

ILALKO ELEMENTARY SCHOOL HVAC System Assessment



Completed for:



February 23, 2021

Site Visits, Analysis & Report by:
Metrix Engineers
Eric Nordlund, Principal, PE, LEED AP



SCOPE

Metrix Engineers was hired to perform an assessment of the existing heating, ventilation and air conditioning systems at the Ilalko Elementary School site in Auburn School District. The goal of the assessment was to provide an executive summary level of detail regarding the type and condition of the existing mechanical systems, determine if the systems are operating in compliance with their original design intent, and identify any areas of improvement based on site observations.

The existing facility is a single-story building of approximately 52,000 square feet and is laid out with a wing containing the admin, gym and library at the front of the built with three classroom wings off the sides and back. The facility was originally constructed in 1992 and had a controls replacement project completed in 2014.

A site walk was conducted on February 17, 2021 to review the existing mechanical systems. This report summarizes Metrix observations based on that visit.

EXECUTIVE SUMMARY

The existing building appears to be operating per its original design intent. Generally speaking, no major operating points of concern were observed.

There were some spaces that have been modified or have existing space ventilation concern as noted in the Observations section below.

EXISTING SYSTEM OBSERVATIONS

HVAC:

The central hot water plant design consisted of two 2630 MBH gas-fired Burnham boilers, two hydronic pumps, air separator and expansion tank located in the boiler room.

Heating, ventilation and air conditioning to Admin, kindergarten and music spaces are served by central variable air handling units with DX cooling and individual zone fan powered variable air volume (VAV) units with hot water reheat coils. Classroom spaces are served central variable air handling units and individual zone fan powered variable air volume (VAV) units with hot water reheat coils. The gym and kitchen are both conditioned and ventilated by dedicated air handling units with heating-water coils. The library is conditioned and ventilated by a dedicated air handling unit with heating-water coil and DX cooling coil. The air handling units and VAV's are located in a mezzanine that spans the entire building attic space along each of the four wings. Central toilet rooms are served by exhaust fans located in mezzanines, and small toilet rooms are served by ceiling mounted exhaust fans. Portables are served by exterior wall-mounted heat pumps.

A spot check of the internals of various HVAC system components was completed during the site visit. Systems scheduled on at the time of the site visit were verified operational and all equipment appeared well maintained.

All classroom systems and spaces appeared to be meeting or exceeding designed outdoor airflow ventilation rates. There are a couple office or converted office spaces that do not have any supply or ventilation air.

- Gym office does not have any supply air.

Note 1



- The Gym storage room has a desk set up like an office and does not have any supply air. Note 2
- Room 124 was originally designed as a storage room, but has been converted to an office. There appears to be adequate ventilation for an office.
- Actuator at AHU-4 mixing dampers appeared loose on the damper shaft. Recommend tightening and confirming correct damper positions. Note 3

Controls:

Building automation system controls are provided by an Alerton Envision direct digital control system. No major points of concern were observed.

A review of the Building Automation System and outside air damper setpoints was conducted and all systems and spaces appear to be meeting or exceeding design outdoor airflow ventilation rates.

During control system review no space temperature deficiencies were identified.





Ilalko Elementary
 HVAC System Assessment Notes

Note	Additional Notes		Estimated Completion Date	Final Completion Date
1		Verify outside air pathway.	3/5/21	3/3/21
	1.1	Provide recommendation to space occupant to open door to gym during occupancy.	3/5/21 In person Goodspeed	3/5/21
2		Verify outside air pathway.	3/5/21	3/3/21
	2.1	Provide recommendation to space occupant to open door to gym during occupancy.	3/5/21 email McBane	3/5/21
3		Work order to repair and commission damper. WO 1-358454	3/10/21	3/23/21

Revision Date 3/23/21