October 2024 ASHRAE Journal Online Content

Below is supplementary information for the following column in the September 2024 issue of ASHRAE Journal:

A Tool to Assist in the Education and Design of Durable Envelopes By Andre Desjarlais; Michael Lubliner, Life Member ASHRAE; Gina Accawi; and Kyle Biega

Preferences:

	ID	Exterior Cladding Brick/Stone	Air Space Drained/Ventilated \$	Cont. Insulation Foil Faced Polyiso	Cont. Insulation Thickness	Water Resistive Barrier No Preference	Cavity Insulation Fiberglass/Cellulose/Or 🗘
	247841	Brick/Stone	Drained/Ventilated	Foil Faced Polyiso	1 in.	Housewrap/Building Paper (>= 10 perm)	Fiberglass/Cellulose/Open Cell Foam (R- 13/R-21)
	246689	Brick/Stone	Drained/Ventilated	Foil Faced Polyiso	1 in.	Impermeable Coating/Membrane (< 1 Perm)	Fiberglass/Cellulose/Open Cell Foam (R- 13/R-21)
	322020	Brick/Stone	Drained/Ventilated	Foil Faced Polyiso	1 in.	Permeable Coating/Membrane (>= 1 perm)	Fiberglass/Cellulose/Open Cell Foam (R- 13/R-21)
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Figure 1: Recommendations developed by the BSA tool based on the example scenario.

imate Zone: 3A - Mixed-Humid			
Risky		Existing Wall	New Wall
	Exterior Cladding	Acrylic Stucco/Treated Brick	Brick/Stone
1	Air Space	None	Drained/Ventilated
	Continuous Insulation	None	Foil Faced Polyiso
Mold Risk @	Insulation Thickness	None	1 in.
Existing — New —	WRB Air Barrier	Housewrap/Building Paper (>= 10 perm)	Housewrap/Building Paper (>= 10 perm)
	Exterior Sheathing	Plywood/OSB/Fiberboard/Wood Plank	Plywood/OSB/Fiberboard/Wood Plank
Risky	Wall Structure	2 x 4 16 inch o.c. Wood Frame	
	Cavity Insulation	None	Fiberglass/Cellulose/Open Cell Foam (R-13/R-21)
	Interior Continuous Insulation	None	
	Interior Continuous Insulation Thickness	None	
Sheathing Moisture Content @	Interior Vapor Retarder	None	
Existing — New —	Interior Finish	Drywall/Latex Paint	
R0 R0 R0 B0 B0 B0 B0 B0 B0 B0 B0 B0 B			
R-3.2 R-17.9			

Figure 2: Results provide moisture durability; mold risk and sheathing moisture content and thermal performance changes created by the wall retrofit.