



## WATSKY ASSOCIATES, INC.

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October 4, 2018  
via email only

Attn: Erik Kaeyer, AIA LEEP AP  
Re: Westport Schools - Coleytown Middle School

Gentlemen:  
Some initial thoughts:

### **Existing Plans & Specifications:**

A considerable amount of renovation work was done at Coleytown MS circa 1994 - 2000, and we have drawings from Fletcher Thomas and Jeter Cook & Jepson that show much of it.

We are missing Phase 3 Volume 1 drawings prepared by Jeter Cook Jepson; they contain the architectural drawings which probably show the wall sections, roof work and facade details we're interested in seeing.

The drawings we have show that roofing was installed on the Coleytown MS on numerous different occasions, albeit none of it seems to have been installed any later than 2000, and a lot of it was installed in 1998. (Manufacturer's date stamps on the EPDM confirm this.)

The drawings show the ground face block (CMU) facade, the aluminum window walls and sun shades. However, as occurs on most similar construction projects, the facade, window walls and sun shades were not constructed as shown - but rather in accordance with submittals and shop drawings. We do not have copies of the submittals, shop drawings or accurate as-built drawings.

### **Facade:**

There is no doubt the ground face concrete block facade walls leak. There is algae and moss growth on the walls, especially at the sun shade mounting brackets, and where roof water spills over the roof eaves.

There is also no doubt the window walls leak. A number of the insulated glass panels have failed; there is moisture between the panes, and there is "fresh" sealant at a number of joints between the transom panels and aluminum frame members.

There are essentially no sill flashings at the unit heater grills, there are large gaps (some covered with a lot of surface applied sealant) at the sun shade mounting brackets, there are gaps in the block walls - where mechanical louvers are mounted behind the CMU facade, portions of the CMU facade extend below grade, and the wall flashing at the base of the CMU wall does not turn down to shed water over the cast concrete foundation.

### **Roof:**

There are at least four different types of roofing on the Coleytown MS; ethylene propylene diene monomer (EPDM) rubber installed on new additions constructed circa 1998, EPDM installed on the "original" portions of the school, an as yet unidentified white single ply roof installed on the folded plate gym roof addition, and roofing with a white coating on the auditorium, library and original portion of the gym.

The drawings describe metal, concrete plank and wood roof decks.

continued

Most sections of roof appear to be in reasonably good condition - as good as can be expected for 18 to 20 year old roofs that were intended to provide about 20 to 22 years of service. However, most sections of the roof have surface applied patches; at naturally occurring seams, and where holes (and leaks) developed through the years - some roof seams and target patches are loose and water has infiltrated at least portions of the system.

A number of roof eave flashings are also leaking, at sealant cracks that have formed between sections of metal eave trim. Cracked eave trim sealant is probably allowing water into the exterior facade walls.

Cap flashings at many of the change in elevation walls are too low (to the roof surface), and it doesn't look like the cap flashings were installed to extend completely through the exterior wythe of masonry (as they should).

**What We Know:**

Roof and facade leaks are allowing water into the building envelope - where it doesn't belong. Water entering the envelope is causing deterioration, and it's allowing algae and moss to grow on (and perhaps inside) the facade and roof.

Water that has entered the CMU "tower" adjoining the main entrance is causing a dank odor that's noticeable in the front vestibule.

Voids at the sun shade support arm brackets, and the other facade deficiencies described above are causing many of the leaks.

However ground face CMU naturally absorbs water; and the best the industry can offer is a surface applied water repellent coating. It's a stop gap measure to mitigate absorption, it usually works for about 5 to 7 years.

Current building standards consider ground face CMU a rain screen only - a facade with this type of CMU would be constructed with a full layer of back up waterproofing, and carefully positioned concealed flashings and weeps to direct water that soaks into the walls - harmlessly to the exterior.

Insulated window panels have a finite life, which is hard to predict and varies widely from manufacturer to manufacturer. It is not a good sign that a number of panels have moisture within them.

**What We Don't Know:**

We don't know if the facade leaks have impacted back up masonry and dry wall components; in other words, and not intending to cause alarm, we don't know if algae, moss or mold is growing out of sight, inside the facade.

We don't know exactly how the facade, sun shades, and other wall components were constructed.

We don't know if roof and roof eave sealant leaks have let water into the roof assembly; insulation within the roof assembly needs to be dry - to provide insulation value, and to prevent the growth of algae and mold.

We don't know if there is more than one layer of roofing on the school, and we don't know what type and how much roof insulation there is. Current standards (and the Building Code) require a lot more insulation than would have been installed circa 1998 and 2000.

**Destructive Testing / Probes:**

Removing isolated and limited portions of the facade (at some of the areas where surface algae and moss growth is the worst) would provide some insight with respect to how the facade was constructed and how far moisture has infiltrated the walls. Unfortunately, probes won't provide any guarantee that conditions aren't markedly different a few feet away.

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Attn: Erik Kaeyer, AIA LEED AP

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Making a probe in each different section of roof would enable us to determine the type and "typical condition" of each different roof assembly, albeit it won't allow us to know for sure if the insulation is dry.

An infrared survey could be performed to determine if the roof insulation is generally dry. It should be performed after probes are made to determine the composition of the existing roof assemblies.

I suggest we discuss if and where roof and facade probes might be made.

Very truly yours,  
WATSKY ASSOCIATES INC.



Thomas Olam, President