

WASHINGTON ELEMENTARY SCHOOL HVAC System Assessment



Completed for:



March 4, 2021

Site Visits, Analysis & Report by:
Metrix Engineers
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SCOPE

Metrix Engineers was hired to perform an assessment of the existing heating, ventilation and air conditioning systems at the Washington 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 43285 square feet, split between a gym building and the main building. The facility was originally constructed in 1971, had a main building HVAC replacement in 1998, and a gym HVAC replacement in 2013. There are 7 additional portable buildings (hereafter referred to as portables) on site.

A site walk was conducted on February 19, 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:

All observed equipment is original to the facility's HVAC upgrade, performed in 1998 for the main building and 2013 for the gym.

Heating, ventilation, and air conditioning to classroom spaces and the administration are served by a VAV system, with an air handler serving each wing located in mechanical rooms at the exterior of each wing. The air handlers are coupled with roof mounted heat pumps. The VAV boxes are located above ceilings, typically above the space it serves, and have an electric heating coil.

Heating, ventilation, and air conditioning to the library and corridor are served by a packaged rooftop heat pump.

Heating, ventilation, and air conditioning to the gym are served by a packaged rooftop heat pump. The classrooms in the gym building are served by an air handler, coupled with a heat pump.

All systems and spaces appeared to be meeting or exceeding designed outdoor airflow ventilation rates. There are a few spaces noted below that Metrix noted as differing from the original design intent:

- There is a desk located in the kitchen corridor, next to Custodial 114A. Given the exhaust, makeup, and transfer air requirements for the space, this area appears acceptable for single occupancy use.
- Electrical 113 has a desk, but the VAV serving the room appears to supply adequate outdoor ventilation air for the space for single occupancy use.
- Storage 203 has been converted to a dual-occupancy office space. Supply and return ductwork serving this space appear to deliver adequate outdoor ventilation air for the space.



- Storage 301 has been converted to a dual-occupancy office space. Transfer air is supplied to the space from a neighboring classroom.
- Storage 116B has been converted to a dual-occupancy office space. Supply and return ductwork serving this space appear to deliver adequate outdoor ventilation air for the space.
- Kitchenette 504 does not have any outdoor ventilation airflow provided as originally designed.
- PE Office 508 does not have any outdoor ventilation airflow provided as originally designed. Transfer air and exhaust air appears adequate for single occupancy use.

There are 7 portables located on site. All of the portables have sidewall packaged heat pump units, and these spaces appear to be meeting or exceeding designed outdoor airflow ventilation rates.

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, one space temperature deficiency was identified in the Gym. The space was calling for heating but the supply air temperature off HP-03 was maintaining 55F which infers the heat pump was not operating.

Note 1





Washington Elementary
HVAC System Assessment Notes

Note	Additional Notes		Estimated Completion Date	Final Completion Date
1		Submit work request	3/10/21	3/10/21
		WO 1-358652	3/19/21	3/26/21

Revision Date 3/26/21