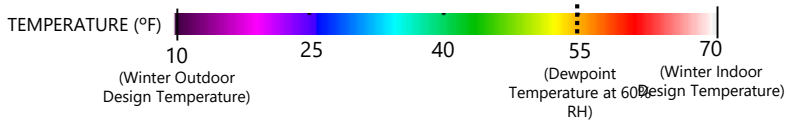
ASHRAE HQ **Envelope Updates**

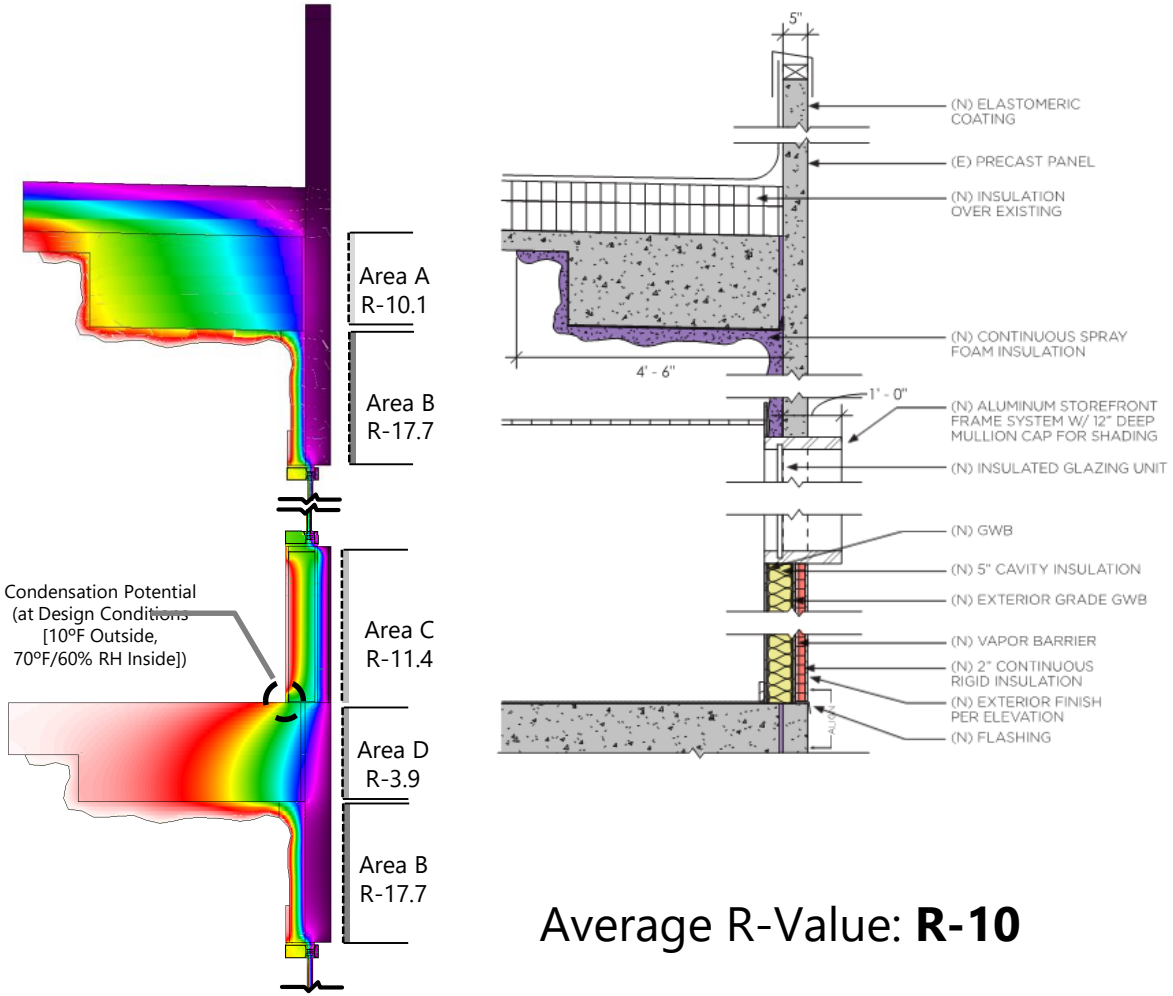
4.17.2019

THERM Analysis: **Wall Assembly R-value**

Impacts of Insulation: Option A vs. Option C/D

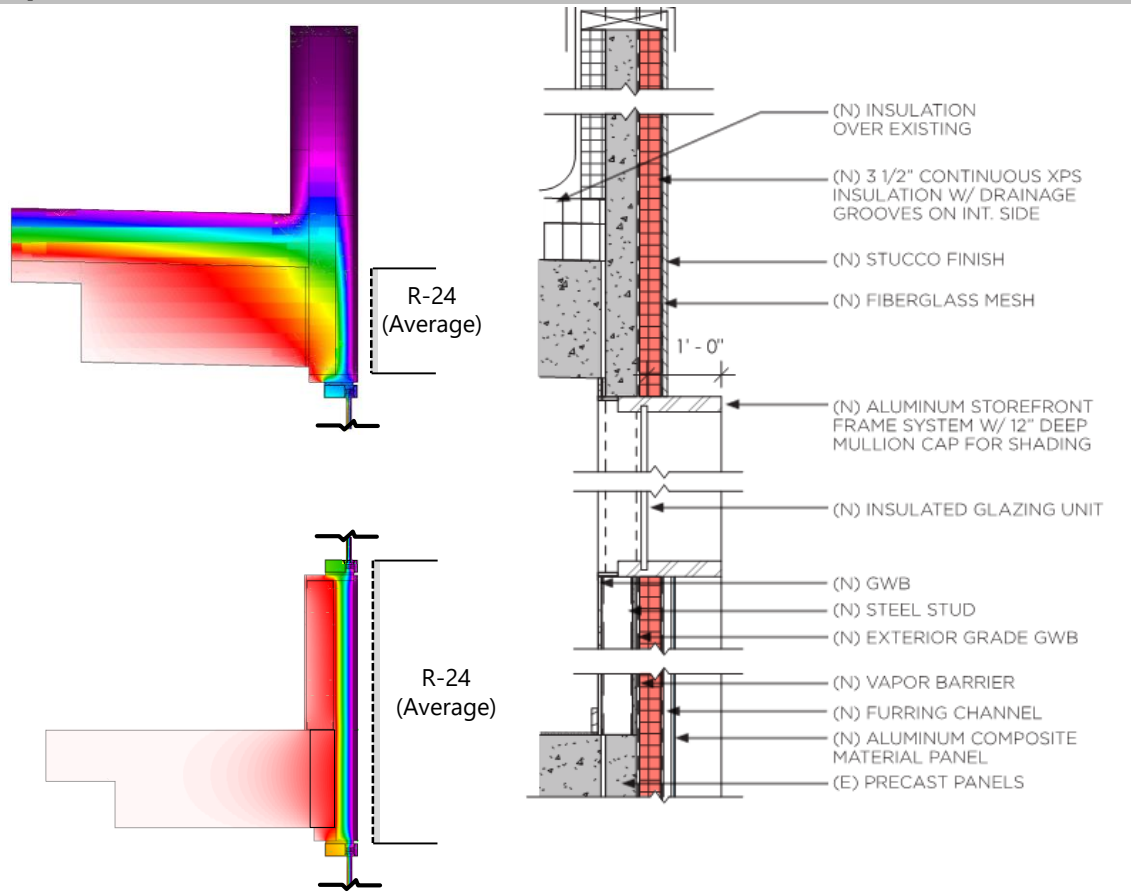


Option A: Insulate From Interior, Maintain Precast



Average R-Value: **R-10**

Option C & D: Continuous Exterior Insulation Over Precast



Average R-Value: **R-24**

Envelope Targets and EUI Impacts

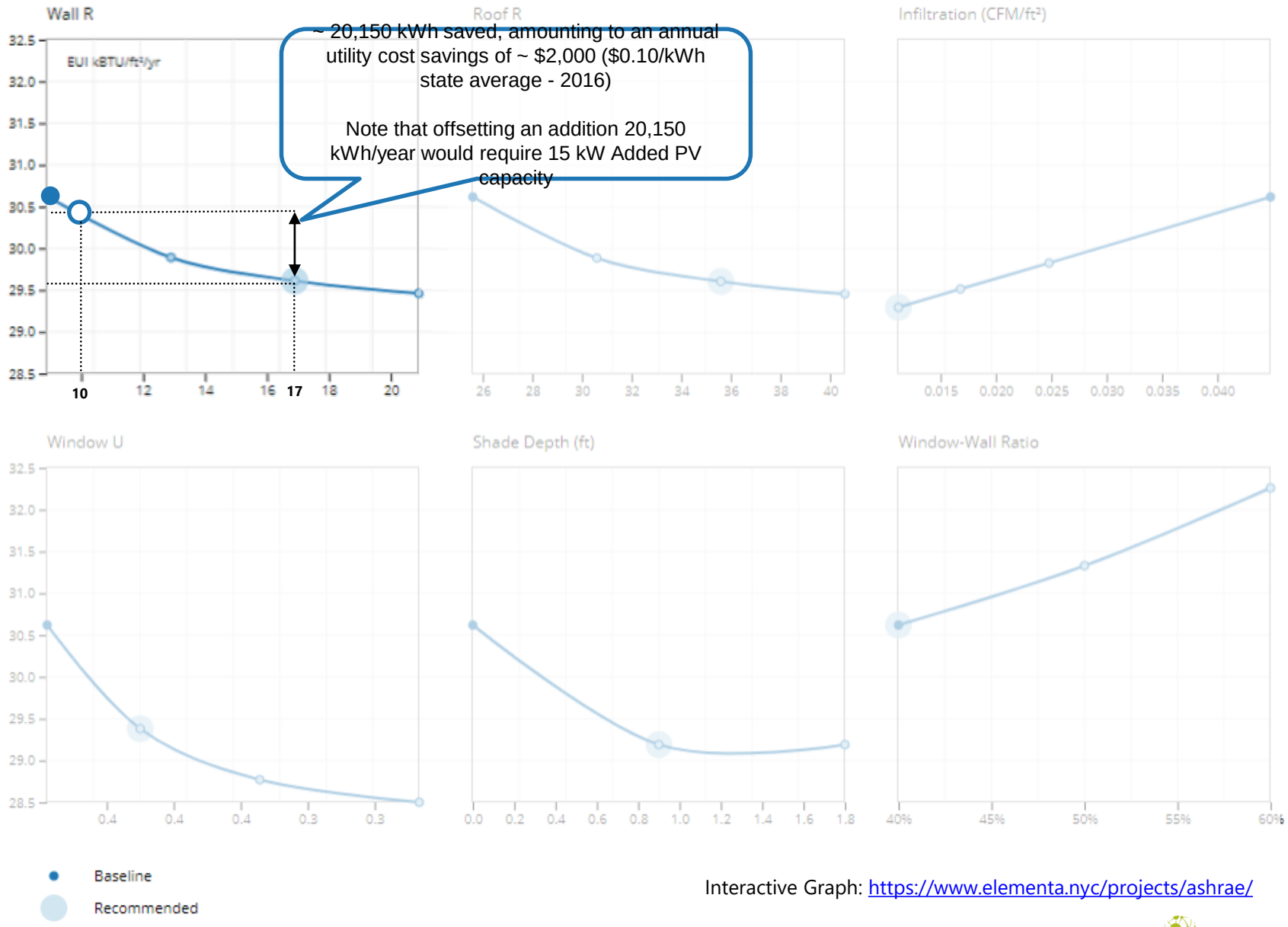
Insulation EUI Impacts

A wall assembly of **R-17** has been targeted by the design based on an analysis of diminishing Energy Use Intensity (EUI) savings shown at right.

Envelope **Option A**, can achieve an estimated assembly R-value of **R-10**

Envelope **Options C & D**, can achieve an estimated assembly R-value of **R-17 or better** with continuous exterior insulation as drawn. This amounts to an EUI savings for the building of approximately 1 kBtu/sf/yr when compared to envelope Option A (refer to sensitivity graph at right).

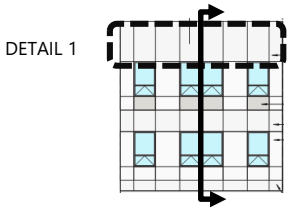
ASHRAE NZE AEDG recommends R-15.6 for Climate Zone 3!

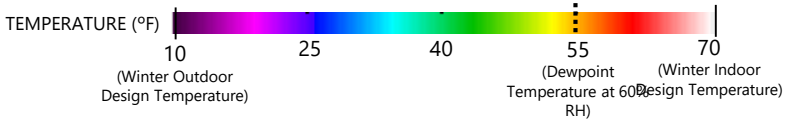


Interactive Graph: https://www.elementa.nyc/projects/ashrae/

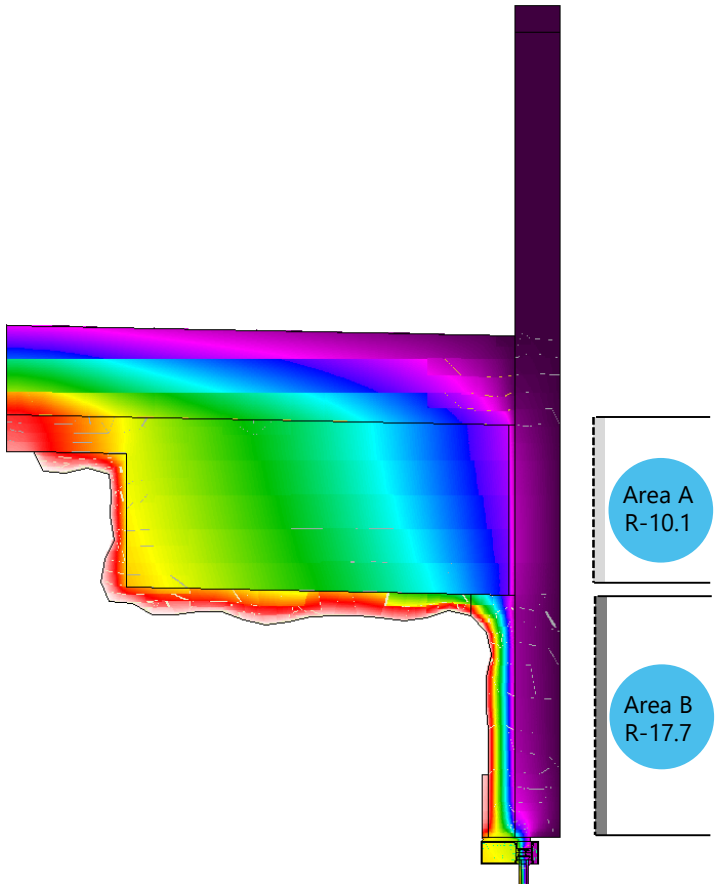
THERM Analysis: Option A, **Detail 1**

Analysis Details

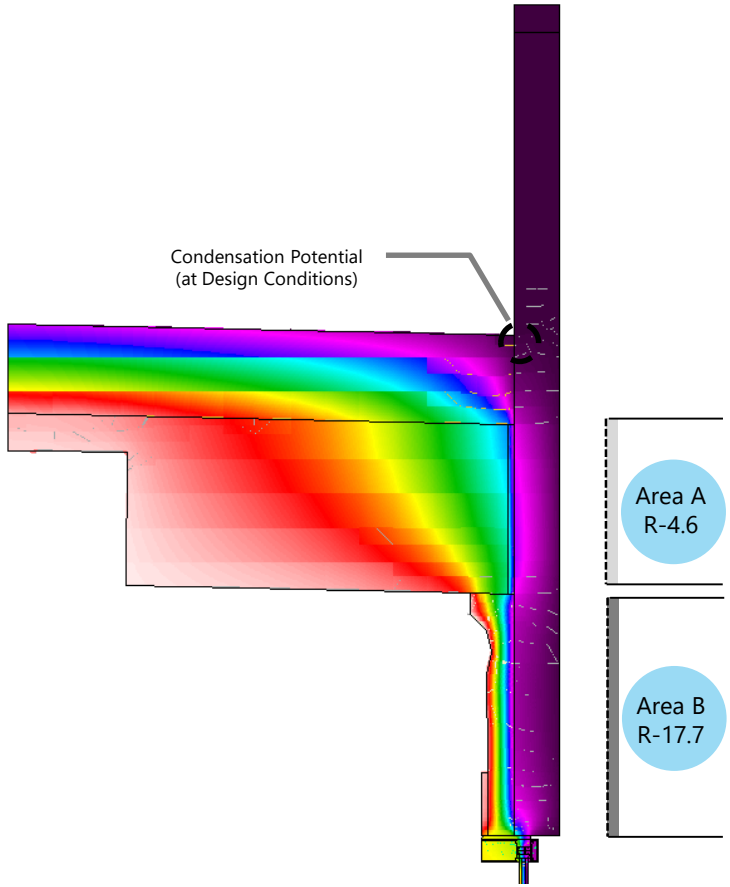




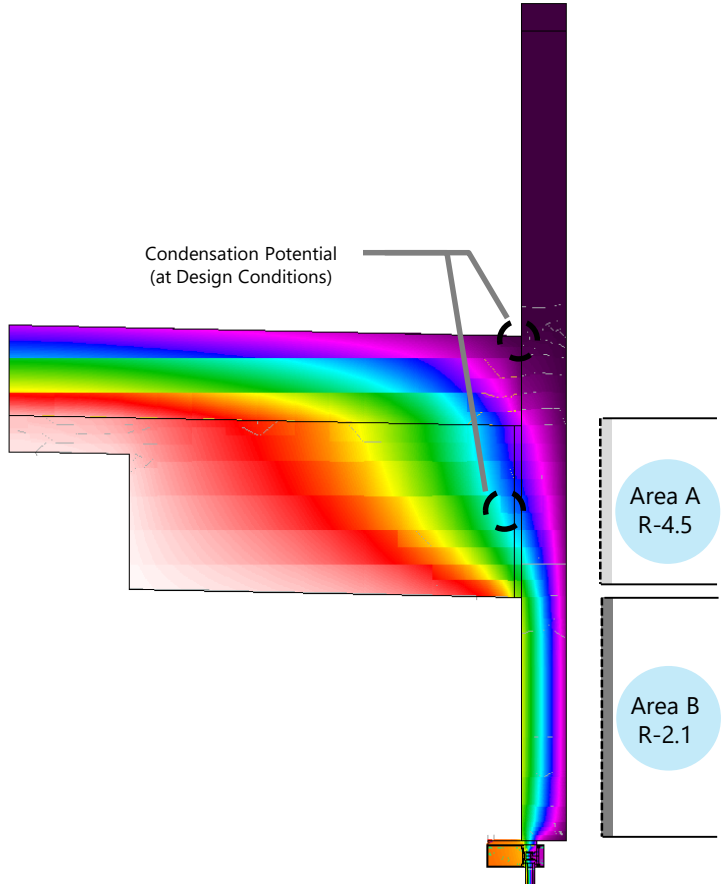
Option 1: Proposed Insulated Slab



Option 2: Partially Insulated Slab Underside

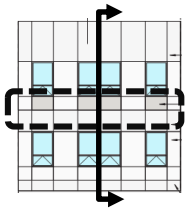


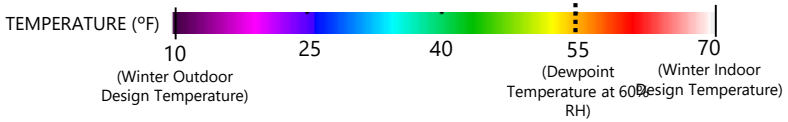
Baseline (Uninsulated Existing Condition)



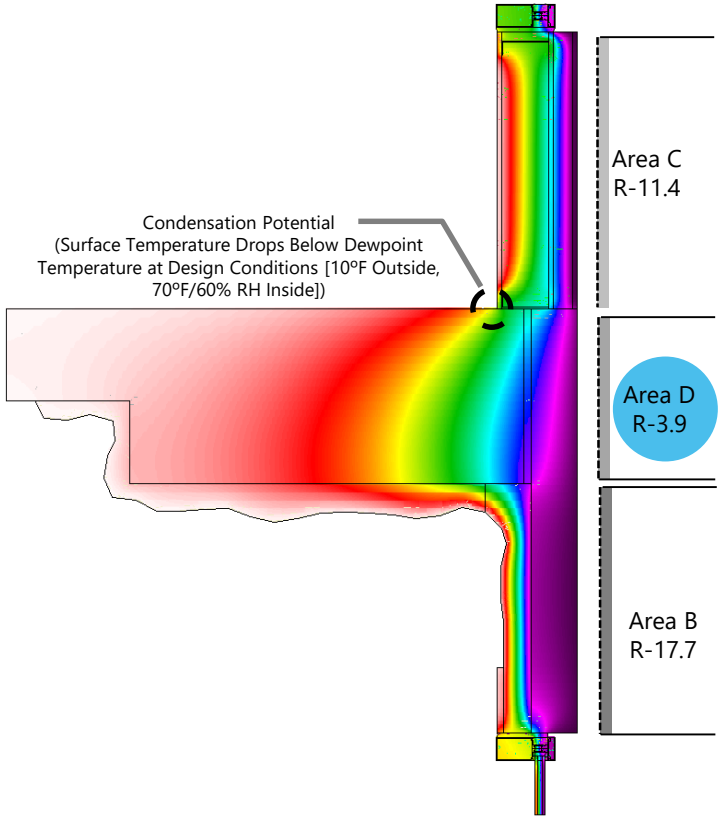
THERM Analysis: Option A, **Detail 2**

Analysis Details

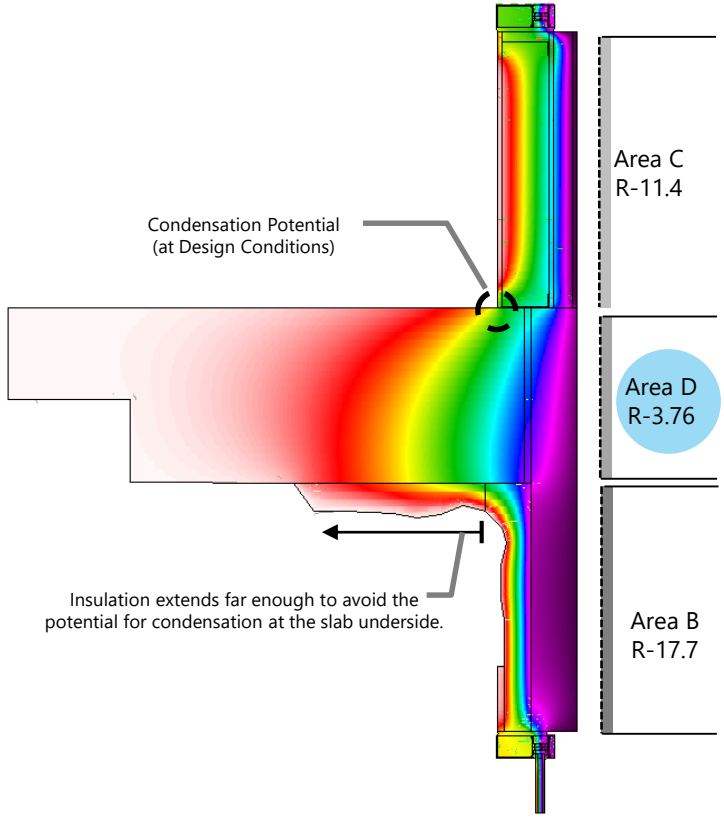




Option 1: Proposed Insulated Slab



Option 2: Partially Insulated Slab Underside



Option 3: Uninsulated Slab Underside