

Building Science Corporation

The Perfect Wall

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The Perfect Wall

Keeps the Outside Out and the Inside In

Damage Functions

Water

Heat

Ultra-violet Radiation

2nd Law of Thermodynamics

Heat Flow Is From Warm To Cold

Moisture Flow Is From Warm To Cold

Moisture Flow Is From More To Less

Air Flow Is From A Higher Pressure to a
Lower Pressure

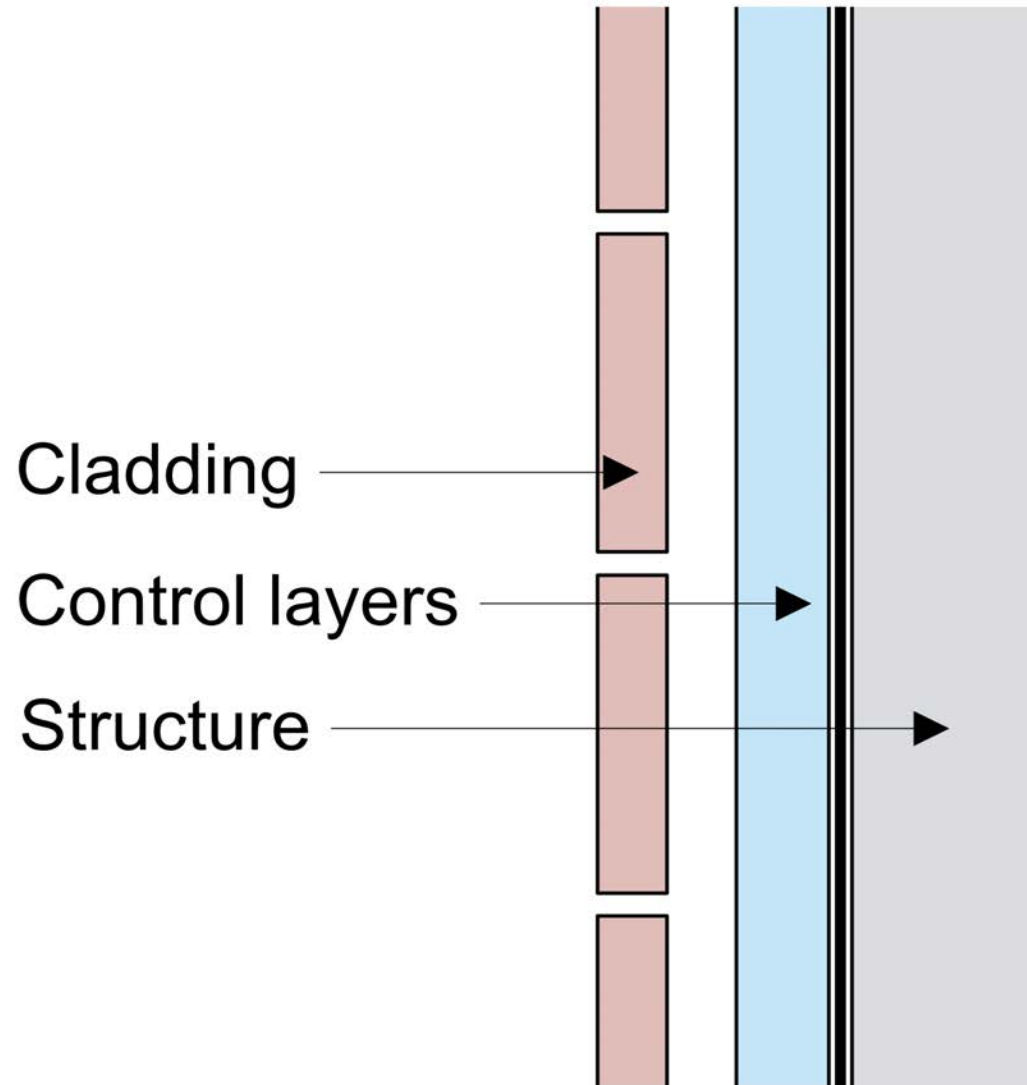
Gravity Acts Down

Water Control Layer

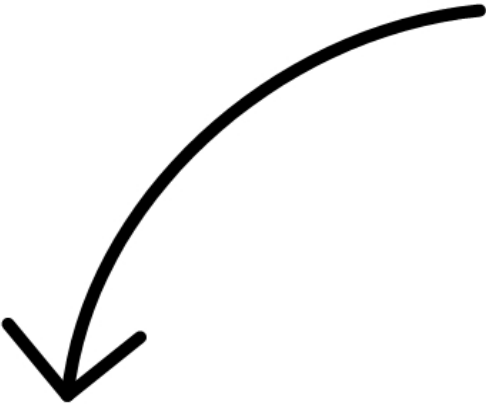
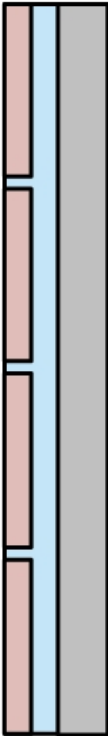
Air Control Layer

Vapor Control Layer

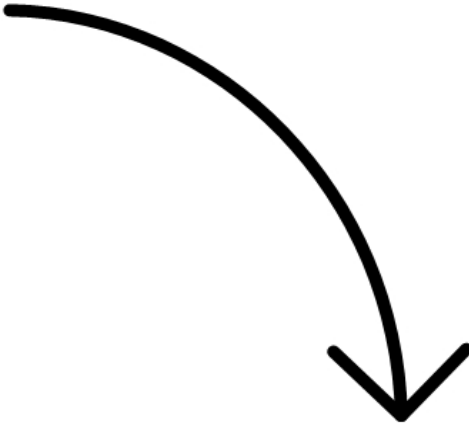
Thermal Control Layer



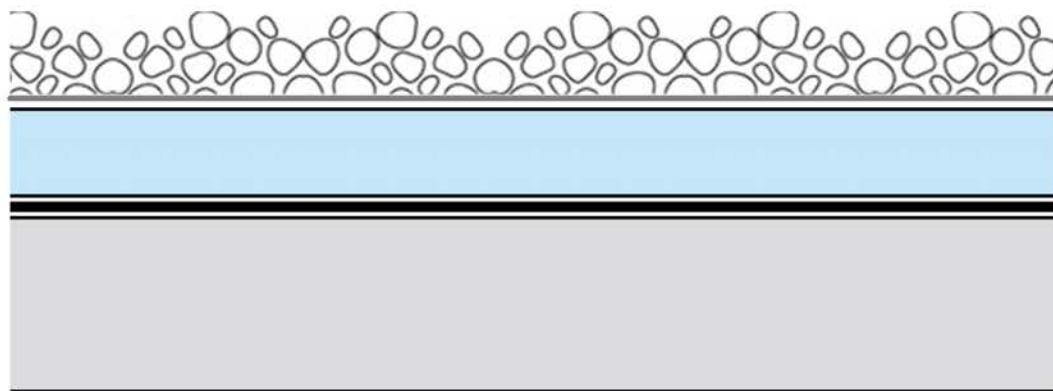
Wall



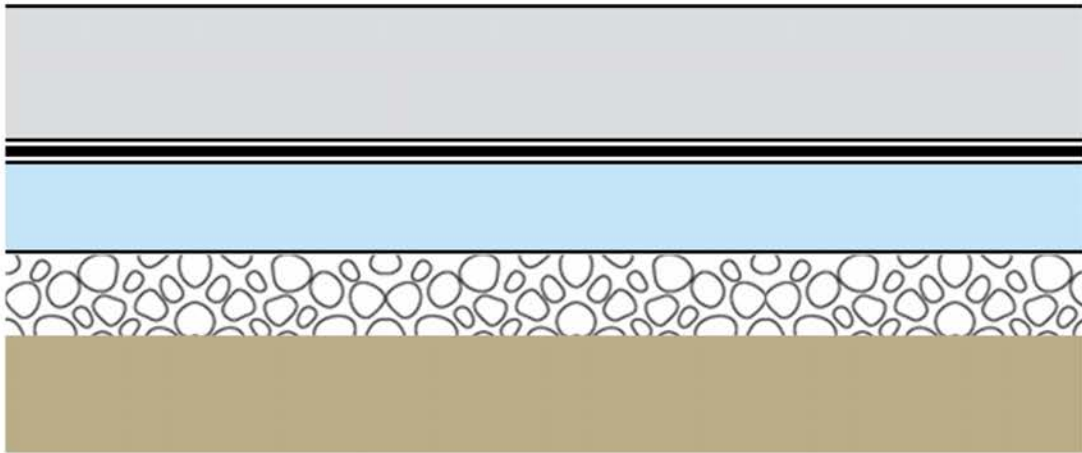
Slab



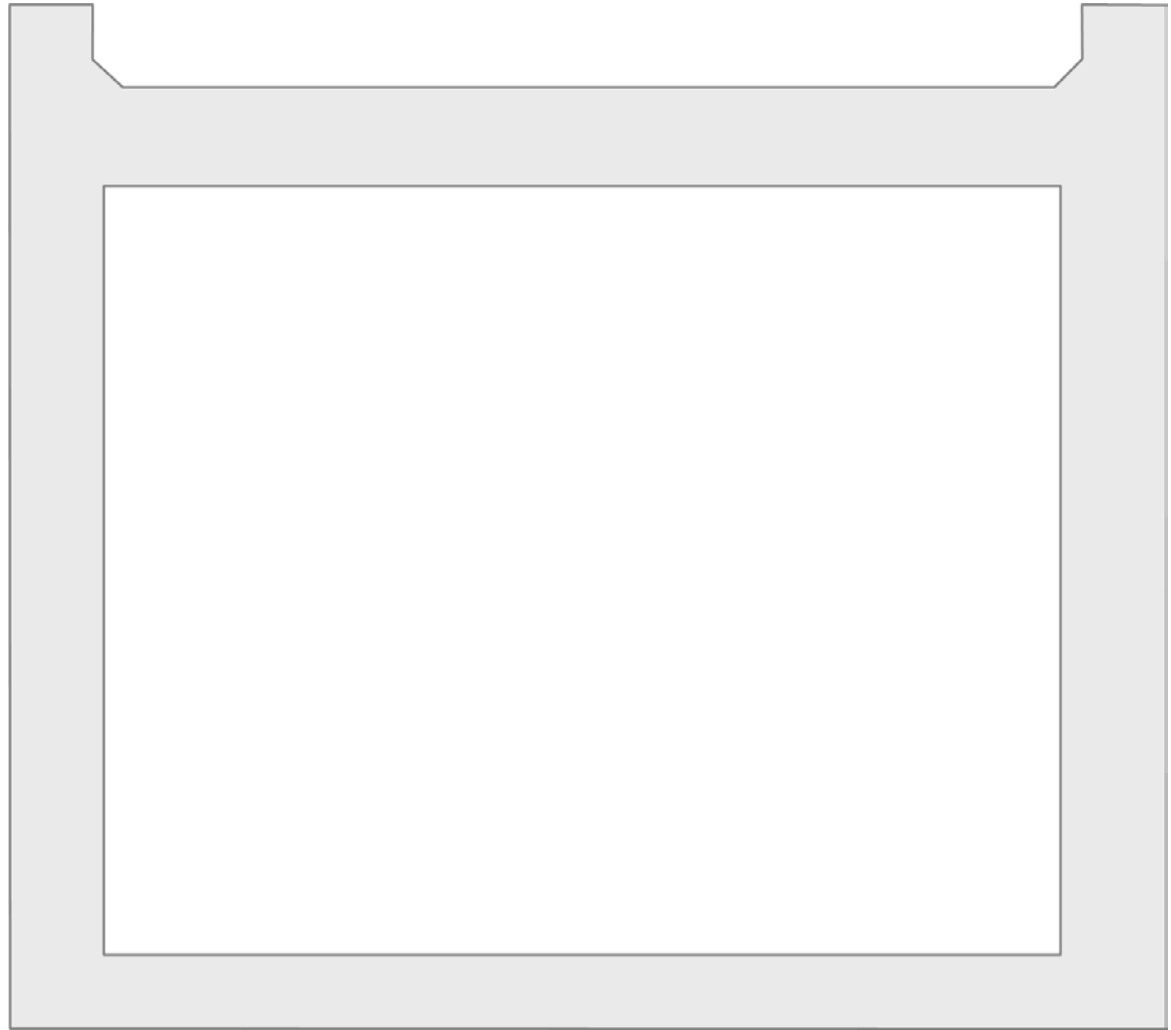
Roof



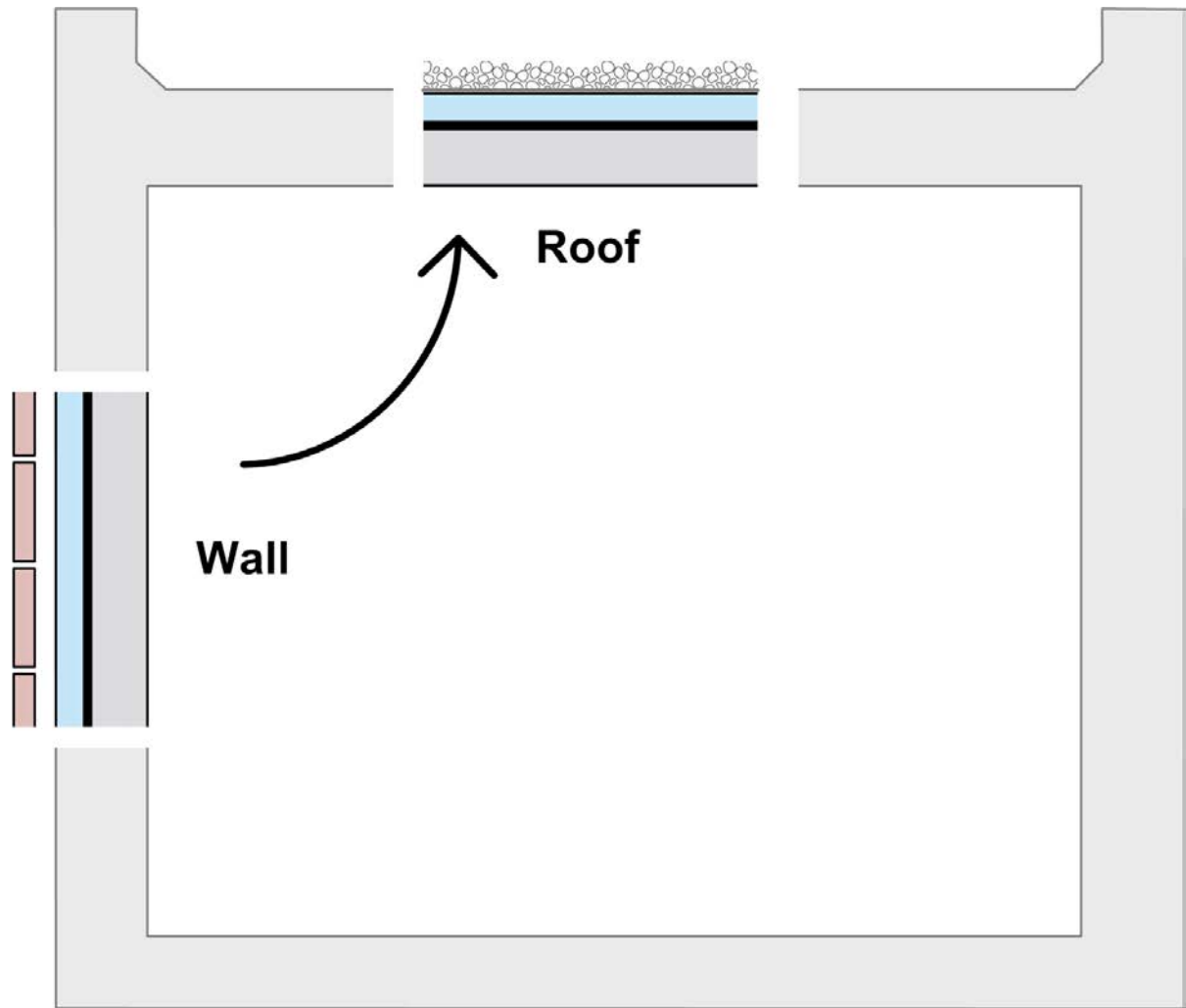
- ← Ballast
- ← Filter fabric
- ← Control layers
- ← Roof structure

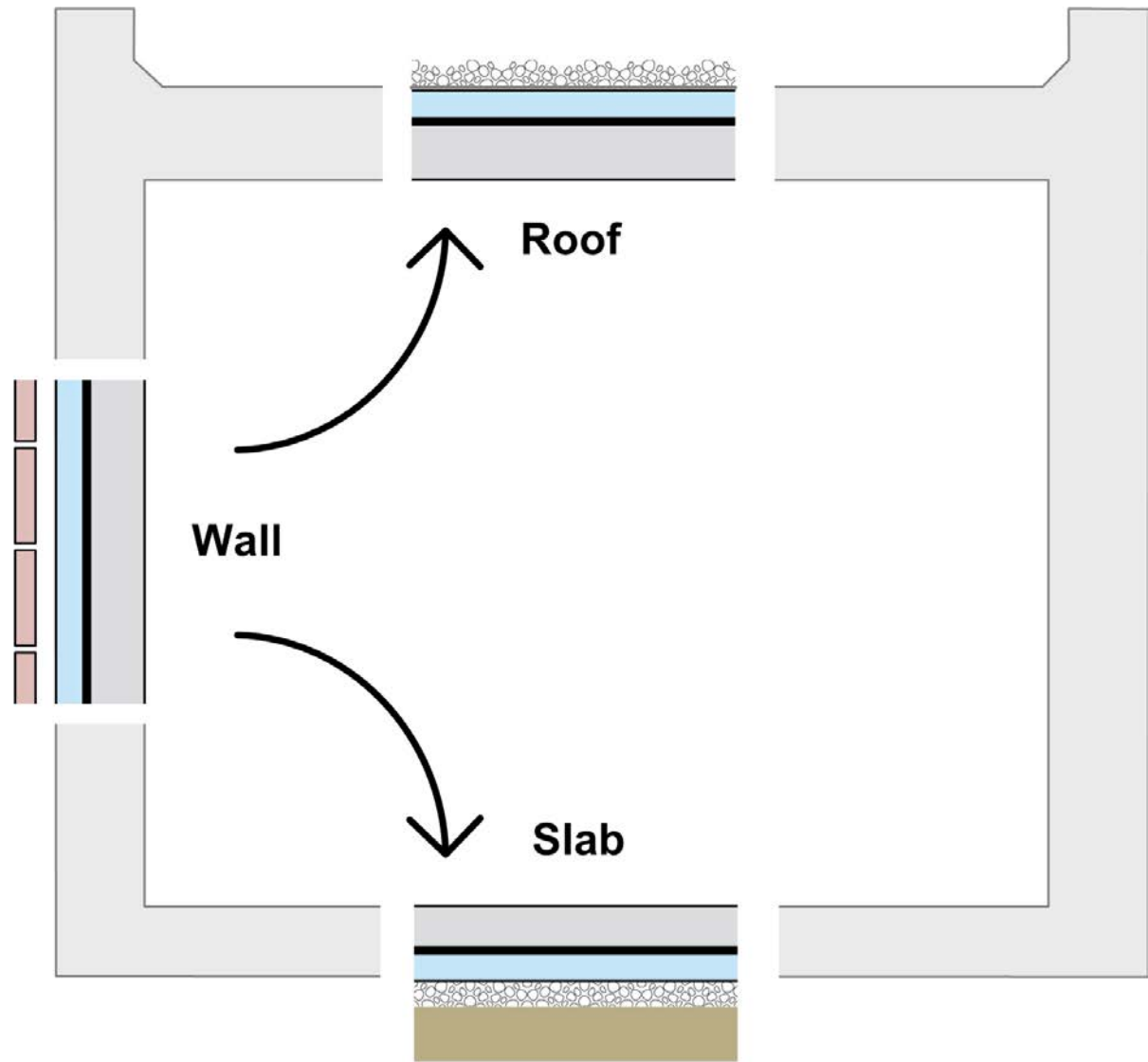


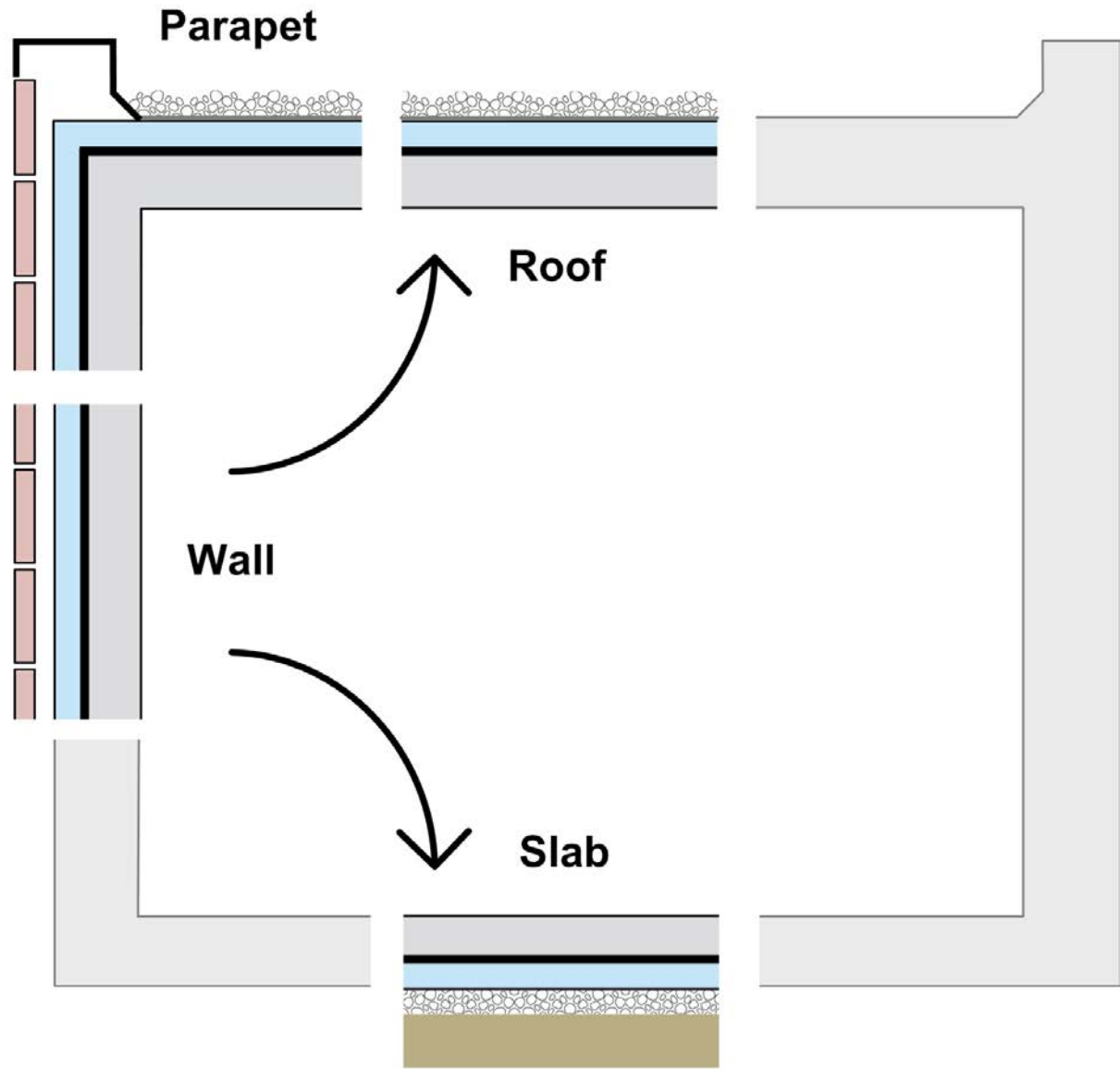
- ← Slab
- ← Control layers
- ← Stones
- ← Earth

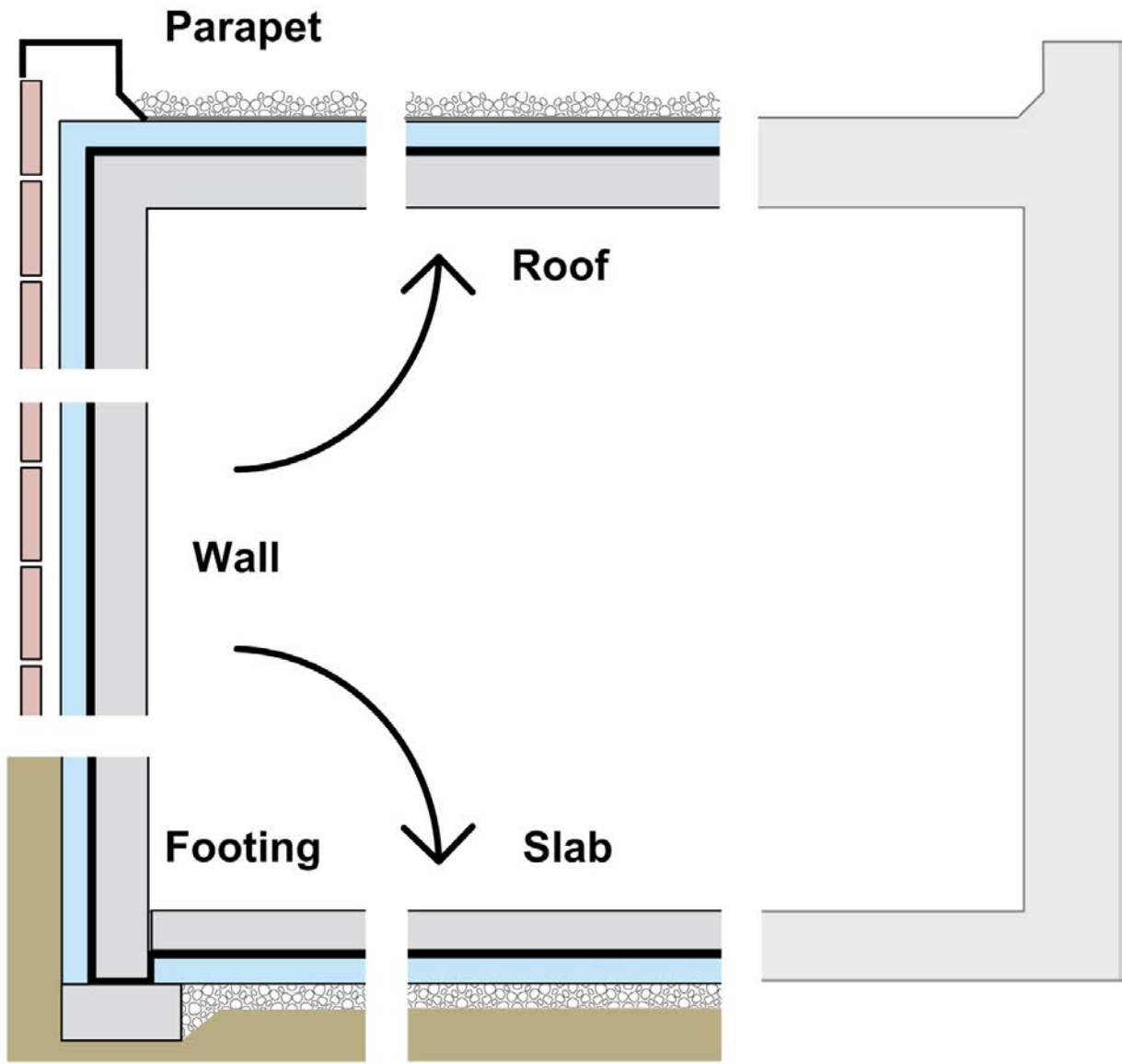


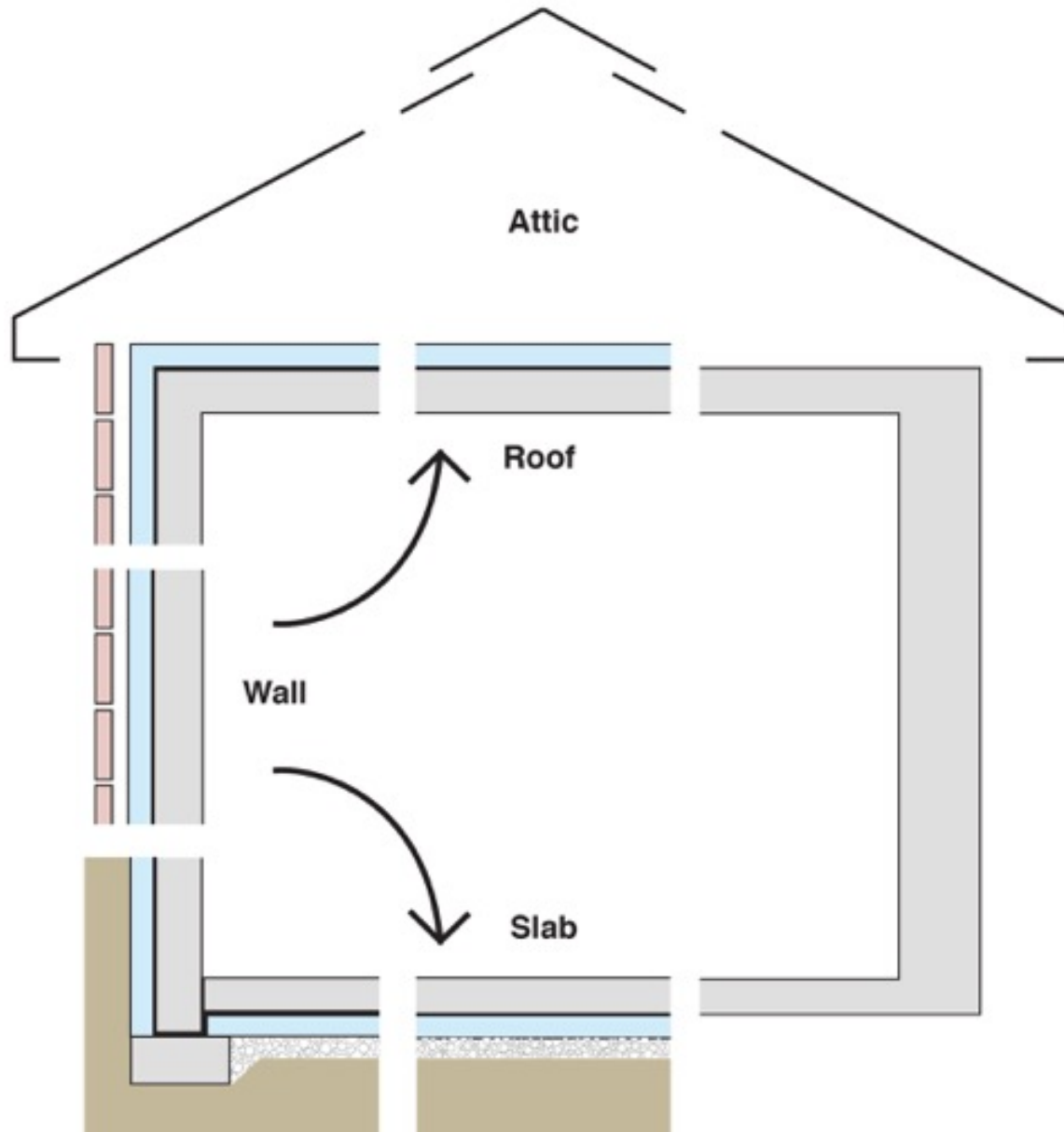


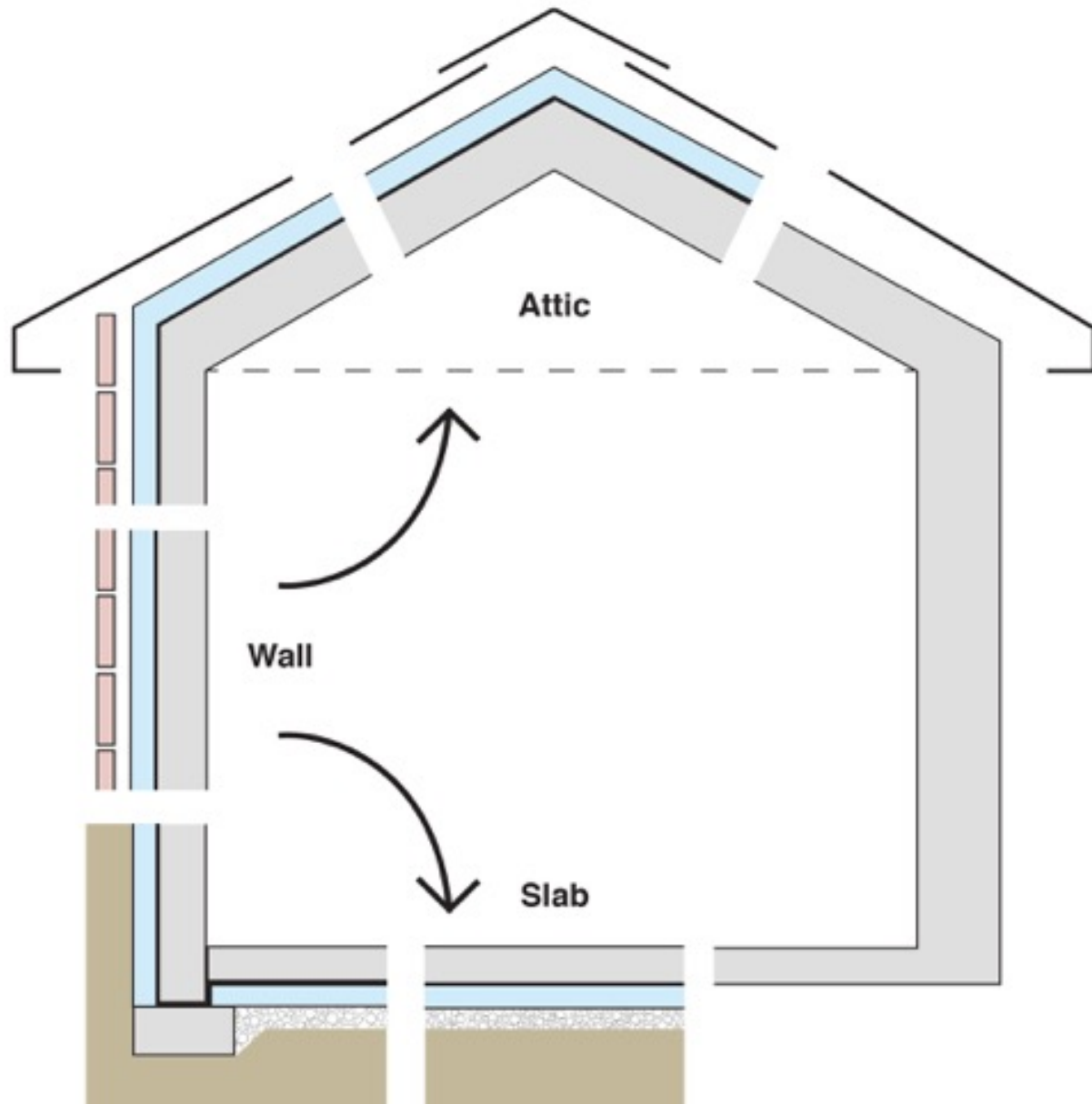


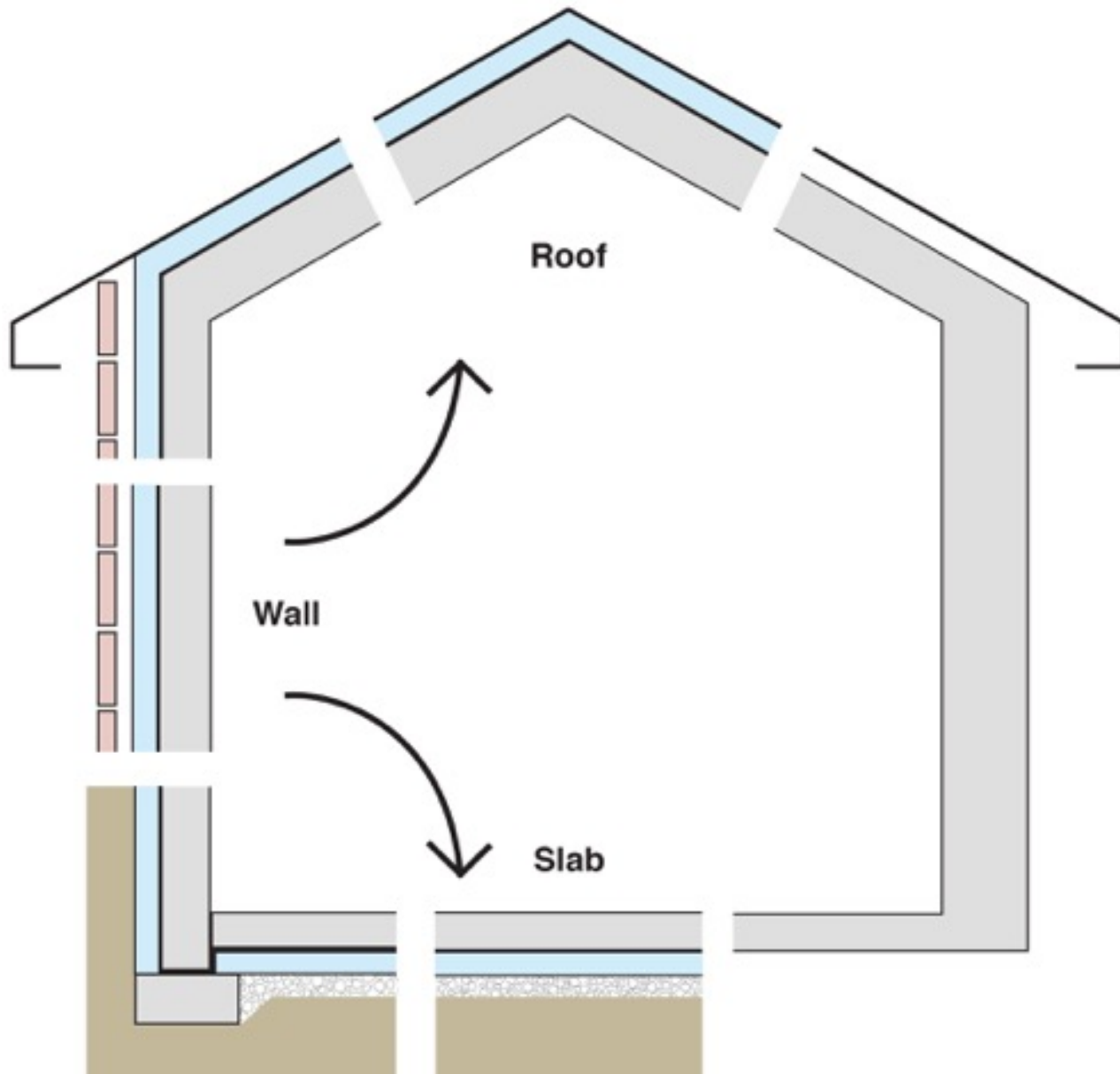


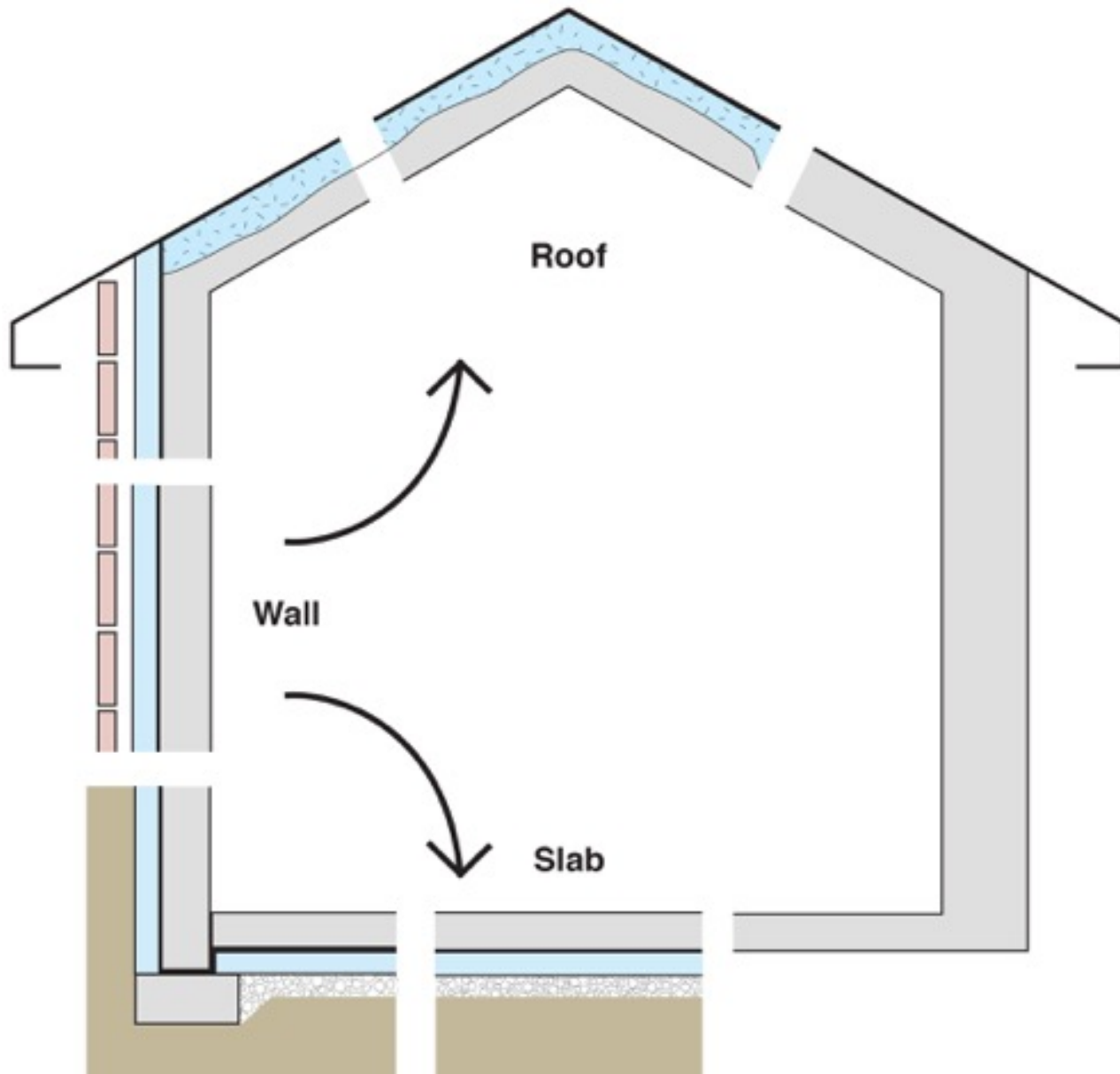


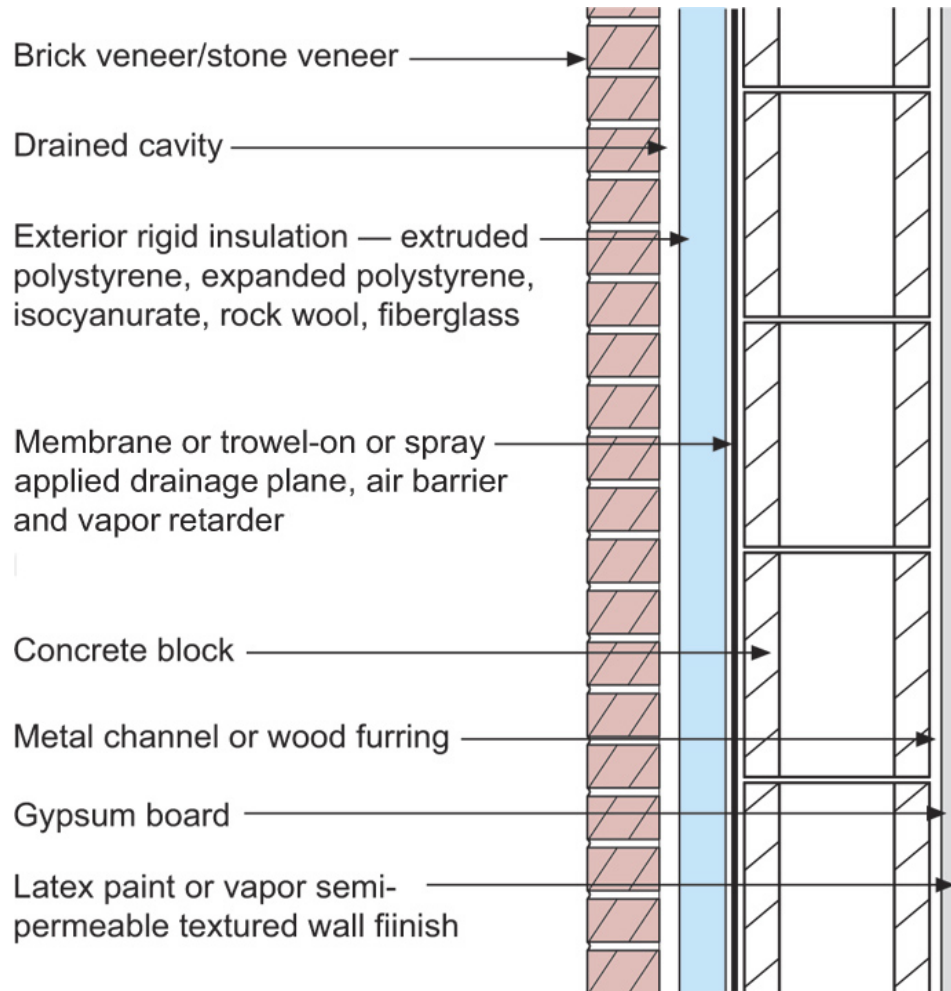




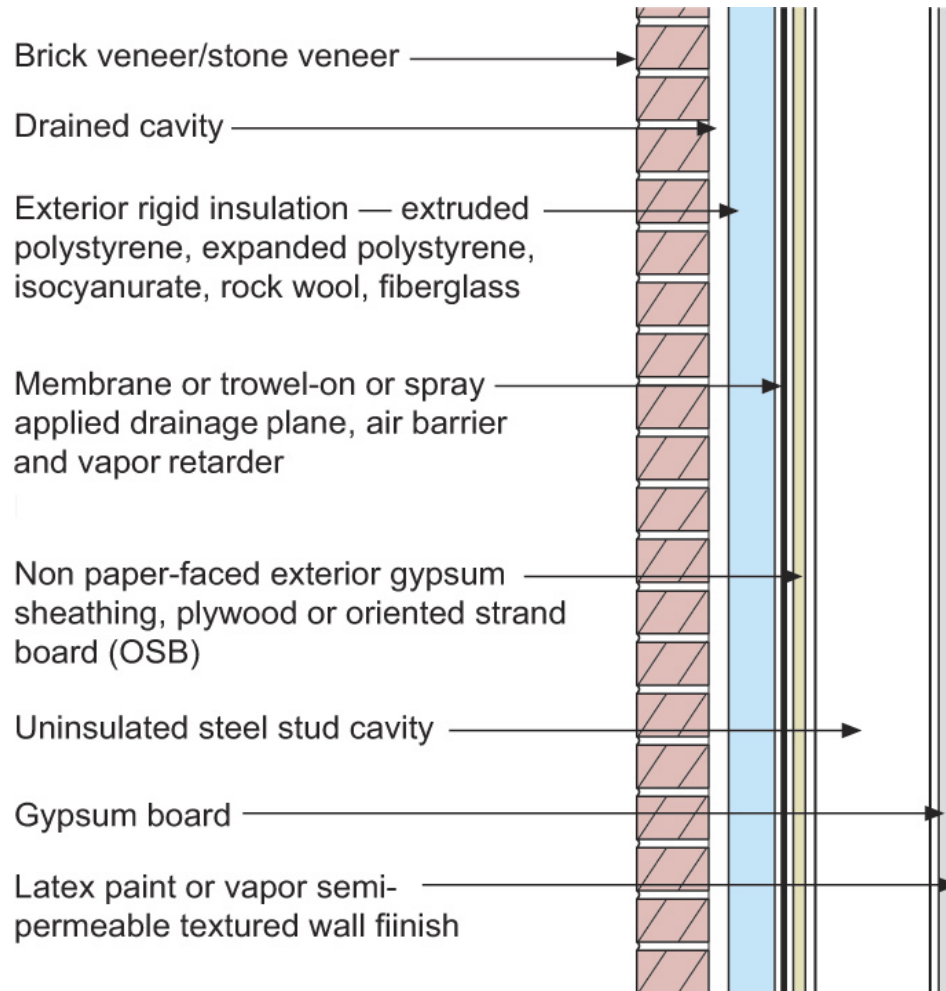




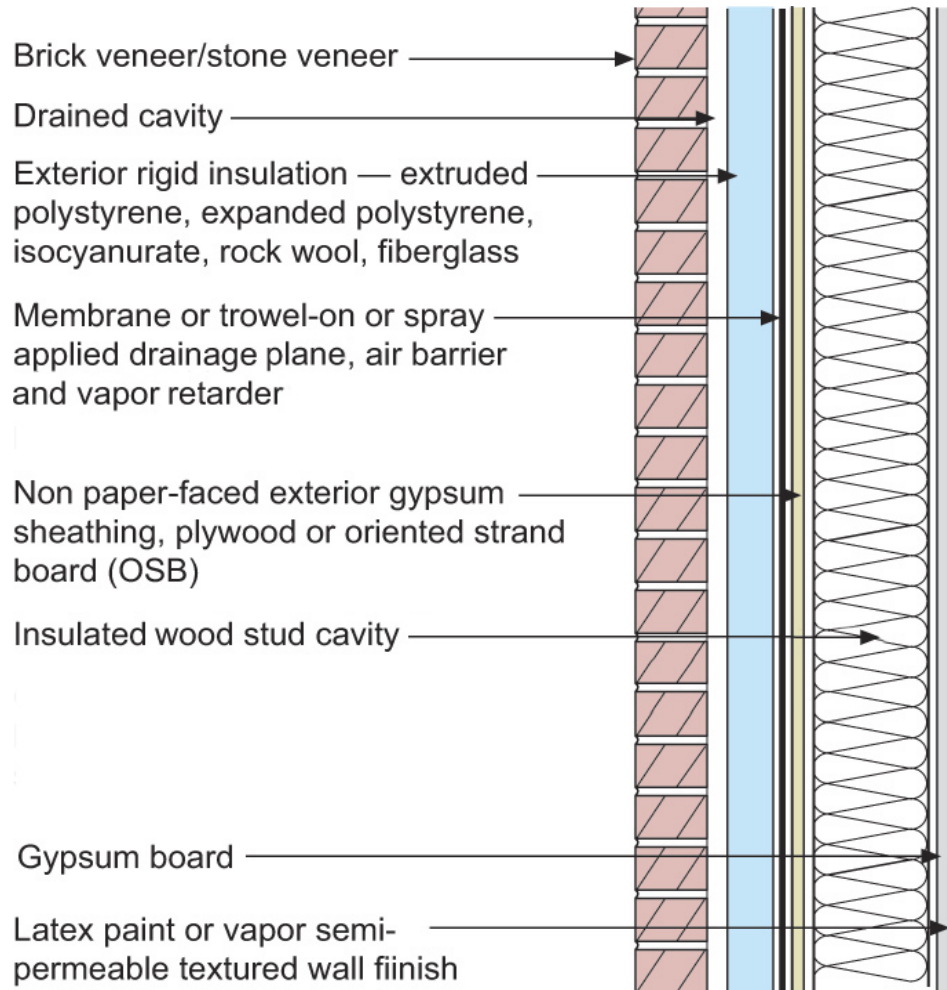




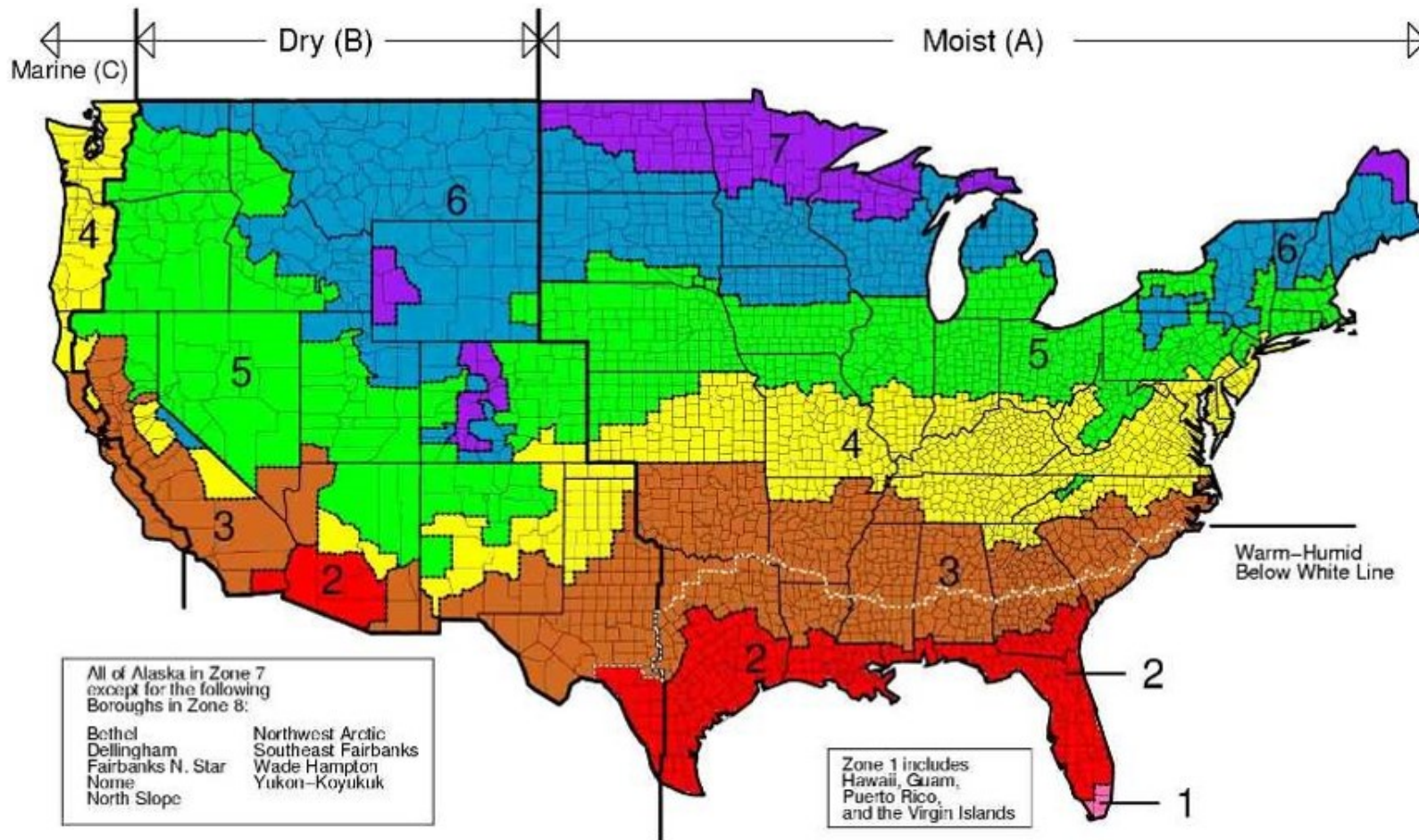
Vapor Profile



Vapor Profile



Vapor Profile



IECC Climate Zone	Minimum Continuous Insulation/ Cavity Insulation Ratio
Marine 4	0.2
5	0.35
6	0.5
7	0.7
8	0.95

























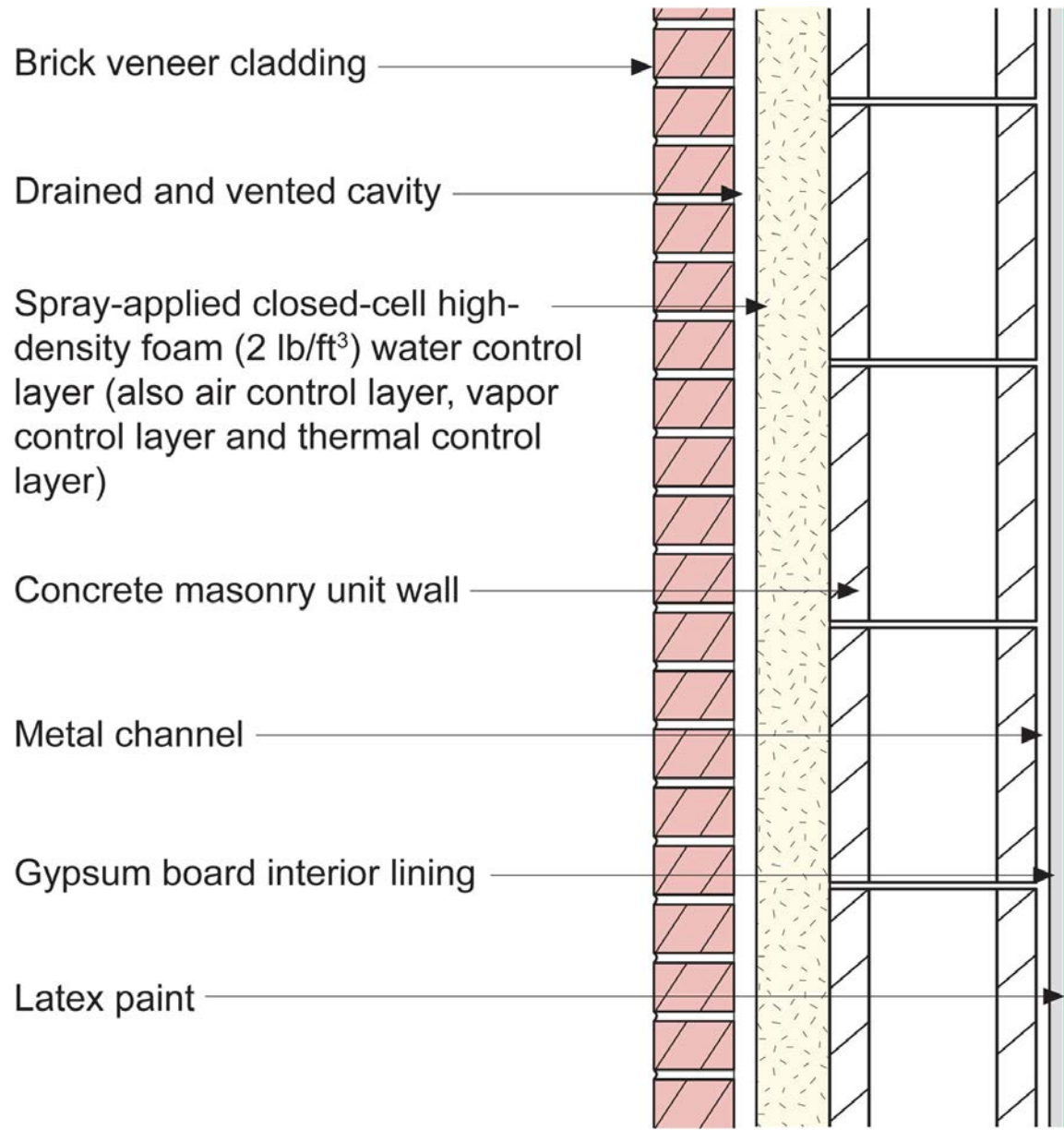


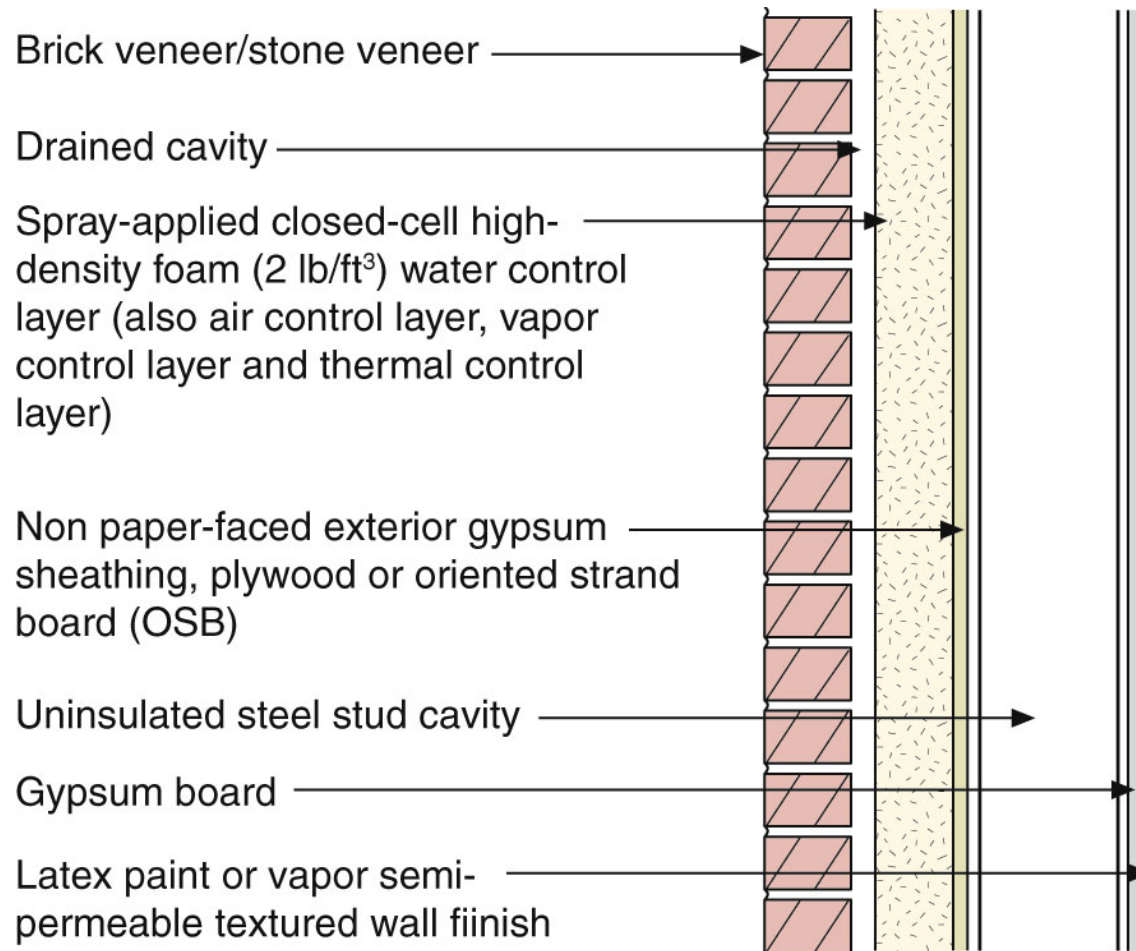


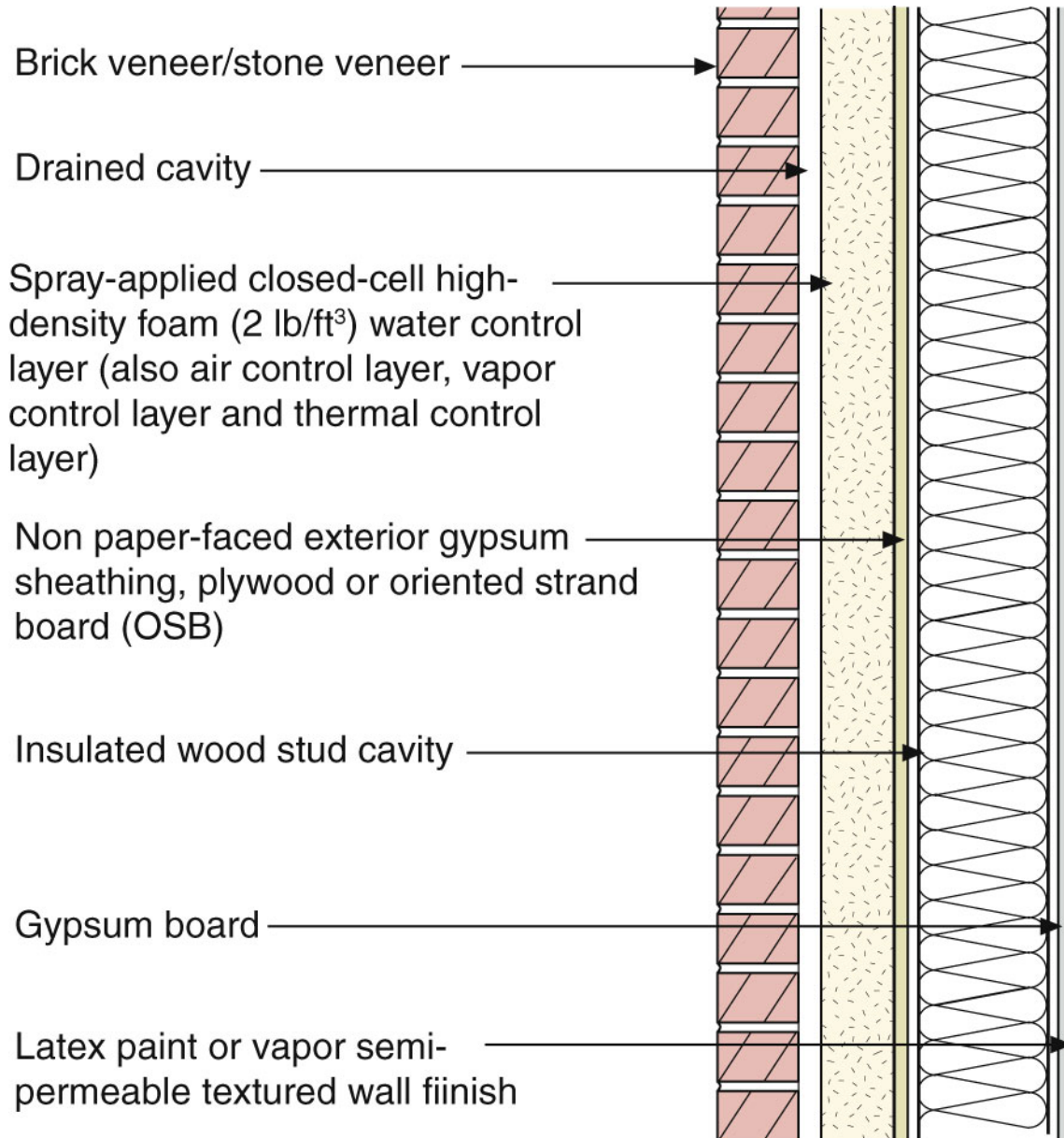


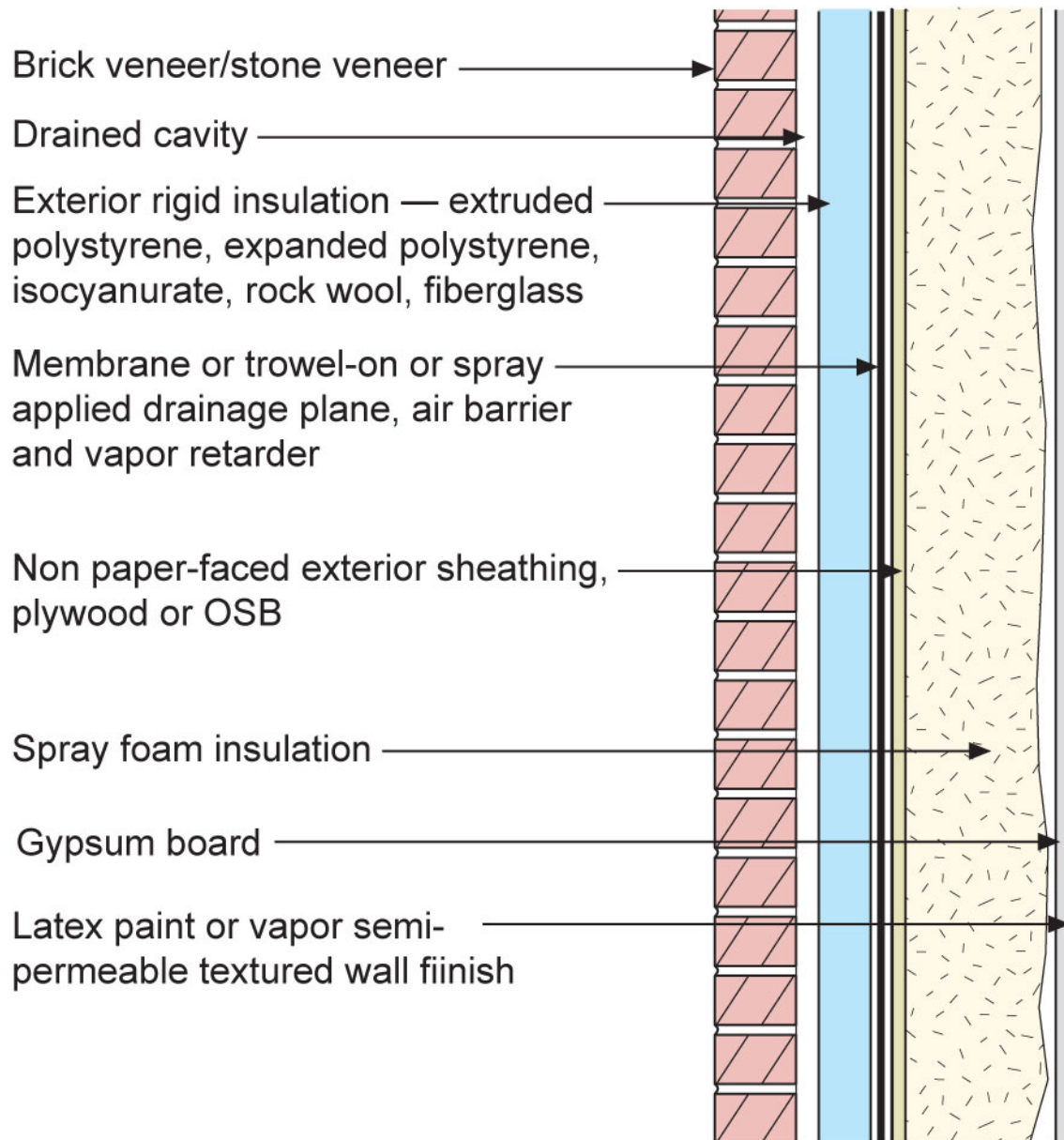


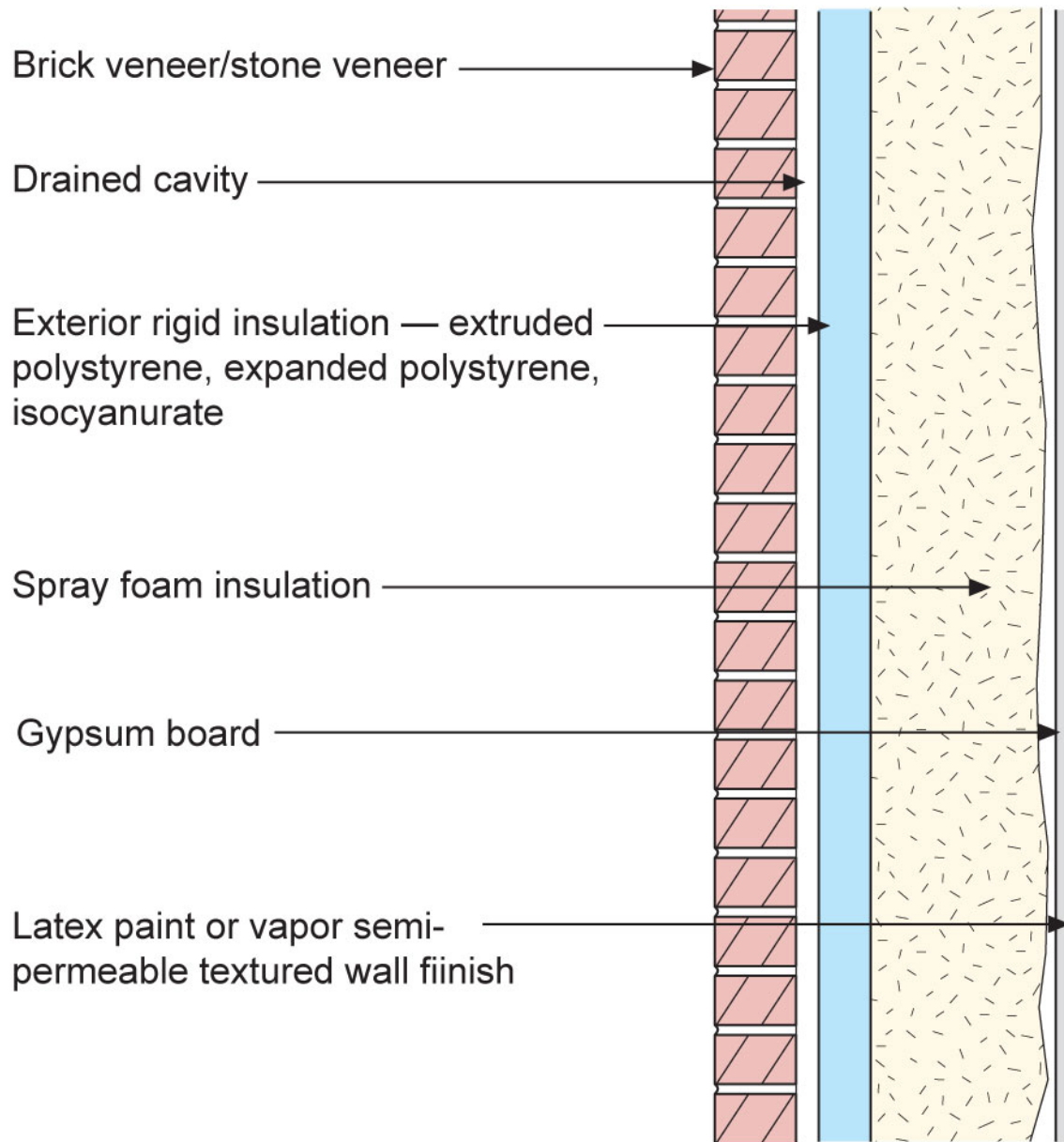


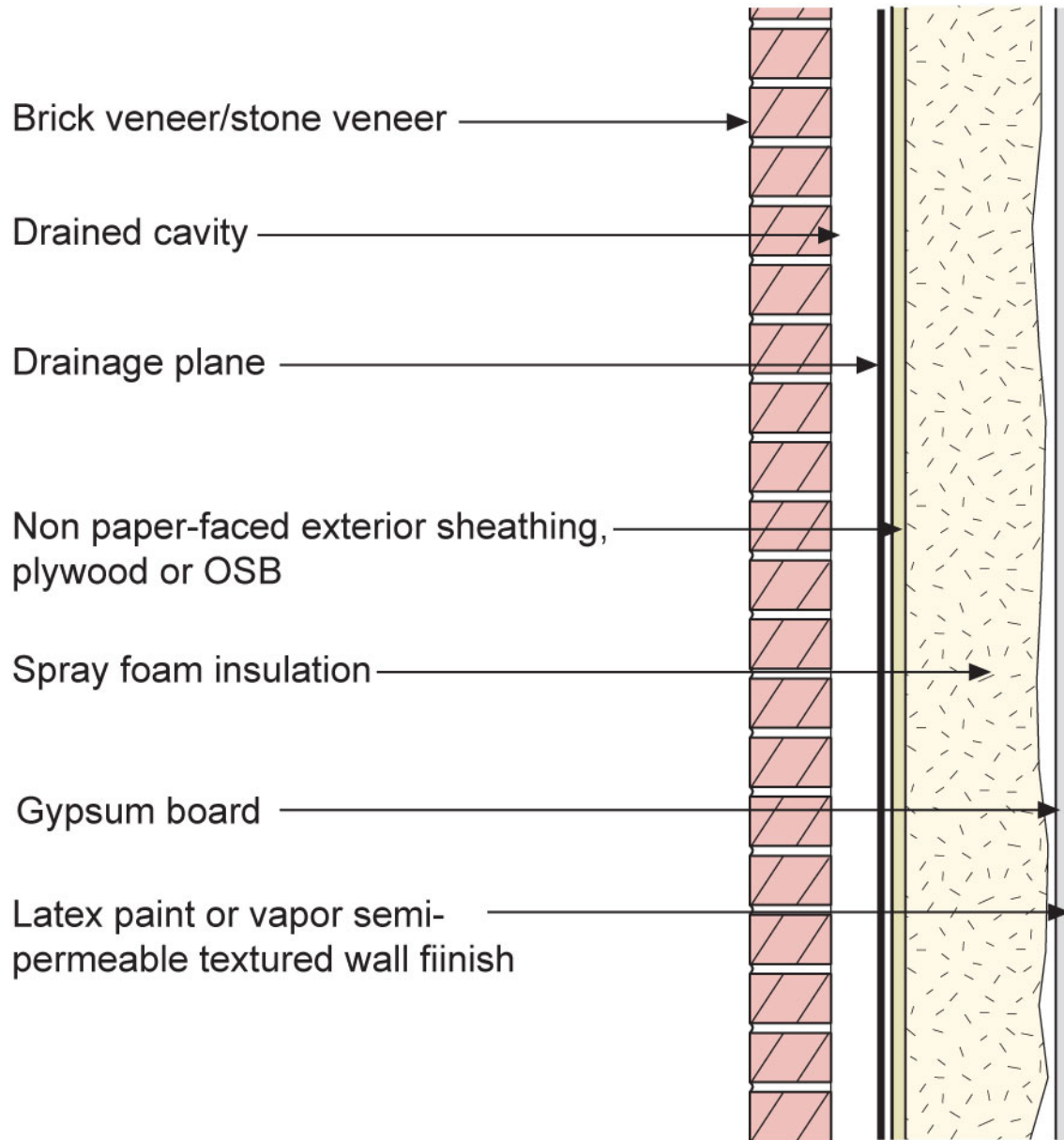


























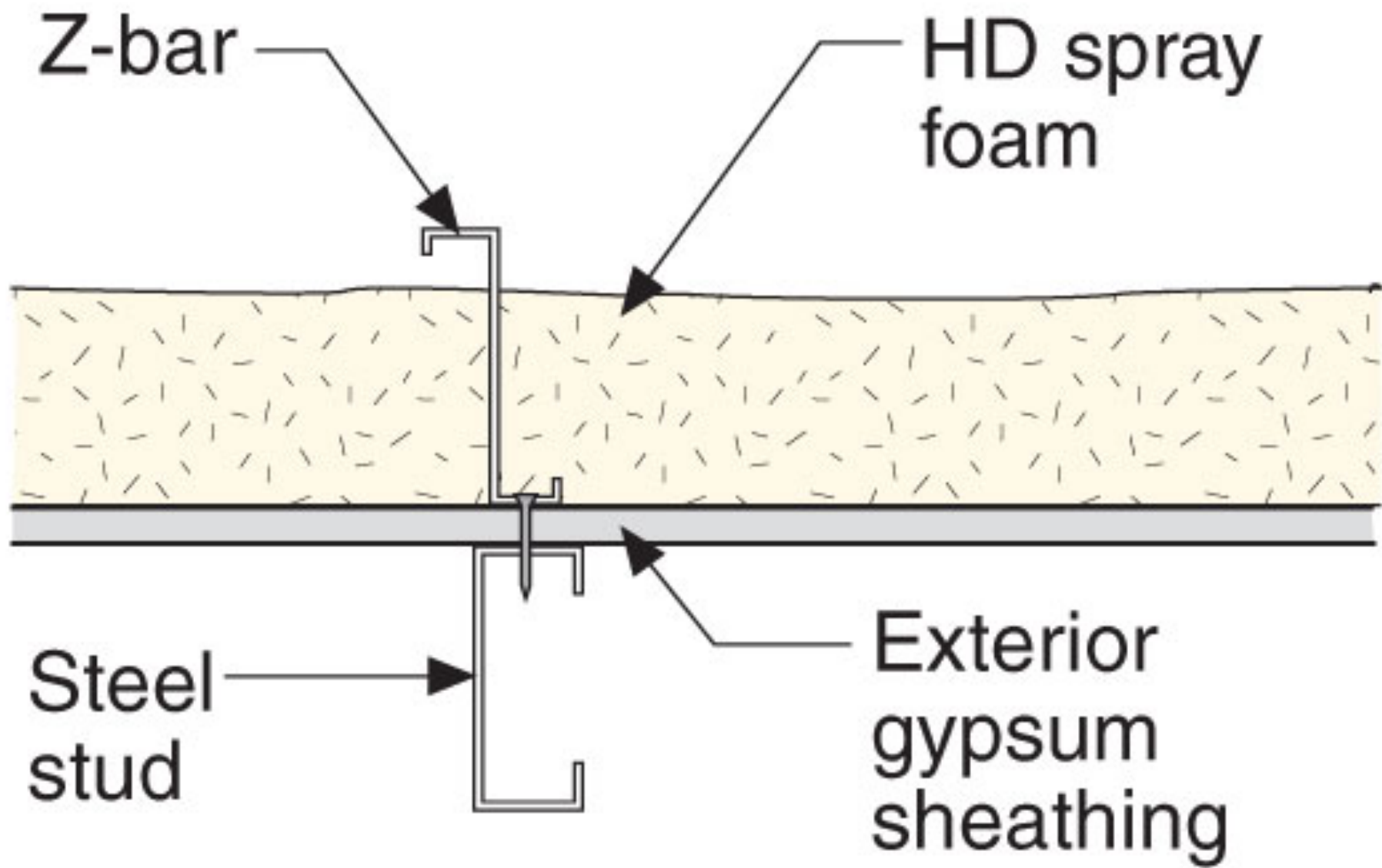


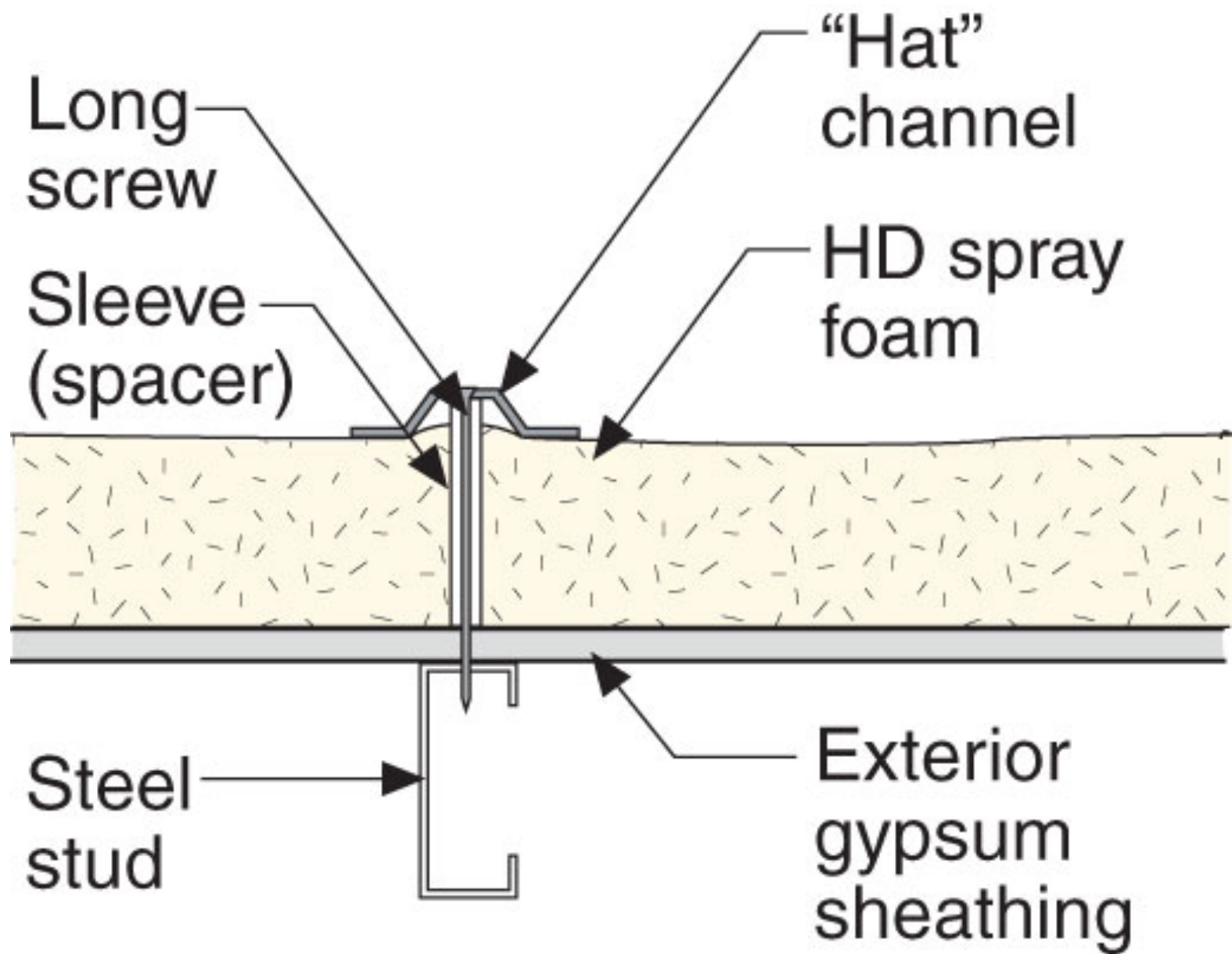














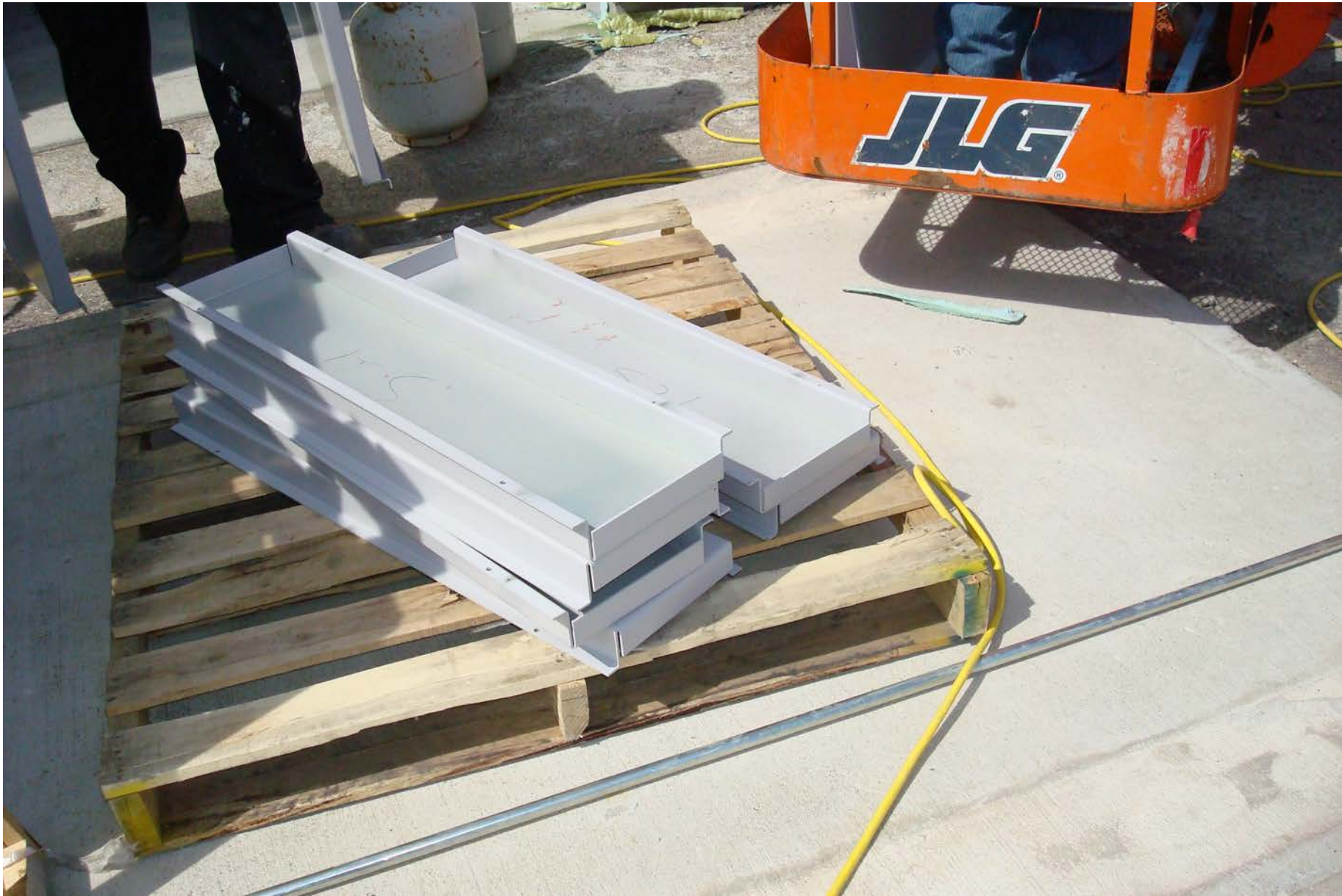




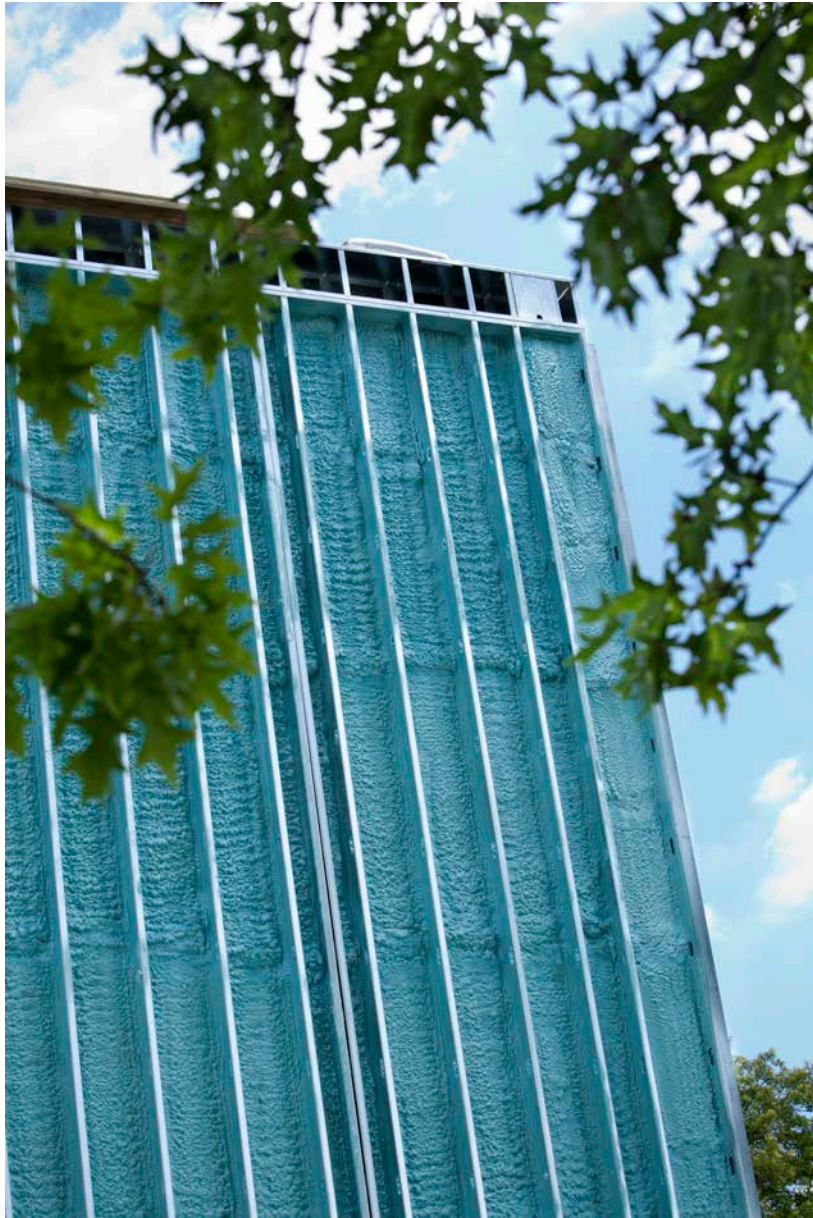








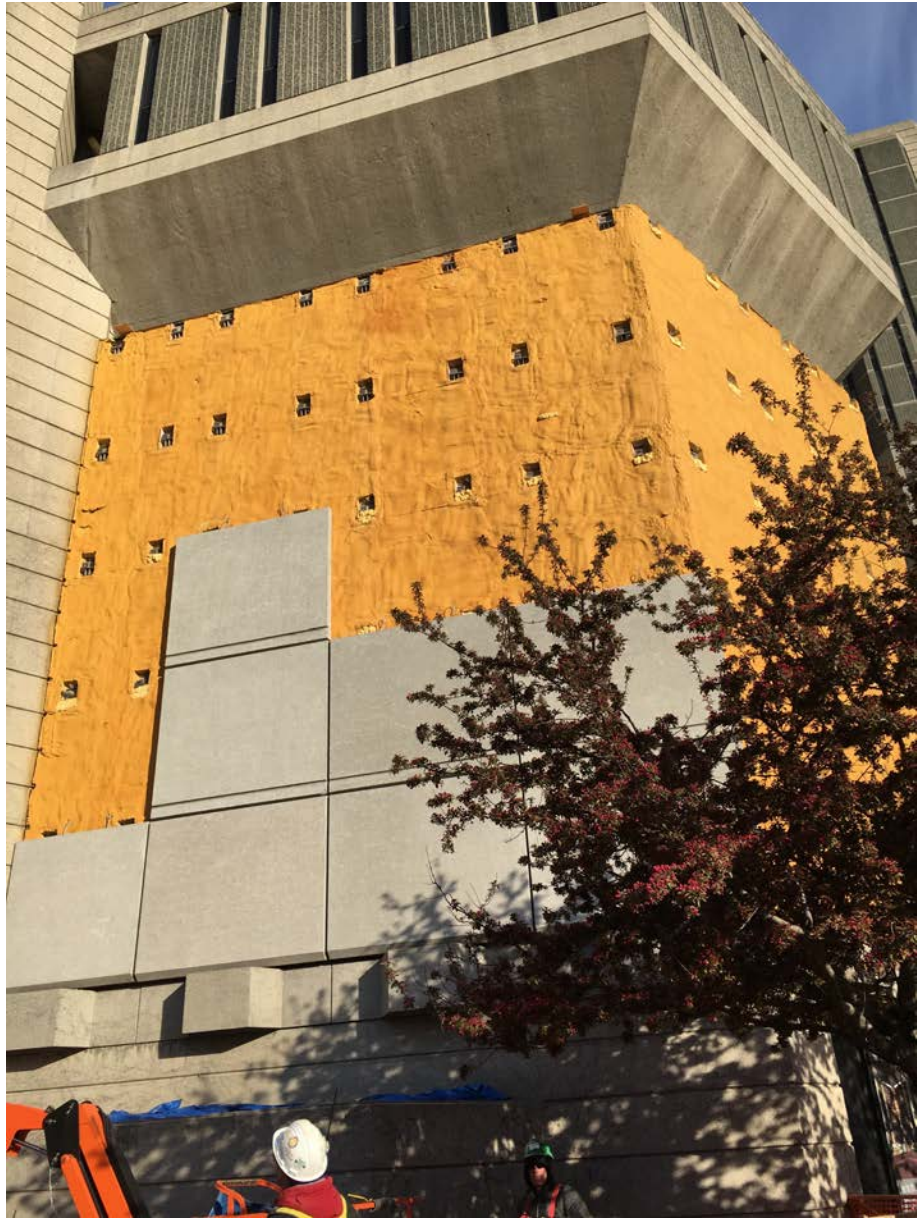


















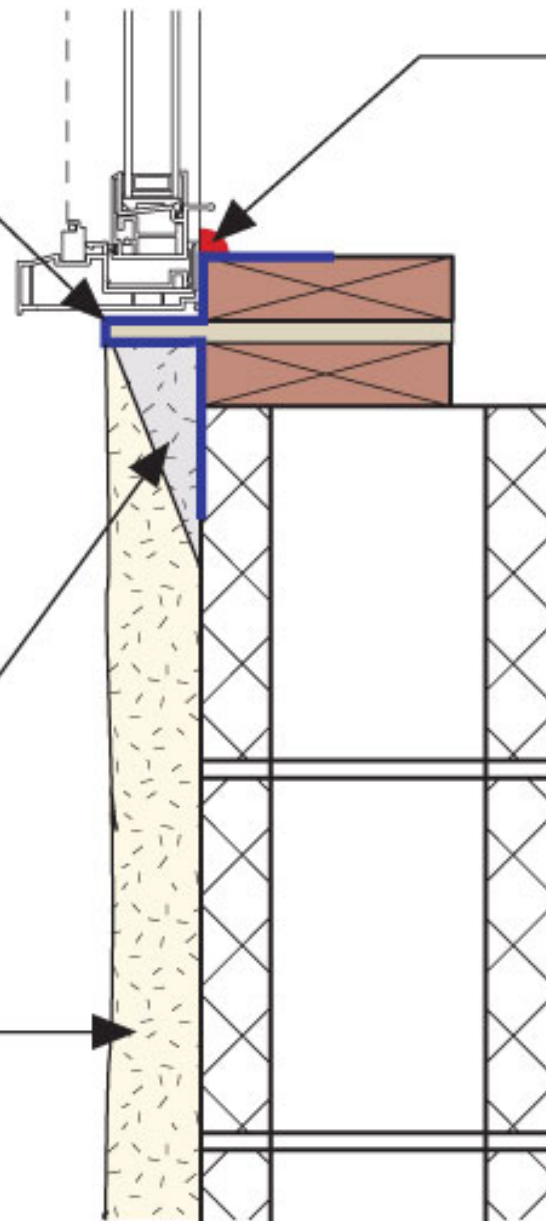




Liquid-applied membrane lining, sub-sill window flashing, air and water barrier transition membrane

HD spray foam "filet" to be applied before rest of foam

HD spray foam



Air seal

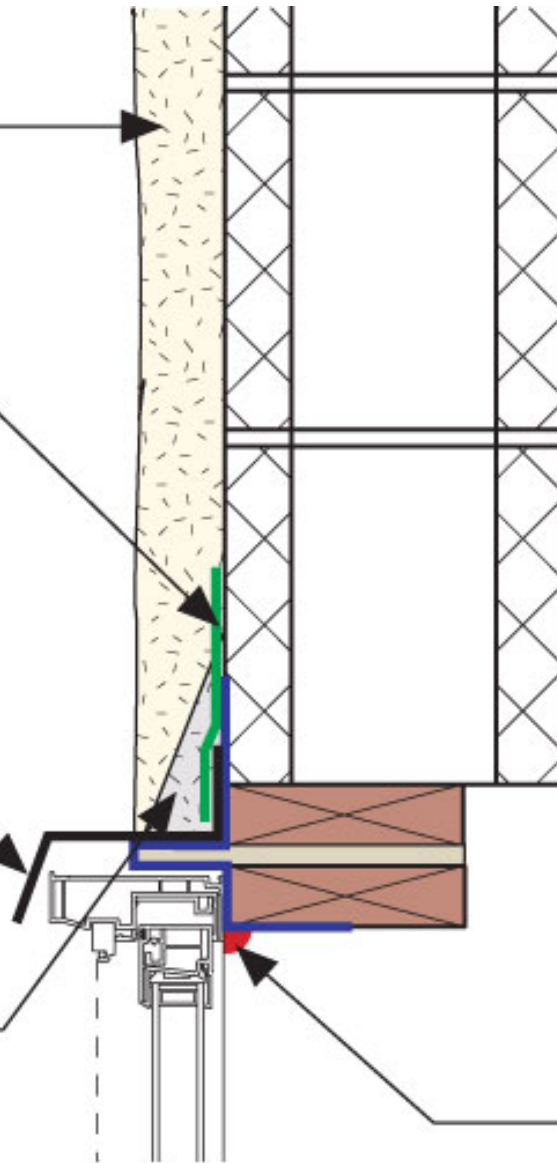
HD spray foam

Liquid-applied
membrane lining,
window flashing,
air and water barrier
transition membrane

Flashing

HD spray foam "filet"
to be applied before
rest of foam

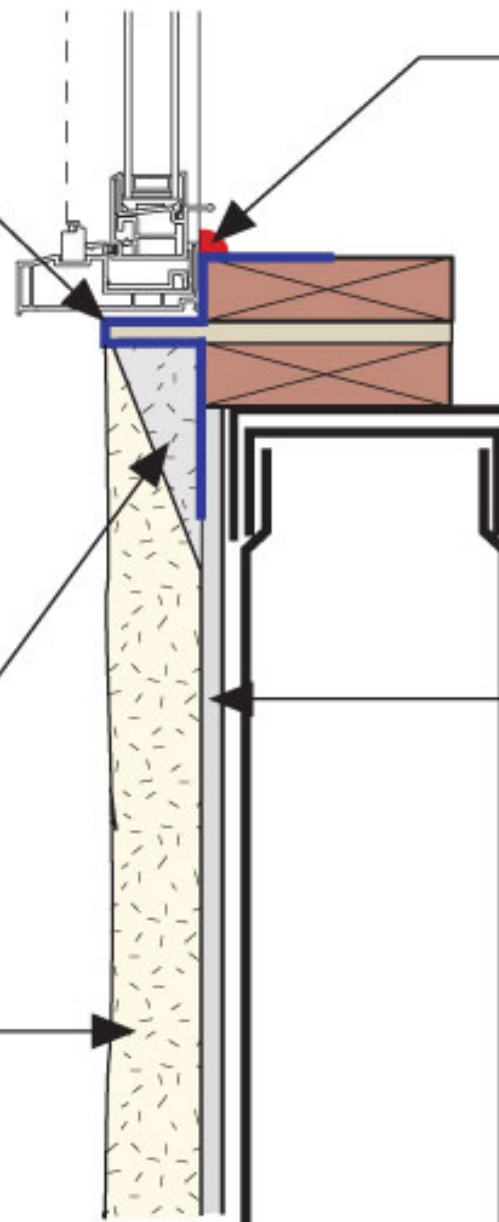
Air seal



Liquid-applied membrane lining, sub-sill window flashing, air and water barrier transition membrane

HD spray foam "filet" to be applied before rest of foam

HD spray foam



Air seal

Paperless gypsum sheathing

