

**School/Facility:** Swansfield Elementary

**Location:** Portable Wing Classroom 121, Temporary Planning Area, Conference Room near Kindergarten, and Renovation Work

**Date of IEQ Report Form:** The week teachers returned / Week of August 22, 2016

**Date(s) Investigated:** Internally; week of August 22<sup>nd</sup>, August 24<sup>th</sup>, and September 7<sup>th</sup>  
Externally; August 26<sup>th</sup> and September 1<sup>st</sup>

**Date of Report:** November 14, 2016

**IEQ Concern:**

A few staff expressed general health symptoms (i.e. allergy like, headaches) with possible relation to the school's renovation phase 1 activities.

**IEQ Investigation Process:**

Identify deficiencies that may impact IEQ and/or sources of odor concerns. Typically includes the following depending on the nature of concern, but not limited to:

- interview/questionnaire of concern individual(s)
- inspection above drop ceiling (condition of roof deck, pipe insulation, return air plenum)
- inspection of ventilation system (operation of variable air volume box and outdoor air dampers, check controls, measurements of carbon dioxide, temperature and relative humidity, sources near outdoor air intake, measure return and supply air volume, cleanliness of coils, liner and condensate pan)
- inspection of exterior
- inspection below drop ceiling (housekeeping, sink and floor drain traps, signs of past and present moisture concern via visual and/or moisture meter, mold growth, ensure connection of current and capping of abandoned sanitary vents, odorizers, excessive plants and fabric items, identify potential pathways, and measure volatile organic compounds, carbon monoxide, and lighting)

**Findings:**

- See attached ARIA Environmental Inc. report.
- The outdoor air dampers to both HVAC units serving portable wing classroom 121 were not functional.
- The temporary planning area contained a plug-in air freshener.
- The temporary planning area had a pipe protruding the exterior wall with an air gap surrounding the pipe.
- The return air grille (located in ceiling of temporary health suite) for the temporary planning area was obstructed with particulate build-up.
- HVAC roof top unit (RTU) #1 had ice buildup on coils.
- The outdoor air dampers of RTUs #1, 7, and 8 appeared closed.
- RTUs #12 and 14 were not operating.

- Phase 1 renovation area was under positive air pressure (potential for particulate to be forced out from work area into hallways). The cafeteria was under strong negative pressure (drawing hallway air into the cafeteria).
- Phase 1 work area contained several entry points from the hallways connected to occupied areas.

**Corrective Actions (per current work orders):**

- Actuators, stat, and/or relays were replaced in order for outdoor air dampers to optimally function in the RTUs. The outdoor air dampers to the HVAC units serving portable classroom 121 were addressed by unpinning the manual louver damper and understanding the other unit consists of a dehumidifier which keeps the dampers closed when mechanically cooling the air.
- The plug-in air freshener was removed.
- Deficiencies identified in the temporary planning area, currently under renovation, will be addressed during the renovation.
- Refrigerant was added in RTU #1.
- RTUS #12 and 14 were impacted by the renovation and were turn back on.
- Future renovation phases will be better isolated from occupied areas based on the layout eliminating or significantly minimizing a passage way(s) between work and non-work areas.