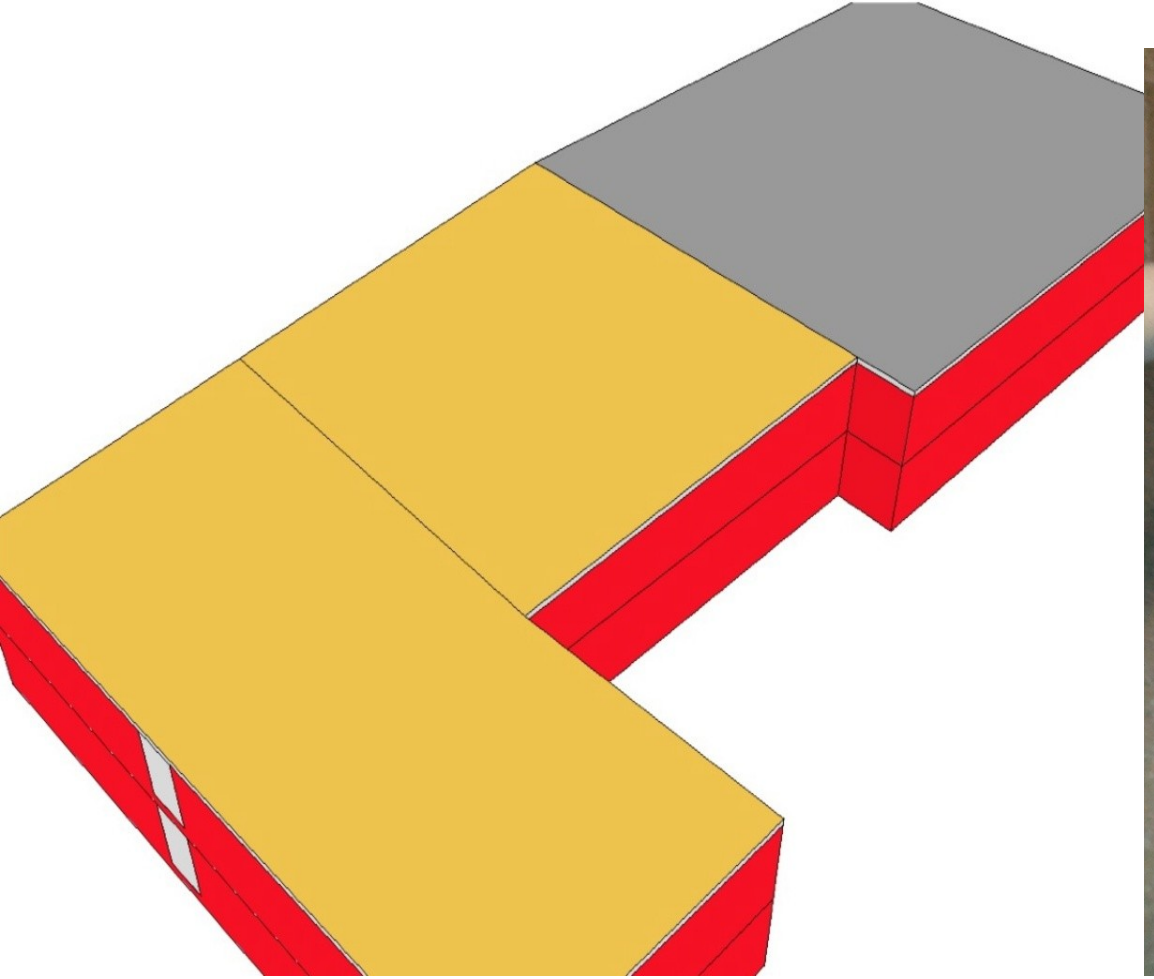




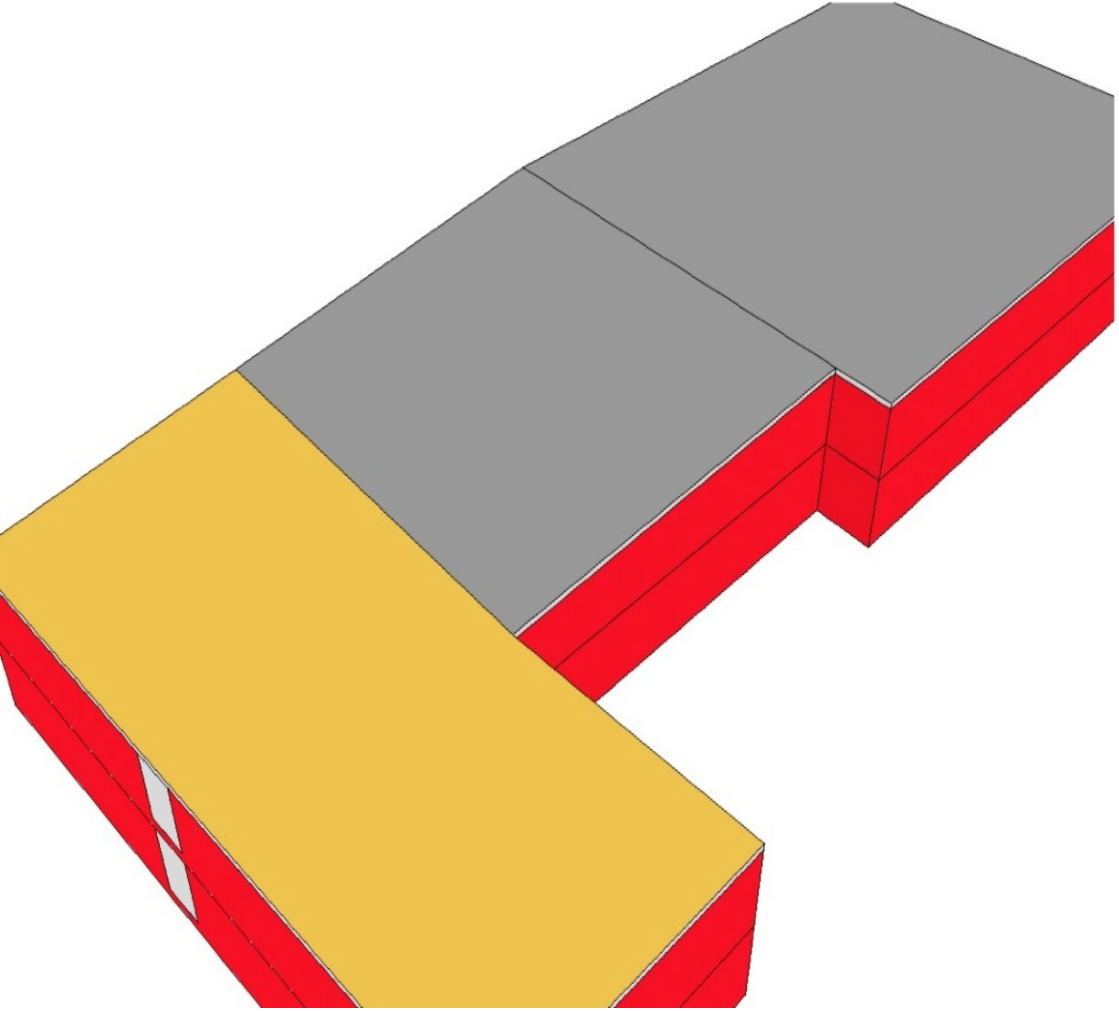
Thermal imaging was also used to air seal as the enveloped closed in.



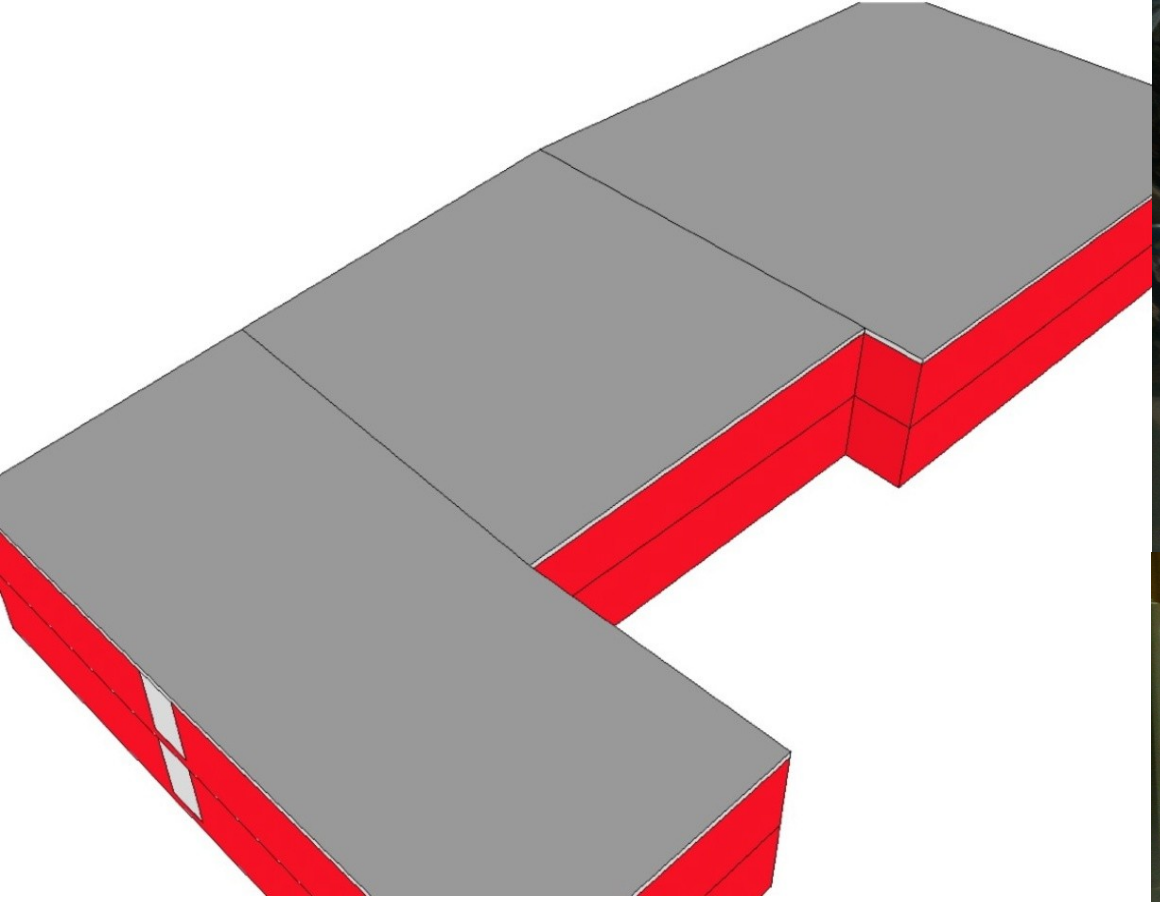
Welcome to the attic.



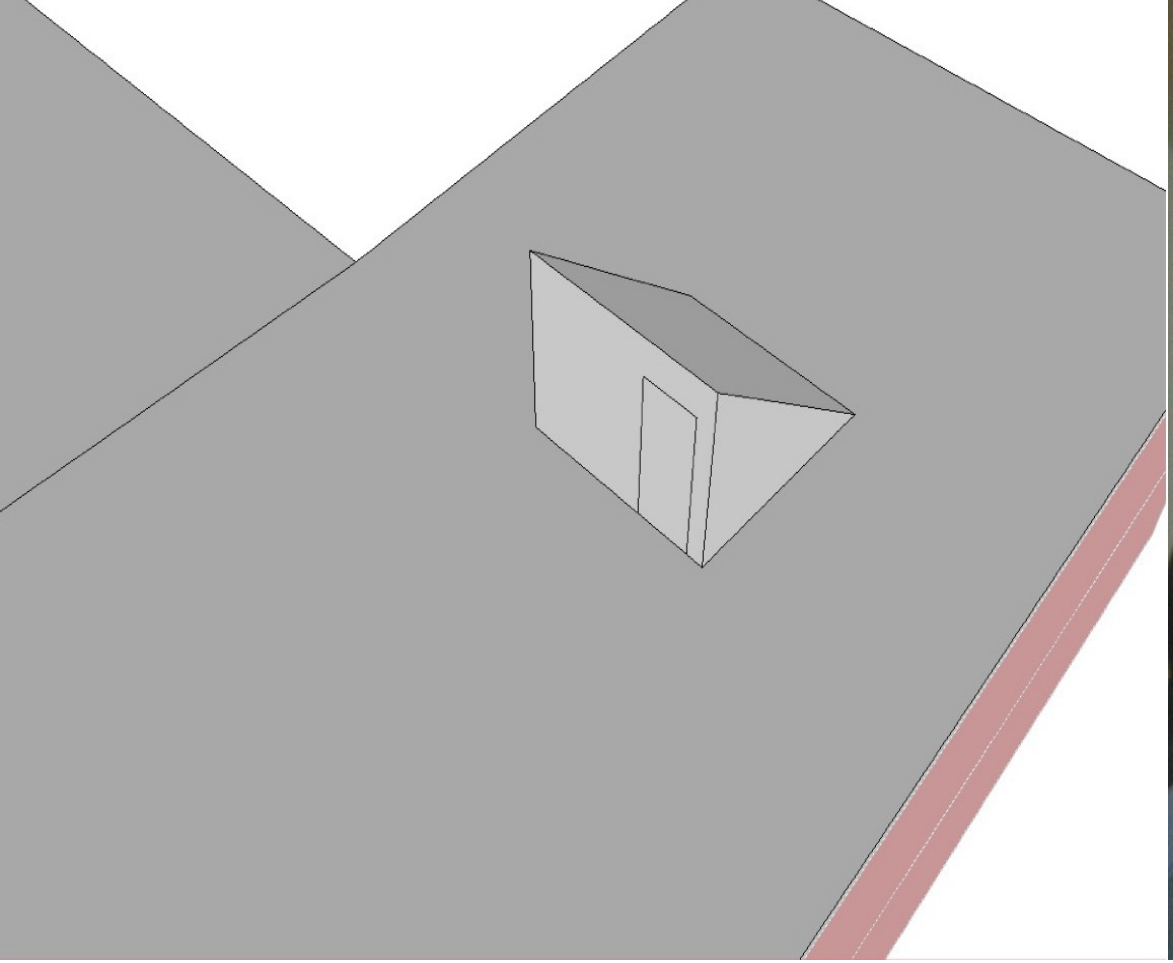
The attic was insulated with blown cellulose, one apartment at a time.



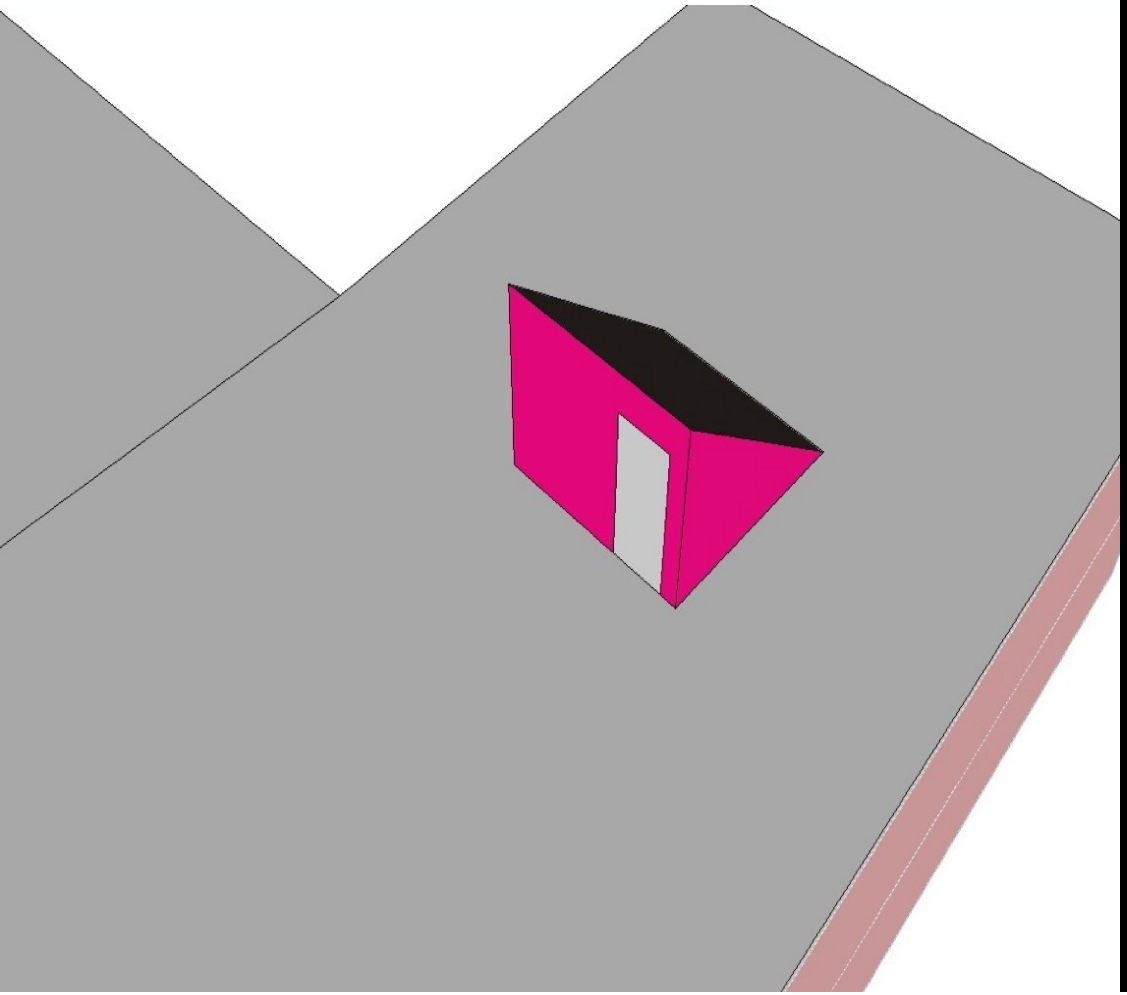
Air tight, insulated attic access hatches were constructed.



Special tools were used to reach all areas (top right). This was our stuffed storage apartment(bottom right). We went through over 5 tons of cellulose.



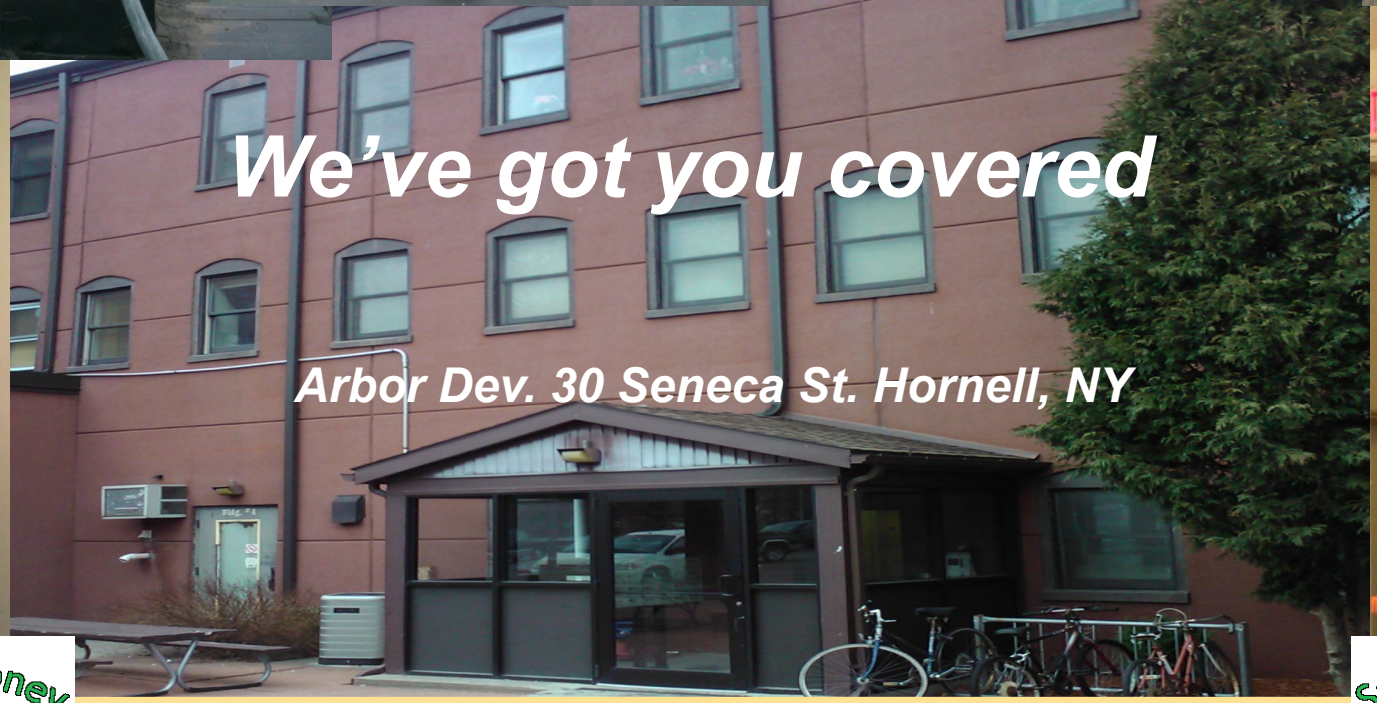
We didn't leave out these upper stairwells once we discovered there wasn’t ANY insulation in them!



Some of the upper stairwells were air sealed & insulated with spray foam from inside.



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