





BUILDING ENVELOPE COMMISSIONING REPORT

Report Date: July 21, 2022
Project Name: Winooski School BECx
Project Number: 21-21-162
Date of Visit: July 19, 2022
Purpose: First Instance Tests - ASTM E 1186 (Fog Testing)

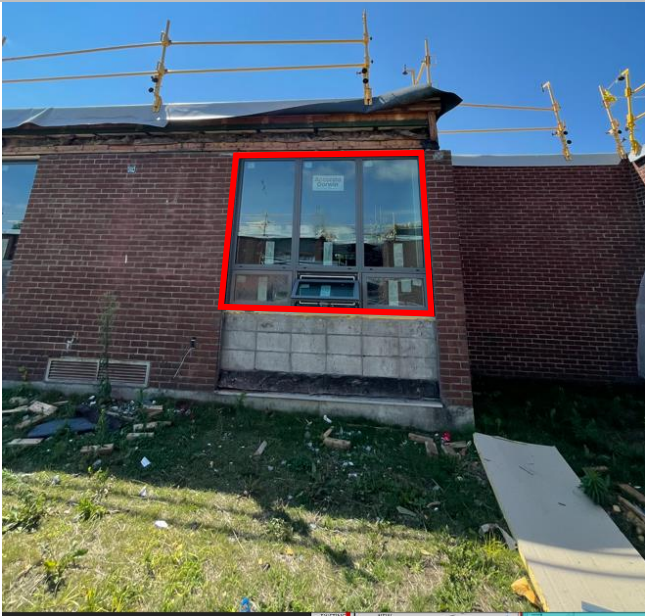
***Note on Using This Report:** In this report, specific items are identified for improvement. The items identified may be representative of trends or patterns in the installation that apply to the project at large, not just to the areas that were inspected. Lessons learned from quality assurance inspections must be applied not only to the inspected areas but to all similar areas in order to be effective.*

Location:	East Elevation Area D
Location Description:	Wall to Roof Transition at Spray Foam Section
Test Type:	Pressurized fog at 60+ pascals of pressure (impingement)
<p>Results: In the area above the window, no leaks were observed due to the spray foam making a good seal to the metal deck. However at the I-joists the spray foam wasn't able to make an effective seal. As a result fog was found to leak out at every I-joist transition where it meets the wall to roof. We recommend that the I-joists are spot sealed with can foam to address the air leakage through and around them.</p>	
	
	<p>The tested transition is outlined above. The red arrows call out the specific locations where fog was observed to escape.</p>
<p>The arrow above points to an I-joist which the can foam does not fully seal around. We recommend the I-joist voids are filled with can foam to help decrease the air leakage.</p>	



Location:	South Courtyard Elevation in Area D
Location Description:	Wall to Roof Transition
Test Type:	Pressurized fog at 60+ pascals of pressure (impingement)
Results: This area leaked heavily as there is no defined air barrier in the detail. We recommend a change order is submitted in order to get the approval for spray foam to seal the wall to roof transition. BVH also recommends sealing the roof membrane or the exterior brick/CMU to prevent air from leaking out at the flutes above the deck. This is because the flutes of the metal deck here are perpendicular to the wall whereas at the previous vintage the flutes are parallel.	
	
The tested transition is outlined above.	The tested transition is outlined above in red.

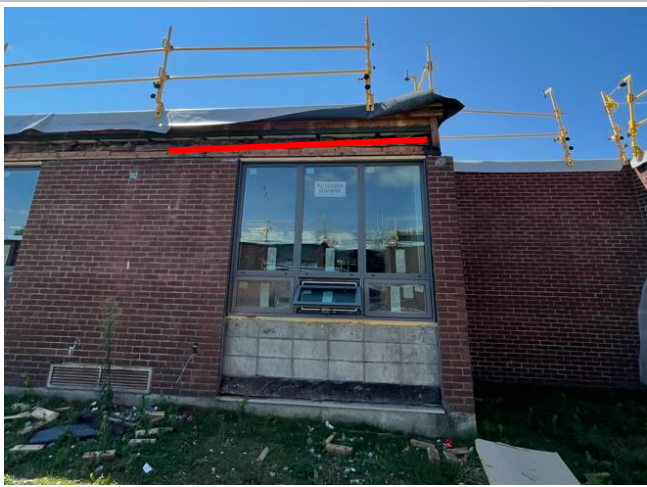


Location:	North Courtyard Elevation in Area D
Location Description:	Window to Rough Opening and the Window
Test Type:	Pressurized fog at 60+ pascals of pressure (impingement)
Results: This transition produced no leaks during testing. Continue to construct this detail in the same manner with the same quality of work. The window was also found to perform well.	
	
The tested transition is outlined above.	



Location:	North Courtyard Elevation in Area D
Location Description:	Wall to Roof Transition with Tectum Ceiling
Test Type:	Pressurized fog at 60+ pascals of pressure (impingement)

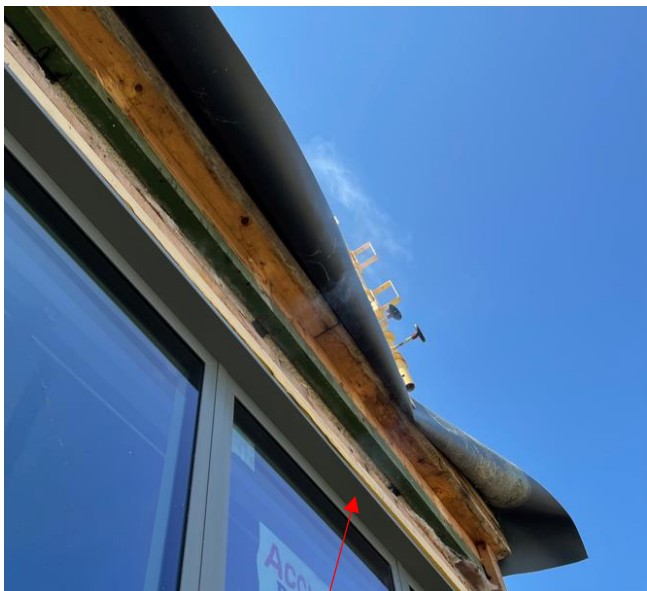
Results: This transition leaked heavily one because it was incomplete, and two because the spray foam only travels up the wall to the bottom of the wall to roof transition beam. With the tectum being porous, air is easily able to leak out here. We recommend to continue work adhering to the 1-A510.2 detail and SKA-28 as these will complete an airtight transition. This will greatly improve the performance of this transition.



The tested transition is outlined above.



The tested transition is outlined above.



Close up image showing fog escaping the transition during the testing.



Close up image showing another location where fog was observed to escape during testing.



Location:	North Courtyard Elevation in Where Area E and Area D Meet
Location Description:	New to Existing Transition
Test Type:	Pressurized fog at 60+ pascals of pressure (impingement)
Results: During testing fog was observed to leak through fish mouth openings in the transition membrane. We recommend that the insulation is removed so the transition membrane can be sealed with an additional layer of DensElement sealant.	



The tested transition is outlined above.



The tested transition is outlined above. Pointed to above is an air bypass through the existing layers which is described in the next table.





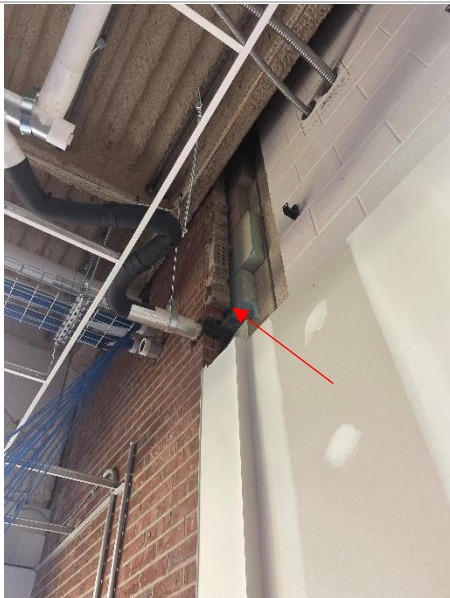
Close up image showing fog escaping the transition during the testing. These openings in the transition membrane should be sealed with more fluid applied.



Close up image showing another location where fog was observed to escape during testing. This insulation should be removed so that the transition membrane can be sealed with additional fluid applied.



Location:	North Courtyard Elevation in Where Area E and Area D Meet
Location Description:	New to Existing Transition
Test Type:	Pressurized fog at 60+ pascals of pressure (impingement)
Results: While inspecting the building, the existing construction at this location was found to have an air space behind the brick. This air space acts as a path for air to leak out of the building. BVH recommends this space is filled with can foam where the existing brick was cut. This will help to decrease the buildings air leakage.	



The arrow above points to the air space which leads to outside, We recommend this is filled with can foam along the entire height. Some of the drywall will need to be removed to do this.



The arrows above point to some penetrations through the brick wall which should be sealed from both sides, as they enter the air space.

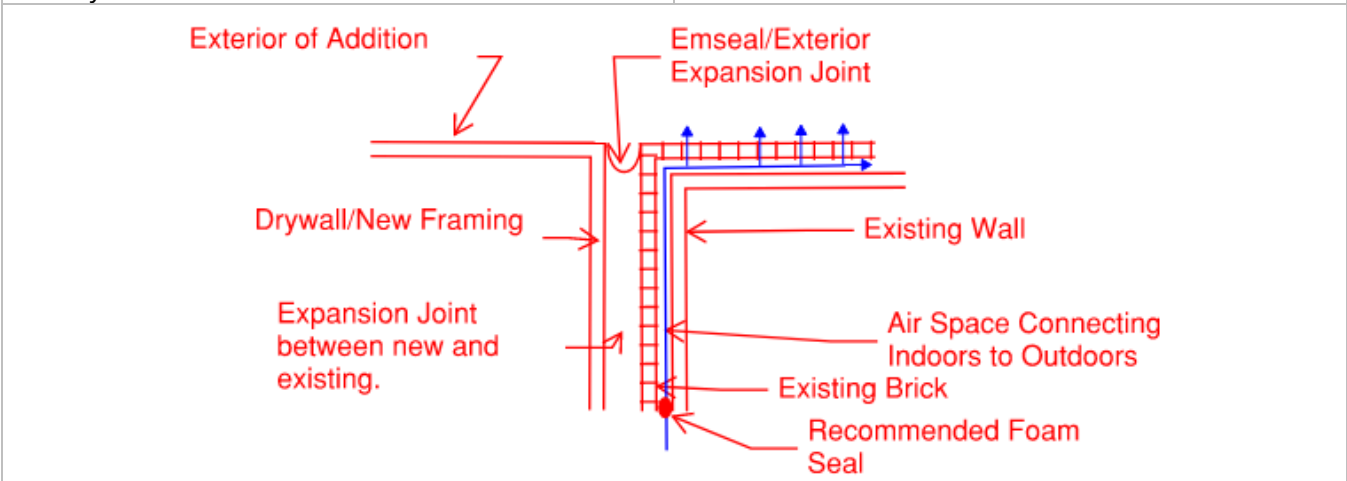
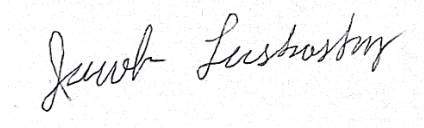


Diagram above is slightly different from what is actually constructed, but it shows how conditioned air (represented by the blue line) can travel into the cavity and out through the existing wall at weep holes, mortar joints, etc.

Please review and let me know if there are any questions.

Energetically yours,

BVH Integrated Services, Inc.



Jacob Laskosky
Building Envelope Services Provider

JL/

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