**Letter from the DPH IAQ Program to Lowell School Superintendent, June 15, 2017**

June 15, 2017

Salah Khelfaoui, Superintendent  
Lowell School District  
155 Merrimack Street  
Lowell, MA 01852

Dear Superintendent Khelfaoui:

Thank you for extending an invitation for an assessment of Lowell High School (LHS) last week. As you likely know, I visited LHS on Thursday, June 8, 2017. The purpose of the visit was to assess the size, scope, and logistics of the LHS building complex prior to the Massachusetts Department of Public Health (DPH)/Indoor Air Quality (IAQ) Program conducting an assessment of the campus. The walkthrough consisted of visual examination of most hallways, a number of classrooms, storage spaces and other locations in the 1922 building, Lord building, Freshmen Academy, and the Field House.

The walkthrough focused on the top and bottom floor hallways and classrooms in each building since, in the experience of the IAQ Program, these locations are more likely susceptible to water damage. IAQ staff observed water-damaged ceiling tiles in a number of areas in the building complex. Ceiling tiles were stained; however, no visible mold or musty odors were observed/detected in any location during the walkthrough.

It is important to note that the US Environmental Protection Agency (US EPA) and the American Conference of Governmental Industrial Hygienists (ACGIH) recommend that porous materials be dried with fans and heating within 24 to 48 hours of becoming wet (US EPA, 2008; ACGIH, 1989). If not dried within this time frame, mold growth may occur. Mold colonized porous materials are difficult to clean and should be removed. It would be advisable to replace water-damaged ceiling tiles throughout the building complex as damage is observed, with the understanding that new ceiling tiles will become wet again if the source of water is not identified and repaired. A system to report water-damaged ceiling tiles should be used at the LPS to identify and document locations where replacement is needed. It would also be advisable that roof and plumbing leaks be repaired to prevent further water damage to building materials.

Based on this walkthrough, the IAQ Program proposes the following plan for assessing the LHS building complex: (1) visit(s) during July 2017 to examine building conditions while the building is unoccupied and (2) visit(s) during October 2017 to conduct air testing when the building is occupied (i.e., under normal operation).

MDPH IAQ staff will return in July to examine each building for water damage, heating, ventilating, and air-conditioning (HVAC) system components, and the presence of possible sources of respiratory irritants. IAQ staff will need access to all occupant areas and mechanical rooms during the assessment. Any findings of concern will be communicated to both Lowell Public Schools (LPS) and Lowell Department of Public Works (LDPW) staff verbally. A detailed, written report of the findings and recommendations of the July assessment will be provided roughly 6 to 8 weeks after the date of the last visit to the building complex.

It is important to note that air sampling will *not* be conducted during the July assessment since the LHS is generally unoccupied during summer vacation. It is necessary for the building complex to be fully occupied in order to conduct air sampling that will produce meaningful results.

MDPH IAQ staff plan to conduct air sampling when the buildings are occupied and the HVAC system is in heating mode (mid-October). In addition to visual observations, measurements of carbon dioxide (CO2), temperature, and relative humidity will be used to assess the adequacy the HVAC system function. To assess whether environmental pollutants that can cause eye, nose, and respiratory system irritation are present, air sampling for carbon monoxide (CO), airborne particles with a diameter of 2.5 micron or less (PM2.5), and total volatile organic compounds (TVOCs) will be conducted. Once air sampling is complete, a report detailing the results will be provided approximately 6 to 8 weeks following the last site visit. Details regarding air sampling and the IAQ assessment process can be found in the IAQ Manual that can be viewed/downloaded at: <http://www.mass.gov/eohhs/gov/departments/dph/programs/environmental-health/exposure-topics/iaq/iaq-manual/>.

It is important to note that the MDPH IAQ Program will *not* conduct mold sampling in the building complex. The IAQ Program does not advise mold sampling in buildings to determine if a water damage issue exists. At this time, studies indicate that mold sampling cannot be used as evidence of health risks from water damage or mold in buildings (CA DPH, 2011; Mendell et al., 2011; WHO, 2009; IOM, 2004). While water damage and the presence of mold has been associated with exacerbation of asthma and/or other respiratory conditions, analysis of airborne, bulk, or wipe samples for the presence or speciation of mold do not reliably predict increased health risks. In general, the most appropriate methods for addressing water damage in buildings are (1) identifying and remediating conditions leading to moisture and water damage inside a building, (2) removing and discarding mold-colonized and water-damaged and/or contaminated porous materials, and (3) removing or cleaning non-porous mold-contaminated materials (MA DPH 2006; US EPA, 2001). Porous items (e.g., gypsum wallboard, ceiling tiles, carpeting, cardboard) cannot be fully cleaned. Nonporous items (e.g., concrete, tile, solid lumber) may be cleaned with an appropriate detergent.

We understand that plans for renovation or replacement of LHS are several years in the future. The recommendations that will be made in our reports will be aimed towards providing guidance for methods and practices that can be used by the LPS and LDPW to maintain indoor environmental conditions in the building complex over the course of the next several years, while the building is occupied in its current configuration and operation.

We will be in contact with your office to schedule and coordinate the July 2017 visit. If you have any questions, please feel free to contact me either by telephone at (617) 624-5757 or by e-mail at [mike.feeney@state.ma.us](mailto:mike.feeney@state.ma.us) (and Cory Holmes at [cory.holmes@state.ma.us](mailto:cory.holmes@state.ma.us)).

Sincerely,

Michael A. Feeney, R.Ph., J.D., C.H.O.  
Director, Indoor Air Quality Program

cc:  Jan Sullivan Acting Director, Bureau of Environmental Health  
Brian J. Martin, Principal, Lowell High School  
Kerran Vigroux, Director, Lowell Health and Human Services  
Shaun Shanahan, Lowell Building Commissioner

**References**

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