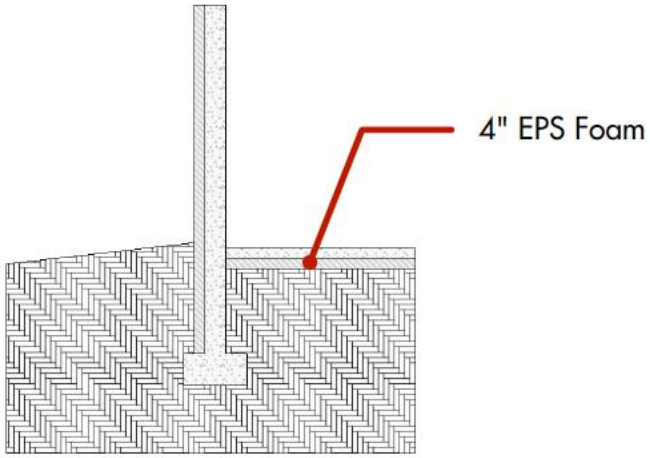
Continuous Foam Under Entire Slab

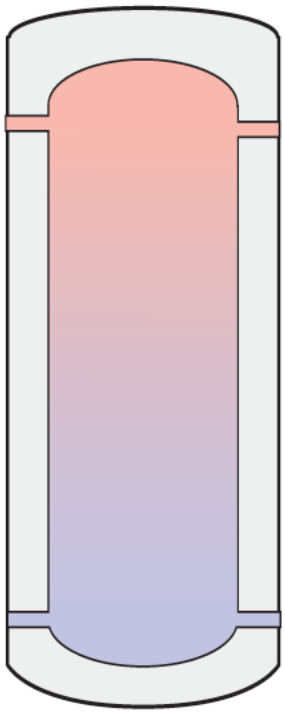


- Slab R-value of over R-15.
- Insulation is under entire slab rather than the code required perimeter insulation.
- Significantly decreased losses from radiant system (very little of the radiant heat is wasted warming up the ground)

Reduced Air Leakage

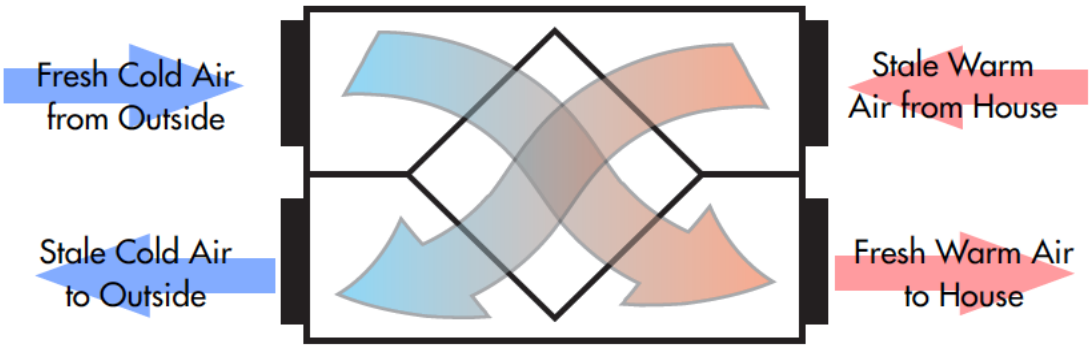
- Blower door was used to seek out and fill air leaks in the thermal envelope.
- Reduced air leakage results in lower heating cost.

Buffer Tank



- Stores heated and chilled water for the radiant system.
- Extends life of boiler and heat pump by reducing equipment short cycling.

Heat Recovery Ventilator



- Mechanical ventilation has been installed to ensure healthy indoor air quality.
- Ventilation is done with a heat recovery ventilator (HRV) to ensure that ventilation is done efficiently.
- CO2 sensor in the house turns the HRV on during times of high occupancy.
- Humidity sensor in the house turns the HRV on during times of high humidity.
- HRV is used in place of bath fans in bathrooms to efficiently meet ventilation needs.

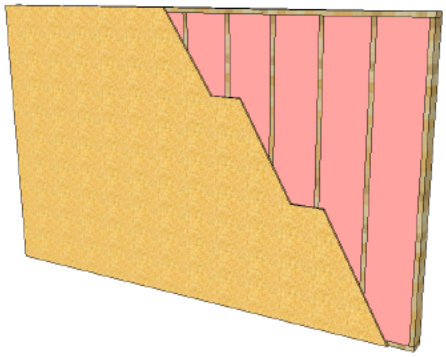
0 in

Zoned Snow Melt System

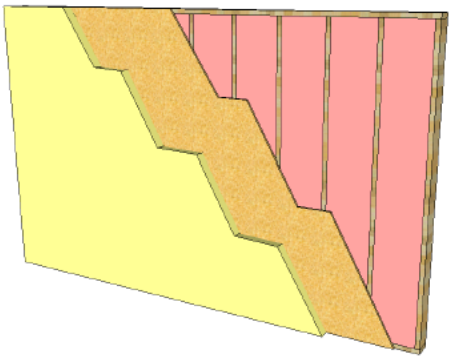
- Optical sensor in driveway automatically activates snowmelt when system is enabled.
- User selectable zones allows snowmelt to only be used in areas where it is needed.

Foam Sheathed Walls

Conventional 2x6 Wall with Fiberglass Insulation

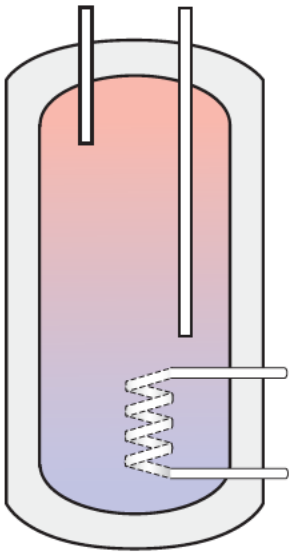


Improved 2x6 Wall with Blown in Fiberglass and 4" of Polyiso Foam



- Improves wall thermal efficiency by raising the insulative value of the wall from R-19 to over R-45.
- Decreases conductive heat loss through the walls.
- Helps air seal the wall reducing external air infiltration
- Vastly improves comfort by rising the surface temperature of the wall.

Indirect Domestic Hot Water Tank



- 80 gallon tank for extra hot water storage.
- Oversized heat exchanger to optimize heat transfer.
- Indirect tank has significantly decreased standby losses when compared to a conventional draft vented tank.

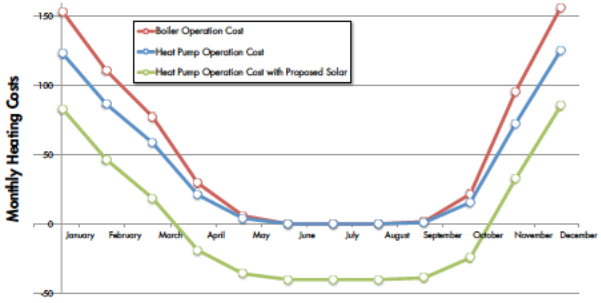
Condensing Boiler

- 95% efficient natural gas boiler.
- Sealed combustion allows for the mechanical room to have zero ventilation requirements. This eliminates the need for a large hole in the house.
- Provides heat source for domestic hot water and snowmelt systems.
- Backup heat source if primary heat source ever goes down.
- Will be used instead of heat pump when conditions and energy prices deem it more cost effective.

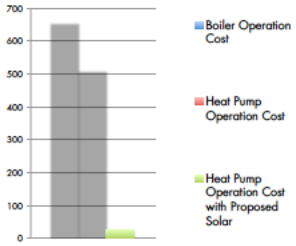
Air Source Heat Pump

- Uses electricity and a 200% - 400% efficient refrigeration cycle to extract heat from the outdoor air.
- Offers a 15% cost savings over a natural gas system.
- When coupled with solar panels the heating system could be run at no cost.
- Provides cooling via the same radiant floor system used for heating.

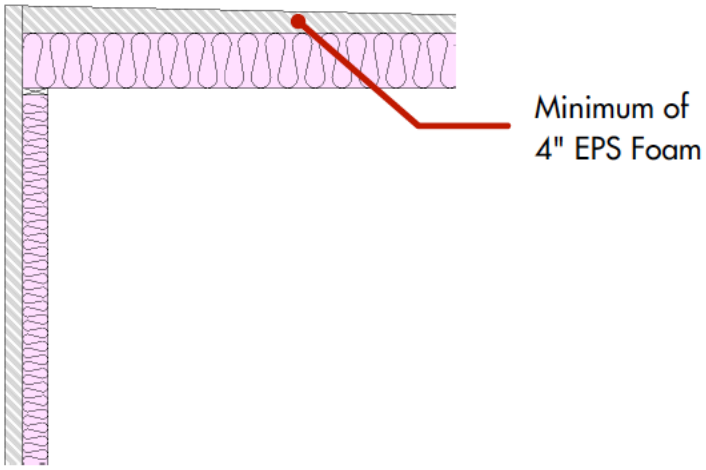
Approximate Monthly Heating Energy Costs



Approximate Annual Heating Energy Costs



Continuous Foam Over Entire Roof



- Roof R-Value of close to R-60
- Foam performs dew point control minimizing risk on condensation without the need for ventilation.
- Significantly decreased heat loss from house via the roof.