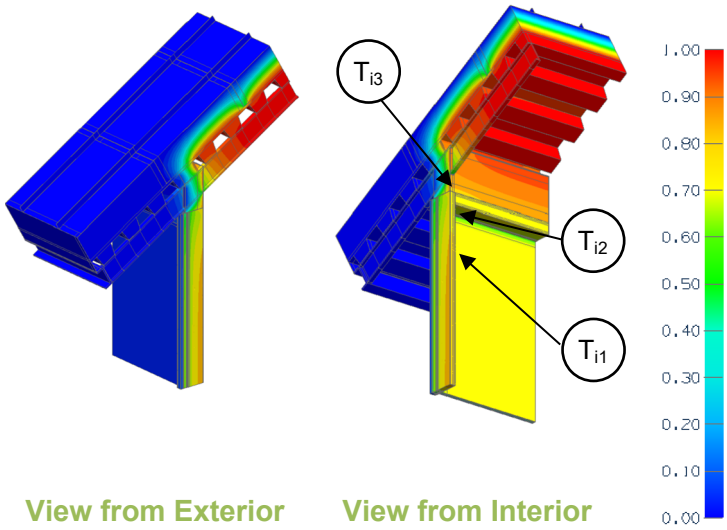
Detail 10.2.5

Exterior Insulated Sloped Metal Roof with Metal Sub-Girts (24" o.c.) Supporting Standing Seam Metal Roof and Curtain Wall – Roof to Wall Intersection with Through Wall Structural Beam and Thermally Broken Structural Metal Deck



View from Exterior View from Interior

Thermal Performance Indicators

Assembly 1D (Nominal) R-Value	R_{1D}	R-2.5 (0.44 RSI) + exterior insulation
Transmittance / Resistance without Anomaly	U_o, R_o, U_g	"clear field" U- and R-value: o = without curtainwall g = glazing
Transmittance / Resistance	U, R	U and R-values for the combined assembly
Surface Temperature Index[1]	T_i	0 = exterior temperature 1 = interior temperature
Linear Transmittance	Ψ	Incremental increase in transmittance per linear length of curtainwall

[1]Surface temperatures are a result of steady-state conductive heat flow with constant heat transfer coefficients. Limitations are identified in final report.

Nominal (1D) vs. Assembly Performance Indicators

Base Assembly Roof

Roof Insulation 1D R-Value (RSI)	R_{1D} ft²·hr·°F / Btu (m² K / W)	R_o ft²·hr·°F / Btu (m² K / W)	U_o Btu/ft² ·hr ·°F (W/m² K)
R-36 (6.34)	R-38.5 (6.78)	12.4 (2.18)	0.081 (0.46)

Base Assembly Glazing

$U_{centre\ of\ glass}$ Btu/ft² ·hr ·°F (W/m² K)	U_g Btu/ft² ·hr ·°F (W/m² K)
0.321 (1.82)	0.344 (1.95)

Roof to Wall Linear Transmittance

R ft²·hr·°F / Btu (m² K / W)	U Btu/ft² ·hr ·°F (W/m² K)	Ψ Btu/ft ·hr ·°F (W/m K)
3.2 (0.56)	0.317 (1.80)	0.350 (0.607)

Temperature Indices

T_{i1}	0.53	Upper corner of glazing
T_{i2}	0.53	Beam at curtain wall interior closure panel
T_{i3}	0.80	Underside of roof deck at beam