O'Reilly, Talbot & Okun
ENGINEERING ASSOCIATES

March 9, 2018
File No. 5171-06-01

Mr. Paul Comerford, Director of Facilities Management
Worcester Public Schools
20 Irving Street
Worcester, MA 01609, MA 02035

RE: February 2018 PCB BMP Quarterly Status Report
Doherty Memorial High School

Dear Mr. Comerford,

In accordance with the Worcester Public School's (WPS) request, O'Reilly Talbot & Okun Associates, Inc. (OTO) is pleased to present this quarterly independent status report of the Best Management Practices (BMPs) implemented at the Doherty Memorial High School (Doherty) to reduce potential exposures to polychlorinated biphenyls (PCBs). WPS and its staff are responsible for implementing the BMPs, and OTO conducts quarterly evaluations to provide WPS management with an independent assessment of their effectiveness.

As you know, certain building materials used in the construction and renovation of school buildings during the period between 1950 and 1980 may contain PCBs. The US Environmental Protection Agency (USEPA) has recommended that a BMP program be implemented in schools either built or renovated during this period. Doherty was constructed during this period.

Note that WPS also requested OTO to conduct indoor air monitoring for PCBs at Doherty and that the second round of sampling was recently completed. The reports of air testing have been provided in separate reports, although we note that all results were well below USEPA guidelines for PCB concentrations in school air in each sampling round.

**Best Management Practices (BMPs)**

In its July 28, 2015 guidance for school administrators and other building owners and managers titled "Practical Actions for Reducing Exposure to PCBs in Schools and Other Buildings," the USEPA describes potentially useful BMPs, including:

1. Ensuring that ventilation systems are operating properly and are regularly inspected and maintained according to system manufacturer instructions and guidelines or ANSI/ASHRAE/ACCA Standard 180-2012—Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems. If system cleaning is needed, follow ANSI/ACCA Standard 6–Restoring the Cleanliness of HVAC Systems (2007);
2. Cleaning inside schools and other buildings frequently to reduce dust and residue;
3. Using a wet or damp cloth or mop to clean surfaces;

4. Using vacuum cleaners with high efficiency particulate air (HEPA) filters;
5. Not sweeping with dry brooms or using dry cloths for dusting;
6. Washing hands with soap and water, particularly before eating; and
7. Washing children's toys.

OTO's assessment of BMP effectiveness focuses on items 1 through 5 on this list. For items 6 all school lavatories are equipped with soap and water. Item 7 is not relevant to a high school environment.

**Assessment of BMPs at Doherty Memorial High School**

We conducted our BMP assessment at Doherty on Tuesday, February 20, 2018. We reviewed the operation of the HVAC/air handling equipment with school engineering staff. The system underwent a significant overhaul approximately one year ago and was operating properly at the time of the BMP assessment.

OTO observed 30 rooms selected at random during the assessment at Doherty, or roughly 40% of rooms within the school. Our observations of these rooms focused on the presence of dust on windows, window sill and window frames as well as the condition of the Univent systems that provide heating and ventilation to the classrooms. The rooms we observed included:

- The cafeteria;
- Kitchen;
- Library,
- Faculty break rooms;
- Administrative offices;
- Selected classrooms, and
- Hallway areas.

Our general observations are summarized on Table 1 (attached); representative photographs are also attached. We discussed cleaning procedures with school staff emphasizing the importance of consistency with the BMPs. We were assured that the BMP recommendations were routinely followed in the school.

Based on our discussions and observations, the implementation of the BMPs at Doherty is very effective. The Univents were free of significant dust and visible oil leakage. Several rooms, mostly in the wood shop area, exhibited some accumulated dust, but this appeared to be recently generated sawdust. The observed windowsills and blinds exhibited little dust. The storage of educational materials on windowsills and air vents, which was observed in previous visits, has been curtailed.

**Other USEPA Recommendation for Suspected PCBs in Schools**

Although not technically BMPs, USEPA made three other recommendations in its July 28, 2015 guidance for PCBs in schools:

- Remove all PCB containing fluorescent light ballasts (FLBs);
- Give consideration to encapsulating suspected PCB containing materials (such as caulk) to further reduce the potential for PCB exposure; and
- Removing suspect PCB containing building materials during planned renovations and repairs.

As you know, WPS removed all suspect PCB containing FLBs in 2012. There are no suspected PCB FLBs remaining in the school system.

Also in 2012, WPS encapsulated the suspect PCB containing caulk around all of the windows at Doherty with an additional thick layer of non-PCB caulk. We observed this over-caulking in each room we visited and found that it was intact and in good condition. This over-caulking is amended on an as-needed basis to maintain its condition.

Finally, it should be mentioned that Doherty has been accepted into a state sponsored financing program that will help assure the replacement of the school in approximately 5 years. When Doherty is replaced, the suspect PCB containing materials will be removed and disposed of in accordance with USEPA requirements.

**Conclusions and Recommendations**

In conclusion, it is our opinion that the BMPs are being implemented in an effective manner. We recommend that the next quarterly on-site visit be conducted in May 2018.

Should you have questions or require additional information, please contact the undersigned.

Very truly yours,
O'Reilly, Talbot & Okun Associates, Inc.

Thomas B. Speight, CHMM
Project Manager

James D. Okun, LSP
Principal

**Attachments**

Table 1 – Summary of Observations for Doherty Memorial High School
Selected photographs from Doherty High School

Table 1 - Summary of BMP Observations
Doherty Memorial High School
299 Highland Street
Worcester, MA 01602
February 20, 2018

| Room | Condition of Caulk | Condition of Univents | Dust Accumulation |
|---|---|---|---|
| 101 | VG | VG | VG |
| 103 | VG | VG | VG |
| 104 | VG | VG | VG |
| 106 | VG | VG | VG |
| 107 | VG | VG | VG |
| Cafeteria | VG | NA | VG |
| Exterior doors by cafeteria | VG | NA | VG |
| 209 | VG | VG | VG |
| 211 | VG | VG | VG |
| 212 | VG | VG | VG |
| 302A | VG | NA | VG |
| 302B | VG | VG | VG |
| 303A | VG | VG | Some |
| 303B | VG | VG | VG |
| 304 | VG | VG | VG |
| 304B | VG | VG | VG |
| 306 | VG | VG | VG |
| 310 | VG | VG | VG |
| 312 | VG | VG | VG |
| 314 | VG | VG | VG |
| 316 | VG | VG | VG |
| 324 | VG | VG | VG |
| 326 | VG | VG | VG |
| Faculty Room, 300s Wing | VG | VG | VG |
| 402 | VG | VG | VG |
| 403 | VG | VG | VG |
| 406 | VG | VG | VG |
| 420 | VG | VG | VG |
| 430 | VG | VG | VG |
| Ground floor exterior in courtyard, at rooms 400-422 | VG | NA | NA |

**CATEGORIZATION**

**Dust**

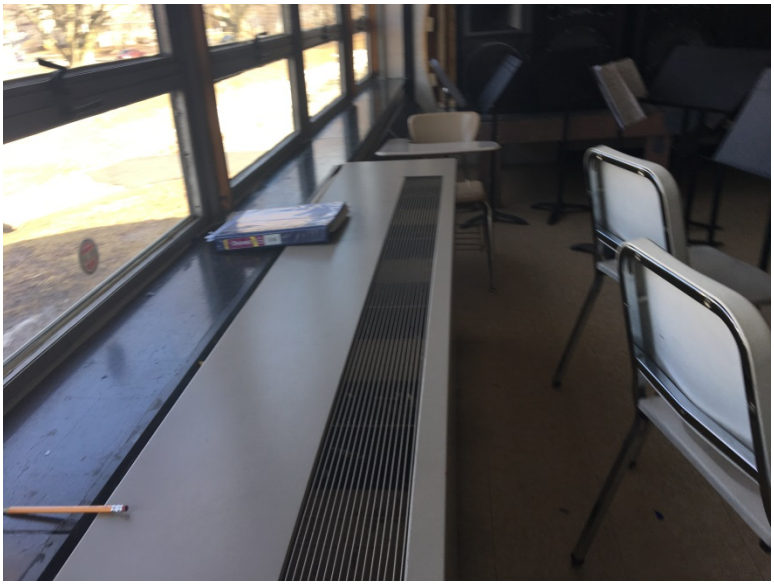
Very good = minimal dust or debris
Some = enough dust to leave a residue on a gloved finger
Moderate = visible accumulations of dust
Significant = thick layer of dust

Some = enough dust to leave a residue on a gloved finger
Moderate = visible accumulations of dust, trace oil leakage
Significant = thick layer of dust, distinct oil leakage

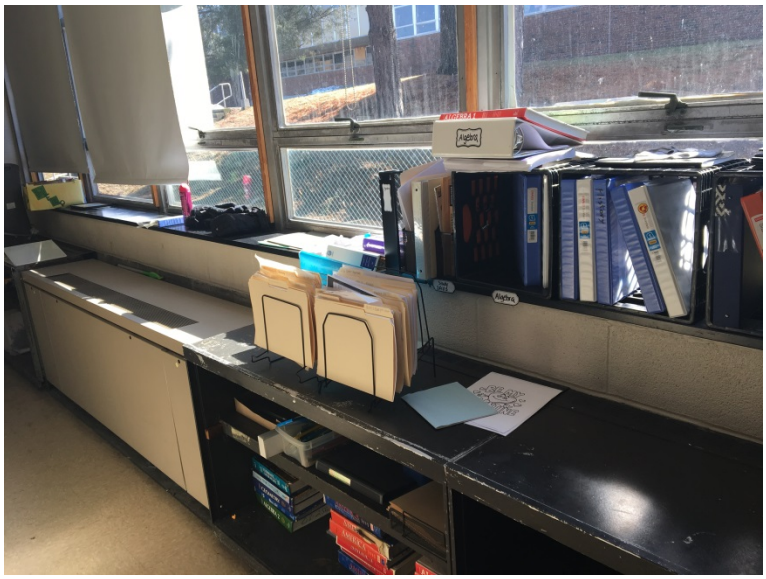
**Caulk**

Very Good = Overcaulking is intact, with no visible debris
Good = Overcaulking is generally intact but for minor patching
Needs repair = Overcaulking missing or damaged

# Site Photographs

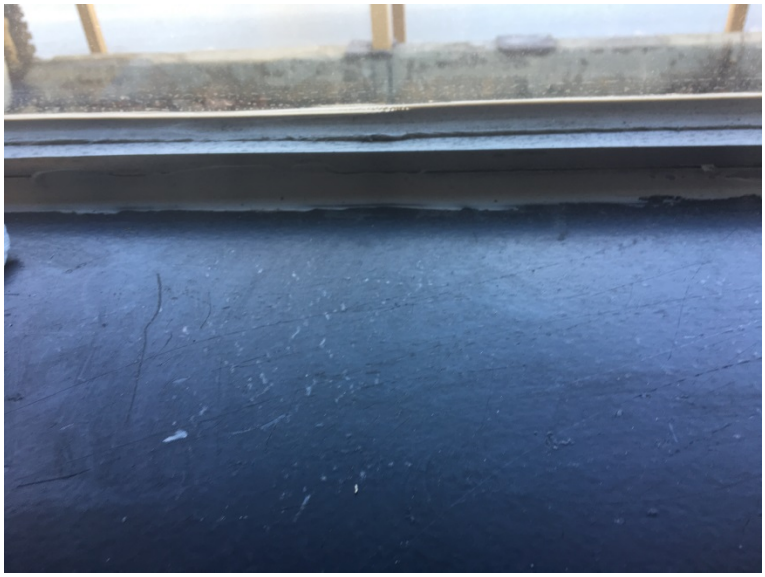


**Photograph 1:** Typical windowsill and Univent, Room 101

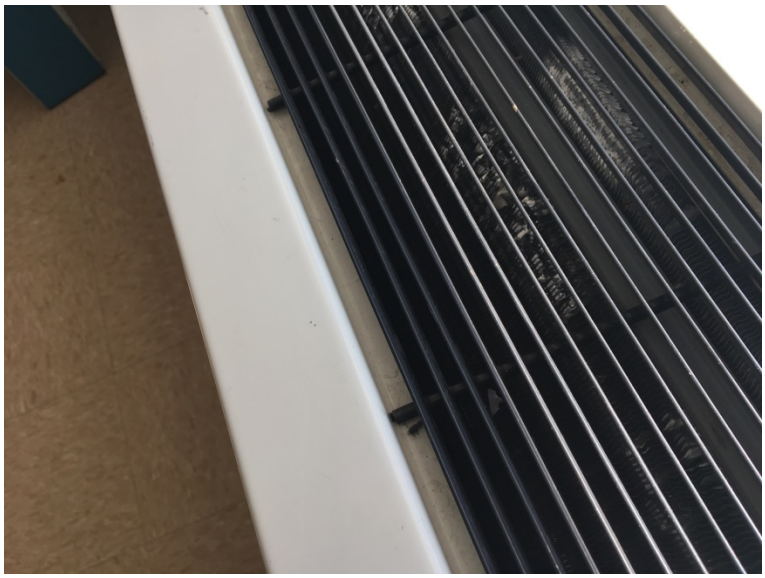


**Photograph 2:** Windowsill used for storage, Room 104

# Site Photographs

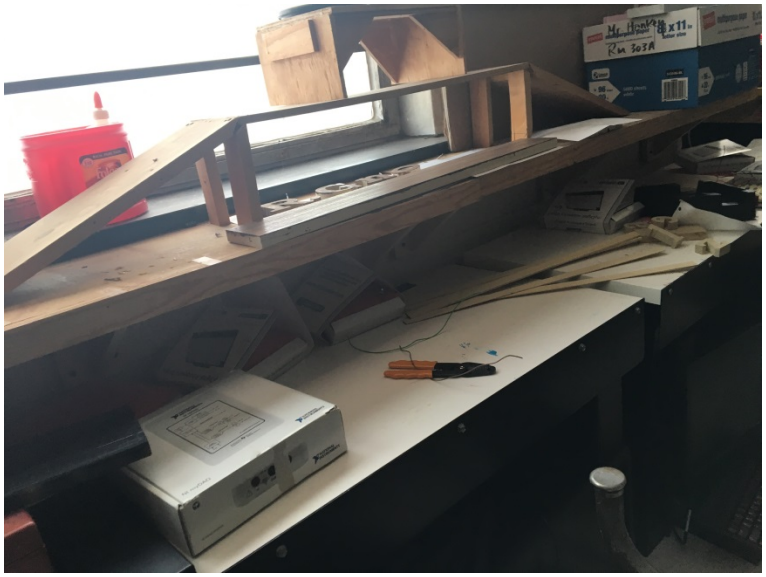


**Photograph 3:** Typical overcaulking

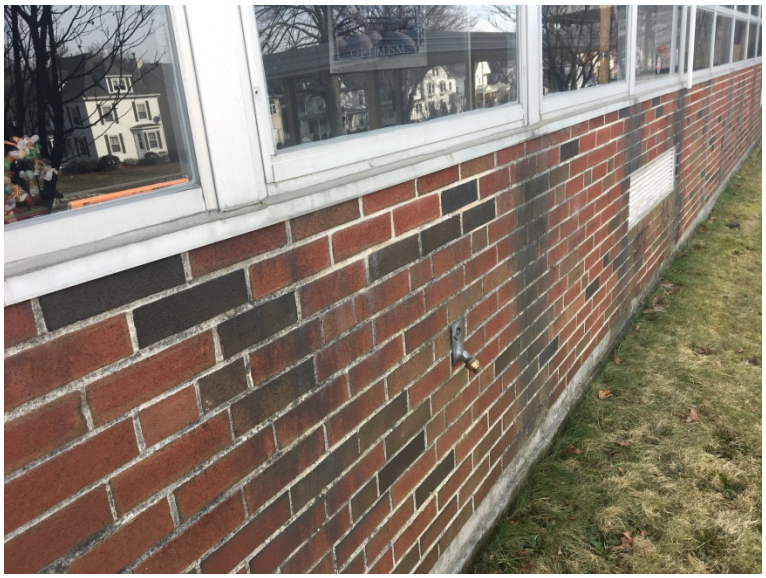


**Photograph 4:** Typical Univent condition. Room 310

# Site Photographs



**Photograph 5:** Engineering classroom



**Photograph 6:** Typical condition of exterior caulk