NORTH SLOPE
BOROUGH SCHOOL DISTRICT

Striving For Excellence

WAINWRIGHT
AREAWIDE MECHANICAL AND ELECTRICAL
BUILDING ASSESSMENT AND INVENTORY SURVEY REPORT

August 19, 2024

Prepared by:

RSA Engineering, Inc.
MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS
670 W Fireweed Lane Suite 200, Anchorage, AK 99503 / 907-276-0521

This page intentionally left blank.

TABLE OF CONTENTS

This page intentionally left blank.

SECTION 1. INTRODUCTION

A. OVERVIEW

This report provides an area wide condition survey of the mechanical and electrical systems of the buildings owned by the North Slope Borough School District in Wainwright. The purpose of the survey was to develop a plan to prioritize and address the issues with the mechanical and electrical systems as money is available. The assessment was performed by a survey team composed of representatives from RSA Engineering Inc. and the NSBSD. The survey included a walk-through of each building to evaluate condition of the existing mechanical and electrical systems. The survey was non-destructive, issues noted in this report were visible during the building walk-through or reported by NSBSD staff. During the walk-through the survey team met with NSBSD staff to discuss issues at the buildings and proceeded to assess the project area to develop recommended upgrades for the facility.

Team Member	Title
Dustin McCleskey, P.E.	Project Mechanical Engineer
Steven Bassler, P.E.	Senior Electrical Engineer

B. BUILDING SUMMARY

The below table includes a list of buildings inspected in this survey:

Table 1: Buildings Surveyed

Village	Building Name
Wainwright	Alak K-12 School

C. REFERENCED CODES AND STANDARDS

The buildings were inspected for conformance of the following adopted codes and standards:

International Existing Building Code 2021
International Mechanical Code 2021
International Fire Code 2021
International Fuel Code 2021
Uniform Plumbing Code 2021
National Electrical Code 2020
ASHRAE 62.1-2019 – Ventilation & Acceptable Indoor Air Quality.
National Fire Alarm Code (NFPA 72), 2019
ADA Standards for Accessible Design 2010
ANSI A117.1 2017: Accessible and Usable Buildings and Facilities
Illuminating Engineering Society (IES) Lighting Standards, latest published version

SECTION 2. SURVEY RESULTS

ALAK K-12 SCHOOL

Note that 2017 reports are included in regular text and updates from 2024 site visits are found in bold italic after each section.

Mechanical Systems

Overview

The school was visited on May 13, 2024, to review the condition of the mechanical systems that were inspected in 2017. The school in its current configuration was constructed in 1990. There have been numerous addition and renovation projects over time, but existing plans do not give clear dates and scope for this work. Overall the mechanical equipment is in fair to poor condition. The school has been well maintained but standard wear and tear as well. the harsh environmental conditions have taken their toll.

Plumbing

Domestic water and sanitary sewer service is provided to the school by the city utility. The building does not have a storm drainage system.

The condition of the plumbing piping is fair to poor. All of the piping is believed to be at least 27 years old, though some of it is likely older. A reasonable service life for plumbing piping is about 30 years. The waste piping is a combination of cast iron and plastic (ABS and/or PVC) and drains to two sewage lift stations in the building crawlspace. Cast iron pipe is failing and being replaced as needed, particularly in the elementary school area. The lift stations are at the end of their service life and prone to failure. One lift station in particular vibrates considerably, which may be contributing to the cast iron pipe failure. Both lift station rooms lack code required ventilation and construction. Domestic water piping is primarily copper and appears to be in fair condition though lacking insulation in some locations. It is likely that the existing soldered joints to not meet current code requirements for low lead content.

The plumbing fixtures vary in condition from fair to poor. The visible condition of many fixtures is good, but trim is not performing sufficiently and failing, and many fixtures and trim are coming loose from their mounting bases. There is also a mix of different makes and models of equipment as well as some lavatories with manual activation and some with automatic, which complicates and adds cost to maintenance. It is also important to note that the existing fixtures consume more water per use than contemporary fixtures, which would reduce water use and wastewater treatment if updated.

Plumbing equipment in the commercial kitchen is in fair condition and warrants replacement due to age and installations that do not meet current code. Food preparation sinks require indirect drainage with airgaps, which are not present. The pre-rise garbage disposal is indirectly drained but requires a direct

connection to the building sewer system. The existing 3-bin sink grease interceptor needs replaced due to grease build-up over time.

Domestic hot water is provided by three hot water generators – two in the high school boiler room and one in the elementary school mechanical room – that are in fair condition. They are not seismically braced, their pipe connections are leaking, and they are each a different capacity, make and model. The elementary school unit has a thermostatic mixing valve, but the high school ones do not, creating a potential for scalding.

Emergency shower and eyewash fixtures in the pool mechanical room, metal shop and vehicle maintenance building do not meet code requirements. They are generally lacking tempering valves, sufficient placards, activating levers, and are obstructed.

The condition of the fuel oil system is fair. No leaks were observed but piping is almost 30 years old, if not older, and the outside piping is corroding. The fuel oil storage tank appears to be single wall with an integral containment dike. Tank trim and placards do not meet current code requirements and the access ladder appears to have been hit and deformed. The supply piping from the tank to the school is bent as well. Access to the tank is poor for fueling and maintenance activities. The fuel oil day tank in the boiler room appears to be in fair condition but is at the end of its reasonable service life. The entire fuel oil system warrants replacement with a new UL-142 above ground double wall tank, new distribution piping and new day tank.

The building has a swimming pool that outwardly appears to be in good shape but has outdated and failing equipment that needs replaced. The underside of the pool enclosure is rusty and has pipes that are leaking. The main circulation pump is also leaking, and the chemical mixing equipment is not functioning properly. The heat exchanger appears to be relatively new but connected piping is corroding and leaking and none of the pipe is insulated. Also, due to lack of dehumidification pipe throughout the pool equipment area is corroding.

Photo M1 – East Lift Station

Photo M2 – West Lift Station

Photo M3 – Leaking and Corrosion Under Pool

Photo M4 – Leaking Pool Circulation Pump

Photo M5 and Photo M6 – Exterior Fuel Oil Storage Tank

2024 Update

There are no changes to the plumbing system report.

Heating

The heating system is located in the high school portion of the building and consists of three fuel oil cast iron boilers, each rated at 1,084,000 BTU/hr gross output each. The boilers were installed in 1990. The boilers are in poor condition. Only one was operating at the time of the site visit and is running rough and corrosion was observed on the flues. The boilers are piped in a primary only system with two sets of system pumps piped in parallel for redundancy. The building heating pumps are constant volume and are leaking at flange seals. There are pumps in the boiler room as well as in the elementary school mechanical room. The piping as configured does not ensure even flow to each boiler and it does not provide minimum return water protection or minimum flow to the boilers. The piping configuration can lead to condensation of flue gases due low temperature, overheating of glycol solution and uneven system

heating as each boiler receives part of the flow regardless of boiler operation. The piping system should be replaced with a primary/secondary pumping system with variable flow secondary pumps. The primary/secondary pumping system would ensure adequate flow to each boiler, allow control system to flow water only through operating boiler and would provide energy savings with the variable speed secondary pumps. The variable speed secondary pumps would operate to match actual system demand, saving energy and improving overall system performance. Supporting equipment such as expansion tanks, air separators, glycol storage/fill tanks, and other similar equipment also be replaced. A boiler emergency shutdown switch needs to be installed per code.

The heating system is an inhibited propylene glycol-based system with propylene mixed on site with water to the desired concentration. The piping in the boiler room consists of steel and copper piping. The piping was observed leaking at joints at a number of places throughout the building including mechanical rooms and crawlspaces. It is likely a combination of age and boilers overheating the glycol, causing it to become acidic and corrode piping and seals. It is recommended that all of the heating piping be replaced.

Terminal heating equipment in the building includes fintube baseboard with enclosures, cabinet unit heaters, and unit heaters. The equipment is generally in good condition, but a number of baseboard enclosures are damaged and falling off, cabinet unit heaters have light damage and unit heaters are leaking at pipe connections. Also given that the heating glycol likely has some acidity to it the heating equipment is likely to be corroding. For these reasons in addition to age it is recommended that all of the terminal heating equipment be replaced.

Photo M7 – Failed Boiler

Photo M8 – Typical High School Heating Pumps

Photo M9 – Typical Elementary School Heating Pumps

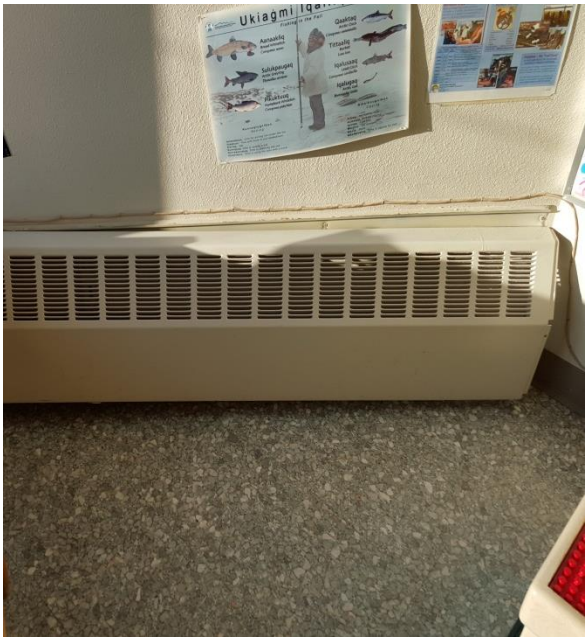

Photo M10 – Fintube Enclosure Falling Off Wall

Photo M11 – Old Unit Heater

2024 Update

There are no changes to the heating system report. Glycol has continued to leak at valves of main circulation pumps in the elementary wing causing significant corrosion damage.

Photo M12 – Glycol Leak at Elementary school circulation pumps

Ventilation

Ventilation for the school is provided by a number of air handlers and associated exhaust fan, relief fans and relief openings. The elementary school is served by two air handlers, one distributing air from the ceiling of a few classrooms on the east, and the other distributing air from the floor in the remaining rooms. For both units the air is ducted directly from the spaces back to the air handler. Relief air appears to be removed by the restroom central exhaust fan. Ventilation for the high school is provided by three central air handlers, with relief provided by two propeller fans numerous exhaust fans. The commercial kitchen has a dedicated air handler, located in the boiler room, for make-up air to the Type 1 cooking hood. The kitchen storage room has a dedicated air handler with gravity relief for cooling the refrigerator condensing units. The boiler room has a cooling-only air handler. All air handlers have mixing boxes, filters, and heating coils. All of the units are functional but in poor condition. Coils are leaking, casings are beat up, fans are noisy, the high school units have wood mounting bases, access to many units is poor, and moving parts such as motors, bearings and dampers are assumed to be near failure. All air handlers should be replaced with new. Since current code required ventilation rates are higher than they were in

1990 the new air handlers will have to be sized to accommodate current requirements. There were some spaces currently without ventilation such as the kitchen office and vocational education office. All occupied spaces will need to be provided with ventilation. Existing ductwork, diffusers and grilles are in good condition and could be cleaned and reused. Exhaust and relief fans also warrant replacement due to age and numerous small exhaust fans observed no longer working. In addition to, or as a result of these deficiencies the relative space pressures vary dramatically. All air handling systems in the building need to be rebalanced.

The school kitchen Type 1 hood has a roof mounted exhaust fan that also needs replaced. The Type 1 hood appears to be in good condition and could remain, though the Ansul fire suppression system in the hood would need to be checked against current code requirements. The kitchen has a commercial dishwasher that does not have a code required steam and heat exhaust hood and fan. This will need to be added or the dishwasher replaced with a unit that does not require a hood.

The wood shop is served by an air handler that serves other portions of the high school but should have a dedicated air handler due to odors and dust. This would also allow the space to only be ventilated when in use, which will help conserve energy. The space should also be provided with a dedicated dust collector ducted to each piece of machinery. There are currently a few portable dust collection units that should be removed.

The metal shop should also have a dedicated air handler for reasons similar to the wood shop. The metal shop currently has four welding hoods connected to an exhaust fan. The equipment appears to be in good condition, but the fan should be replaced due to excessive wear and tear that weld exhaust fans experience. The weld hoods and ductwork should be cleaned and remain.

The pool deck, the space below the pool deck and the pool equipment room are not sufficiently ventilated. Humidity levels are noticeably high as noted by the feel of the air as well as corrosion on equipment. In addition to the observed effects, it is likely that condensation is occurring in the walls and roof, which will ruin them, though neither gave indications of containing moisture. The pool deck has a dedicated air handler, but it is lacking a dehumidification unit, which is present at other school pools in the district. Reducing the humidity level on the pool deck will help reduce levels below the deck and in the pool mechanical room as well, but each of those spaces should also have dedicated ventilation fans to address humidity.

The combustion air system for the boilers is a large opening in the floor covered with a grate that appears to be large enough to serve the boiler plant.

As noted in the plumbing description the two lift station rooms in the building are not provided with ventilation, which is required by code.

The vehicle maintenance building next to the school has a backup generator with ductwork and mixing dampers. The dampers are old and warrant replacement as well as the related controls. The vehicle building itself requires ventilation due to vehicles operating within. A carbon monoxide (CO) and nitrogen dioxide (NO2) detection system should be installed along with a ventilation system to provide air changes when equipment operates indoors. This is a life/safety issue.

Photo M12 – Typical High School Air Handler

Photo M13 – Elementary School Air Handler

2024 Update

There are no changes to the ventilation system report.

HVAC Controls System

The control system utilized throughout the building is a combination of pneumatic with some Johnson Controls MetaSys controllers. The pneumatic equipment appears to be in decent condition including tubing and air compressor. The MetaSys controllers are in poor condition. Building control is insufficient. Time clocks are not set correctly. Heating in the building is inconsistent. Many of the space temperature control devices have failed. Given the age of the system the costs of maintaining it will continue to increase due to equipment failure and scarcity of replacement parts. The existing control system should be replaced with a contemporary BACnet based direct digital control (DDC) system for proper environmental control, failure notifications and energy management.

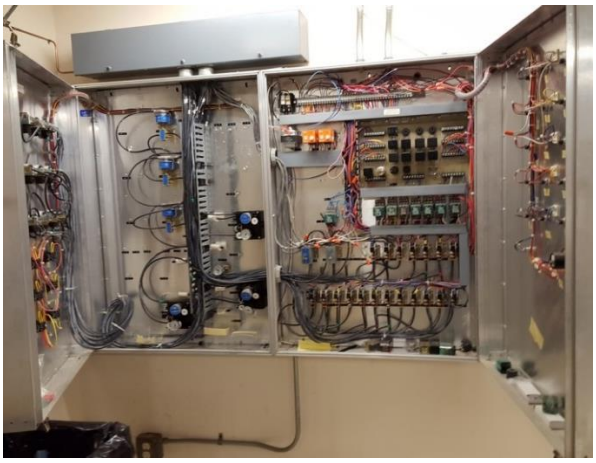

Photo M14 – Typical Pneumatic Control Panel

Photo M15 – Typ. MetaSys Controllers

2024 Update

There are no changes to the HVAC Controls system report.

Fire Protection

The fire protection system is a NFPA 13 wet sprinkler system tied into the village water utility on the northeast end of the school. At one time the high school and elementary school appear to have been served by separate water sources but were combined into one some time ago. The sprinkler system is served by a water service entrance from the vehicle maintenance building on the northeast end of the school, with a double check valve assembly in the crawlspace of that building. However there appears to be a second double check valve assembly in the pool mechanical room. We do not currently have sprinkler plans of the building, so it is unclear exactly how the system is set up. Overall the system appears to be in good condition. No leaks were observed but piping in the pool mechanic. room is lightly corroded due to moisture. It is recommended that the double check valve in the pool room be removed, if possible, to reduce pressure drop in the system, remove a potential point of failure, and reduce maintenance. An abandoned pump controller remains in the pool mechanical room from a long-demolished fire pump and should be removed to provide more space in the room.

Photo M16 – Vehicle Maint. Double Check Valve

Photo M17 – Pool Mech. Double Check Valve

2024 Update

There are no changes to the plumbing system report.

Electrical Systems

2024 Overview

The site was visited on May 13TH, 2024 to inspect the electrical systems for the school. The overall condition of the school was fair for its aging components, the school has been well taken care of.

Power

The school electrical power service is supplied by the utility from a 750kVA pad-mounted transformer located on the Northeast side of the school to the service entrance equipment on the East side *(Photo E2)*. The service is fed from below the building to an interior switchgear which houses the 1,200A, 480V, 3p disconnect located in the maintenance building on the east side of School. *(Photo E2)*. The main feeder was then routed into a 1,200A, 480V, 4p Automatic Transfer Switch adjacent to the service entrance switch gear. The transfer switch serves a 1,200A, 277/480V, 3p, 4W switchboard 'MDPU' located on the adjacent wall and is fed from a 310kW generator. The 'MDPU' is a Square D QED switchboard. From the 'MDPU' a feeder is routed out of the maintenance building and through the school to an 800A 277/480V, 3p switchboard 'MDPHH' located in the second-floor mechanical room. This panel feeds all 277/480V loads, but also feeds a 300kVA transformer that steps the voltage down to a 1000A,120/208V,3p switchboard 'MDPHL'. The distribution section serves all of the normal power panelboards located throughout the facility and has spare capacity for additional breakers.

Photo E1 – Utility Service Entrance

Photo E2– Service Entrance Switchgear

Backup Power: The entire school is provided with standby power via a 310kW,480V, 3ph, 4W diesel-fired engine generator set – Caterpillar #3408. The generator was original to the building and is in average condition.

2024 Power Update

The power system is largely unchanged from the previous inspection. Panels appear to be in good condition throughout with about 70% of them being original panels and 30% being newer panels that were installed around 1997. Panel schedule appeared to be accurate, and all panels have spare parts readily available. Panel EA has a black water line in its NEC working clearance, see photo E3. This is a

code violation and was a code violation when installed. The generator was manufactured in 1984 and is now 40 years old. With the age and of this generator and the criticality of its applications in Wainwright it would be recommended that it is replaced in the near future.

Photo E3– Panel 'EA' Code violation

Wiring Devices and Cabling Systems

The typical branch wiring system in the facility consists of ½" electrical metallic conduit with copper building wire with conduit used as ground path.

The wiring devices in the facility consisted of ivory Nema 5-20R receptacles and 20A, 120V light switches with stainless steel wallplates *(Photo E4)*. In general, the receptacles were in good condition despite the age of the facility. Classrooms have surface raceway, usually above counters, with receptacles, those in general were in OK condition. The kitchen seemed to be lacking receptacles, most of them were taken up by kitchen equipment.

2024 Wiring Devices and Cabling Systems Update

The wiring devices and cabling systems in the building are largely unchanged from the previous inspection. Receptacles appear to still be in fair condition. Wire mold and wiring appeared to still be in OK condition (*Photo E5)*

Photo E4 – Typical Receptacle

Photo E5 – Typical Wiremold

Lighting

In general, the school was illuminated with T8 lamps and recessed incandescent fixtures inside the building and with High Pressure Sodium luminaires outside the building *(Photo E4)*. The interior fixtures were in average to good shape. The exterior fixtures are dated but still functional, a lighting upgrade would be needed within a few years. The lighting in the utilidor need to be replaced, due to them being damaged, old, and not maintained. Pool lights were LPS and very old and outdated. Light levels in the pool were very poor and took 15 minutes to reach full brightness.

Most of the classrooms were illuminated with 3-lamp T8 pendant/surface-mounted lights with inboard/outboard switching. *(Photo E5)*

The gymnasium was illuminated old HPS and T8 fluorescent strip fixtures. Lighting levels were OK.

Lighting levels were good in the cafeteria. The fixtures are old and outdated HPS with strip type fixtures.

Most of the emergency lights tested were still working, but past their useful life. The exit signs were self-luminescent or nuke type which are expired.

The corridor lighting was controlled by the lighting panel circuit breakers, which was located on the second floor, which was very inconvenient. The East entry of the school had some previous water leakage that ruined the ceiling around the recessed can lights.

2024 Lighting Update

Lighting in the building appears largely unchanged from the previous inspection with the exception of led bulbs that have been provided for the existing high bay lights in the gym and cafeteria.

The existing lighting throughout the building is in poor condition which many broken fixtures or fixtures missing components. See (*Photo E6*) for a typical classroom light with missing lenses. The lighting has continued to deteriorate since the last inspection and is nearing end of useful life. It would be recommended that this school undergoes a lighting upgrade to new, energy efficient LED lighting.

Virtually every emergency light was non-operational when tested and there is still a large amount of self-luminescent or nuke type signs which are expired.

Exterior lighting was utilizing HPS bulbs and appeared to be always on even when it was the middle of the day (*Photo E7).* For energy savings it would be recommended to upgrade the fixtures to LED and provide controls that turn off lighting when illuminate it is not needed.

General lighting control is achieved with manual snap switches which are in OK condition. It would be recommended that automatic lighting control be provided for energy savings.

Photo E6– Typical Classroom lighting

Photo E7 – Exterior Entry Lighting

Telecommunication Systems

The building is fed from the utility by an overhead drop from the North side of the school down underneath the building to the main Telephone Terminal Board located on the second floor in the

mechanical room. From punchdown blocks at the TTB copper is terminated to patch panels located in an adjacent rack.

The telecommunications system cabling generally consists of category 5 cabling run in conduit or surface raceways to surface or recess mounted computer jacks. There are two 7ft tall racks in the second-floor mechanical room that contain telecommunication patch panels and network equipment for most of the facility. *(Photo E6)* There is a 7ft tall rack on the first floor, Electrical room in the East wing of the school. There are also some newer POE switches that serve Wireless Access Points with Category 5e cabling located throughout the school for a wireless network system.

There are very few network drops in the facility. There are approximately 3 drops with 2 Cat 5 cables each (6 total) per classroom. *(Photo E7)*

2024 Telecommunications System Update

The Telecommunication System is largely unchanged from the previous inspection. The organization of the main data rack is poor and could be reconfigured in a more workman-line manner.

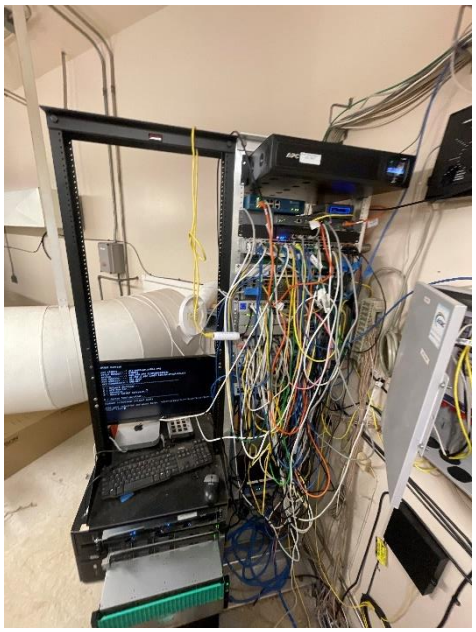

Photo E8– Telecommunication Equipment

Photo E7– Typical Classroom Data Jacks

Fire Alarm System

The fire alarm system consists of an addressable Class 'B' fire alarm System. The Fire Alarm Control Panel 'FACP' is located in the Admin area *(Photo E8)*. The fire initiating devices consist of pull stations at the

exits, smoke detectors throughout the building, heat detectors in the mechanical and kitchen areas, duct smoke detectors on the air handlers, beam type smoke detectors in the gym, kitchen hood suppression system, and sprinkler flow/tamper switches. The signaling devices consist of fire alarm horn/strobe devices in the corridors, classrooms, and public spaces and an alarm dialer. Located in the main entry is an Annunciator and Zone panel, which were in average shape. The system as installed appeared to meet current NFPA 72 and ADA guidelines.

The only problem is that the fire alarm panel is 15+ years old and is approaching the end of its useful life and soon the maintenance staff will have difficulty finding parts. The fire alarm panel always has an error, even after troubleshooting the panel, the problem never goes away.

2024 Fire Alarm System Update

The fire alarm system has been upgraded since the last inspection. The new system is a Notifier by Honeywell. The new system consists of a new FACP, annunciator panel, booster panels, notification devices and signaling devices in existing locations. It was noticed on site that the FACP was indicating two alarm modes: Supervisory and System Trouble. This indicates an error with a component that is monitored by the FACP and that there could be a power issue within the system. The system is in excellent shape and should last many years. See updated (*Photo E9)* of the fire alarm control panel.

Photo E8– Old Fire Alarm Control Panel

Photo E9– New Fire Alarm Control Panel

Intercom, Master Clock and Bell System

The school has a stand-alone intercom headend equipment located in the admin area *(Photo E10)*. The intercom system is in average working condition and is still used, but past its useful life. Parts may become harder to find as the unit starts breaking down.

The clock system is in average working condition but is past its useful life. Parts may become obsolete and harder to find.

2024 Intercom, Master Clock and Bell System Update

The intercom system has remained unchanged since the previous inspection. The System is very old and beginning to fail. The power supply for the intercom is failing and buzzes loudly every 15 min. This creates distraction and nuisance noises for personnel working the main office. Many of the speakers in the building have an audible buzz at 60hz. This could be because the wiring for the system is experiencing cross talk from power systems in the building. It would be recommended to upgrade to a newer intercom system in the near future.

The clock system is unchanged from the previous inspection. Many clocks have failed, and their sync feature no longer works. Staff are required to manually change all clocks in the building during daylights savings and back. It would be recommended to upgrade to a synced clock system.

The bell system no longer works in the building. The head end equipment has been dismantled and it is unknown how to repair. (*Photo E11)* It would be recommended that a new bell system be installed, one that could be integrated with a new intercom system would be recommended.

Photo E10 – Intercom Headend Equipment

Photo E11–Bell Systems Headend Equipment

Gymnasium Sound System

The gymnasium sound system is in like new condition. The equipment was not tested during investigation, but there were no complaints from maintenance or staff.

2024 Gymnasium Sound System Update

The gymnasium sound system was unchanged from the previous inspection. The sound system is in excellent condition and there are no recommendations for this system. (*Photo E12)*

Security Systems

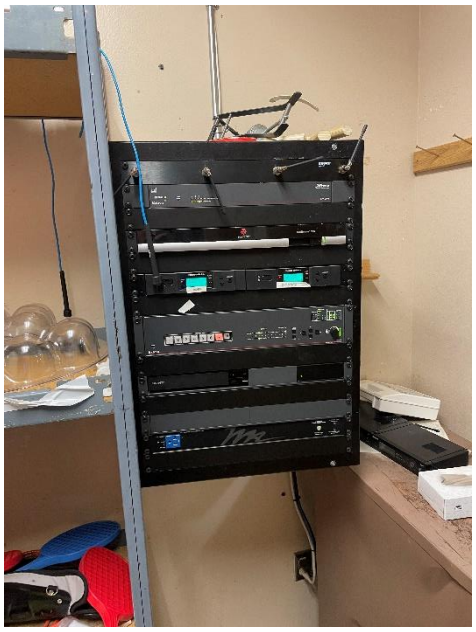

Photo E12– Gymnasium Sound System

The camera security system does not work, replace existing Bosch camera with new PoE camera, in the exterior and interior.

2024 Security System Update

The security system was unchanged since the last inspection. With talks on staff the camera system is still non function. It would be recommended to replace the existing system with new PoE cameras in the exterior and interior.

End of Alak K-12 School Survey results

SECTION 3. DEFICIENCY CODES & FINDINGS

This section explains the codification system for categorizing facility deficiencies based upon field survey findings.

A. DEFICIENCY CODES

1 – Health/Life Safety: These deficiencies identify areas where the facility is not constructed or maintained in compliance with provisions of the state mandated life safety aspects of building codes including the codes adopted from the International Code Council (such as the International Building Code) or other standards organizations (such as the National Fire Prevention Association). Deficiencies could include inadequacies in fire barriers, smoke barriers, capacity and means of egress, door ratings, and fire protection equipment not covered in other deficiency codes.

2 – Operating Cost: These deficiencies address the efficiency of lighting, heating systems/fuel types and the thermal enclosures of buildings, processes, and are required for energy conservation and good energy management.

3 – Technical Upgrade: These are items that would upgrade obsolete equipment or systems to the current technology.

4 – Code Upgrade: These are deficiencies related to building code violations where there is no imminent threat to life safety.

5 – Protection of Structure: These are deficiencies that endanger the physical structure of the facility.

6 – Functional Upgrade: These are deficiencies in the plumbing, heating, ventilating, air conditioning, power, lighting, special systems, etc. requiring maintenance due to normal wear and tear that would result in system failure.

7 – Education Program Upgrade: These are items that would improve the ability of the educators to instruct the students.

The deficiencies are further categorized by design disciplines and priority as follows:

Code	Discipline
M	Mechanical
E	Electrical

Priority	Description
1	Highest priority – Life safety or imminent danger
2	Building Code Compliance Issues
3	Energy Efficiency Upgrades

See attached Deficiency Matrix for detailed information.

B. MASTER DEFICIENCY INDEX

Discipline/ Record #	Deficiency Code	Priority	Building	Deficiency Title	2024 Update
M1	6	1	Alak K-12 School	Replace heating plant	***No change noted.***
M2	1	1	Alak K-12 School	Eyewash not to code	***No change noted.***
M3	1	1	Alak K-12 School	Natatorium equipment failing and code issues	***No change noted.***
M4	5	1	Alak K-12 School	No dehumidification for pool deck	***No change noted.***
M5	5	1	Alak K-12 School	Waste pipe beyond useful life expectancy and failing	***No change noted.***
M6	1	1	Alak K-12 School	Sewage lift station deficiencies	***No change noted.***
M7	1	1	Alak K-12 School	Kitchen plumbing at end of useful life expectancy	***No change noted.***
M8	1	1	Alak K-12 School	Custodial sink requires backflow prevention	***No change noted.***
M9	6	2	Alak K-12 School	Upgrade HVAC controls	***No change noted.***
M10	6	2	Alak K-12 School	Provide new domestic water heating plant	***No change noted.***
M11	6	2	Alak K-12 School	Air handling units and fans at end of useful life expectancy	***No change noted.***
M12	6	2	Alak K-12 School	Fire sprinkler entrance deficiencies	***No change noted.***
M13	6	2	Alak K-12 School	Fuel oil system deficiencies	***No change noted.***
M14	4	2	Alak K-12 School	Dust Collection system does not meet current codes.	***No change noted.***
M15	4	2	Alak K-12 School	Voc-ed Ventilation Upgrades	***No change noted.***
M16	6	2	Alak K-12 School	General ventilation items	***No change noted.***
M17	6	2	Alak K-12 School	Various other deficiencies	***No change noted.***
M18	6	2	Alak K-12 School	Rebalance ventilation systems	***No change noted.***
M19	6	2	Alak K-12 School	Various plumbing deficiencies	***No change noted.***
M20	6	2	Alak K-12 School	Plumbing fixtures beyond useful life expectancy	***No change noted.***
M21	6	3	Alak K-12 School	Replace heating distribution system	***No change noted.***
M22	6	3	Alak K-12 School	Replace domestic water piping	***No change noted.***

M23	1	1	Alak K-12 School, Bus Barn	Install ventilation equipment	***No change noted.***
M24	1	1	Alak K-12 School, Bus Barn	Plumbing deficiencies	***No change noted.***
M25	6	2	Alak K-12 School, Bus Barn	Generator room temperature control	***No change noted.***
M26	6	2	Alak K-12 School, Bus Barn	Replace heating system	***No change noted.***
E1	6	2	Alak K-12 School	Exterior lights on all day	***No change noted. Lights are still on all the time.***
E2	1	1	Alak K-12 School	Fire alarm system parts are obsolete	***Fire Alarm was replaced with a Notifier panel and is in excellent condition. No longer a deficiency.***
E3	6	3	Alak K-12 School	Classroom lighting needs upgrade	***No change noted.***
E4	6	2	Alak K-12 School	Cat 5, Cat 5e cabling are nearly obsolete.	***No change noted.***
E5	2	3	Alak K-12 School	Existing T8, and CFL lighting not as energy efficient as new LED	***No change noted.***
E6	1	1	Alak K-12 School	Existing Bosch cameras do not work.	***No change noted. System is still non-functional.***
E7	1	1	Alak K-12 School	Emergency egress lighting non-functional	***New item.***
E8	4	1	Alak K-12 School	Working space violation	***New item.***
E9	3	2	Alak K-12 School	Headend equipment has buzzing sounds and speakers have electrical noise output to them 24/7	***New item.***
E10	3	2	Alak K-12 School	Bell system is non-functional.	***New item.***