

School/Facility: Pointers Run Elementary
Location: Front Office Area and Teachers' Lounge
Date of IEQ Report Form: March 22, 2017
Date(s) Investigated: April 5, 24, and 27, 2017
Date of Report: June 2, 2017

IEQ Concern:

Front office personnel expressed experiencing general health symptoms.

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:

- Custodial staff changed cleaning the front office area from in the evenings to the mornings before the start of school.
- Visible mold growth was reported in the teachers' lounge on the drywall beside a refrigerator and on the sides of a vending machine and refrigerators that were side by side to one another. The growth was a result of condensate due to lack of air space, thermal surface differentials, and/or ambient air conditions. This may have been influenced during indoor relative humidity issues experienced the start of the 2015/2016 school year.
- A supply air diffuser in Planning Room 2 had rust like stains.
- The areas behind desks and furniture along a wall in the front office area had heavy dust buildup.
- A small desk top fan was observed on a front office desk, but was not blowing across a potential allergen source (i.e. plants, dusty surface).
- The sound liner (pressed fiberglass coated with a paper primary barrier) within the air handling unit serving the areas of concern is in need of attention. The primary paper / blanket layer is peeling off in strips.

- The outdoor air dampers of the air handling unit appeared to be closed.
- The penthouse housing the ventilation equipment had one of two floor drain traps dried out. Dried traps may allow for sewer like gases to backflow.
- Mold growth was observed on drywall behind file cabinets within a storage closet across from the RECC area. Front office personnel may have to enter to access records / files.
- The planning room(s) is receiving the proper air volume which would satisfy comfort (i.e. body odors, stuffiness) of an occupancy of two. Personnel indicated meetings may be held after school with at least five people. Comfort may be further influenced if the room is used after one hour of the school day since the ventilation system is to shut down at that time.

Corrective Actions:

- School administration is to inform school custodial staff to revert back to cleaning the front office during the evenings to see if that improves symptoms.
- The mold growth on the drywall within the teachers' lounge was removed by a restoration contractor over spring break.
- The mold impacted sides of the vending machine and refrigerators were cleaned/disinfected by the Office of the Environment at the time of finding.
- School administration is to provide refrigerators and vending machines with the manufacturer's recommended spacing between walls and other appliances which is typically four inches.
- Building Services addressed the rust stained supply air diffuser, by sanding, priming, and painting since it was an obsolete duct size and would have taken considerable effort to convert to a more common size duct. The diffuser appears to be original and impacted at one time by possible thermal surface differential causing condensate. Building Services insulated the top side of the diffuser with fiberglass.
- School administration is to inform custodial staff to move furniture within the front office reception area to allow access to thoroughly clean (i.e. exposed furniture surfaces, cables/wires, and carpeting) behind these areas. This should be scheduled over summer break.
- Building Services is working to determine the best solution to the failing primary layer of the sound liner within the air handling unit. This would also apply to other air handling units of the same age and design within the school. A date of temporary and/or permanent repair is not able to be provided at this time. Building Services will notify of resolution and schedule.
- Building Services observed the outdoor air damper of the air handling unit to be slightly open. The pneumatic signal limiter was adjusted to allow the outdoor air damper to open more. At that time, Building Services also noticed that the air handling unit was not taking in penthouse plenum air as it should, but instead was using ducted return air from the administration area. This should only occur when the administration area is being cooled by a dedicated refrigerant cooling unit for that area when the chiller water is not being operated (i.e. seasonal transitions). The finding was rectified by tracing control lines, checking control prints, and switching controls.

- School administration is to inform custodial staff to pour water (~5 gallons) down the floor drains within the penthouses on a monthly basis to prevent them from drying out.
- The mold in the storage closet across from the RECC was addressed by a restoration contractor. The cause was thought to be a past leak from kitchen area on opposite side and/or thermal differentials of the wall (file cabinets tight against wall while refrigerator was on the other side of the wall). The school is to periodically monitor using the IEQ walk through inspection as a minimum. The file cabinets need to be relocated to side of storage with cement block wall.