

Air Leakage Diagnostics

22392 Getaway Circle, Deerwood, MN 56444

Objective:

To locate the source of air infiltration and create a plan for air leakage mitigation.

Summary: The Element Group/Midwest Aerobarrier's findings from the Air Leakage diagnostic assessment that was performed on the Cayuna cabin on Thursday 1/28/21.

A traditional Blower door Test revealed a total home leakage of 500 CFM50 or 2.13 ACH50. Where ACH indicates the total volume of the house that is exchanged through the blower door over the course of 1 hour at the industry standard pressure of negative 50 pascals. The current industry standard for construction is 3.0 ACH50. Performing an IR scan and using traditional air flow discovery techniques we were able to locate multiple sources of air infiltration into your building

Floor Area	Conditioned Volume	Measured Leakage	ACH50
1129 SF	14,100 CF	500 CFM50	2.13

The following list designates the areas of the house where we were able to specifically discover air infiltration and how we would recommend addressing the air leakage issue.

Electric box covers: Air leakage was detected in multiple electrical outlet boxes throughout the building. Much of this was detectable with the IR scan.

Recessed can Lights: The trim around the light fixtures should be checked for air leakage and sealed with silicone or caulk as needed.

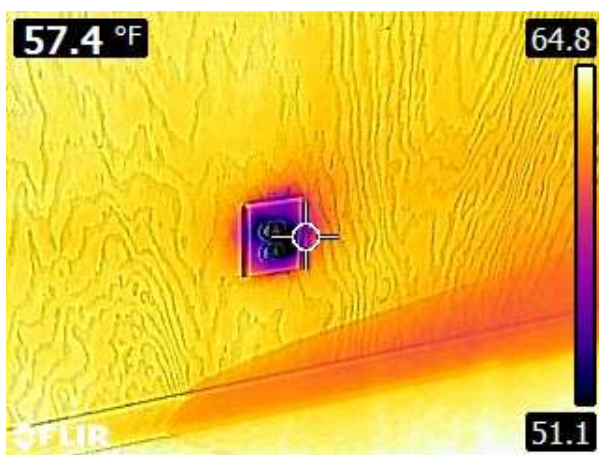
SIP Panel seams: Several joints in the SIP panel showed both a lack of sufficient insulation as well as air leakage.

Mini-Split Ducting: The seal between the Mini-Split in the loft and the exterior wall was incomplete and indicated a significant amount of air leakage.

Sliding Doors: Sliding doors were not clasping consistently and effectively due to ice in the track system.

Leakage areas:

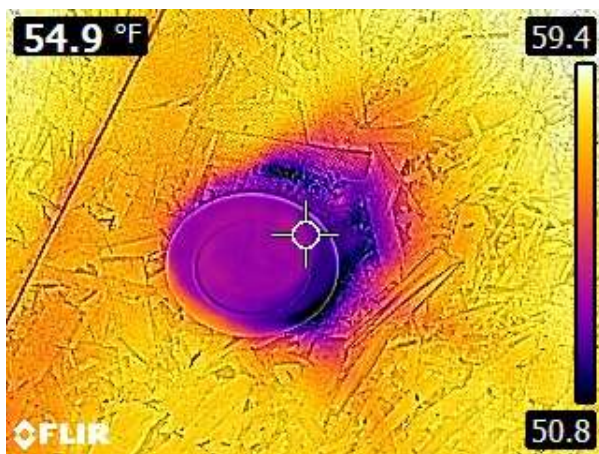
**Electrical box:
Main Room**



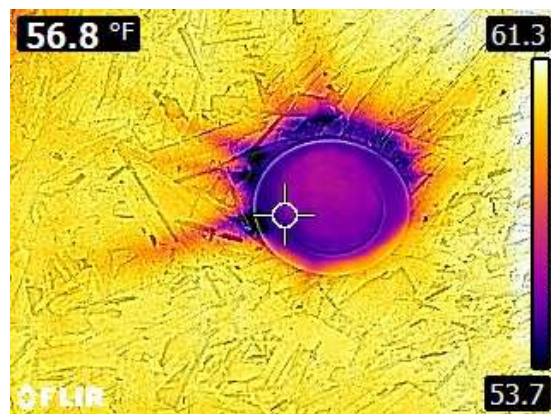
Lower Bedroom w/OSB



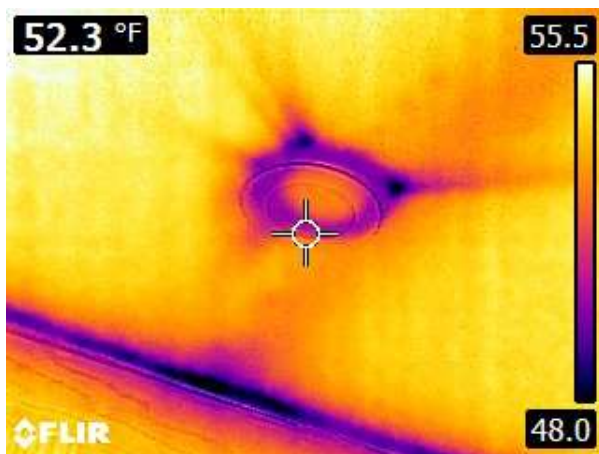
**Recessed Cans:
Lower Bedroom w/OSB**



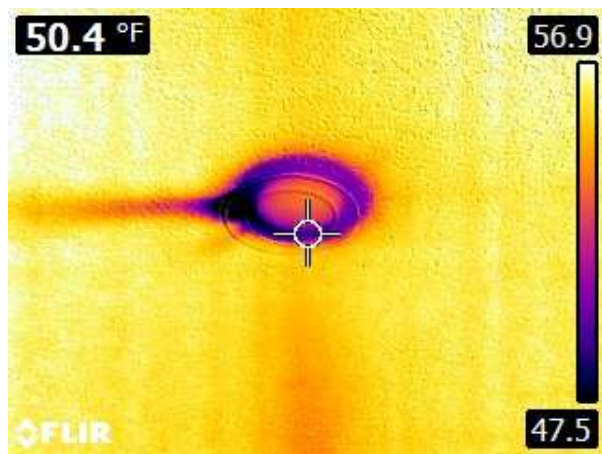
Lower Bedroom w/OSB



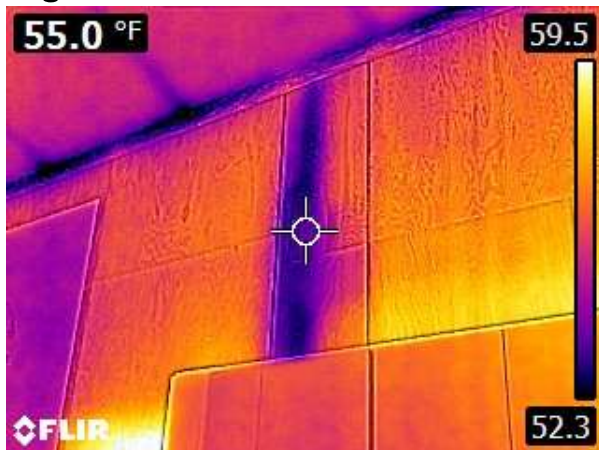
**Recessed Cans (Cont.):
Loft Area**



Loft Area



**SIP Panels:
High Wall of Kitchen**



Lower Bedroom w/OSB



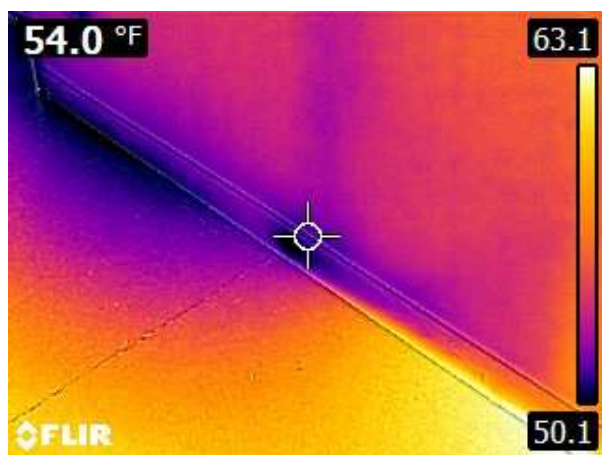
Mini-Split:



**Sliding Doors:
Loft Area**



**Bottom Plate Leakage:
Near Front Door**



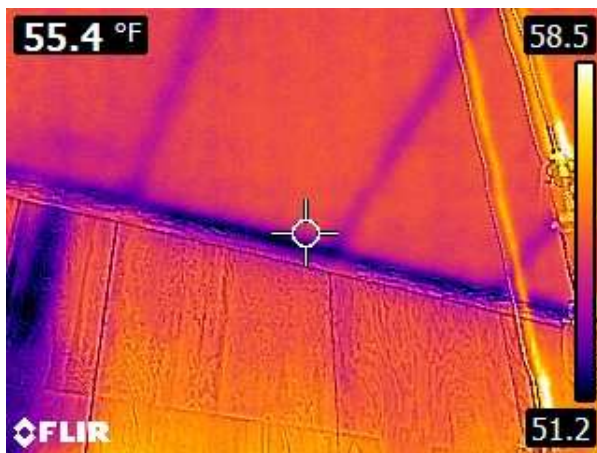
**Ceiling to Wall Connection:
Loft Area**



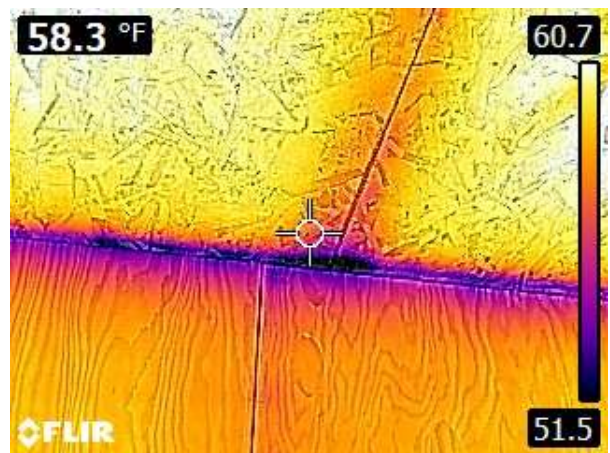
Loft Area



**Ceiling to Wall Connection:
Kitchen**



Lower Bedroom w/OSB



AeroBarrier Leakage Diagnostics

Conclusion: The testing results indicate that there is a moderate amount of leakage between the building and the exterior environment. The location and amount of air leakage from the building seems to be located at electrical penetrations in the exterior envelope of the building. Much of this leakage can be handled with manual air sealing (i.e. caulk, spray foam). However, there also seems to be several faulty seams in the SIP Panel construction which are allowing air transfer into the building which should be remedied using manufacturers instructions.

For any follow up and questions please reach out to us.

Thank you.

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Adam Nelson | Field Operations
Energy Consultation | Minneapolis, MN



adam@mwaerobarrier.com | 612.368.0780