Facility Overview

School District:	Wrangell Public School District
Facility:	Evergreen Elementary/Intermediary School
Inspection Date(s):	May 16-19, 2023

Dates of Construction and Additions

	Date	GSF
Original Construction:	1979	24,277
Addition: Boiler room	2003	250
Siding replacement:	1988	
Roof Replacement:	1998	
	Total:	24,533

*Confirm dates and GSF with DEED Facility Database

Renovations and System Replacement

Date	Description (including renovations as part of above additions)
	Connected to Elementary/Primary school by a covered enclosed walkway

Survey Team

Name	Firm
Sean Boily, AIA	NorthWind Architects, LLC - Juneau
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Mark Langberg, ME	AMC Engineers, Inc. - Anchorage

Notes

Evergreen Primary is part of Evergreen Elementary – connected by a covered walkway on a shared site. Priority projects for funding are highlighted in yellow. Pricing in the report escalated to 2024. The summary provided on last page provides totals escalated to 2025.

Regulatory Data

Codes Utilized
2021 International Building Code (IBC)
2021 International Existing Building Code (IEBC)
2021 International Mechanical Code (IMC)
International Fuel Gas Code 2021 Edition (IFGC)
2021 International Fire Code (IFC)
2020 National Electrical Code (NEC)

Additional relevant codes and standards:
2022 NFPA 72, National Fire Alarm and Signaling Code
Illuminating Engineering Society of North America (IESNA) Lighting Library
ASME CSD-1 Controls and Safety Devices for Automatically Fired Boilers
Uniform Plumbing Code
NFPA 30 – Flammable and Combustible Liquids Code
ASCE/SEI 7-2016 – Minimum Design Loads and Associated Criteria for Buildings and Other Structures
Alaska DEED School Design and construction Standards, 2022

Codes of Original Construction
Uniform Building Code 1976 Edition
Sprinklered building.
City of Wrangell- local modifications:
Design Loads: Snow Load- 40 PSF (assumed) Wind Load- 25 PSF
Requirements based on Occupancy:

1. UBC 801-2(C): Storage and Janitor closets 1-hour fire-resistive construction
2. HBC 801-2(D): Laboratory areas separated from other portions of the building by a 1-hour fire-resistive occupancy separation.

Code Analysis, 1976
Occupancy Group: E-1
Type of Construction: Type 5-1 HR: Sprinklered
Separation: Separation of three sides.

Floor Area:
Allowable Floor Area: 11,800 sq ft./floor Table 5-C
With calculated increases: 35,400 gsf. Actual: 24,950 sq. ft.
Allowable No. of Floors: 2 stories Table 5-D Actual number of stories: 1
Allowable Area Increases: 2.5% for each lineal foot which the minimum width exceeds twenty feet (20') but the increase shall not exceed 100%. Sec 506.a.2
Allowable increase by separation = 11,800 sf
Allowable increase, Sprinklered 300% in single story (UBC 1976m 506.c) = 35,400 gsf.

Site and Infrastructure

Site Improvements Overview

Synopsis

The Elementary Intermediary school shares a common site with the Primary School surfaces are a mix of asphalt paving, concrete surfacing, and gravel area with perimeter planted areas (lawn borders, garden space and natural vegetation.

Vehicular Surfaces

Description of Existing Systems

Vehicular driving and parking surfaces are entirely gravel. No striping for lanes, parking stalls, crosswalks etc. is in place. The parking area is accessed via 2nd Avenue, off Bennett Street. The parking area can likely accommodate two rows of parking.

Existing Conditions

The access street (2nd Avenue), site parking and drive aisles are all gravel surface with no delineations for parking, lanes, crosswalks, drop-off/loading, etc. The site generally grades downhill from Bennett Street. The site is believed to have been constructed over organic peat-type subgrade, leading to surface irregularities due to differential settlement. No standing water was observed during the site visit and no precipitation had fallen recently. Evidence of puddles and potholes were observed.

Based on measured length of the observed parking area, there is room for approximately 26 vehicle stalls per the Wrangell Municipal Code requirements for parking stalls (10 feet wide by 17 feet long) assuming that two rows of parking can be accommodated.

Code Deficiencies

C-1 There are no designated ADA parking stalls.

Recommendations

C-1 Priority #1 Construct the minimum-required quantity of ADA parking stalls with appropriate striping, signage, and compliant access aisles to the building.

It is recommended that a geotechnical investigation be performed prior to installing any pavement or hardscapes in parking areas. This will determine what, if any, subgrade modifications are needed to ensure adequate pavement performance. Without a geotechnical investigation or any special design considerations, it is likely that the pavement would suffer premature failure due to problematic subgrade.

Estimates

C-1: ADA Parking	$20,160

Pedestrian Surfaces

Description of Existing Systems

Delineated pedestrian systems (excluding play areas) are concrete walks generally around the building perimeter.

Existing Conditions

The condition of concrete walks varies from poor to good. Much of the sidewalk running parallel to the southwest side of the building appears to be more recently constructed and is in good condition.

Code Deficiencies

C-2 Multiple areas are not ADA-compliant for several reasons including cross or longitudinal slope, gaps or abrupt elevation changes at joints, and surface irregularities.

One of two concrete stoops recommended for replacement.

Large gap at joint in sidewalk on west side of building

Abrupt elevation change (1.25”) in sidewalk on west side of building

Differential settlement between sidewalk and foundations on west side of building

C-3 There are no ADA sidewalk ramps to provide access from a recommended future ADA parking stall to building sidewalks.

Recommendations

C-2 Priority #1 Replace two concrete stoops (9'x6' and 7'x6').
C-2 Priority #1 Replace 137'x5' of sidewalk on west side of building.
C-3 Priority #1 Construct an ADA ramp and landing in the sidewalk.
C-4 Priority #2 Replace 32'x4' of sidewalk on north side of building. (Consider replacing sidewalk in its entirety on north side of building with wider sidewalk to create adequate clear width for vehicle overhang. Alternatively, recommend installing parking bumpers to eliminate vehicle overhang).

Vehicle/sidewalk conflict.

It is likely that weak subgrade has contributed to settlement of pedestrian surfaces. If replaced in kind, new pedestrian surfaces may continue to settle and fall out of code compliance again. It is recommended that over-excavation and backfill be considered prior to replacement.

Estimates

C-2: Replace Stairs and Sidewalks	$44,066
C-3: Replace Ramp	$3,562
C-4: Replace Sidewalk	$6,359

Elevated Decks, Stairs & Ramps –See Primary school

Site Walls - None

Landscaping & Irrigation

Description of Existing Systems
The landscape is limited to cut grass areas and a fenced garden space between the school and the highway, west end of building. No Irrigation system.

Existing Conditions
Gardens and associated building is owned by the community and operated by the students and teachers. Good active condition. Cut grass areas are maintained by School Maintenance.

Code Deficiencies
None

Recommendations
Maintain as is.

Fencing and Gates

Description of Existing Systems
6' chain link fence and gate around garden area. 6' chain link fence around play area (see Primary School assessment).

Existing Conditions
Good condition.

Code Deficiencies
None

Recommendations
None

Site Furnishing & Equipment

Description of Existing Systems
There are two lumber picnic tables on the southwest corner of the site, with a teak wood bench. It is unclear if these are owned and maintained by the school district or the city.
There is one aluminum flagpole west of the font entry.

Existing Conditions
The flagpole appears to be in good condition.

Code Deficiencies
None observed.

Recommendations
Maintain as is.

Playgrounds

Description of Existing Systems
The playground is shared with the Primary School. See Primary School report for information.

Other Site Improvements - None

Site Structures Overview

Freestanding Shelters – See Primary Assessment.

Attached Shelters - None

Connecting Covered Walkway

Description of Existing Systems:
Connecting covered walkway, original 1979 construction, renovated with enclosure. Post and beam construction, openings infilled with hollow metal doors and vinyl windows. Tempered space.

Existing Condition:

Good condition

Code Deficiencies

None Noted

Recommendations

None

Civil/Mechanical Utilities Overview

Water System

Description of Existing Systems
Plans indicate that the building is provided water through a 4" domestic service and a 2-1/2" dedicated sprinkler service.

Existing Conditions
The nearest fire hydrant is approximately 210' from the FDC.

Code Deficiencies
N/A

Recommendations
None

Sanitary Sewer

Description of Existing Systems
Underground piping

Existing Conditions
Unknown

Code Deficiencies
None

Recommendations
C-5, priority #3: Camera all existing sanitary sewer lines to assess condition and look for breaks, sags, etc.

Estimates

C-5: Camera Sanitary Sewer Lines	$13,245

Storm Water

Description of Existing Systems
The gravel parking area on the north side appears to be graded towards a single catch basin near the parking area's south corner. The vegetative buffer alongside the building also grades to a catch basin on the east side of the buffer. This system ties into the playground storm drain system (see Primary School).

Existing Conditions
Visible components appear to be in good condition. Catch basins in the gravel parking area have standing water above the pipe inverts and the sumps appear to be full of debris.

Code Deficiencies
C-6 A catch basin grate located in a sidewalk is not ADA-compliant and should be rectified if the sidewalk is intended to be an accessible route.

Non-ADA grate

Recommendations

C-6 Priority #1 Replace storm drain grate in sidewalk with ADA-compliant grate.
C-7 Priority #3 Camera all storm drain pipes to assess for condition, sags, etc.
C-8 Priority #4 Clean (3) catch basins in gravel parking area, vegetated buffer and sidewalk.
C-9 Priority #4 Clean 60 LF of pipe upstream of playground system.
C-10 Priority #3 Install approximately 700 LF of 4" perforated CPP perimeter foundation drain.
C-11 Priority #4 Re-grade approximately 110 LF of vegetative buffer on north side of building to existing area drain.

Regrade buffer

C-12 Priority #4 Construct swale (150 LF) and install two catch basins and 150 LF of 12” CPP pipe on west side of building, connect to existing catch basin.

Address drainage

Estimates

C-6: Repair Catch Basin	$1,372
C-7: Camera	$16,546
C-8: Catch Basin	$8,740
C-9: Clean Pipe	$11,655
C-10: Install Foundation Drain	$79,642
C-11: Re-Grade	$22,444
C-12: Swale	$70,585

Fuel Systems – See Special Mechanical Systems, Fuel Supply (Oil)

Heating/Cooling Piping & Utilidors – Not Applicable

Site Electrical Overview

Synopsis

Site electrical consists of the electrical power and communication utility services to the building and site lighting as described below.

Supply & Distribution

Description of Existing Systems

The building is served by Wrangell Municipal Light and Power via an overhead distribution line on the west side of the building. The utility primary line connects to (3) pole mounted single phase utility transformers which supply the building at 208Y/120V. From the utility transformers, the overhead secondary service conductors transit from south to north to another wood utility pole. The service conductors riser down the pole to underground and feed the interior service entrance inside an electrical closet located off the corridor of the intermediate primary building. The service entrance consists of an interior current transformer (CT) switchgear section, meter base and distribution switchgear section with main disconnect. The main service disconnect for the building consists of a 600A circuit breaker. The grounding electrode conductor was not observable but assumed to be like the primary building with a single ground rod.

Existing Conditions

The supply and distribution system appears to be in adequate condition.

Code Deficiencies

E-1: The grounding electrode system is not bonded together in accordance with National Electrical Code (NEC) 250.50. In addition to the existing ground rod, the grounding electrode conductor is required to be bonded to the metal water pipe.

E-2: Where multiple services are present, the services locations are required to be identified at each location in accordance with NEC 230.2(E).

E-3: Service disconnect not marked in accordance with NEC 230.70(B).

Recommendations

E-1: Bond the grounding electrode system to the metallic water pipe. Priority #1

E-2: Identify service locations in accordance with NEC 230.2(E). Priority #1

E-3: Label service disconnect in accordance with NEC 230.70(B). Priority #1

E-4: The primary building and the intermediate building are effectively one building. NEC 230.2 requires a single electrical service unless special permission is granted per NEC 230.2(C)(3). It is assumed that this special permission is granted, however, if major renovations are undertaken, provide a single electrical service for the primary and intermediate building with a single main exterior service disconnect. Priority #4

Estimates

E-1: Bond The Grounding Electrodes To Water Pipe	$467
E-2: Identify Service Location	$168
E-3: Label Service Disconnect	$228
E-4: Provide A Single Electrical Service	$17,808

Data/Comm Service & Distribution

Description of Existing Systems

The Data /Comm Service consists of an overhead 12-strand optical fiber cable (OFC) from the serving utility (GCI). The overhead cable follows the electrical service conductors on wood poles to the west of the facility and risers down transitioning to underground and enters the building at the main distribution frame (MDF) located in a storage room next to the admin office. This service supplies both the intermediate building and the primary building via an intermediate distribution frame (IDF) located in the workroom of the primary building.

Existing Conditions

The service is in good condition.

Code Deficiencies

None noted.

Recommendations

None.

Lighting & Equipment

Description of Existing Systems

Exterior area lighting is provided by both pole mounted area light fixtures and building mounted wall pack fixtures. The fixtures appear to utilize old technology high pressure sodium (HPS) lamps. Fixture locations and spacing appear to be adequate to meet recommended lighting levels. Exterior fixtures are photocell controlled.

Existing Conditions

The pole mounted fixtures are in poor condition. The pole foundations are deteriorating, and the poles/fixture housings are heavily corroded. The wall mounted fixture diffuser housings are clouded and yellowing. Photocell control for area lighting is damaged and requires repair.

Code Deficiencies
E-5: System is not fully functional and therefore does not provide recommended parking lot illumination levels per IES recommendations.

Recommendations
E-5: Replace pole foundations, poles and pole mounted area lights including photocell controls. Area lights to be current technology LED style. Priority #1
E-6: Replace wall mounted exterior lighting with current technology LED style. Priority #1

Estimates

E-5: Replace Pole Foundations	$56,830
E-6: Replace Wall Mounted Exterior Lighting	$16,047

Security Systems - None

Offsite Work Overview - None

Substructure

Synopsis
The substructure of the building generally appears to be in good condition and functioning as expected. The substructure consists of creosote treated timber piles, reinforced concrete pile caps, and perimeter reinforced concrete grade beams. The building has three separate crawl space areas: classroom wing, music room, and gymnasium. These crawl spaces are separated by grade beams and are accessed from separate hatches. Helical piers were installed in the 2003 renovation at a new ramp in the music room. PND assessed the entirety of the three crawl spaces. The original structural drawings were also utilized in our assessment. Our assessment assumes the foundation elements specified on the original drawings were installed unless observed otherwise during assessment.

Standard Foundations & Basements Overview

Continuous & Column Footings - None

Foundation Walls & Treatment

Description of Existing Systems
Not Applicable

Existing Conditions
Perimeter grade beams do not appear to be treated.

Code Deficiencies
S-1: Perimeter grade beams are not dampproofed.

Recommendations

S-1: Provide dampproofing on perimeter grade beams. Priority #3

Estimates

S-1: Provide Dampproofing $186,512

Foundation Drainage

Description of Existing Systems

Perimeter foundation drains were not shown on the existing drawings or identified in the field. Drains were installed in the crawl space in 2003 renovation.

Existing Conditions

Drains in crawl space are not functioning properly in the southwest portion of the classroom wing. There is a lot of standing water under the vapor barrier in this area.

Code Deficiencies

S-2: Standing water in crawl space.

Water in Crawlspace (on top of Vapor Retarder)

Water in Crawlspace (on top of Vapor Retarder)

Recommendations

S-2: Install drain under vapor barrier in crawl space in southwest portion of the classroom wing. Priority #2

Estimates

S-2; Install Drain in Crawl Space	$25,816

Slab on Grade Overview - None

Structural & Non-structural Slabs – Not Applicable

Trench, Pit, and Pad – Not Applicable

Underslab Elements– Not Applicable

Special Foundations Overview

Synopsis

Special foundations include creosote treated timber piles, reinforced concrete pile caps, and perimeter reinforced concrete grade beams. A heavy vapor barrier was installed that was wrapped around the piles and run up the face of the perimeter grade beams. No signs of differential settlement were visually observed.

Piling & Pile Cap

Description of Existing Systems

Piling are creosote treated timber piles that were to be driven to a 20-ton capacity. Piles are Douglas Fir and have a min tip diameter of 8". Batter piles were installed in pairs of two at perimeter of building. Reinforced concrete pile caps are located at the top of batter pile pairs. Pile caps are 2'-6" wide x 5'-0" long x 2'-6" thick.

Existing Conditions

Piles were sounded with a hammer and were found to be in fair to good condition. No deterioration or distress of the piles caps was observed.

Code Deficiencies

Not Applicable

Recommendations

None

Caissons - None

Grade Beams

Description of Existing Systems
Reinforced concrete grade beams are located around the perimeter of the building and between the three separate crawl space areas. Grade beams are 10" wide x 4'-0" tall and are connected to the pile caps with #5 dowels.

Existing Conditions
No deterioration or distress of the grade beams was observed.

Code Deficiencies
Not Applicable

Recommendations
None

Arctic Foundation Systems - None

Other Special Foundations - None

Description of Existing Systems
Helical piers were installed in the 2003 renovation for a new ramp in the music room.

Existing Conditions
No deterioration or distress of the grade beams was observed.

Code Deficiencies
Not Applicable

Recommendations
None

Superstructure

Synopsis
The superstructure of the building appears to be in good to fair condition and functioning as expected. The building is constructed using conventional light-framed timber construction. Framing typically consists of 2x timber studs with some larger timber sections at areas of concentrated load. The floor and roof is supported by pre-engineered timber trusses or dimensional lumber joists. Plywood was used for the floor and roof diaphragm and shear walls to transfer and resist lateral forces. PND assessed the entirety of the building where accessible. The original structural drawings were also utilized in our assessment. Our assessment assumes the structural framing specified on the original drawings was installed unless different framing was observed.

Floor Structure Overview

Synopsis

The floors are supported by pre-engineered timber trusses or dimensional lumber joists and glu-lam beams. The floor diaphragm is comprised of plywood sheathing secured to the timber trusses, which also serves as the flooring substrate.

Lower & Main Floors

Description of Existing Systems

The floor is supported on pre-engineered timber framed trusses with steel plate connectors between 2x chords and webs. Trusses and joists are spaced at 16-inches or 24-inches on center. The trusses appear to be a substitution during construction for the originally specified Trus Joist open web trusses shown on the original drawings. The trusses and joists are supported on glu-lam beams spanning between the timber piles and the perimeter grade beam. The floor diaphragm is constructed using ¾" plywood sheathing secured to the floor trusses. The plywood sheathing also serves as a flooring substrate for architectural floor finishes.

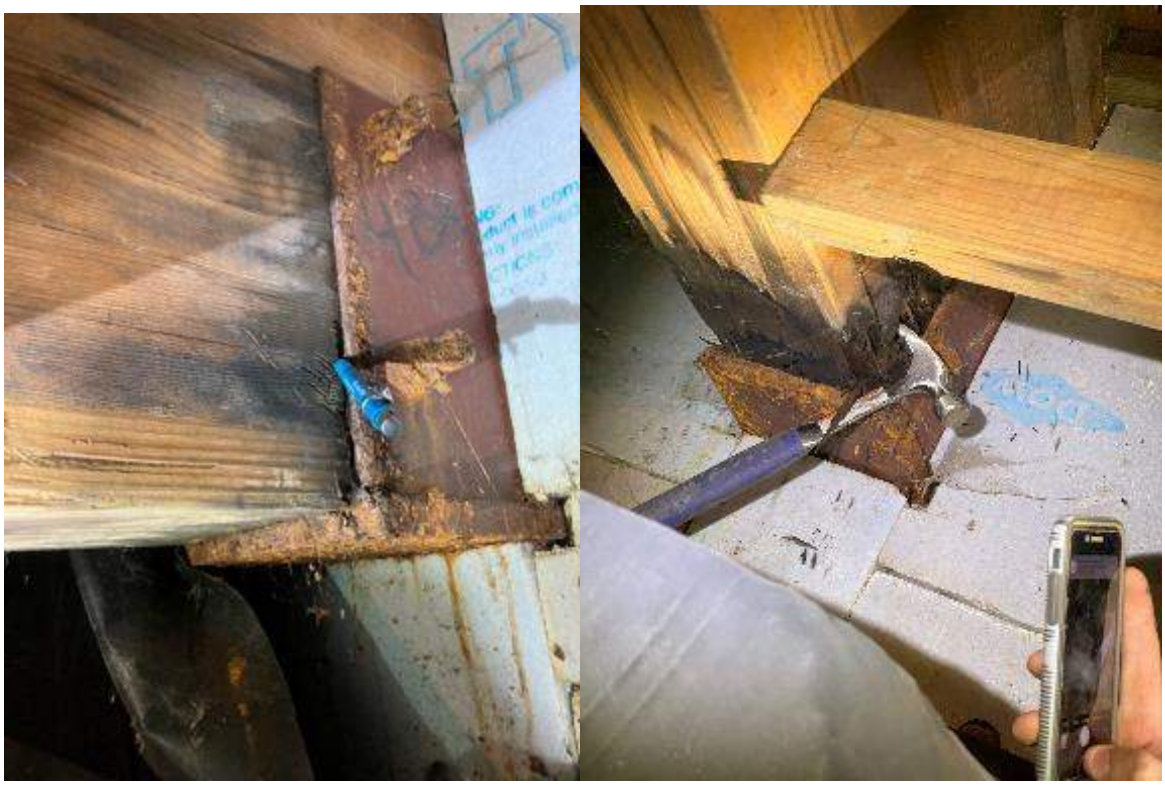
Existing Conditions

The floor trusses and joists are in good condition. It was noted that several trusses along west side of the building had been repaired and reinforced in the past. It is assumed that the wood trusses had degraded due to water infiltration into the building. The trusses were repaired and reinforced with structural steel angles where damaged. Numerous glu-lam beams exhibited significant dry rot where supported on the perimeter grade beams.

The floor in the media room/library was bouncy. The original design documents specify a design live load of 75 psf for the media room.

Code Deficiencies

S-3: Rotten glu-lam beams at perimeter grade beam on east side of gymnasium. This was noted in four places.



Rot at beam ends

S-4: Dry rot in floor sheathing and blocking between trusses. These appear to be located under door thresholds on the south wall of the gymnasium.

Rot at sheathing, blocking.

S-5: Pile to glu-lam beam connection not installed as specified.

Missing connection plate.

S-6: Glu-lam floor beam notched at bottom lamination for pipe.

Notched Beam

Recommendations

S-3: Remove end of rotten beams and provide new post and connection to pile cap below. Beams shall be shored immediately due to the extent of the rot. Priority#1

S-4: Replace rotten sheathing and blocking. Priority #2

S-5: Install steel connection between pile top plate and side of glu-lam beams. Priority #2

S-6: Have engineer analyze beam notch and reinforce as necessary. Priority #2

Estimates

S-3: Remove Rotten Beams	$51,935
S-4: Replace Rotten Sheathing and Blocking	$1,234
S-5: Install Steel Connection	$325,041
S-6: Reinforce Beam Notch If Necessary	$15,823

Upper Floors

Description of Existing Systems

The mechanical mezzanine floor is supported on pre-engineered timber framed trusses with steel plate connectors between 3x or 4x chords and webs. The floor diaphragm is constructed using plywood sheathing secured to the floor trusses.

Existing Conditions

The floor was slightly sloped at the east end. This appeared to be due to the longer span of the trusses at the east end.

Code Deficiencies

Not Applicable

Recommendations

None

Ramps

Description of Existing Systems

Ramp in Music/Band Room is comprised of dimensional lumber and plywood overlaying primary floor framing.

Existing Conditions

Functional

Code Deficiencies

None

Recommendations

None

Special Floors - Not Applicable

Roof Structure Overview

Synopsis
The floors are supported by pre-engineered timber trusses or dimensional lumber joists and glu-lam beams. The roof diaphragm is comprised of plywood sheathing secured to the timber trusses, which also serves as the roofing substrate.

Pitched Roofs

Description of Existing Systems
The only pitched roof in the structure is the gymnasium roof. The roof consists of pitched pre-engineered timber framed trusses with plate connectors between 2x chords and webs. The roofs are sheathed with ¾" plywood sheathing which provides lateral force transfer as a diaphragm and serves as structural support for the roofing system. Multiple trusses are located above the folding partition.

Existing Conditions
The roof trusses and joists are in good condition. We understand that the folding partition has not been used recently. It was not clear if that was due to a lack of need or due to it being inoperable. Folding partitions can become inoperable if the supporting structure deflects more than the allowable.

Code Deficiencies
Not Applicable

Recommendations
None

Flat Roofs

Description of Existing Systems
The flat roofs are supported by pre-engineered timber trusses with steel plate connectors between 2x chords and webs. Trusses are supported by bearing walls or glu-lam beams. Glu-lam beams are supported by built up stud columns, heavy timber posts, or steel posts. The diaphragm is created using ¾" plywood sheathing which also serves as structural roof substrate. Entry canopy roof framing is supported by heavy timber posts on concrete piers.

Existing Conditions
Overall, the flat roof framing appears to be in good condition. The roofing was soft in numerous places indicating potential water infiltration. There was evidence of water infiltration through the roofing at the underside of the roof sheathing in numerous places. There was a lot of airflow above the ceiling, which likely has reduced moisture accumulation and rot.

Code Deficiencies
S-7: Rotten roof sheathing. While no rotten roof sheathing was observed, we assume that there may be some due to the condition of the roofing and evidence of water infiltration at underside of roof sheathing.

Water staining at roof sheathing

S-8: Corroded post base connections at two posts. Deterioration of concrete pier at post base.

Deteriorated post bases

S-9: Bearing wall stud cut by electrician.

Cut structural studs.

Recommendations

S-7: Replace rotten roof sheathing when roofing is replaced. Priority #1 as part of reroofing

S-8: Replace post base connections with hot dip galvanized connections. Remove loose concrete and patch with grout. Priority #2

S-9: Reinforce wall stud with sister stud. Priority #2

Estimates

S-7: Replace Rotten Roof Sheathing	$57,291
S-8: Replace Post Base Connections	$2,786
S-9: Reinforce Wall Stud	$2,679

Special Roofs – Not Applicable

Stairs Overview

Internal stairs in the facility are those from the multipurpose room up onto the stage and from the hallway to the Music/Band room (also at stage level, adjacent to backstage area) in the music room. The stairs (4 risers) in the Music room have no handrails and is therefore deficient.

Stair Structure

Description of Existing Systems

Stairs in Music/Band Room is comprised of dimensional lumber and plywood overlaying primary floor framing.

Existing Conditions
Functional

Code Deficiencies
A-1: Lacks handrails – see Stair Railing

Recommendations
A-1: Install Handrails for 4-riser stars, each side, with height, diameter and extensions meeting code.
Priority #1

Estimates
A-1: Install Handrails at stair in Music room $4,104

Stair Railings – See Stairs

Recommendation:

A-1: Install handrails on both sides of stairway in the music room.

Estimates

Ladders and Steps

Description of Existing Systems
A steel framed ladder is located in in Electrical Room 37 to access the mechanical mezzanine.

Existing Conditions
There were no signs of deterioration or distress.

Code Deficiencies
Not Applicable

Recommendations
None

Exterior Enclosure

Synopsis
The Elementary/Intermediary school building is a wood framed structure comprised of 2x framed exterior walls, flat chord wood floor and roof trusses supported by wood piling over a crawlspace. Roofs are low sloped/flat with single ply membrane roofing. A clerestory monitor is configured over the higher volume of the library. Siding is T&G cedar (vertically oriented) with a sheet metal clad parapet at all perimeters, extended down to serve as siding at the higher volume area of the gymnasium. Entries are full light aluminum doors with sidelights, windows are vinyl clad wood.

Exterior Walls & Soffits Overview

Synopsis

All elevations are comprised of vertically oriented 1x4 T&G cedar siding for the full height of insulated wall and rafter cavity. Later construction in 1988 added a parapet around all roof surfaces, which is clad with 24 ga sheet metal siding. Canopy soffits are of the same finish material.

Some wood siding is compromised at bottom edges and at fenestrations where sealant joints have failed resulting in degradation at end grain. Painting is a short-term solution. Replacement with a new weather barrier and vented cavity is a long-term solution. Anticipate 1% sheathing replacement due to failure of painted wood siding as a part of any residing project. Site cast concrete base at Elementary is in good condition.

Note: Finishes on the south elevation of these buildings is in notably worse condition. Solar exposure has accelerated weathering of paint, stain, sealant and exposed substrates.

Exterior Walls

Description of Existing Systems

Vertically oriented 1x4 T&G CVG red cedar, painted over furring and spun olphan weather barrier (Tyvek brand) installed in 1988. Original framed walls are 2x6 wood studs with plywood sheathing, batt insulation (R19) fill between studs, vapor retarder and gypsum wall board interior finish.

Exterior wall framing could only be visually observed above the ceilings. In locations that were visible, the wall framing was in good condition. The framing around the upper windows in the library were of particular concern as the windows did not appear to be sealed properly.

Existing Conditions

Some wood siding is compromised at bottom edges and at fenestrations where sealant joints have failed, resulting in degradation at end grain.

Sheetmetal siding at parapet is in fair condition and life may be extended with cleaning and spot repairs.

Site cast concrete base at Elementary is in good condition, with rigid insulation applied to inboard side.

Code Deficiencies

A-3: Existing Wall assembly affords minimal thermal performance of R-19 at stud cavities. Though not a code deficiency in the State of Alaska for the timeframe in which these buildings were built, Chapter 4 of the 2021 International Energy Conservation code describes minimum standards for thermal assemblies, which includes continuous insulation outboard of framed stud cavities: R-20 + R3.5 continuous insulation.

A-4: Noted there is no thermal protection applied to inboard face of rigid insulation in the crawlspace as required under the current building code, IBC, 2021 2603.1.6.

S-10: Exterior siding appeared to be in fair condition, but there likely is some rot in the wall sheathing and potentially the wall framing.

Recommendations

A-2: Siding: Re-seal all fenestrations, replace severely damaged material (approximately 200 sf). Repaint all siding, approximately 9,000 sf, less fenestration area. Option 1, Priority 1.

A-3: Siding Replacement of all wood and metal siding with new resin composite siding (Resysta or similar) over furring with air gap, 1.5" continuous rigid insulation and weather barrier as a long-term thermally improved solution. Anticipate 5% sheathing replacement due to failure of painted wood siding as a part of any residing project. Coordinate with window replacement. Option 2, Priority #2

A-4: Crawlspace: Install 1.5" thick mineral fiber insulation board over unprotected foam plastic insulation at crawlspace perimeter (approximately 40" tall). This may be adhered to existing surfaces and will both afford thermal protection and increase building envelope thermal performance. Approximately 690 lf. Priority #1

S-10: Replace rotten wall sheathing and framing where uncovered during siding replacement. Part of siding repairs and replacement, Priority #1

Estimates

A-2 Re-Seal All Fenestrations & Paint Exterior	$77,007
A-3 Replacement Of All Wood and Metal Siding	$608,130
A-4 Install Mineral Fiber Insulation Board	$16,663
S-10 Replace Rotten Sheathing and Framing	$3,932

Fascias & Soffits

Description of Existing Systems

24 ga PVDF coated sheet metal, interlocking rib profile, with flashings (the 1998 parapet extension).

Soffits at entry area canopies are T&G wood, matching siding.

Existing Conditions:

Both sheet metal parapet fascia and painted wood soffits are in good condition and serviceable for another 10-15 years

Code Deficiencies:

None

Recommendation:

Retain

Curtainwalls & Non-bearing Walls – None

Exterior Glazing Overview

Synopsis

All grade-level window units in the school were replaced with new vinyl clad wood windows in 1999. We believe the storefront entries into the building were installed as a part of the same project. Windows at library clerestory appear to be original wood windows with slender thermal glazing units.

Windows

Description of Existing Systems

Andersen Commercial, vinyl clad wood windows, installed 1999. Typical unit module configuration is a fixed unit over wither a fixed or hand crank operated awning, in groups of 2, 3, and 4. The units have 1/2" thermal glazing and are painted or clear finished wood interior, dark brown vinyl exterior. Installation is flangeless. Operable units typically have metal bug screens by window manufacturer.,. A typical grade level unit module on the north wall is a fixed 36" wide x 40" tall unit above an awning or fixed 36" wide x 20" tall unit. Total count:

- North elevation is 18 modules: three groups of four, 3 groups of 2.
- West elevation there are 12 modules; 2 groups of four, two groups of 2. In the music room the windows are slightly different – 3 modules 40"x4" fixed over 40" wide x 20" tall awnings, in a group of three.
- East elevation is 18 modules: three groups of four, 3 groups of 2.
- No windows on the south elevation.
- Windows at East and West elevations of Library Clerestory: A total of 20 modules, each 24" wide x 18" tall.

Typical unit main floor configurations, north elevation.

Library Clerestory Windows

Existing Conditions

Conditions vary with exposure. Clerestory windows in the library appear to be in sound condition, though thermal value of glazing is minimal.

Windows in classrooms facing north have experienced severe water infiltration and exhibit rotting wood assembly. There is one broken upper fixed glass pan on the west elevation. The ½" thermal glazings are antiquated, not optimised for energy efficiencey.

Rotting wood on north facing window units.

Broken glass in typical 4-modual unit, West elevation

Library upper windows not properly sealed

Code Deficiencies

The existing window system is substandard in terms of thermal performance, providing a glazing U value of approximately 0.42 whereas a more contemporary gas filled low emissivity coated glaring unit will yield U values closer to 0.32 – approximately 25% thermal performance improvement. Though not a code deficiency in the State of Alaska for the timeframe in which these buildings were built, the 2021 International Energy Conservation Code and DEED Standards for School Construction support higher minimum standards for thermal assemblies.

Recommendations

A-5: Replace the damaged 18 modules of units on the north elevation with new vinyl clad wood units. Replace the broken glass in the one unit damaged on the west elevation. Option 1, Priority #1

A-6: Preferred measure: remove and replace all wood windows with new high performance vinyl clad wood or fiberglass units consistent with DEED standards. Option 2, Priority #2

Estimates

A-5: Replace The Damaged Windows	$57,530
A-6: Remove Replace All Windows with Vinyl Clad Or Fiberglass	$205,628

Storefronts

Description of Existing Systems

Kawneer Commercial Entrances, aluminum full light doors in aluminum storefront frames, with relights and transoms at each inner and outer vestibule door. Dark bronze anodized, with bright stainless steel hardware. 1" thermal tempered glazing at all. A total of seven Pair 3x7.

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Existing Conditions

Door units are in good operable condition with functioning hardware but are likely not thermally improved. Panic hardware is an older style push bar. Door sweeps and brush-type weather stripping is worn.

Storefront mullions, glazing and gasketing is all in good condition.

Code Deficiencies

None observed.

Recommendations

A-7: Renew brush type seals and door sweeps. Priority #1

Estimates

A-7 Replace Seals and Door Sweeps	$3,313

Structural Window Walls - None

Translucent Panels - None

Exterior Doors Overview

Synopsis

Exterior entry doors covered under "Storefronts". All other exterior doors are insulated hollow metal in hollow metal frames, in fair condition. All need attention to door sweeps

Personnel Doors

Description of Existing Systems

Non-entry doors are typically insulated hollow metal in hollow metal frames, undetermined age. Boiler room doors were new in 2003, as apart of that boiler room addition.

Existing Conditions

Functional.

Code Deficiencies

Non apparent.

Recommendations

A-8: Repaint all doors and frames. The door at boiler room is Pr 3-6x7. Door at Music room is Pr 4x7. There are two doors at the Multipurpose room, each 3x7. Total of 4 openings. Priority #1

Estimates

A-8 Repaint All Doors and Frames	$3,036

Special Doors - None

Exterior Accessories Overview

Synopsis

Exterior accessories include:

1) Flag pole (single), west of front entry.
2) Bike racks (quantity 3) one large at front entry, tow at south side of Multipurpose room.
3) Picnic Table x2 (these may not be school property) southwest corner of property.
4) Teak bench (this may not be school property
5) Greenhouse and gardening equipment (community owned, on school property)

Louvers, Screens & Shading Devices - None

Balcony Elements - None

Other Exterior Accessories - None

Roof Systems

Pitched Roof Overview - None

Flat Roof Overview

Synopsis

The existing roof was installed in 1998 concurrent with installation at the Middle School. The roof assembly is applied directly over sloped wood structural decking is comprised of vapor retarder, rigid insulation, Oriented Strand Board (OSB) cover board mechanically fastened through to structural decking with deck screws, and an adhered EPDM membrane. At the time of installation, a 24" tall wood famed parapet assembly was installed, with EPDM membrane extending up and across top of parapet and terminated under a sheet metal coping. There is no OSHA compliant fall restraint anchor system on these rooftops. Access is by portable ladder outside of building.

Flat Roofing

Description of Existing Systems

Reinforced EPDM membrane, 0.45", by Manville adhered to OSB cover bord. The cover board is mechanically fastened through 6" rigid insulation and polyethylene vapor retarder to structural decking with deck screws and plate washers. Installed in 1998. Noted small roof area over boiler room was installed in 2003 and is in better condition.

Typical condition of roof – this is area over multipurpose stage and music room.

Typical condition of roof – this is area over library.

OSB "pillowing" at valley area, and debris under membrane

Existing Conditions

At year 20 since installation Roofing is near the end of useful life. Water leakage at penetrations and where laps have come unglued. OSB substrate has absorbed water and is swelling "pillowing" in all

roof areas. This in turn has resulted in membrane adhesion being compromised, loss of thermal integrity through water saturated insulation and occasional water damage in spaces below.

Code Deficiencies

1) The roof lacks OSHA fall restraint anchoring system or access, or sufficient parapet height to protect unrestrained personnel during maintenance activity.
2) In numerous locations the roof does not appear to meet minimum slope requirements, and there is evidence of ponding. The inspection occurred in exceptionally hot and dry weather, so this is based on location and quantity of sediment deposits.
3) Existing Roof assembly affords minimal thermal performance (R5.5 x 6" = R33, but Water saturated insulation has a much lower thermal value than design values. Chapter 4 of the 2021 International Energy Conservation code describes minimum standards for thermal assemblies, which includes continuous insulation at roofs of R-30 in zone 5C but conventions in our region are typically targeting R-40 as a minimum.

Recommendations

A-9: Option 1, Priority #1 Short term – continued patching maintenance – 1-3 years. Patching and repairs, 15 location allowance.

A-10: Option 2, Priority #1 Replacement of membrane, cover board, insulation, and vapor retarder, along with all roof drain receptors, penetration boots, curbs, copings, and flashings. Increase slop of ponding areas by using tapered insulation. Include budget for 500 sf roof sheathing replacement. Install new ice and waters shield vapor retarder, R-40 insulation, cover board and new single-ply PVC or TPO roofing. Provide walking/protection mats to penthouse and maintenance points.

A-11: Priority #1 Install post type fall restrain anchoring points. to be included with reroofing.

Estimates

A-9: Option 1, Priority #1 Continued Patching Maintenance	$8,394
A-10:Option 2, Priority #1 Replace Roofing	$1,667,807
A-11: W/ option 2, Priority #1 Install Fall Anchoring Points	$18,112

Special Roof Assembly

Description of Existing Systems

A small bolt-on canopy has been installed over the east-most multi-purpose room exterior door. It is not part of the original building system, is likely not designed for snow or wind loading.

Recommendation

A-12: Priority #3 Remove and replace with attached covering tht will extend to cover door, landing, and stair below. Anticipate 5' wide x 12' long, timber frame supporting metal roof assembly.

Estimates

A-12: Priority 3 Door Canopy	$18,680

Roof Drains & Piping

Description of Existing Systems

Primary drains are cast iron type receptors with cast iron debris baskets. One drain in each roof area is provided with heat trace. Secondary/overflow drainage is provided via scuppers through parapet. Main rain leaders through building are insulated.

Existing Conditions

Drains and debris cages are intact and in operation but should likely be inspected for replacement with any reroofing project.

Code Deficiencies

None noted

Recommendations

Replace with roofing replacement.

Estimates

Roof Accessories Overview – No additional roof accessories noted.

Skylights - None

Roof Hatches - None

Roof Decks, Walls & Railings - None

Other Roof Accessories - None

All other roof accessories relate to mechanical and electrical equipment, covered in other sections.

Interiors

Synopsis

The 1979 school was constructed with durable interior finishes, including solid wood paneling at entries, hallways, multipurpose room and library, floor carpet, ACT ceilings and tectum panels for durable acoustic attenuation in activity space. Gypsum Wall board was relocated to more utilitarian areas and secondary partitions, such as those between classrooms and offices. In some key locations the original wood paneling survives in good condition, but all other finishes have been renewed over the life of the building.

Partitions/Soffits Overview

Synopsis

Elementary school partitions are wood framed, typically with gypsum board, and a finish overlay. Partitions between classrooms and offices are typically gypsum wall board on wood stud framing with a flattened texture and painted finish. The hallways appear to have been face with wood paneling, subsequently covered with woven textile/wall carpet. All bearing and non-bearing walls are wood framed, 2x6 typical. Acoustic wall panels above 7' aff in Multipurpose room are Tectum. The student bathrooms are FRP panels, completed in 2008 renovations.

Fixed Partitions

Description of Existing Systems

See Synopsis

Existing Conditions

The partition appears to be in good condition, primarily 2x6 framing.

- Wall textile/carpet used in hallways scored 4 – some seams need to be flushed out, some burn holes need to be patched.
- Wood paneling occurs in front lobby, district Offices, Library, and behind the climbing wall in the multipurpose room scored 4.
- Gypsum wall board throughout facility scored 3 – needs to be patched in some places, but largely repairable, re-paintable. The texture makes it more challenging.
- Tectum acoustic panels – Activity/Multipurpose rooms scored a 3, getting dingey but will continue to serve.

Code Deficiencies

Verification of wall carpet in hallways meeting flame spread and smoke development restrictions.

Recommendations

ID-1: Repair damaged wall carpet in hallways: approximately 200 sf. Verify Wall carpet manufacturer and type. Priority #1

ID-2: repair and paint all gypsum wall board walls. Priority #1

ID-3: Paint Tectum wall panels in Multipurpose room. Priority #1

Estimates

ID-1: Repair Damaged Wall Carpet at hallways	$4,146
ID-2: Repair and Paint All Gypsum Wall Board Walls	$308,687

ID-3: Paint Tectum Wall Panels $32,875

Soffits & Ceilings

Description of Existing Systems

Typical ceilings at hallways, Offices, Library, and classrooms are ACT in in 2x4 grid.
The multipurpose room ceiling is Tectum tegular in 2x4 grid format.
The ceiling backstage is gypsum board.

Existing Conditions

Typical ACT ceilings, with some stained tiles where roof leakage has occurred - score 4.

Water staining at ceiling tile, varies in hallways and classrooms

Typical painted gypsum board soffits/ceilings are in bathrooms and are in condition. Ceilings should be repainted with walls – score 4.

Tectum ceiling in Multipurpose room is in fair condition, needs to be repainted – score 3.

Tectum Ceiling and Wall panels in multipurpose and activity rooms

Code Deficiencies

ID-4: Given age of installation areas of the ACT grid is not seismically braced.

Recommendations

ID-4: Priority #2 provide minimum seismic bracing attachment retrofit to all ACT grids, and replace or paint-stained ceiling tiles (quantity 1%)
ID -5: Priority #1 Paint Tectum ceiling tile in Multipurpose spaces.

Estimates

ID-4: Priority #2 Seismic Bracing at ACT	$98,160
ID-5: Priority #1 Paint Tectum Ceiling	$71,384

Special Partitions Overview

Synopsis

The Recreation/Multipurpose room is bisected by a single folding full height operable partition, 54' wide x 16.5' tall, undetermined manufacturer. When deployed, the two spaces appear to be configured with sufficient means of egress under the current code. The school does not seem to prioritize repairs, likely given the current reduced student population and use.

Operable Partitions

Description of Existing Systems

Folding full height operable partition, 54' wide x 16.5' tall, with a5 3.5" thick panels with woven fabric wall covering. Panels are center pivot, with multiple butts on each edge, with surface mounted bellows type acoustic seal. This is an antiquated system.

Existing Conditions

The operating cable mechanism is broken, and the system could not be extended for inspection. The panel appears to be in serviceable condition.

Code Deficiencies
None Noted

Recommendations

ID-6: Priority #2 Identify manufacturer and have service inspection for repairs, anticipating retrofit of cable operating system.

ID-7: Priority #3 Replace operable partition in its entirety.

ID-8: Priority #3 If the school district confirms it is not needed, remove operable panel system in its entirety.

Estimates

ID-6: Priority #2 Service Operable Partition	$8,600
ID-7: Priority #2 Replace Operable Partition	$505,164
ID-8: Priority #2 Remove Operable Panel System	$99,917

Demountable Partitions - None

Glazed Partitions - None

Railings & Screens - None

Interior Openings Overview

Synopsis
Typical original interior doors are solid core wood doors in hollow metal frames. Many have been replaced with plastic laminate faced (simulated wood) solid core doors in the existing hollow meal frames in the 2008 renovation. Existing wood doors are generally in good condition. Oversized Hollow metal doors in hollow metal frames are used at the separation between the Band room and the backstage area. Personnel Doors are equipped commercial with mortice locksets, 5-knuckel ball bearing hinges, door closers in serviceable condition, except for three late-addition hollow core doors in wood frames and trim located in the School District Offices – these are residential in nature, do not have accessibility compliant hardware, and afford little acoustic or security separation.

Personnel Doors

Description of Existing Systems
Typical hallway and office doors: solid core wood or wood print plastic laminate panels in painted hollow metal frames. Most have a fire rating of 20 or 60 min. None are equipped with vision lites.
Oversized door between Band room and backstage area: painted hollow metal in hollow metal frame.

Existing Conditions
Typical Hallway and office doors: Door and frame conditions. Score 3. Hardware issue identified below, Score 1.
Oversized door (PR4x7) between Band and Stage: Door and frame condition score 2.
Residential Hollow Core doors in School district offices in inconsistent with standard in the school, and do not have ADA lever hardware. Score 2

Code Deficiencies

ID-9: Door latching mechanisms into classrooms do not meet NFPA 101 or DEED Design Standards for latching function. These door latches do not have a means of securing the classroom from the inside without a key or opening the door and keying the mechanism from the outside. However they can be keyed from the inside or outside. This is a security deficiency that needs to be evaluated by the School district.

ID-10: Three doors in the School District office are not equipped with latching mechanism with accessibility compliant levers.

ID-11: 8 classroom doors are not equipped with full-perimeter gaskets and door bottom with neoprene element, closer per DEED Standards.

Recommendations

ID-9: Replace mortice locksets at 15 locations in the school (classrooms, library, faculty space, school district offices) with new mortice locksets with keyless classroom securing function. Priority #2

ID-10: Replace nonstandard doors in the School district offices with new solid core wood doors and hollow metal frames, with accessibility compliant hardware. Three doors. Priority #2

ID-11: At 8 classroom doors install full-perimeter gaskets and door bottom with neoprene element, door closer, and wall or floor stop, per DEED Standards. Priority #2

ID-12: Install acoustic seals and door bottom at door between Band and stage, repaint. Priority #2

Estimates

ID-9: Replace Mortice Locksets	$18,802
ID-10: Replace Nonstandard Doors	$3,761
ID-11: Install Full-Perimeter Gaskets and Door Bottom	$12,327
ID-12: Install Acoustic Seals and Door Bottom	$623

Special Doors

Description of Existing Systems

Coiling Counter door, School district Office

Existing Conditions

Overhead coiling counted door was installed as part of 2008 renovation work and appears to function as intended.

Code Deficiencies

None

Recommendations

None

Windows & Sidelites – None

Interior Finishes Overview

Synopsis
Interior finishes vary age and condition, with most bring serviceable. The school is clean and well maintained.

Floor Finishes

Description of Existing Systems
Hallways and classrooms: Broadloom Carpet
Wet areas in classrooms, School district and administration staff spaces: Sheet Vinyl
Bathrooms: Sheet vinyl
Multipurpose Room: play floor carpet.
Stage: Painted Masonite

Existing Conditions
Hallways and classrooms: Broadloom Carpet is in fair condition, with some need for spot cleaning, score 3. Anticipate replacement in 7-10 years, with attention to DEED standards for finish selection.

Wet areas in classrooms, School district and administration staff spaces: Sheet Vinyl in fair condition, score 3. Anticipate replacement in 7-10 years.

Bathrooms (student and staff): Sheet vinyl is in good condition, score 4. Anticipate replacement in 7-10 years.

Multipurpose Room: play floor carpet is in fair condition considering it appears to be from original construction, but has some deficits; no padding, more difficult to clean. It is also not consistent with DEED standards. Score 2. Replace it in 1-3 years.

Stage: Painted Masonite in fair condition., score 3. Repaint in 3-5 years.

Code Deficiencies
Note the Sheet vinyl at the intermediary school staff and utility areas has been identified as a non-friable Asbestos containing material in the AHREA 3-year reinspection.

Recommendations
ID-13: Multipurpose Room carpet replacement with performance cushioned sports flooring suitable for installation over wood decking substrate. Priority #2

Estimates

ID-13: Replace Carpet with Performance Cushioned Sports Flooring	$170,158

Wall Finishes

Description of Existing Systems
Hallways: Wall textile/carpet over wood paneling
Classrooms and support space: painted gypsum board
Multipurpose/Recreation space: wood paneling to 7’ aff, Tectum above to ceiling.
Library: wood paneling and painted gypsum board.
Staff bathrooms: painted gypsum board

Student bathrooms: Fiberglass Reinforced Plastic (FRP)

Existing Conditions

Hallways: Wall textile/carpet over wood paneling is in good condition with a few seams that need to be reglued and small areas that have been damaged by ignition vandalism. Score 3.

Classrooms and support space: painted gypsum board and need to be patched and painted. Score 3

Multipurpose/Recreation space: wood paneling to 7' aff, Tectum above to ceiling. wood paneling is in good condition, score 4, tectum panels above are in fair condition and need repainting, score 3

Library: wood paneling and painted gypsum board is in good condition, score 4

Staff bathrooms: painted gypsum board are in good condition, score 4.

Student bathrooms: Fiberglass Reinforced Plastic (FRP) are in good condition, core 5.

Code Deficiencies

None noted.

Recommendations

ID- 14: Spot repairs and Seam gluing, hallway carpet 10 seams, 200 sf material. Priority #1

ID-15: Repaint gypsum board classroom walls, including wood trim at exterior windows. Patch and paint gypsum board walls at backstage platform area. Priority #1

ID-16: Repaint tectum wall panels; located above wood paneling at Multipurpose/Recreation rooms. Priority #1

Estimates

ID-14: Seam Gluing Hallway Carpet, Repairs	See ID-1
ID-15: Repaint Gypsum Board Classroom Walls	Part of ID-2
ID-16: Repaint Tectum Wall Panels	See ID-3

Ceiling Finishes

Description of Existing Systems

The typical ceiling, I throughout school is acoustic ceiling tile ACT in suspended grid. Areas with painted gypsum board ceilings are limited to bathrooms and the backstage area.

Existing Conditions

Conditions of ceilings are described in Soffits and Ceilings.

Other Finishes - None

Specialties Overview

Synopsis

The facility has a raised stage, backstage space with supporting proscenium, 30' wide, 12' high, stage curtain and curtain equipment, with direct connection to Multipurpose room on the stage thrust side and a large set of double doors into the band room/ music room side. Other specialties are listed in Description.

Interior Specialties

Description of Existing Systems

Theater support equipment – see Theatrical Equipment
Room/Panel Signage – are plastic resin type, mounted on the wall at the strike side of the hallway doors, and appear to meet accessibility requirements in terms of dimensional character and size and contrast, and provisions for braille.
Tackboards exist in hallways and classrooms. Tackboards are aluminum frame type.
Classrooms were originally equipped with chalk boards. Three of 8 still have them. Five have a section of whiteboard overlaying the old chalk boards.
Smart boards: two classrooms were noted having smartboards
Toilet room accessories are provided at staff and student bathrooms, including provisions for accessibility (mirror, literary, toilet heights and clearances, grab bars at Accessible toilet).
Toilet Room partitions are solid surfaces type, utilized at student bathrooms.
Corner guards are not utilized in this facility.
Retracting projector screens are provided in each classroom. There is no large projector screen seen in the Multipurpose room.
Fire extinguishers are provided on wall brackets with no fire extinguisher cabinets.
Recessed Aluminum Entry Floor system: Each entry vestibules is underlain by an aluminum and traction surface entry floor over a recessed pit/pan.

Existing Conditions

Theater support equipment – see Theatrical Equipment
Room/Panel Signage – are plastic resin type, mounted on the wall at the strike side of the hallway doors, and appear to meet accessibility requirements in terms of dimensional character and size and contrast, and provisions for braille - Score 4.
Tackboards exist in hallways and classrooms. The backboards are aluminum frame typ and numerous, in good condition – Score 4.
Classrooms were originally equipped with chalk boards, three of eight still have them. Five have a section of whiteboard overlaying the old chalk boards. The school installs white bords overlaying chalk boards so as to not damage the walls by removing the chalkboards – score 3.
Smart boards: two classrooms were noted having smartboards, they are in operational condition – score 3,
Toilet room accessories are provided at staff and student bathrooms, including provisions for accessibility (mirror, literary, toilet heights and clearances, grab bars at Accessible toilet). These were installed under older accessibility provisions and do not include the upright section of grab bar by the toilet as required in the current code. Score 3 for condition of accessories, score 2 for the missing grab bar component.
Toilet Room partitions are solid surfaces type, utilized at student bathrooms. These are in good condition, score 4.

Corner guards are not utilized in this facility. With the carpet wall covering over wood, the hallway walls do not appear to easily damage.
Retracting projector screens are provided in each classroom. There is no large projector screen seen in the Multipurpose room.
Fire extinguishers are provided on wall brackets with no fire extinguisher cabinets. Score 2. Noted all extinguishers will expire in June, this is when they are scheduled for annual inspection.
Recessed Aluminum Entry Floor system: at high traffic entry points the carpet strips bonded to the aluminum bars are worn, but serviceable.

Code Deficiencies
ID-17: missing upright grab bar at toilet rooms x 4.
ID-18: No large projector screen in Multipurpose room x 1
ID-19: No fire extinguisher cabinets per DEED standards. X 8

Recommendations
ID-17: install missing upright grab bar at toilet rooms x 4. Priority #1
ID-18(2): provide large projector screen in Multipurpose room x 1. Priority #1
ID-19(2): Provide fire extinguisher cabinets for fire extinguishers per DEED standards. X 8. Priority #2

Estimates

ID-17 Install Missing Upright Grab Bar	$3,733
ID-18(2) Provide Large Projector Screen	$18,987
ID-19(2) Provide Fire Extinguisher Cabinets	$10,003

Casework/Millwork

Description of Existing Systems
Existing Architectural millwork through facility is commercial plastic laminate over particleboard boxes, door, and drawer panels with PVC edge banding. Countertops are plastic laminate, self-edged (edge matching tops). Door hinges are knuckling type stainless steel, pulls are recesses finger pull type.

Existing Conditions
The commercial cabinet boxes and shelves appear sound and design configuration seem functional, but door and drawer faces are chipped and damaged in some places.

Code Deficiencies
ID-17(2): Closed cabinets under sink bases do not meet accessibility requirements.

Recommendations
ID-18: Option 1, Priority #1- Remove and replace all countertops with new plastic laminate countertops and backsplashes. At sink base cabinets, remove box and provide new configuration to afford accessible clearance and plumbing guard. The existing stainless-steel sink and touch free faucet may be salvaged and reinstalled. Replace all damaged drawer and door faces and replace them with new to match (approximately 15% of all units).
ID-19: Option 2, Priority #2 - Remove and replace all countertops with new plastic laminate countertops and backsplashes. At sink base cabinets, remove box and provide new configuration to afford accessible clearance and plumbing guard. The existing stainless-steel sink and touch free

faucet may be salvaged and reinstalled. Remove all door and drawer faces and provide new heavy duty PVC edge banding and wire pulls.

Estimates

ID-18: Replace Countertops & 15% Drawers and Doors	$121,717
ID-19: Replace Countertops Drawers and Doors	$306,774

Seating – No Fixed seating

Window Coverings

Description of Existing Systems

Vertical louver slat blinds, PVC, retractable to sides.

Existing Conditions

Mostly intact and operational but not functional. Operation requires sill and mullions be cleared, spaces commonly used as shelves for plants and other classroom related items that must be moved to deploy the blinds. Rapid deployment of blinds is not possible in an emergency.

Code Deficiencies

ID-20: These blinds do not meet DEED Design and construction Standards which identify roller blinds as a baseline standard.

Recommendations

ID-20: Remove and replace existing blinds with new roller shades. Priority #1

Estimates

ID-20 Remove and replace Existing Blinds $38,300

Conveying Systems – None

Mechanical

Synopsis

Mechanical and plumbing systems in this school are generally either from the original 1970's era construction or the 2003 remodel. Individual conditions vary for systems and components, but overall they are generally in fair to good condition, despite generally being at or beyond the ends of their useful service lift. The pneumatic controls are only marginally functional.

Plumbing Overview

Synopsis

Plumbing systems in this school are generally either from the 1970's era construction or the 2003 remodel, so piping is aged but serviceable. Fixtures are also in serviceable condition.

Plumbing Fixtures

The toilets, urinals, lavatories, and sinks are all original late-1970's vintage. The laundry tub in the corner of the gym is an add on, date unknown. There are two drinking fountains outside the boys and girls toilet rooms. The one by the girls toilet room is a newer unit and is equipped with a bottle filler. The one by the boys room was also a replacement unit, but is older (age unknown). All faucets in the building were changed out in 2020 to be low flow, hard-wired sensor faucets for hands free operation. All flush valves in the building have been retrofit in 2020 with Sloan brand battery powered, low consumption, automatic flush power heads. Toilet flush valves have a water saving low flow-high flow sensor function, based on dwell time. In addition to sensor operation, the valves have a manual flush button and the flush valves for the toilets have a water saving 2 button option. The stainless steel classroom sinks have been retrofit with a sensor operated faucet and have had the bubbler removed and a cap installed on the sink. The laundry room has a residential type washer and dryer set, along with a counter-mounted stainless steel sink with a manual faucet. The faculty room has a modular kitchenette with a built-in sink, dishwasher, microwave, refrigerator, and 2-burner cooktop, dating from the original construction. The sink has been retrofit with a sensor operated faucet. The mop sink in the Janitor's closet is in fair condition.

Existing Conditions

Fixtures are generally in fair to good condition, and faucets and flush valves are in fair to almost new condition. The drinking fountain / bottle filler is like new.

Code Deficiencies

MP-1: None of the lavatories are equipped with an ASSE 1070 compliant tempering valve, as required by section 407.3 of the Uniform Plumbing Code.

Recommendations

MP-1: Provide ASSE 1070 compliant tempering valves for the lavatories. Any ADA compliance issues should be addressed. Priority #1
MP-2: The existing toilets and urinals are older designs not engineered for use with low consumption flush valves. Consequently, the flush valves have been adjusted to a higher flow for proper flushing action. If saving water is a concern, it is recommended these fixtures be changed out for modern versions that can better utilize the capability of the low consumption flush valves. Any ADA compliance issues should be addressed. Priority #3

Estimates

MP-1: Provide Tempering Valves For The Lavatories	$2,698
MP-2: Change Fixtures, keep Flush Valves	$27,300

Plumbing Piping

Description of Existing Systems

A 2-1/2" water service comes into the building's crawlspace under the stage platform. This water service is separate from the 4" water service for fire protection. The domestic cold water is routed in the crawlspace to all points in the school and to the water heater in the mechanical room. There is no water meter on the system. There is no check valve on cold water (CW) pipe to the water heater to prevent HWC water backflowing into the CW piping. Hot water from the water heater is routed down into the crawlspace for distribution to the fixtures and recirculation. Hot water recirculation piping is also in the crawlspace and comes back to the HWC pump and the water heater. Water pressure into the building is assumed to be in the 80 to 90 PSIG range.

Existing Conditions

Piping is in fair to good condition. Some pipe insulation is in poor condition or missing and needs to be replaced. Many of the isolation valves in the building are gate valves and are either known or suspected to have poor function (hard to turn and/or do not fully shut off) or no function (frozen).

Code Deficiencies

MP-3: Water pressure into the building generally exceeds the plumbing code maximum of 80 PSIG, which is a violation of section 608.2 of the Uniform Plumbing Code.

Recommendations

MP-3: Provide a pressure reducing station for the water service entrance piping to keep water pressure below 80 PSIG. Priority #1
MP-4: It is recommended a check valve be added to the CW pipe upstream of the HWC connection to prevent recirculated hot water from getting into the CW piping to the fixtures. Priority #1
MP-5: Replace the trap primer in the boiler room. Priority #1

For future planning, recommend replacing domestic water piping within the next 7-10 years.

Estimates

MP-3: Provide A Pressure Reducing Station	$11,647
MP-4: Install A Check Valve To The CW Pipe	$9,297
MP-5: Replace The Trap Primer	$3,429

Plumbing Equipment

Description of Existing Systems

Domestic hot water is generated by one water heater. It is an HTP SuperStor Ultra model SSU-80C, 80 gallons, single wall, which is indirect-fired from the heating system. The hot water circulation (HWC) pump is a small Teel brand pump that connects to the cold water piping upstream of the cold water connection to the water heater. Hot water is stored and distributed at 120 degrees F.

Existing Conditions

The HTP water heater is in very good condition. It was built in August of 2018, so it is approaching 5 years old. The HWC pump is not new but is in fair condition.

Code Deficiencies

MP-6: The HTP water heater is not either strapped to the wall or anchored to the floor to prevent overturning, which is a violation of section 507.2 of the Uniform Plumbing Code and Chapter 13 of ASCE/SEI Standard 7-2016 (Minimum Design Loads for Buildings and Other Structures). Priority #1

MP-7: The safety relief valve is piped with a long run of piping using 6 elbows and a pipe tee to reach the floor drain. This pipe runs with numerous elbows will inhibit flow through the relief valve and potentially create a safety hazard, which does not comply with section 608.5 of the Uniform Plumbing Code or the ASME Boiler and Pressure Vessel Code requirements. The relief valve should have 1 elbow that directs the flow downward, and the pipe should terminate 6 to 24 inches above the floor. Priority #1

MP-8: This water heater has a single wall heat exchanger, and so does not comply with the language of section 505.4.1 of the Uniform Plumbing Code. Priority #2

Recommendations

MP-6: Strap the water heater to the wall.

MP-7: Pipe the safety relief valve with one elbow.

MP-8: The water heater is reasonably new, but since it does not comply with UPC requirements should be considered for replacement within the next 1-3 years (note: the commercial warranty should be good for 7 years).

Estimates

MP-6: Strap The Water Heater To The Wall	$6,389
MP-7: Pipe The Safety Relief Valve With One Elbow	$1,019
MP-8: Consider Replacement Of Water Heater Within The Next 1-3 Years	$13,305

Waste & Vent Piping

Description of Existing Systems

DWV (Drain, Waste and Vent) piping is original to the building and is cast iron. Waste piping is routed down into the crawlspace, where it flows via gravity to a common discharge point out of the building. Vent piping is routed within walls and above ceilings, discharging through the roof. Rain

leader piping also is routed down into the crawlspace, where it flows via gravity to a common discharge point out of the building. Some piping in the crawlspace is submerged due to elevation and the watertight membrane on floor.

Existing Conditions
Visible piping is generally in fair to good condition. No complaints of blockages or venting issues.

Code Deficiencies
None noted.

Recommendations
MP-8(2): Observe submerged piping for excessive corrosion and replace as needed.
For future planning, recommend for the DWV piping to be replaced in the next 7-10 years. Priority #4

Estimates

MP-8(1) Replace DWV Piping	$282,847

Special Systems - None

HVAC Overview

Synopsis
The HVAC system is pretty typical for a school of this age and location. The heating plant for both the primary building and the intermediate building is located in the intermediate building in a boiler room addition. This building has three single zone air handling units. Two systems have ducted return air and a return fan. The classroom system is a 100% outside air, once through system with an exhaust fan to provide ventilation. General exhaust air systems located where appropriate.

Heating Equipment

This school is equipped with two oil-fired, cast-iron sectional boilers, Weil McLain model 788 Series 1 with Beckett burners, installed with the boiler room addition in 2003. This boiler room serves both the Primary Building and the Intermediate Building. There are two main circulation pumps that circulate heating water through the school, P-1A and P-1B. Each boiler is equipped with a boiler circulation pump, P-2 (for boiler #2) and P-3 (for boiler #1). Pump P-1A is a Taco model 1941 series pump, newly installed in 2022. Pump P-1B is the original pump and is a Taco 1641 series. Both pumps have a 7.5" impeller. Boiler pumps P-2 and P-3 are the original pumps, and each are a Taco 1611 series with a 4.6" impeller. The expansion tank, ET-1, is an Amtrol Extrol model 500L, with a replaceable bladder. The system is piped in a primary-only configuration, with the boiler pumps providing thermal shock protection for the boilers. The HWS flow is directed through an air separator, AS-1, believed to be an Amtrol brand.

Existing Conditions
The equipment is generally in good to fair condition.

The boilers are 20 years old and so are approximately 2/3 of the way through their useful life. Recommend planning for these to be replaced within the next 7-10 years.

During boiler replacement, it is recommended to also replace the expansion tank due age and the air separator due to both age and improved technology by replacing it with a Spirotherm brand Spirovent coalescing air and dirt separator.

Code Deficiencies

MP-9: Both boiler safety relief valves are piped with a long run of piping using 5-6 elbows to reach the floor drain. These pipe runs with numerous elbows will inhibit flow through the relief valves and potentially create a safety hazard, which does not comply with section 1006 of the International Mechanical Code or the ASME Boiler and Pressure Vessel Code requirements. These relief valves should have 1 elbow that directs the flow downward, and the pipe should terminate no more than 6 inches above the floor.

Recommendations

MP-9: Priority #2 Pipe the safety relief valves with one elbow.

MP-10: The three pumps that have not been replaced should be scheduled for replacement within the next 3-5 years. Priority #2

Estimates

MP-9 Pipe The Safety Relief Valves With One Elbow	$2,040
MP-10 The Three Pumps That Have Not Been Replaced Should Be Scheduled For Replacement Within The Next 3-5 Years	$403,262

Heating Distribution Systems

Description of Existing Systems

Heating piping and valves are at least 20 years old at the boiler room addition. Piping and valves are roughly 50 years old, except where modified in 2003. Piping typically runs under both school buildings inside the crawlspace. Piping is insulated, with some damage or gaps in places. Heating terminal units of baseboard fintube, unit heaters, cabinet unit heaters/convectors, and cabinet unit ventilators. The classrooms have cabinet unit ventilators (with no outside air connection, so are used only for heating).

Existing Conditions

Heating system overall is in fair condition, with the piping itself generally in good condition, and the heating terminal devices in good to fair condition. Isolation valves are typically gate valve style, and many have issues with cycling open/closed. Some fittings at various valves show signs of leakage in the past. The main balance valves at the boilers are leaking and need replacement. Some butterfly valves do not shut tight, allowing heating water to leak through. Not all pneumatic control valves are properly functioning. Some of the pipe insulation needs to be repaired or replaced.

Code Deficiencies

None noted.

Recommendations

MP-11: Tasks as follows (Priority #2):

- Replace all isolation valves.

- Replace malfunctioning control valves.
- Replace main balance valves.
- Repair pipe insulation.
- Clean and flush entire heating system.
- Conduct TAB (Testing, Adjusting, and Balancing) exercise on the system to bring it into balance and help save energy.

Estimates

MP-11 Tasks As listed for heating upgrades, TAB	$232,581

Ventilation Equipment

Description of Existing Systems

Building is served by three ventilation systems. All fans were new in 1979, so are approximately 44 years old.

An AHU tagged HV-1 is a 100% outside air unit which serves all the classrooms (as a single zone). This is a once-through system, with all air being exhausted by EF-6. HV-1 provides a constant volume of supply air. It is a Pace brand A-15F fan, capable of moving 3,600 CFM at 1-1/4" static pressure.

The second AHU, tagged HV-2, is coupled with a return fan, tagged RF-1. This system serves the library and district offices (two zones). HV-2 provides a constant volume of supply air. It is a Pace brand A-18/16F fan, capable of moving 5,015 CFM at 1-1/2" static pressure. The return fan RF-1 is a Pace 24AF, capable of moving 4,010 CFM at 1" static pressure.

The third AHU, HV-3, is coupled with a return fan, tagged RF-2. This system serves the gym, stage platform, and music room (3 zones). HV-3 provides a constant volume of supply air. It is a Pace brand B-16F fan, capable of moving 13,190 CFM at 1-1/4" static pressure. The return fan RF-2 is a Pace 33AF, capable of moving 11,200 CFM at 3/4" static pressure.

There are three exhaust fans in the building. Exhaust fan EF-1 is located on the roof and serves the five toilet rooms, the janitor closet, and the laundry room. It is a Cook model 180C6B, capable of moving 1,340 CFM at 1.25" SP. The exhaust fan serving the classrooms, tagged EF-6, is a Logic Air model MCF-4150A, capable of moving 3,420 CFM at 7/8" static pressure. The crawlspace exhaust fan, tagged EF-5, is also located on the roof and is a Cook model 120C3B, capable of moving 500 CFM at 3/4" static pressure. This fan ventilates the north (academic) portion of the crawlspace, under the classrooms, district offices, and library. These fans were new in 2003. EF-7 and another undocumented exhaust fan also ventilate the crawlspace for the intermediate school, serving the south side of the school below the gym, stage platform, and music room. EF-7 is below the music room and the other EF is below the east wall of the gym. Specifics of these fans are unknown, but both are assumed to be more than 20 years old and possibly date to the original construction.

Existing Conditions

Despite their age and being well beyond their expected useful life, the three main AHUs are generally in good condition due to good maintenance practices. The two return fans are also generally in good condition. Roof exhausters EF-1 and EF-5 are beyond their expected useful life. EF-6 is at the end of its expected useful life. EF-7 is well beyond its expected useful life.

Each fan is well beyond the end of its useful life. Recommend planning for these to be replaced within the next 3-5 years. Note that while no longer in business, Pace was a high-quality brand, so the cabinets for HV-2 and HV-3 potentially could be saved for retrofitting a "fan wall" type of arrangement. Prior to replacing the fans, consider using CO2 demand control ventilation for possible energy savings. If so, consider installing VFDs for HV-2, HV-3, RF-1, and RF-2, and CO2 sensors in the gym, stage platform, music room, library, and main district office during the fan retrofit, to use demand control ventilation to potentially reduce airflow during the day.

The classroom ventilation system (HV-1, EF-6) needs to be completely gutted and replaced. The classrooms need an AHU that is not a 100% outside air system so it won't shut down in winter. HV-1 should be replaced with a modern VAV (variable air volume) system, complete with new medium pressure ductwork, VAV boxes, low pressure ductwork and diffusers, and a ducted return air system to bring air back to the fan room. Ducted return air is necessary due to the extensive combustible construction in the school. Due to the current configuration of the three ventilation systems and limited fan room area, it will be necessary to also remove the HV-2/RF-1 system and provide a combined system that will serve the entire academic area of the school. The supply air ducts and VAV boxes will be located above the ceiling. The return air ducts will be located in the crawlspace. Exhaust fan EF-6 will be replaced with a return air fan that will move the air back to the fan room via a duct above the ceiling. This system will require extensive reworking of all the ductwork above the ceiling and in the crawlspace to have a coordinated installation.

Code Deficiencies

MP-12: All the fan units are not properly anchored against seismic events per section 1613 of the International Building Code and Chapter 13 of ASCE/SEI Standard 7-2016 (Minimum Design Loads for Buildings and Other Structures).

Recommendations

MP-12: Properly anchor the main fans (HV-1, HV-2, HV-3, RF-1, RF-2, EF-6) in accordance with current seismic restraint requirements. Priority #1

Estimates

MP-12 Properly Anchor The Main Fans	$575,845

Ventilation Distribution Systems

Description of Existing Systems

Distribution ductwork routes supply air to each of the main rooms. Ducted return air pulls air from the same spaces, except toilet rooms. The exhaust air ductwork pulls air from the toilet rooms and the janitor closet. Diffuser and grille locations are generally reasonable for good air distribution. The classrooms have air supplied to the room from diffusers either high on the interior wall or from the ceiling, and have return air grilles in the floor. As previously described, using a 100% outside air system for the classrooms is a problem due to the need to shut HV-1 off due to cold air temperatures in winter.

Existing Conditions

The ductwork is generally in good condition, but due to the issue with HV-1 as a 100% outside air system, almost all the ductwork in the academic portion of the building will need to be replaced.

Code Deficiencies

None noted.

Recommendations

The classrooms need a ventilation system that is not 100% outside air so that it won't shut down when subjected to cold winter temperatures. See the more detailed discussion under the Ventilation Equipment recommendations.

Conduct TAB (Testing, Adjusting, and Balancing) exercises on the system to bring it into balance and help save energy.

Cooling Equipment - None

Cooling Distribution Systems - None

Heat Recovery System - None

Integrated Automation Overview

Synopsis

Existing system is a Honeywell Niagara N4 DDC system installed in 2020 by Meridian Systems as part of a districtwide controls upgrade project. System is DDC over pneumatics. The existing pneumatic system is used to drive damper and valve actuators, as well as room thermostats. There are a few controlled devices that are completely DDC (no pneumatics).

Control Systems

Description of Existing Systems

See above. The air compressor is in the Fan room. See the Air compressor section of this report. Most room thermostats are Johnson Controls pneumatic type devices. Some are Honeywell DDC type.

Existing Conditions

DDC portion of the system for both buildings is in very good condition. There are some programming items to clean up and miscellaneous control glitches to sort out. The pneumatic portion of the system is in poor to very poor condition. Many pneumatic devices are problematic to properly control. See the Air compressor section of this report.

Code Deficiencies

None noted.

Recommendations

MP-13: Priority #2. Remove all pneumatic thermostats, actuators, devices, and tubing, and replace with digital thermostats, devices, and actuators. Update programming and graphics. Troubleshoot issues with the system. Retro commissioning: Have the controls contractor and TAB contractor work with district maintenance personnel to adjust the heating and ventilation systems for proper operation.

Estimates

MP-13 Replace Controls With DDC	$460,954

Other Automation - None

Fire Protection Overview

Synopsis
This building is equipped with a wet pipe system fed off a separate, dedicated 4" water supply. The boiler room has a dry pipe system that provides coverage for outdoor canopies.

Riser & Equipment

Description of Existing Systems
Riser is in the backstage area of the stage platform. This system serves the entire building. It is a 4" water line that is separate from the domestic water service to the building. It is regularly maintained and was recertified in August of 2022.

Boiler room has a dry pipe system, with the riser in the boiler room. This system serves the covered outdoor canopies. It is regularly maintained and was recertified in August of 2022.

Existing Conditions
Sprinkler systems are generally in good condition and are certified annually.

Code Deficiencies
None noted.

Recommendations
Continue annual maintenance and certification program. Replace any sprinklers or devices as required.

Sprinklers & Piping

Description of Existing Systems
Piping is both concealed and exposed, depending on the room and building construction. Sprinklers in the gym are protected with wire guards.

Existing Conditions
Sprinklers and piping are generally in good condition.

Code Deficiencies
MP-14: There is low storage under the stage platform, accessible through the doors in the gym. These storage compartments have combustible construction and are not sprinklered.

Recommendations
MP-14: Extend the sprinkler coverage to include the storage spaces underneath the stage platform. Priority #1.

Estimates

MP-14 Extend Sprinklers Under Stage	$50,702

Special Suppression Systems - None

Special Mechanical Systems Overview

Synopsis

This school has an underground fuel oil storage tank and a day tank for the generator, a newer air compressor for the dry pipe system, and an old but functional controls air compressor.

Fuel Supply (Oil)

Description of Existing Systems

There is an existing 3,000 gallon underground storage tank (UST) close to the boiler room addition. Supply and return piping between the UST and the boiler room is underground and is a double wall type. Piping within the boiler room is threaded schedule 40 steel pipe, routed to both burners on the boilers and back to the UST.

There is also a separate pair of supply and return piping between the UST and the fuel transfer pump and generator day tank, which are located in the Intermediate Building fan room. Supply and return piping between the UST and the crawlspace is underground and is a double wall type. Supply and return piping in the crawlspace and up to the fan room is schedule 40 steel pipe. Piping in the fan room is soft copper tubing.

Existing Conditions

The UST was recently recertified with DEC so is in good condition. Piping within the boiler room and fan room is in good condition. The generator day tank has evidence of a previous leak at one of the fittings. Both the generator and the day tank have approximately 4" tall drip pans to contain oil leakage. Each of the boiler burners has a small, 1-inch tall drip pan to contain minor oil leakage.

Code Deficiencies

None noted.

Recommendations

MP-15: For long term planning, recommend replacing the UST with a double wall above ground storage tank (AST) in the next 5-10 years. Priority #2

Estimates

MP-15 Replacing The UST Storage Tank With (AST)	$149,579

Dust Collection Systems - None

Compressed Air & Vacuum Systems

Description of Existing Systems

A Quincy brand air compressor is used to provide control air for the pneumatic controls in both buildings. This is a horizontal tank with duplex compressors, floor mounted with vibration isolation.

This compressor is original to the building and is approximately 23-24 years old. System is equipped with a filter, Hankinson refrigerated dryer, and regulator.

An air compressor is used for pressurizing the dry pipe sprinkler system in the boiler room. This is a small, pipe-mounted unit, typical for smaller dry pipe fire protection systems.

Existing Conditions
This air compressor system appears to be in fair condition. Overall, the system is in poor to very poor condition. It is old, unreliable and replacement parts are not available.

The boiler room air compressor was replaced in 2016 and the solenoid switch on it was replaced a couple years ago. This unit is in good condition.

Code Deficiencies
None noted.

Recommendations
With MP-13: Remove this air compressor system when the controls are upgraded to DDC. Remove existing controls tubing throughout the building where feasible.

Other Special Mechanical Systems - None

Electrical

Synopsis
The electrical systems for the building include power distribution, lighting fixtures and lighting control, low voltage systems such a fire alarm, intercom, communications, etc. These systems are described fully under the sub-headings below.

Service & Distribution Overview

Synopsis
The building is served at 208Y/120V from the local electrical utility. The utility does not record electrical demand data; however, the service size is appropriate for a facility of this size with appropriate spare capacity.

Main Distribution Panels & Switchgear

Description of Existing Systems
The main distribution panel consists of a 208Y/120V, 600A main breaker distribution switchboard located in an electrical closet accessed from a corridor. The distribution section contains (9) feeder breakers with supply branch circuit panelboards and equipment throughout the facility.

Existing Conditions
The system condition is determined to be marginal due to the system exceeding its useful life.

Code Deficiencies
E-7: Feeder breakers in main distribution panel are not labeled in accordance with NEC 408.4.

Recommendations
E-7: Label main and feeder breakers in accordance with NEC 408.4. Priority #1

Estimates

E-7 Label Main and Feeder Breakers	$736

Panels & Motor Control Centers

Description of Existing Systems
Secondary Building: There are numerous branch circuit panels located throughout the intermediate building. Branch circuit panels reflect numerous changes over the years with marked up circuit descriptions. Each branch circuit panel has a Transient Voltage Surge Suppressor (TVSS) device installed to protect branch circuits from transient voltage spikes.

Existing Conditions
The system condition is determined to be marginal due to the system exceeding its useful life.

Code Deficiencies
E-8: Panel schedules in branch circuit panelboards are not wholly accurate and require relabeling in accordance with NEC 408.4.
E-9: Fire alarm panel circuit breaker is not provided with lock off device or labeled/identified in accordance with NFPA 72.

Recommendations
E-8: Confirm branch circuit loads and recreate panel schedules in accordance with NEC 408.4. Priority #1
E-9: Provide labeling of FACP branch circuit breaker in accordance with NFPA 72. Priority #1

Estimates

E-8 Confirm Branch Circuits, Panel Schedules	$38,569
E-9 Label and Lock-off Fire Alarm Circuit	$1,911

Transformers - None

Conduit & Feeders

Description of Existing Systems
Conduit systems in use include, rigid metal conduit (RMC), electrical metallic tubing (EMT), flexible metal conduit (FMC), rigid polyvinyl chloride conduit (PVC), armored cable (AC), and metal clad cable (MC).

Existing Conditions
In general, the conduit systems in use are in good condition.

Code Deficiencies
None noted.

Recommendations
None.

Lighting Overview

Synopsis
See below.

Light Fixtures

Description of Existing Systems
Interior lighting is provided by a variety of fixture types including recessed 2'x4', linear strips, surface wraparound style, surface fixtures and recessed downlights. The predominant lamp type is fluorescent with T12, T8 and T5 lamps in use. As the fluorescent lamps fail, the ballasts have been removed and direct wired tubular LED lamps are provided. Lighting levels are appropriate for the spaces throughout the facility. A stage lighting system with incandescent dimmers and incandescent stage lighting is present and is still in limited use for stage productions. The system is antiquated and should be replaced.

Emergency egress lighting is provided by individual battery pack wall mounted emergency lighting units (ELUs or so called "bug-eyes"). Interior emergency egress lighting coverage is not adequate. Exit signs are the powered type with incandescent lamp and battery backup. Some of the exit sign lamps have been replaced with LED equivalent.

Existing Conditions
While functional, the lighting fixtures in the facility are classified as marginal due to the components exceeding their useful life. Numerous lighting diffusers were noted to be damaged or missing. The style of fixtures is dated and light distribution while adequate would be greatly improved using volumetric style lighting fixtures. The stage lighting system is in poor condition and should be replaced with a smaller, energy efficient system using DMX controls and LED fixtures with fixture based dimming drivers.

Code Deficiencies
E-10: Code required emergency exit lighting at exterior landings was not evident to meet IBC requirements.
E-11: Path of egress emergency lighting is not adequate to meet IBC requirements.
E-12: Fixture diffusers are missing or damaged.
E-13: Portable incandescent string lights in crawl space are not provided with guards per NEC Article 590.
E-14: Stage lighting dimmers located in storage room with inadequate clearance.

Recommendations
E-10 through E-13: Provide a complete lighting upgrade for the entire facility with energy efficient LED fixtures and exit signs. Provide remote emergency lighting heads at exterior landings to meet IBC requirements. Provide battery pack wall mounted emergency lighting units in paths of egress to meet IBC required exit lighting levels. Replace the crawl space lighting with a permanently installed LED lighting system. Priority #2
E-14: Replace the stage lighting dimming system with current technology system using DMX controls and LED fixtures. Priority #4

Estimates
E-10 Through E-13: Complete Lighting Upgrade $928,112

E-14: Replace The Stage Lighting $63,290

Lighting Controls

Description of Existing Systems
Lighting controls are generally simple line voltage switches. Corridor lighting control is provided by momentary switches controlling multipole lighting contactors. Digital and mechanical time switch controls with photocell is utilized for exterior lighting control.

Existing Conditions
The existing lighting control system is adequate

Code Deficiencies
None noted.

Recommendations
E-15: As part of a complete lighting upgrade, replace the existing lighting control system with a low voltage lighting control system providing dimming capability and occupancy-based control. Priority #2

Estimates
E-15 Replace The Existing Lighting Control System $81,221

Conduit & Wiring

Description of Existing Systems
Conduit systems in use include, rigid metal conduit (RMC), electrical metallic tubing (EMT), flexible metal conduit (FMC), rigid polyvinyl chloride conduit (PVC), armored cable (AC), and metal clad cable (MC). Wiring consists typically of THHN style.

Existing Conditions
In general, the conduit and wiring systems in use are in good condition.

Code Deficiencies
None noted.

Recommendations
None.

Power Overview

Synopsis
The following sections describe electrical devices and associated power connections.

Devices & Connections

Description of Existing Systems
Receptacles consist of recessed devices in public areas and surface mounted devices in utility areas. Devices appear to be original. Some classrooms have surface mounted raceway/plugmold for

mounting devices. Device plates are typically stainless steel. Numerous areas where flat screens have been installed, need a local receptacle installed behind the screen to avoid power cords strung across walls.

Existing Conditions

Receptacles appear to be original equipment and are classified as marginal due to exceeding useful life.

Code Deficiencies

E-16: Receptacle adjacent to Multipurpose 43 utility sink and intermediate classroom sinks are not GFCI per NEC 210.8(B)(5).
E-17: Receptacles in laundry area are not GFCI per NEC 210.8(B)(11).
E-18: Receptacles for bottle fillers are not GFCI as required by NEC 422.5(A)(2).
E-19: Lighting outlets in crawl space are not GFCI protected as required by NEC 210.8(C).
E-20: Exterior receptacles are not GFCI type per NEC 210.8(B)(4).
E-21: Exterior receptacles do not have weatherproof while in use cover per NEC 406.9(B)(1).
E-22: No emergency shutdown switch for boilers per ASME CSD-1.
E-23: No receptacle within 25' of mechanical fan above boiler room or exhaust fan between roof doghouses per NEC 210.63.
E-24: Roof heat trace is not ground fault protected for equipment (GFPE) per NEC 427.22.
Stage PA system is supplied by an extension cord. Provide a permanent receptacle adjacent to system.

Recommendations

E-16: Provide GFCI receptacle adjacent to Multipurpose 43 utility sink and intermediate classrooms. Priority #1
E-17: Provide GFCI receptacles in laundry area. Priority #1
E-18: Provide GFCI receptacles for bottle fillers Priority #1
E-19: Provide GFCI protected branch circuit for lighting outlets in crawl space. Priority #1
E-20: Provide GFCI exterior receptacles. Priority #1
E-21: Provide weatherproof while in use covers for exterior receptacles. Priority #1
E-22: Provide emergency shutdown switch for boilers per ASME CSD-1. Priority #1
E-23: Provide GFCI receptacle within 25' of mechanical fan above boiler room or exhaust fan between roof doghouses. Priority #1
E-24: Provide GFPE breaker for roof heat trace circuit. Priority #1
E-25: Provide permanent receptacle for stage PA system supplied by an extension cord at Platform 42. Priority #1
E-26: Provide additional permanent receptacles behind flat screens to avoid stringing cords across room spaces. Priority #1

Estimates

E-16 Provide GFCI Receptacles	$5,122
E-17 Provide GFCI Receptacles In Laundry Area	$358
E-18 Provide GFCI Receptacles For Bottle Fillers	$239
E-19 Provide GFCI Protected Branch Circuit In Crawl Space	$1,191
E-20 Provide GFCI Exterior Receptacles	$834
E-21 Provide Weatherproof Covers For Exterior Receptacles	$756

E-22 Provide Emergency Shutdown Switch For Boilers	$1,566
E23 Provide GFCI Receptacle Within 25' Of Mechanical Fan	$5,271
E-24 Provide GFPE Breaker	$560
E-25 Provide Permanent Receptacle For Stage PA System	$1,296
E-26 Provide Additional Permanent Receptacles	$10,370

Conduit & Wiring

Description of Existing Systems

Conduit systems in use include, rigid metal conduit (RMC), electrical metallic tubing (EMT), flexible metal conduit (FMC), rigid polyvinyl chloride conduit (PVC), armored cable (AC), and metal clad cable (MC). Wiring consists typically of THHN style.

Existing Conditions

In general, the conduit and wiring systems in use are in good condition. Some locations in exterior locations were showing signs of corrosion such as the main service conduit below decking.

Code Deficiencies

E-27: A fair amount of conduit and MC cable is not supported in accordance with NEC Chapter 3 in the crawlspace.

Recommendations

E-27: Properly support conduit and MC cable in crawlspace in accordance with NEC Chapter 3. Priority #1

Estimates

E-27 Properly Support Conduit	$13,011

Special Systems Overview

Synopsis

The systems described below fall under the category of low voltage systems as described in Article 725 of the NEC.

Fire Alarm

Description of Existing Systems

An addressable fire alarm system (EST-2) serves the facility and was installed in 2003. The system includes the main fire alarm panel located in the intermediate building office, field devices including horn-strobes, horns, smoke detectors and manual pull stations. Several remote annunciators are located throughout the facility and building entrances. The annual certification date for the system was noted to be October 2018.

Existing Conditions
The system is in adequate condition and no unexpected alarm or trouble conditions were noted. However, it is approaching the end of its useful life.

Code Deficiencies
E-28: Annual certification is out of date. Educational occupancies now require fire alarm systems with voice evacuation control.

Recommendations
E-28: Provide annual certification testing of existing fire alarm system. *Task Completed*
E-29: In the next five years, provide new fire alarm system meeting code requirements for educational occupancies. Priority #2

Estimates

E-28 Provide Annual Certification Testing	Task Completed
E-29 Replace Fire Alarm System	$484,650

Data & Communications

Description of Existing Systems
The telecom distribution system consists of a floor mounted telecommunication rack located in the storage room adjacent to the main office in the intermediate building. The providers optical fiber cable is terminated and supplies the rack mounted switches via an associated router/firewall. Category 5, plenum rated, unshielded twisted pair cabling is routed from modular patch panels in the MDF to multiport telecommunications outlets in the intermediate building via open wiring in ceiling space and crawl space. A separate wall mounted IDF rack supports telecommunications outlets in the primary building. From inspection it appears that the network cabling currently supports IP phones and wireless access points. Very few computers are connected to system at it is reported that most utilize the wireless network.

Existing Conditions
The cabling is considered marginal as it has exceeded its useful life.

Code Deficiencies
E-30: Abandoned cables that are accessible require removal per NEC 725.25 and 800.25.

Recommendations
E-30: Remove abandoned phone/telecom wiring and unused equipment. Priority #3
E-31: Add additional cable management to organize cabling at racks. Priority #2
E-32: Upgrade telecommunication cabling to support higher data rates. Priority #3
E-33: Provide additional permanent receptacle at MDF rack for server equipment. Priority #2

Estimates

E-30 Remove Abandoned Phone/Telecom Wiring	$8,358
E-31 Add Additional Cable Management	$12,584
E-32 Upgrade Telecommunication Cabling	$46,218
E-33 Provide Additional Permanent Receptacle	$1,296

Security Systems - None

Clock Systems

Description of Existing Systems
A Rauland 2524 master clock located in the intercom headend rack in Storage 17 provides input to the analog synchronized clocks located throughout the facility.

Existing Conditions
The system is functional but categorized as marginal since it has exceeded its useful life.

Code Deficiencies
None noted.

Recommendations
E-34: Replace existing synchronized clocks with GPS based master clock system to provide long term useability. Priority #2

Estimates

09-E-34 Replace Existing Synchronized Clocks	***$20,652***

Intercom Systems

Description of Existing Systems
The intercom system consists of a Rauland Telecenter 21 intercom headend located in Storage 17. The system provides intercom and bell service throughout the facility via recessed and surface mounted speakers in the corridors and classrooms.

Existing Conditions
The system is functional but categorized as marginal since it has exceeded its useful life.

Code Deficiencies
None noted.

Recommendations
E-35: Replace existing intercom system with IP based system to provide long term useability. Priority #2

Estimates

E-35 Replace Existing Intercom System	$178,207

Other Special Systems

Description of Existing Systems
CCTV: Several cameras were noted at various locations throughout the facility. The system is not operational.

TV: A cable TV distribution system is present consisting of signal distribution amplifiers, coaxial cabling, and cable outlets in classrooms. The system is no longer used.

Classroom Sound Enhancement: Classroom sound enhancement systems were in use in several classrooms. The system appears to have been installed with the classroom smartboards and consists of a small amplifier with wireless mic and source inputs and surface mounted classroom speakers. The system appeared to be in use in several classrooms.

Existing Conditions
CCTV: Poor condition.
TV: Poor condition.
Classroom Sound Enhancement: Good condition.

Code Deficiencies
E-36: Abandoned TV cables that are accessible require removal per NEC 725.25.

Recommendations
E-36: Demolish existing, unused cable TV system including amplifiers, outlets and associated cabling. Priority #3

Estimates

E-36 Demolish Unused TV System	$10,448

Other Electrical Systems Overview

Synopsis
See below.

Power Generation & Distribution

Description of Existing Systems
A diesel fueled Onan generator is located in the 2nd level fan room near the rec room stage in the intermediate building. The generator was installed in 2001. The generator is rated at 15kVA/12kW with a 30A/3P output breaker. The output breaker supplies the alternate source side of an Onan automatic transfer switch. The load side of the transfer switch supplies building freeze protection loads (boilers and circulation pumps) and a few communications loads as reported by facilities.

Existing Conditions
The system is adequate due to approaching the end of its useful life.

Code Deficiencies
No electrical code deficiencies noted.

Recommendations
E-37: Provide a drip pan under generator fuel pump. Priority #1
E-38: Provide insulation on silencer piping. Priority #1
E-39: Repair day tank pump controls reported to not be working. Priority #1

Estimates

E-37 Provide A Drip Pan Under Generator Fuel Pump	$1,445

E-38 Provide Insulation On Silencer Piping	$2,839
E-39 Repair Day Tank Pump Controls	$7,038

Electrical Heating Systems - None

Grounding Systems

Description of Existing Systems
See site electrical/supply and distribution.

Existing Conditions
See site electrical/supply and distribution.

Code Deficiencies
See site electrical/supply and distribution.

Recommendations
See site electrical/supply and distribution.

Equipment and Furnishings

Equipment Overview

Synopsis

Equipment is limited to food storage, athletic equipment, and Theatrical equipment.

Food Service & Kitchen Equipment

Description of Existing Systems

Limited food related equipment includes upright residential refrigerator/freezer, small chest freezer, and folding lunch tables. A utility sink and a storage closet are located in the vicinity of refrigerator, freezer and table storage. Food preparation does not occur at this facility.

Existing Conditions

Refrigerators and freezers are antiquated but functional. Folding student lunch tables are in operational condition. DEED Standards call for easily cleanable surfaces where food is handled. This is a greater design question related to how the school is handling food related activities in this area. If the area is to have a food service function it should be remodeled with appropriate plumbing, floors walls and ceilings that meet standard requirements.

Code Deficiencies

To be determined.

Recommendations

Replace refrigerator and freezer with single large refrigerator/freezer unit with integral icemaker.

Estimates
None

Athletic Equipment

Description of Existing Systems
The multipurpose room has a continuous horizontal climbing wall on three sides, two non-regulation mobile basketball backstops, and miscellaneous exercise activity equipment stored on the main floor.

Existing Conditions
Equipment is in serviceable condition, score 4.

Code Deficiencies
EQUIP-1: DEED standards call for ceiling or wall mounted basketball equipment.

Recommendations
EQUIP-1: provide two electronically retracting wall/ceiling mounted retracting basketball backstop/hoops. Priority #3

Estimates

EQUIP-1: Provide Two Electronically Retracting Wall/Ceiling Mounted Retracting Basketball Backstop/Hoops	$50,018

Career & Technology Equipment – None

Science Equipment - None

Library Equipment

Description of Existing Systems
Plastic laminate bookshelves and storage.

Existing Conditions
Fair condition for built purpose. Score 3. May consider replacement if 5-7 years as needs change.

Code Deficiencies
None

Recommendations
None

Theater Equipment

Description of Existing Systems
Equipment as follows:

- Stage curtain (red velvet) Score 3
- Backstage masking curtains (black) – three tracks Score 3
- Theater lighting and lighting control board; 20 theater lights on a ceiling mounted pipe in Multipurpose room, manual control board located backstage. Antiquated controls, verify functionality, score 3
- Theater audio system (basic) controls backstage. Score 3

Existing Conditions
The equipment is a little antiquated but is in serviceable condition. Score 3.

Code Deficiencies
None noted.

Recommendations
None

Art Equipment - None

Loading Dock Equipment - None

Other Equipment - None

Furnishings Overview

Synopsis
Facility furnishings, including desks, chairs, tables, carts, racks, etc. are of mixed generations but all seem serviceable for their intended purpose.

Fixed Furnishings

Description of Existing Systems
Bookshelves in the library, storage rooms and classrooms.
File cabinets
Freestanding wardrobe cabinets
Desks
Appliances

Existing Conditions
The condition of fixed furnishings is typically fair to good, score 3, with most matching in spaces used.

Code Deficiencies
None noted

Recommendations
None

Mats - None

Other Furnishings - None

Special Conditions

Special Construction Overview

Synopsis

Special construction elements on site, not otherwise covered by Primary School Assessment, include the greenhouse on the west side of the building. This is understood to be funded by the community as a part of the school's garden project.

Packaged Utility Modules - None

Swimming Pool - None

Greenhouse

Description of Existing Systems

Approximately 10' wide x 20' long gabled structure comprised of 2x wood framing and twin-wall acrylic panels.

Existing Conditions

Assembly appears to be in serviceable condition and does not appear to present any health or life safety hazards.

Code Deficiencies

None Noted

Recommendations
None

Special Demolition - None

Structural Demolition - None

Building Selective Demolition - None

Site and Utility Demolition - None

Hazardous Material Removal – None noted

Building Relocation - none

Special Site Conditions - None

Site Shoring & Dewatering - None

Site Earthwork - None

Site Remediation - None

Appendices

Appendices may include subjects such as special inspections, checklists, engineering calculations, photographs, drawings, estimate worksheets, etc. Floor plans, with building area designations, room identification, and door numbers used in the survey should be included.

Survey, reports, and other documentation such as ADA Surveys, AHERA Surveys, Fire Marshal Inspection Reports, and similar documentation shall be referenced under this section of the condition survey and attached as an appendix if available.

Items in included:

- Architectural Appendices 1: Dimensioned plans with room numbers for coordination purposes.
- Architectural Appendices 2: Photo record with condition assessment field notes illustrating magnitude of facility.
- AHERA update as provided by Owner.

Cost Estimating Summary:
Priority #1 Tasks: $3,413,598
Priority #2 Tasks: $4,779,104
Priority #3 Tasks: $942,390
Priority #4 Task: $607,030
Total: $9,742,122

Priority Funding Tasks 2024: $2,513,197

Escalated to 2025: $2,663,989.