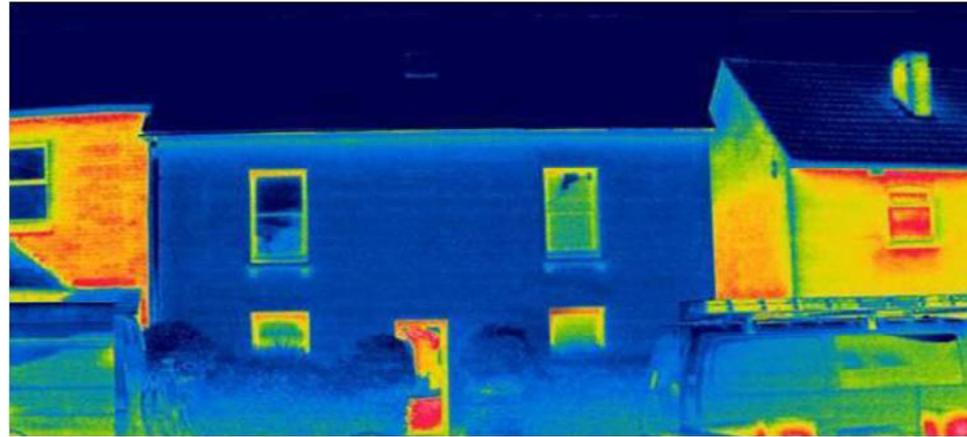




Buildings take a lot of energy to heat and cool. So what if we could drastically reduce that load by super-insulating the envelope? We can, and we did!

The floor, walls, and ceiling of the MVLC has thick layers of insulation and air sealing to provide a protective shell during excessive heat and cold, keeping the indoor air temperature between 68-72 degrees all year long. This means that very little energy is needed to heat and cool the building during the year.



Thermal Envelope

In this image, the yellow/orange is heat escaping through the building's skin, or envelope. The middle house is a Passive House. Which house would you rather live in and pay for heating and cooling?



Insulation and R-Values

Passive House buildings need to have a certain amount of insulation at all "faces" of the envelope to pass the strict energy model used to certify them. For the MVLC, the following levels of insulation, commonly referred to as R-Value, were used:

MVLC

Floors: R-20 (beneath entire slab)
Walls: R-46.6
Ceiling: R-57.6

Washington State Energy Code

R-10, for 24" below only
R-23
R-49

Even the interior concrete shear walls are insulated to protect the indoor temps.