Gastineau Elementary

Douglas, Alaska

Facility Condition Survey Report
Prepared June 2005

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Executive Summary

Gastineau Elementary is a vibrant Douglas community school facility, much loved by faculty, staff, and students. The school has a strong landmark presence in Douglas, and in addition to its service as an educational facility, it serves many of the functions of a community center by providing meeting and gathering spaces for the people of the Douglas and Juneau.

Between April 26, 2005 and June 12, 2005 the NorthWind design team, comprised of two architects, a civil/structural engineer, an electrical engineer and a mechanical engineer, completed an inspection of the Gastineau School. This Facility Condition Survey document is the outgrowth of that assessment. The team met with Gastineau School Principal Angie Lunda, Technology Assistant Eric Cannon, School Nurse Janet Capito, Custodian Humberto Garcia, and several other faculty and staff who had comments regarding noted deficiencies and potential improvements at the school. Consolidating the information gathered in these meetings and from the team's investigation of the existing conditions, this report provides an assessment of the facility which identifies deficiencies and makes recommendations for remediation.

This aging facility is in desperate need of finish and energy upgrades, and other functional and operational improvements. Throughout the generation of this Facility Condition Survey the faculty and staff of Gastineau elementary have consistently supported renovation rather than replacement. They feel the key programmatic requirements are met with the existing facility, and findings in this report suggest that with the renovation of small areas of the facility and more substantial upgrades to mechanical & electrical systems, architectural finishes, and elements of the building envelope, the existing building will have the longevity for continued service as one of the Juneau School District's successful elementary schools.

Building History

Major Construction:

1. First construction phase: 1956-58; 22,200 GSF.
   Architect: Linn A Forrest Architects
2. Second construction phase: 1965-66; 14,500 GSF.
   Architect: Linn A Forrest Architects
3. Third construction phase: 1991-92; 8,040 GSF + 6000 GSF covered outdoor area.
   Architect: Jensen Douglas / Minch Ritter Voelckers Architects - Joint Venture

Renovations and upgrades (documented):

1. Re-roof of 1956 & 1965 portions of building; 1981
2. Roof Upgrades (Class A roofing coating, still seen at library roof); 1982.
3. Asbestos removal; 1985
4. Ventilation upgrades; 1986
5. Plumbing & Sprinkler system upgrades; 1987
6. Accessible Bathroom, hallway carpeting, with Multipurpose Room addition; 1991

7. Glycol sprinkler system at covered outdoor spaces removed; 1994
8. Conversion of old multipurpose room to Library and Computer rooms; 1995
9. Playground drainage, new parking lot; 1996
10. Free standing Bike Rack shelter; 1997
11. Electrical Upgrades, data and power to classrooms; 2000
12. Re-roof of 1956 & 1965 portions of building; 2000
13. Heat upgrades in 1965 wing (decommissioning of in-floor heat); 2002

Building Properties

Construction Type:	Type V-B, Sprinklered*	*excluding covered outdoor spaces
Building Address:	1507 3rd Street, Douglas	
Parcel Number:	2D0402000010	
Total Building Area:	44,740 GSF + 6000 GSF covered outdoor areas	
Assessed Value:	Land:	$ 666,300
	Building:	$9,313,800
	Total:	$9,980,100

Summary of Major Work Items

This report is generated to assist the City and Borough of Juneau in identifying deficiencies and planning remedial improvements at the Gastineau School. The design team has identified deficiencies in the existing facility falling into two categories: Operational Deficiencies and Programmatic Deficiencies. Operational Deficiencies are those that are addressed in the body of this report. They include recommendations for renovations and upgrades to the building weather envelope, finishes, structural system, site grading, electrical systems, and mechanical systems. These improvements increase the longevity of the building and resolve code issues, but do not address operational improvements to any great extent beyond maintenance and energy efficiency. Programmatic Deficiencies are those that are organizational in nature, and address areas of the building where relatively minor renovation will net substantial improvements in how the building is used.

As this report format does not provide a category for Programmatic improvements, we have identified these improvement recommendations in this Executive Summary. Please note that addressing the Programmatic Deficiencies will also address the Operational Deficiencies in that specific portion of the building. The Programmatic Deficiencies cost assessment given herein duplicates some values found in the Operational Deficiencies estimate. Area of carpet in the renovation area, is a good example. To fairly estimate the cost associated with completing the Program renovations at the Administration, Nurses Area, and the Kindergarten, the value of the finish upgrades for these areas in the balance of this report should be calculated and deducted.

Executive Summary

Major Operational Deficiencies:

Civil/Site Improvements: The Gastineau School site has inadequate grading for drainage, inadequate parking, and a constricted and potentially dangerous student drop-off and loading zone. Drainage at the southwest side of the school must be improved to prevent flooding into the building. The bus and parent drop-off zone is shared with a teacher parking area at the front of the school, creating potentially hazardous pedestrian and vehicle traffic flow conflict. Parking needs are barely met and with modifications to the drop-off area, supplemental parking areas must be created. The estimated construction cost of these improvements is approximately $158,000.

Weather Envelope: The overarching complaint by the users of the building has consistently been temperature control in the classrooms and Library. The south and southwest facing rooms are overheated on sunny days, and all rooms are difficult to keep heated on cold and windy days. This report identifies two areas of improvement that will contribute significantly to temperature control: Replacement of the window system in all classrooms with a new insulated window system, and replace the roof over the Library and Computer rooms with a new insulated roof system. This work will significantly contribute to the energy efficiency of the building, affording both improved human comfort and the opportunity to address repairs to exterior finishes. The estimated construction cost of these improvements is approximately $638,000.

Interior Finish & Code upgrades: The Gastineau School classrooms, hallways and commons finishes are durable, but not consistent with a high performance educational environment. Carpet is wearing out, painted finishes are in need or re-painting, and ceiling tiles are dirty with a large percentage of them in need of replacement. Renovation of these materials will dramatically improve the student, parent, and faculty perception of the facility. The estimated construction cost of this work is approximately $465,300.

Heating and Ventilation upgrades: The engineers assessment of the building concluded that the existing boilers, controls, and ventilation system are antiquated, dirty, and in serious need of unit replacement, piping repairs, and duct cleaning. This work will improve the quality of indoor air, and assist in regulating interior temperatures. This work is directly related to the energy efficiency of the building. The estimated construction cost of these improvements is approximately $622,000.

Plumbing fixture and fixture ADA upgrades: In compliance with federal regulations, current building codes, and health concerns, a substantial bathroom and school wide plumbing fixture upgrade is proposed. This work includes both finish and plumbing upgrades. With renovation work in all bathrooms in the facility, all concerns should be met. The estimated construction cost of these improvements is approximately $895,000, excluding architectural finishes.

Electrical Upgrades: The main power distribution panels and power distribution in classrooms should be upgraded to meet current power demands and circuiting. The estimated construction cost of this work is approximately $180,000. Lighting throughout

the school should be upgraded or replaced as necessary to improve lighting quantity, and quality, as well as energy performance within the building. The estimated construction cost of these improvements is approximately $190,000. Data and communications upgrades throughout the building are also recommended. The estimated construction cost of these improvements is approximately $83,000. The fire alarm panel should be replaced, and new devices installed in several locations. The estimated construction cost of this work is approximately $36,000. Total significant electrical improvement costs identified in this section are approximately $490,000.

Major Programmatic Deficiencies:

Administration and Nurse's Area Renovation: The original administration areas were designed to serve the 1958 building, which has approximately half the area and classroom capacity of the current facility. This area is crowded and does not serve the faculty and staff of Gastineau School as well as it should. A renovation of this area will include the reorganization of the welcoming and receptionist area, the principal's office, the teacher/staff workroom, the teacher staff break room, the teacher staff bathroom, and all associated storage and vault areas. Included in the administration renovation should be the reorganization of the Nurse's Area, with the addition of an infirmary toilet for sick students. If this project is undertaken, values for mechanical and electrical repairs provided under Operational Deficiencies excluding electrical panel replacement) should be deducted, as they are included in the approximated value of the renovations. Renovations of the Administration and Nurse's areas, 1550 square feet, are calculated at an estimated construction cost of $230/square foot, and will cost approximately $356,500.

Renovations at the Kindergarten Classroom #31: The need exists for a Speech Therapy Classroom. At this time Speech is in a corner of the oversized Kindergarten Classroom #31, but suffers from constant disruption due to classroom noise. This proposed renovation will carve approximately 400 square feet off the kindergarten classroom and create a new small classroom with its own door off the hallway. This space will not have plumbing. A renovation cost of $200/square foot is used to establish an estimated construction cost of $80,000 to cover the cost of mechanical and electrical modifications, partition construction, concrete cutting, and new floor and ceiling finishes.

Americans with Disabilities Act (ADA)

The City and Borough of Juneau has provided a current ADA survey performed by MRV Architects. This analysis carefully identifies ADA compliance issues throughout the school as they pertain to both adults and children 5-12 years of age. This document should be retained as a reference throughout the evaluation of cost and significance of the work associated with renovations at Gastineau Elementary. Due to the detailed nature of this ADA survey and the quantity of information it provides, a parallel ADA survey was not duplicated in this June 2005 Facility Condition Survey.

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Hazardous Materials

A formal hazardous materials investigation was not completed as a part of this June 2005 Facility Condition Survey. Areas of the work thought to potentially contain hazardous materials are identified in the narrative relating to the work, and in this section.

In 1985 an asbestos removal project was completed to address pipe insulation and other materials in the 1958 and 1965 portions of the building. In the field investigations conducted to complete this report the following potentially hazardous materials have been identified for testing:

1. Floor tile at the Administrative area vault, and at the 1965 building Janitorial closets are suspected Asbestos Containing Materials (ACM's). Originally, this facility was constructed with VCT throughout. It is likely any VCT remaining from the original construction would be ACM, and it is possible this original tile may exist under carpet installation through out the 1958 and 1965 portions of the building. Careful investigation of existing conditions should be made a part of any carpet replacement project.

2. Fiber cement board used as exterior panels on the 1958 and 1965 buildings are suspected to be ACMs (as noted on the original construction documents).

3. The Class A fluid applied roof coating on the Library/Computer Lab portion of the building and on the main entry canopy is suspected to be an ACM.

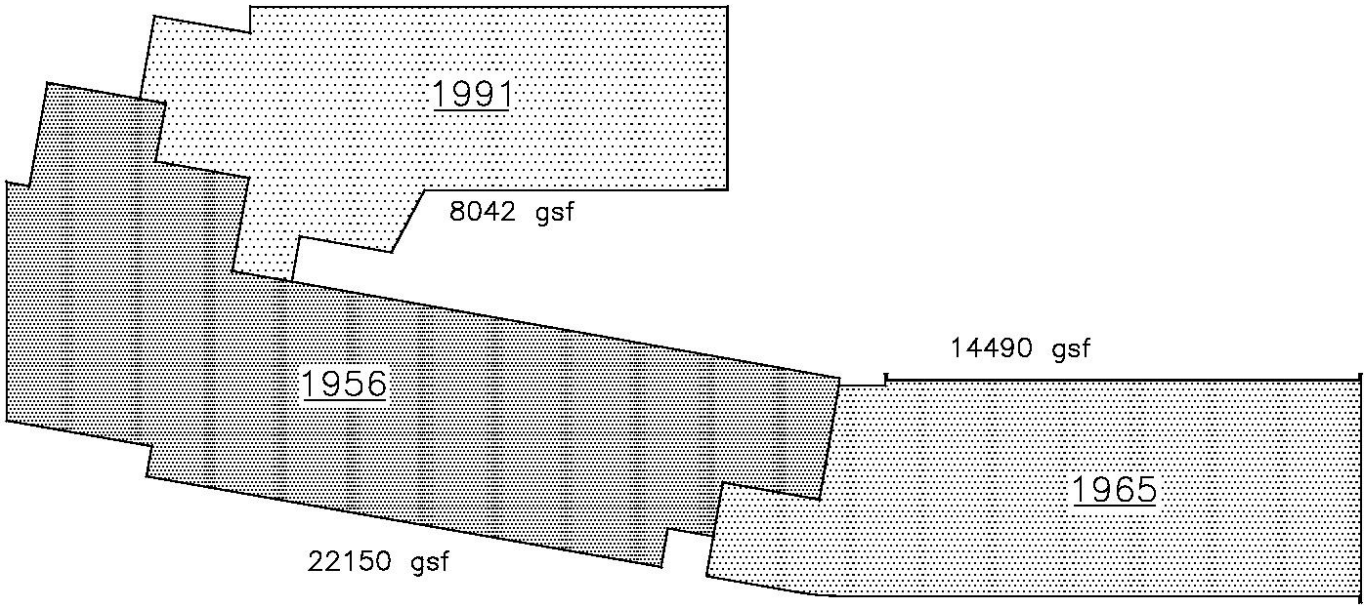
4. Suspended acoustic ceiling tile at the Commons area, the secondary entry between the 1958 and 1965 portions of the building, and the glued on ceiling tile in the administration area workroom and at the 1958 building vestibules should be tested for asbestos.

5. All T12 type fluorescent tubes throughout the building are suspected to contain mercury, and if removed should be disposed of as required by federal and state regulatory agencies.

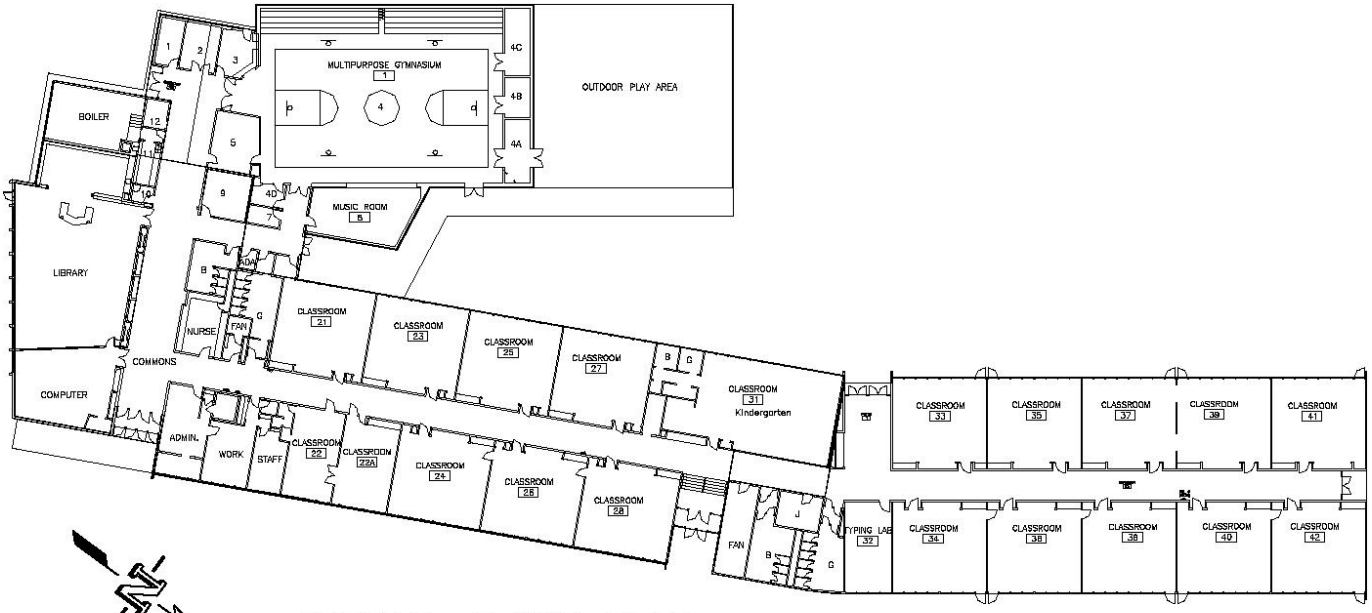
6. The wall plaster utilized during the 1958 and 1965 vintage construction often contained trace amounts of asbestos. Therefore, work requiring modification of wall partitions may require abatement of the wall board.

In general, precautions should be made for cutting into portions of the building of construction dating prior to 1990. Any suspect materials should be tested prior to demolition.

Executive Summary



PLAN DIAGRAM



OVERALL FLOOR PLAN

Summary of Construction Costs by Deficiency Type

Total Construction Cost of Renewal and Replacement Work	$3,883,100
Total Construction Cost of Renewal and Replacement Work - Utilizing Option 2 Remedies	$3,992,100
Total Construction Cost of Building Code Related Work	$679,200
Total Construction Cost of Energy Upgrade Work	$55,200
Total Construction Cost of Functional Upgrade Work	$625,400
Total Construction Cost of Hazardous Material Work	$68,600
Total Construction Cost of Hazardous Material Work - Utilizing Option 2 Remedies	$181,600
Maximum Construction Cost of Deficiency Work	**$5,533,500**

Summary of Construction Costs by Building Systems

Total Construction Cost of 0100 Sitework	$556,100
Total Construction Cost of 0200 Foundations	$0
Total Construction Cost of 0300 Structure	$197,000
Total Construction Cost of 0400 Exterior Closure	$932,700
Total Construction Cost of 0400 Exterior Closure - utilizing Option 2 Remedies	$1,045,700
Total Construction Cost of 0500 Roof	$124,700
Total Construction Cost of 0600 Interiors	$872,300
Total Construction Cost of 0600 Interiors - utilizing Option 2 Remedies	$911,300
Total Construction Cost of 0800 Mechanical	$1,568,000
Total Construction Cost of 0800 Mechanical - utilizing Option 2 Remedies	$1,638,000
Total Construction Cost of 0900 Electrical	$957,300
Total Construction Cost of 1000 Equipment	$103,400
Maximum Construction Cost of Deficiency Work	**$5,533,500**

Civil Inspection - Site Improvements

0131 Vehicular Paving - Paving, curbs, gutters, and signage.

Vehicular paving includes the access and parking east of the building along 3rd Street, the paved area south of the building between the building and I Street, and the separate upper lot southwest of the building.

The access and parking east of the building includes a 27-foot wide by approximately 65 foot long access road from 3rd Street leading to a 42 foot wide by approximately 290 foot long asphalt paved area. The paved area serves as a driveway and parking with space for 18 diagonal parking spaces. The drive is not separated from the school building's east wall as there are no curbs, bollards or painted lines. The edges of the parking stalls do not have curbs or wheel stops. This area is often used by parents dropping off children at the entries on the east side of the building.

The area south of the building is used for parking, access to the dumpster and kitchen and access to the playground access west of the gymnasium and covered play area. South of the library there is approximately 30 feet from the building wall to the curbed-edge of I street, which is unpaved. This area accommodates 8 parking spaces in non-winter months. In winter the area is designated, by the signs posted, as a snow storage area and therefore, provides no parking during snowy months. There are no curbs or wheel stops separating the parking from the school building.

Adjoining the area south of the library are two ADA parking spaces south of the boiler room. These are painted with blue striping and well marked. West of this area there is a paved area until the steel-bin retaining wall is reached. This paved area extends south of the building to the bin wall and provides a paved access to the kitchen door, the southwest building entry and to the unpaved drive access to the playground, which is west of the gymnasium.

Southwest of the gymnasium is an upper parking lot accessible from I street. This lot is asphalt paved and is approximately 85 feet long by 60 feet wide. It is edged with curbs and has 20 marked spaces. A set of timber framed stairs provides pedestrian access to the lower paved area that is adjacent to the building.

Remaining life expectancy: pavement life is over 10 years.

Civil Inspection - Site Improvements

Deficiency

0131-1 Inadequate Parking: Existing parking spaces, not counting the spaces in the snow storage area, number 38 and CBJ Land Use Code requires 48 spaces (based upon 2 per classroom). The spaces south of the library may not be useable in winter as that is a designated snow disposal area. Additional spaces may be needed if one considers that there are seven offices and the library, which add additional parking demands. Community events at the gymnasium or open-house activities are likely to require more parking. During the different days of inspecting the school building, there was rarely a free parking spot to be found.

Deficiency category: C

Remedy
Construct or Expand Parking Lots. Additional parking can be obtained if the upper southwest lot is extended or if the area northeast of the building and east of the T-Ball field is cleared graded and paved.

Estimated Construction Cost: $67,000 for 20 additional spaces

Civil Inspection - Site Improvements

0132 Pedestrian Walks & Hardscapes - Paved walks, paths, plazas, sports courts, and steps

There are the following pedestrian walks and hardscapes at the school:

1) Main entry concrete paving, approximately 10 feet by 48 feet.
2) Entry at east side of middle of building, approximately 16 feet by 12 feet.
3) Asphalt surfaced walk/access ramp at entry at east side of middle of building, approximately 4.5 feet wide by 98 feet long
4) Sidewalk from 3rd Street Sidewalk to north entry of building, approximately 6 feet wide by 73 feet long leading to a 9 foot by 10 foot slab at north end of building. This path includes a set of stairs with three risers.
5) North entry paving approximately 6 feet by 10 feet with inset grating.
6) Concrete paving at basketball court, approximately 65.5 feet by 86 feet.
7) Asphalt paving near central entry west side of classroom wing, 3224 square feet mostly 114 feet long by 26 feet wide with 13 foot by 20 foot section at south end.
8) Entry paving west side at center of classroom wing, approximately 16 feet by 6 feet with grate.
9) Asphalt paving along east side of gymnasium and covered play area and at south end of playground, approximately 3000 square feet,
10) Asphalt paving under covered play area roof, approximately 61 feet by 68 feet.

The respective condition of these areas and the estimated remaining life is as follows:

1) Good, one spall area with poor patch. Estimated life with repairs 10 to 15 years
2) Fair with abraded surface. Estimated life 5 to 10 years
3) Fair to Good. Estimated life at least 10 years
4) Poor with abraded surface. Estimated life 5 years.
5) Fair to Good. Estimated life 15 years.
6) Poor to Fair. Estimated life 5 to 10 years
7) Fair to Good. Estimated life 10 years
8) Good. Estimated life 15 years
9) Good. Estimated Life 10 to 15 years
10) Good. Estimated life 10 to 15 years.

Civil Inspection - Site Improvements

Deficiency

0132-1 Inadequate Drop Off Zone:
The designated drop off zone is along 3rd Street. This is often not used as there is no designated path between the street sidewalk and the paving at the main entry. As a result parents drop children off at the main entry. This causes students arriving on foot to cross the traffic lane. As there is no defined crosswalk or path the situation is likely very confusing and has a high potential for an accident.

Deficiency category: F

Remedy
Construct a 800 SF covered, ADA compliant pathway from the 3rd Street sidewalk to the paved area east of the building and stripe a crosswalk at the paved area.

Estimated Construction Cost: $77,000

Civil Inspection - Site Improvements

Deficiency

0132-2 No Landings at Classroom Exits
At the east side of the building exits from classrooms have stairs but no landings at the base of the stairs. Areas where there should be a landing are overgrown. In an emergency egress of students is likely to be confusing without a clearly designated path. There are 5 locations where this deficiency exists.

Deficiency category: F.

Remedy
Construct concrete landings at all egress stairs.

Estimated Construction Cost**:** $3,700

Civil Inspection - Site Improvements

Deficiency

0132-3 Poor Condition Concrete:
The walk leading to the north building entrance should be replaced as the concrete is poor. The spall/poor patch at the main entry should be repaired. The surface of the concrete slab at the east entry at center of building should be repaired or replaced.

Deficiency category: RR

Remedy
Replace 750SF of concrete walk. Repair spall and repair entryway concrete

Estimated Construction Cost**:** $21,000

Civil Inspection - Site Improvements

Deficiency

0132-4 Inset Grating not ADA Compliant:
Inset grating at the north and west central entries has openings greater than ADA allows.

Deficiency category: C.

Remedy
Replace grating with ADA compliant grating (approximately 72 square feet)

Estimated Construction Cost**:** $7,600

Civil Inspection - Site Improvements

Deficiency

0132-5 Curb East of Building:
Curbs at edge of access drive are in poor condition. (approximately 76 lf)

Deficiency category: RR

Remedy
Remove and replace 76 LF of concrete curbs.

Estimated Construction Cost: $3,900

Civil Inspection - Site Improvements

0134 Elevated Decks, Stairs & Ramps - Elevated walkways and stairs
At the upper parking lot there is an elevated walk and stairs. It is timber framed with galvanized steel floor grate and stair treads. Pressure treated 4x4 posts support stringers. Posts are cross braced with pressure treated 2x members. Stingers are pressure treated 4x12's that support pressure treated 4x6 rail end posts and pressure treated 2x4 intermediate rail posts. Rail posts support a 2x4 top rail and pressure treated 2x4 side rails. Handrails are on the inside of the railing system.

The condition of the elevated walkway and stairs is good.

Remaining life expectancy: 10 years

No deficiencies noted for this building system.

Civil Inspection - Site Improvements

0135 Walls – Site retaining walls
There is a galvanized steel bin wall that is on the west side of the playground that extends south past the covered play area and gymnasium to the parking are southwest of the building. The bin wall is approximately 65" high above adjacent lower grade, at its highest point. The bin wall is of shorter height at the wall ends. The length of the wall is approximately 560 feet.

The bin wall is in poor to fair condition. At the paved area southwest of the building the bin wall has punctures and has one section missing. Galvanizing is depleted at the top of the wall and at exposed faces of horizontal members. There is rust evident where galvanizing has been depleted.

Estimated life of galvanized steel bin wall is 10 years

At classroom exits at the east side of the building there are concrete retaining walls that support the exterior landing and the stairs.

The concrete retaining walls are in poor to fair condition. There is efflorescence, cracking and spalling. Estimated life of these walls is 5 years.

Civil Inspection - Site Improvements

Deficiency

0135-1 Bin Wall Coating:
The bin wall will continue to corrode if existing coatings are not improved. The bin wall should be able to last for decades if it is painted.

Deficiency category: RR

Remedy
Clean and paint 2,800 SF of bin wall with a moisture cured urethane paint system. This system can be applied during low temperatures and high humidity conditions.

Estimated Construction Cost: $41,000

Civil Inspection - Site Improvements

Deficiency

0135-2 Concrete Wall Poor Condition:
Deteriorating concrete will continue to deteriorate if not repaired. The top of all retaining walls at east side of building classroom exits are in poor condition.

Deficiency category: RR

Remedy
Remove and replace deteriorated concrete

Estimated Construction Cost: $8,000

Civil Inspection - Site Improvements

0137 Fences & Gates – Site fencing and gates
There are the following pipe rail fences on site:

1) A pipe rail exists at the main entry.
2) A pipe rail fence with total length of 94 feet exists along the asphalt walk/ramp at the center of the east side of the building. Approximately 38 feet are on the south or east side and the remaining length is on the opposite side of the walk. The rail fence has 2 pipe rails and is approximately 40 inches high.
3) There is pipe rail fence on both sides of the sidewalk from 3rd Street to the building north entry. There is 26 feet of fence on the south side of the walk and 69 feet on the north side of the walk. There are two pipe rails and the average height is 40 inches.

There are the following sections of chain-link fencing on site:

1) At the T-Ball field there is 295 LF of 10 foot high fence with a 9 foot wide swing gate and a 4-foot wide opening with offset fence. At the end of the fence there is 38 lf of 6 foot high fence.
2) West of the playground there are two sections of 6 foot high fence uphill from the steel bin retaining wall. One section is 130 feet long and the other is 140 feet long.
3) There is 126 lf of 8-foot high chain link fence at the basketball courts

The condition of the fencing is good.

Remaining life expectancy: 10 to 15 years

No deficiencies noted for these building systems.

Civil Inspection - Site Utilities

0151 Fire & Potable Water – Water piping, storage, wells, pumps, & hydrants

The water service for the building appears to be a 3-inch galvanized iron pipe that was installed under the original building construction. This line appears to be approximately 50 feet long from the main on I Street to the building.

The sprinkler supply appears to be a 6-inch cast iron waterline installed during the 1965 Addition. It appears to be approximately 90 feet long from the main on I Street to the building.

There are no hydrants on the property other than the CBJ hydrant at the northwest corner of 3rd Street and I Street.

The condition of the two lines is unknown. The lines have exceeded design life

Remaining life expectancy: 0

Civil Inspection - Site Utilities

Deficiency

No Photo

0151-1 Old Domestic Water Service
The existing 3-inch galvanized iron pipe water service is 47 years old and is beyond its expected design life. The condition of the buried pipe is unknown.

Deficiency category: RR

Remedy
Replace 50 LF of 3-inch galvanized iron pipe with a new 6-inch ductile iron domestic water service.

Estimated Construction Cost: $9,400

Deficiency

No Photo

0151-2 Old Fire Sprinkler Service
The existing 6-inch cast iron pipe fire sprinkler service is 40 years old and is at its expected design life. The condition of the buried pipe is unknown.

Deficiency category: RR

Remedy
Replace 90 LF of 6-inch cast iron pipe with a new 6-inch ductile iron fire sprinkler service.

Estimated Construction Cost:$13,000

Civil Inspection - Site Utilities

0152 Sanitary Sewer – Piping, pumps, and treatment

The sewer service for the school appears to be 80 feet of 4-inch asbestos cement pipe and 50 feet of 6-inch asbestos cement pipe from the building to the main on I Street. This appears to have been installed in the original building construction.

The condition of the sewer line is unknown. The line has exceeded its design life.

Remaining life expectancy: 0

Deficiency

No Photo

0152-1 Old Sewer Service
The existing asbestos cement sewer service line is 47 years old and beyond its expected design life. The condition of the buried line is unknown.

Deficiency category: RR

Remedy
Replace the existing 130 LF sewer service with a 6-inch diameter PVC sewer service.

Estimated Construction Cost: $16,000

Civil Inspection - Site Utilities

0153 Storm Water – Piping, culverts, swales, holding areas, etc.

The storm drain system is not well documented on the available plans. It appears to consist of the following"

1) A drain line at the base of the steel bin wall that drains from the south to the north around the north end of the building to the storm drain system on 3rd Street. A branch consisting of buried, perforated, 12-inch diameter pipe connects to the pipe at the base of the bin wall. This branch was at the original toe of the slope on the west side of the playground. This system has three-catch basins and one manhole. The storm drain line is a 12 inch diameter corrugated metal pipe. There appears to be approximately 1,200 lf of pipe in this system. Catch basins have minimal or no aprons.
2) The upper parking lot drain has three catch basins connected with poly-ethylene pipe. This system appears to drain to a storm drain system on I Street. There is approximately 150 lf of pipe in this system.
3) There are two catch basins at the south end of the playground. It is unclear to where these drain.
4) There are several swales/ditches that parallel the bin wall and are uphill of the bin wall west of the building that drain north to a drainage ditch north of the T-ball field. These are open ditches.

School personnel report that there is ponding in winter during heavy rains. In near freezing weather rainwater freezes on the frozen ground creating ice hazards.

The T-ball field surface is uneven and does not slope to drain.

The surface of the access drive west of the gymnasium is uneven and does not slope to drain.

Condition:
The condition of buried pipelines is unknown. Catch basins appear to be in good conditions except for the fact that they have no aprons. Swales and ditches are overgrown. Playground and access drive surfaces are uneven and do not slope to drain.

Remaining life expectancy: over 10 years

Civil Inspection - Site Utilities

Deficiency

0153-1 Catch Basin Aprons
Catch basins at yard drains should have concrete aprons around to prevent gravel and other small debris from collecting in the catch basin. Concrete aprons will reduce cleaning maintenance and will improve the function of the drains.

Deficiency category: F

Remedy

Install 4'x4' aprons at four yard-drain catch basins.

Estimated Construction Cost: $3,900

Civil Inspection - Site Utilities

0153-2 Improve Playground Drainage.
School personnel report that there is ponding in winter during heavy rains. In near freezing weather rainwater freezes on the frozen ground creating ice hazards.

The asphalt pavement west of the building drains towards and elevated area that surrounds the swing sets. There is no effective drainage path especially in weather near freezing during rain when the ground is frozen. Rainwater freezes. The T-ball field surface is uneven and does not slope to drain. The surface of the access drive west of the gymnasium is uneven and does not slope to drain.

Deficiency category: F

Remedy

Add catch basins with aprons at west side of T-ball field, at access road on west side of gym, on paved area between swing sets and building and connect to existing storm drain system with 12 inch diameter PE pipe. Regrade surrounding areas to drain to catch basins. Repave area between swing sets and building.

Estimated Construction Cost: $84,000

Civil Inspection - Site Utilities

0153-3 Clean Drainage Swales/Ditches
Drainage swales and ditches uphill from playground are overgrown, thus reducing the ability of the ditches and swales to drain.

Deficiency category: F

Remedy
Clear growth from sides and in swales. Clean of rubbish and trash.

Estimated Construction Cost: $8,100

Structural Inspection - Foundations

0211 Footings – Concrete pad and continuous footings
Structure has a conventional reinforced concrete spread footing foundation system with perimeter foundation walls with strip footings and interior isolated spread footings and strip footings at interior walls. Perimeter foundation walls are typically 6-inches thick and rest on footings that vary in width from 14 inches wide to 26 inches wide. Isolated interior footings vary in size from 18 inches square to 39 inches square.

Remaining life expectancy: over 10 years

No deficiencies noted for this building system.

0212 Foundation Walls – Foundation walls, basement walls, and pilasters
The building has perimeter foundation walls. Most of the walls are below grade, however, on the east side of the building the walls extend approximately 6'-6" above grade.

The condition of the walls is generally good. It should be noted that on the original building wall, east side there are pieces of wood embedded into the concrete. This appears to be due to the fact that beach or river gravels were used as concrete aggregate and were not washed completely of wood chips.

Remaining life expectancy: more than 10 years if paint is maintained.

No deficiencies noted for this building system.

Structural Inspection - Floor Structure

0220 Slab on Grade – Standard or structural slabs, trenches, pits, and pads

The building has a slab-on-grade floor throughout the building. The slab in the boiler room is at a lower elevation than the rest of the structure. Slabs in the original structure and the 1965 addition consist of a 2-inch concrete leveling slab and a 3 inch concrete topping slab reinforced with welded wire mesh. The slab in the 1991 addition consists of a 4-inch thick concrete slab reinforced with welded wire mesh.

The condition appears to be good. The slab is not visible in most of the building as it is covered.

Remaining life expectancy: more than 10 years

No deficiencies noted for this building system.

0312 Elevated Floors – Structural floor diaphragm, supporting columns, and bracing

There is an elevated timber framed floor above the computer room that serves as a floor for the fan room. No structural plans were available for this floor structure but it appears to consist of a plywood sheathed deck supported on engineered wood joists.

The structural framing appears to be functioning adequately.

Remaining life expectancy: Over 15 years

No deficiencies noted for this building system.

Structural Inspection - Roof Structures

0321 Pitched Roof – Structural roof diaphragm, supporting columns, and bracing

The roof structure over the gymnasium and the covered play area consist of mono-slope trusses supporting steel wide-flange beam purlins, which in turn support the roof deck. The trusses are pre-fabricated bolted steel trusses at 20'-8" centers at the gymnasium and at 22'-4" centers at the covered play area. The roof deck is a steel deck at the gymnasium and a transluscent fiberglass deck at the covered play area. The purlins are 12 inch deep beams at 6 feet on center at the gymnasium and 4 feet on-center at the covered play area. The covered play area has rod bracing as a lateral load resisting system while the gymnasium has a steel deck diaphragm.

Above the computer room, library and main entry hallway the roof system consists of glu-lam beams at 8 feet on center supporting a diagonal-sheathed 4 inch nominal timber deck. The glu-lam beams are supported by glu-lam posts at the south wall, pipe column between the library and the hallway and steel pipe columns in the north hallway wall. The pipe column to glued laminated beam connection consists of 8-inch long steel saddles welded to the pipe columns.

The condition of the roof structural system is good.

Remaining life expectancy: over 10 years.

Deficiency

0321-1 Library Wall Columns
The exterior portions of most of the library exterior wall columns exhibit rot. These glulam timber columns extend from the interior to the exterior of the building and have little or no separation at their bases from water accumulating at grade.

Deficiency category: RR

Remedy
Rehabilitate or replace columns. Rehabilitation will require removal of rotten laminations from the base to an elevation where the laminations are not rotten. New laminations will need to be installed using glue and screws to secure them to the solid material to remain.

Estimated Construction Cost:$38,000

Structural Inspection - Roof Structures

0322 Low Slope Roof – Structural roof diaphragm, supporting columns, and bracing

The roof framing system at the original building and 1965 addition classroom wing consists of open web steel joists supporting a 3x6 nominal tongue and groove timber roof deck. The joists are spaced at 8-feet on center and supported at the corridor and exterior walls by lines of columns and beams in the respective corridor and exterior walls.

Above the boiler room the roof framing consists of a timber deck supported by open web steel joists.

Above the kitchen, storage rooms, music room and corridors constructed in the 1990 addition the roof consists of a steel deck supported by wide flange beams bearing on steel columns.

The condition of the roof framing systems is good.

Remaining life expectancy: over 10 years

Structural Inspection - Roof Structures

Deficiency

No photo provided

0322-1 Lateral Load Resisting System
The lateral load resisting system of this building likely does not meet modern standards. Roof diaphragms are straight sheathed or diagonal sheathed timber with large aspect rations (length to width dimensions). At the library there appears to be no shear walls supporting the roof in the east-west direction. At the classroom wing there is little resistance in the north-south direction as exterior walls are nearly all windows and the sheathing in corridor walls does not extend above the ceiling.

Deficiency category: C

Remedy
Perform seismic evaluation of structure and prepare recommendations to perform if major remodel of structure is performed. It is likely that shear wall sheathing will need to be added at existing walls.

Estimated Construction Cost: $ 5,000 to 10,000 for analysis and $149,000 for new shear walls.

Architectural Inspection – Site Structures

0141 Freestanding Shelters – Open-air shelters not attached to the building.

Bike rack shelter with bike racks:
This 8'x30' structure is located on the north-east side of the building on the wooded landscape island between the primary vehicle drop-off/pick-up access area and 3rd street. The structure is located under the large conifers in this area and is comprised of an unpainted braced-timber frame with painted sheet metal roofing. Roof slope is approximately 3:12. Preservative treated posts are set directly in the earth and sheltered bike racks are on a gravel grade that is overgrown with vegetation. The finished grade under the roof structure is below the level of the adjacent parking area.

The 8 year old structure is unpainted but in fair condition. With minor improvements continued service can be anticipated. The bike racks are bent, beginning to rust, and do not meet quality and safety standards to be anticipated in an educational facility.

Remaining life expectancy: Structure: 8-10 years, bike racks 3-5 years.

Swing sets:
The swing-set stands, chains, and seats are older but are in serviceable condition. Structure is surrounded by 4"- 6" clean pea-gravel.

Remaining life expectancy: 8-10 years + with regular maintenance checks.

Outdoor basketball backstops, hoops and nets:
Three basket-ball backstops are sited at the uncovered paved play court. Of three, only one has a hoop. One backstop is missing and two hoops are missing. Remaining backstops are severely rusted and should be replaced.

Remaining life expectancy: 0 years

Covered outdoor picnic tables
Three covered picnic tables are located in the primary play area to the east of the classrooms. Each structure is comprised of preservative treated timber posts supporting dimensional lumber benches, table and roof assembly. The roof assembly is finished with cedar shakes. The structures are unpainted and weathered, but are generally in good condition. Continued service should be expected with maintenance and remedial repairs.

Remaining life expectancy: 5-8 years +

Primary climbing/sliding structure:
This structure is relatively new and appears to be in good condition. Structure is surrounded by 4"- 6" clean pea-gravel.

Remaining life expectancy: 10 years +.

Architectural Inspection – Site Structures

Deficiency

0141-1 Bike rack shelter location and grading
The bike rack shelter grade is below that of the adjacent parking area and is subject to drainage off the asphalt. Due to proximity of parking area, snow plowed off parking is piled under the shelter roof. This snow berm takes a long time to melt in the spring, hampering early season use of the bike rack shelter.

Deficiency category: F

Remedy
Construct a vehicle and snow removal equipment barrier between shelter and parking area. Elevate grade within shelter perimeter to approximately 6" above elevation of adjacent parking.

Estimated Construction Cost: $5,800

Architectural Inspection – Site Structures

Deficiency

0141-2 Bike Racks
Existing bike racks are in poor condition; bolted assemblies are loose and may pinch fingers, bike locking bars are bent and starting to rust, and bike racks are not anchored to grade.

Deficiency category: RR

Remedy
Replace approximately 30' of existing bike racks with new galvanized steel bike racks mounted on sub-grade anchors.

Estimated Construction Cost: $7,200

Deficiency

0141-3 Pea-gravel surrounding swing-sets
At areas immediately below swings the pea-gravel is scraped away and /or compacted.

Deficiency category: RR

Remedy
Redistribute pea-gravel under swing sets to afford uniform reduced-impact zone in swing area. This is a maintenance item that should be addressed several times throughout the year.

Estimated Construction Cost: $3,200

Architectural Inspection – Site Structures

Deficiency

0141-4 Outdoor basketball backstops
Existing equipment is missing pieces and is in generally poor condition.

Deficiency category: RR

Remedy
Remove existing equipment and replace with new basketball backstops, stands, baskets, and nets.

Estimated Construction Cost: $7,400

Architectural Inspection – Site Structures

Deficiency

0141-5 Covered outdoor picnic tables
Cedar shake roofing in disrepair at three site structures

Deficiency category: RR

Remedy
Replace 25 SF of missing shingles with new.

Estimated Construction Cost: $1,400

Architectural Inspection – Site Structures

Deficiency

0141-6 Fall Protection
Pea gravel is utilized as fall protection surface at Primary climbing equipment. Pea gravel doesn't provide sufficient fall protection during below freezing weather and does not provide ADA access to play equipment.

Deficiency Category: F

Remedy
Replace 3000 SF of pea gravel fall protection with combination of shredded rubber and rubber mats.

Estimated Construction Cost: $65,000

Architectural Inspection – Site Structures

0142 Attached Shelters – Canopies, shelters, covered areas attached to building

Covered outdoor basketball court area:
The covered outdoor basketball court is a steel framed building structure built in 1991, attached to the north-west wind of the multipurpose gymnasium. This structure has a 62' by 68' footprint, and has a sloped translucent corrugated fiberglass panel roof on a steel truss roof structure. All bearing elements are enclosed in unpainted split-face and smooth patterned veneer concrete masonry units to an elevation of 10'-0" above asphalt paved court floor. Above 10'-0", the structural wall and column elements are clad in painted 3/4" MDO (faced plywood) panels with reveals and painted steel flashings at horizontal joints. All exposed structural steel is painted. See deficiency 0162-4 addressing lighting in this area. This covered outdoor recreation area is not sprinklered.

Condition of the building system:
This 14 year old structure is in generally good condition. All surface should be cleaned to remove dust, mold and moss. All painted surfaces exposed to weather and within 10' of the court grade should be repainted.

Remaining life expectancy: 20 years + with continued maintenance.

Covered outdoor walkway at play yard:
The canopy extending from the pare of exit doors near the music room and running parallel to the music room, gymnasium, and covered outdoor basketball court area is comprised of a pre-engineered structural aluminum support and roofing assembly. An aluminum tube beam and column assembly supports a flat interlocking box rib structural aluminum decking at its east edge, while its west edge is supported by the building structure. This assembly was installed as a part of the latest generation of major construction in 1991. This covered outdoor walkway is not sprinklered.

Condition of the building system:
This 14 year old all aluminum structure is in good condition and with minimal maintenance should be expected to last indefinitely. All roof surfaces should be cleaned to remove dirt and moss, which has accumulated on a virtually flat surface. All gutters downspouts, and drainage channels should be cleared of debris.

Remaining life expectancy: more than 10 years

Covered outdoor walkway at main pick-up and drop -off area:
The canopy extending from the four main exit doors at the east end of the commons space, parallel to the east-facing wall of the computer lab, is a part of the original 1956 building. It is comprised of a steel frame supported by the adjacent concrete building walls, and by three 3" steel pipe columns on its drive lane edge. It has a cement board

soffit, wood fascia, and an asphalt roof covering which drains to a scupper at its south end. This canopy at the front entry is not sprinklered.

Condition of the building system:
This assembly appears to be in fair condition with no evidence of leakage or failure. The roofing assembly and fascias were replaced at some point during the building's history, and since have been patched with a torch-down membrane. The scupper at the south end of the canopy empties into a 2.5" black ABS pipe, which serves as a rain leader directing water away from the primary path of human traffic. Wood fascias are in need of repainting. Painted soffit is in good condition. Art tile installations are sheltered under this canopy.

Remaining life expectancy: more than 10 years

Deficiency

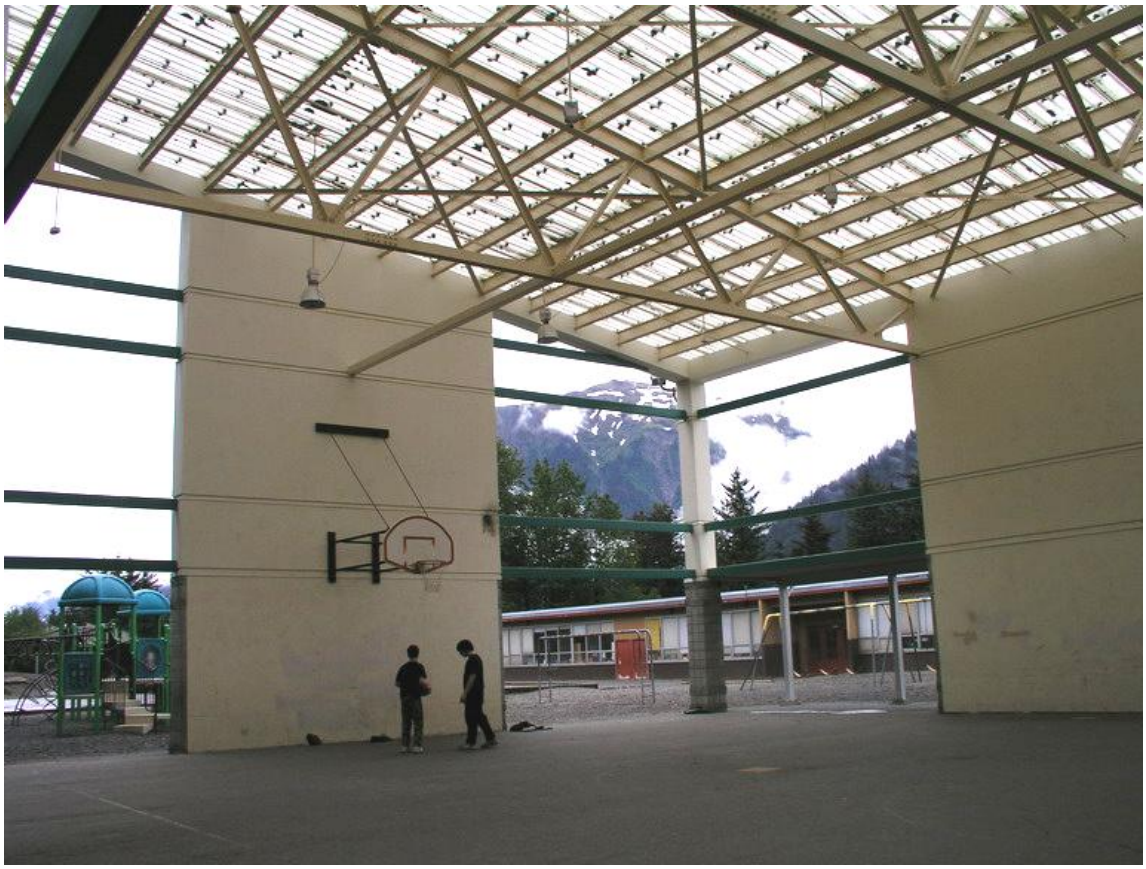
0142-1 Deteriorating panted wall surfaces inside covered court area
Painted surfaces below elevation 10'0" above finished court surface are subject to physical abuse due to both vandalism and regular permissible court use.

Deficiency category: RR

Remedy
Clean and repaint all painted finishes below elevation 10'-0" Above finished court surface inside covered outdoor court area.

Estimated Construction Cost: $2,000

Deficiency



0142-2 Deteriorating panted court markings inside covered court area
Painted court markings are wearing off and are becoming difficult to read due to and regular permissible court use.

Deficiency category: RR

Remedy
Steam clean asphalt court surface and repaint all court markings.

Estimated Construction Cost: $2,200

Deficiency

0142-3 Moss and debris accumulation on court roof assembly
Snow stops on corrugated fiberglass panel court covering have caused the accumulation of debris and promoted heavy moss growth. This reduces the amount of light transmitted to the space below, adds a permanent dead load to the roof structure as water is retained in the organics on the roof surface, and will eventually result in premature deterioration of the fiberglass panels.

Deficiency category: RR

Remedy
Clean all moss and dirt from translucent fiberglass roof panels.

Estimated Construction Cost: $1,500

Deficiency

0142-4 Dirt and debris accumulation on aluminum canopy assembly
Flat roof is accumulating dirt which is plugging drainage channels and overflowing roofing assembly. While the canopy is unharmed, the adjacent wall areas are being damaged by this flooding.

Deficiency category: RR

Remedy
Clean all moss and dirt from aluminum roof panels, gutters, down spouts and water channels.

Estimated Construction Cost: $1,500

0142-5 Concrete board soffit @ main entry canopy.
If new dry pipe sprinkler system is provided at this canopy, the existing cement board soffit, possibly an ACM, will need to be removed and replaced with new concrete board soffit, as part of the work.

Deficiency category: RR

Remedy
Remove soffit in accordance to State and federal laws regarding ACM removal, install new painted fiber cement board panel soffit as a part of other work in this area.

Quantity: 500 sf

Estimated Construction Cost: $14,000

Architectural Inspection – Site Structures

0143 Support Buildings – Enclosed buildings; pump house, boiler building, etc.

Grounds maintenance equipment shed
One portable shed building is located on site next to the dumpster at the south west corner of the building. This wood structure is approximately 8' x 8' with a gabled roof. It appears to be built of 2x framing with T1-11 exterior sheathing.

Condition of the building system:
The condition of the shed is poor to fair. The shed was locked at the time of the site visit so an interior inspection was not completed. The exterior is in need of repainting.

Estimated life: 5 years.

Tree Fort
There is a "tree-fort" in the woods west of the play ground.

The tree-fort is an attractive nuisance.

Deficiency

0143-1 Damaged Siding
The siding has been impacted and is broken in one location. The lower levels of the siding also exhibit moss growth.

Deficiency category: RR

Remedy
Remove and replace 300 SF of siding.

Estimated Construction Cost: $2,700

Architectural Inspection – Site Structures

Deficiency

0143-2 Tree fort is Attractive Nuisance
The tree-fort is an un-authorized structure that will likely be a hazard.

Deficiency category: RR

Remedy
Remove Tree Fort

Estimated Construction Cost: $1,500

Architectural Inspection – Exterior Walls

0411 Exterior Wall - All components of exterior wall assembly excluding interior finish

Exterior wall assemblies
There are multiple typical exterior wall assemblies found at the Gastineau Elementary school.

The original 1956 and 1965 buildings implemented a combination of site-formed and pre-cast concrete exterior wall panels (painted) as the primary weather envelope. These were insulated with 2" of furring wood furring and fiberglass batt insulation on the inboard side of the wall. Full height concrete walls were site formed and poured. Walls below the continuous ribbon window assembly characteristic of schools of the time were precast panels. Walls above these windows and at other infill locations are comprised of 2x wood framing (non load bearing), with batt insulation and an asbestos reinforced cement board weather skin. These cement board panels are typically installed over 15 lb building felt and plywood sheathing with ring-shank concrete panel nails, and most likely have an asbestos content. These panels have been used extensively at soffits, above the bands of classroom windows, and at sidewall conditions associate with the roof assemblies. For the most part these panels are in solid condition and are located 8' or more above the zone of regular human contact. The exceptions are at the door/entry areas, where concrete panels have been used to fill in around door openings. There is no evidence of a vapor retarder in any of these wall assemblies.

Architectural Inspection – Exterior Walls

Special note: Where removed or cut, original concrete board wall panels should be handled by protected workmen who have been specifically trained to remove this type of hazardous material. All necessary environmental protections are to be observed, and all asbestos containing waste is to be disposed of in a manner which meets current state and federal regulations governing this type of hazardous waste.

The 1990's era of construction introduced three weather cladding systems protecting a non-structural gypsum sheathing-clad metal stud system, with R19 fiberglass batt insulation. A vapor retarder is typical on the warm side of these assemblies.
At the gymnasium a 4" concrete masonry unit veneer is applied to an elevation of 10'-0" above finish floor. Above that datum the exterior cladding changes to 2" of rigid insulation with a synthetic stucco finish or EIFS (Exterior Insulation Finish System). At the covered outdoor basketball court area the EIFS system was substituted with a painted 3/4" MDO plywood panel (better resistance to abuse/impact), which is the typical finish of all interior surfaces of this outdoor space, and at all exterior wall faces of this structure above 10' above finish floor.

Condition of the building system
Exterior Wall assemblies of all periods of construction are largely constructed of durable low maintenance materials in fair to good condition. Each of these systems is in need of some maintenance in the form of cleaning, resealing, and painting to uphold material longevity. Monolithic concrete, concrete panel wall, and cement wall board surfaces should be cleaned and painted, and all joints sealed with proper sealant and backer rod. Concrete masonry unit walls should be pressure washed and sandblasted to remove organic growth and graffiti, then sealed with a waterproofing and graffiti repellant sealer system. EIFS system should be cleaned of all organic growth, all sealant joints re-sealed,

and all exposed surfaces repaired and renewed with a new coat of the finishing system. All wood trim and fascia surfaces should be stripped, primed, and repainted. All exposed ferrous metal surfaces such as copings and fascias should be striped primed and repainted.

One exception to this is at the south-east facing Library/Computer Lab window wall. Under *Structural Inspection - Exterior Walls* rot has been detected at a number of the wood columns exposed on the exterior side of the wall. These are primary structural elements that carry the roof loads, and should be addressed as soon as possible.

Remaining life expectancy: 1958-65 construction 10-12 years +*

*1-3 years at the Library window wall - as this condition includes deterioration to primary building structure. Remediation in this area should be a high priority.

1991 construction, 5-7 years.

Architectural Inspection – Exterior Walls

Deficiency

0411-1 Replace sealant joints at EIFS
All vertical and horizontal sealant joints at EIFS wall system exhibit signs of weathering and failure of elastic properties. Cracking as show in this photo is typical throughout assembly type.

Deficiency category: RR

Remedy
Remove sealant joints, clean & repair joint, reinstall new sealant joints with appropriately sized backing rods.

Quantity: 500lf

Estimated Construction Cost: $14,000

Deficiency

0411-2 Cleaning, repair, and resurfacing of EIFS

Granular EIFS surface collects dirt and harbors mold and mildew growth, most prominently at wall surfaces below eaves where missing or plugged gutters overflow down wall face. All vertical EIFS faces exhibit signs of organic growth and weathering, and are clearly near the end of their useful life in this climate. Minor damage has occurred where water has gotten behind system (typically at head and sidewall flashing conditions). Mold growth conditions as shown in photo are typical.

Architectural Inspection – Exterior Walls

Minor damage has occurred where system has been subject to impact. More substantial damage has occurred where the 2-hour rated parapet wall extends up above the roofline, between the gymnasium roof and the outdoor covered play area.

Deficiency category: RR

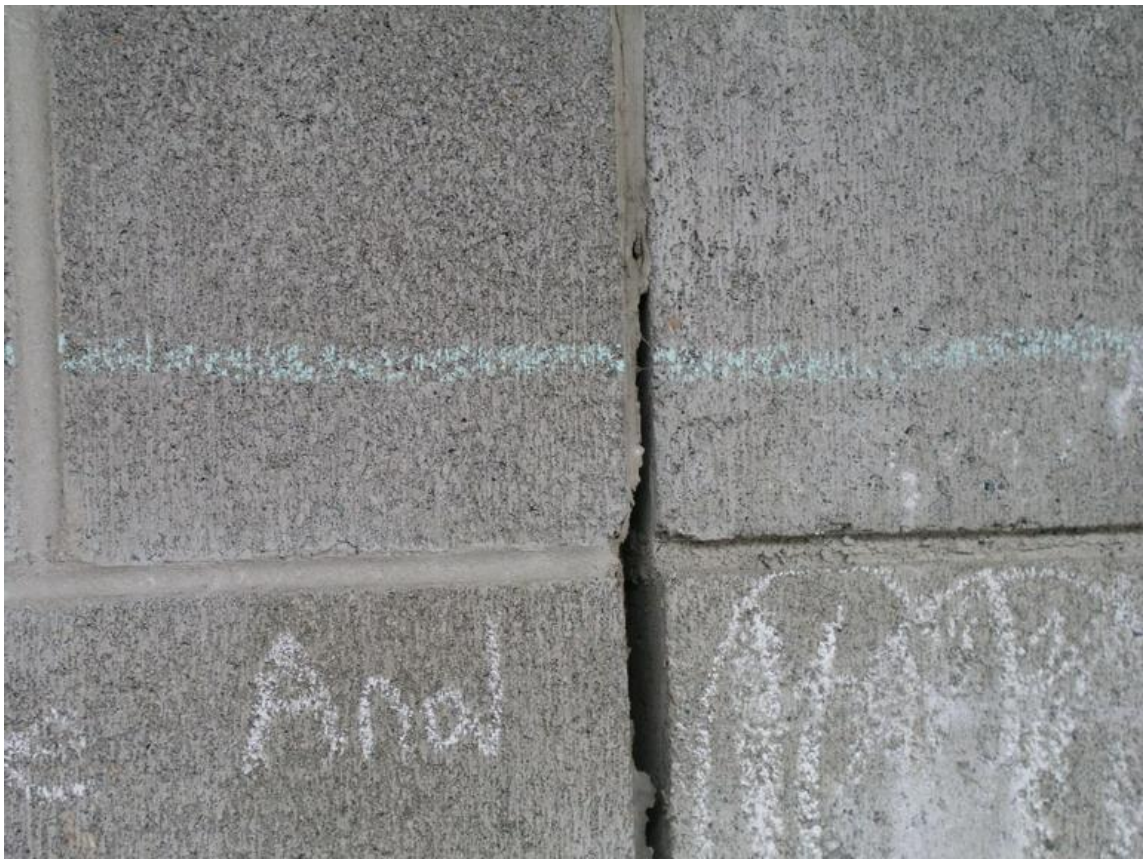
Remedy
Pressure wash system with detergents to remove dirt and organic growth. Remove all loose finish material to sound material. Fill and repair all damaged areas. Prepare entire surface and apply new coats of finishing system.

Estimated Quantity: 5000 sf

Estimated Construction Cost: $87,000

Architectural Inspection – Exterior Walls

Deficiency



0411-3 Failing sealant joints at CMU veneer
Sealant materials have failed and are largely missing at all CMU control joints up to elevations 6' above surrounding outdoor walking surfaces.

Deficiency category: RR

Remedy
Remove remaining sealant and clean concrete bond surfaces. Install new closed cell backing rod in diameters corresponding with joint width. Install new and new high density, "pick resistant" sealant full height of CMU wall assembly. Colors should match concrete mortar.

Quantity: 200 lf

Estimated Construction Cost: $4,300

Architectural Inspection – Exterior Walls

Deficiency

0411-4 Cracked surfacing and organic growth at site cast concrete
Existing site cast concrete wall surfaces are highly textured, and frequently cracked, offering good purchase for moss and mold growth. Paint system on concrete is deteriorating.

Deficiency category: RR

Remedy
Bead-blast existing concrete surface to remove paint, dirt and organic material. Fill all cracks and voids with appropriate concrete filler. Provide new vapor permeable painted finish designed specifically for application to aged concrete surfaces.

Estimated Quantity: 3500 sf

Estimated Construction Cost: $14,000

Architectural Inspection – Exterior Walls

Deficiency

0411-5 Deteriorating paint finish at precast concrete.
Existing precast wall surfaces are not as highly textured as the site-cast elements, and exhibit fewer cracks. Although moss and mod growth is not as great a threat, the paint system is fading and in some places pealing.

Deficiency category: RR

Remedy
Bead-blast existing concrete surface to remove paint, dirt, and organic material. Fill all cracks and voids with appropriate concrete filler. Provide new vapor permeable painted finish designed specifically for application to aged concrete surfaces.

Estimated Quantity: 5510 SF

Estimated Construction Cost: $22,000

Architectural Inspection – Exterior Walls

Deficiency

0411-6 Damaged concrete board wall panels
In these areas, several of the concrete panels have been damaged as illustrated in the photo above.

Deficiency category: RR, H

Remedy
Remove all asbestos containing concrete wall panels below an elevation of 7' above surrounding walking surfaces. Install new non-asbestos containing fiber cement panels over new building felt in these areas. Painting all new and existing concrete wall panels to correspond with adjacent painted concrete wall areas.

Estimated Quantity: 200 sf

Estimated Construction Cost: $8,700

Architectural Inspection – Exterior Walls

Deficiency

0411-7 CMU veneer cleaning and sealing
CMU veneer is fostering organic growth, and is efflorescing.

Deficiency category: RR

Remedy
Clean all CMU faces, removing all dirt, organic growth, efflorescence, and graffiti.
Apply penetrating block sealer with antifungal properties.

Estimated Quantity: 2800 sf

Estimated Construction Cost: $20,000

Architectural Inspection – Exterior Walls

0412 Fascias & Soffits – Exterior fascia & soffit framing and finish

Exterior soffits at the 1958-65 portions of the building are wholly comprised of painted cement board panels. Fascias are painted wood, with sheet metal roof edge trim. Fascias and soffits are supported by wood frame construction, typically an extension of the roof framing system. Most of these soffits are vented with 2" diameter plug-type vents, spaced 2' on center.

Soffits are largely nonexistent at the 1991 portion of the building.

Soffits at the 1958-65 portion of the building are typically in good condition, but should be re-painted as a part of any building exterior painting project. The painted finish in some areas has worn thin. All wood fascias on these portions of the building should be carefully scraped and repainted. Sheet metal roofing terminations are in varying conditions: those dating from the 1950's are painted aluminum and are in fair condition. Those from the 1981 roof replacement are bear galvanized steel and are starting to exhibit signs of corrosion. Those from the 2000 roof replacement are painted steel and are in good condition.

Soffits at the 1991 addition, in the few locations where they occur, are in good condition. Sheet metal roof copings, fascias, and gutters will be addressed under the roofing section of this report.

Remaining life expectancy:

1991 and 2000 building features	
Fascia and coping material	10 years +
1958-65 and 1981 building features	
Soffits	10 years +
Fascias and coping materials	3-5 years

Architectural Inspection – Exterior Walls

Deficiency

0412-1 Wood and galvanized fascias
Wood surfaces are pealing. Galvanized steel surfaces are starting to rust at edges. This condition is typical at 80% of the roof perimeter of the 1958 and 1965 buildings.

Deficiency category: RR

Remedy
Scrape, prime, and paint all exposed wood surfaces. Remove corrosion, acid etch, prime, and paint all exposed galvanized metal surfaces.

Estimated Quantity: 1100 lf

Estimated Construction Cost: $4,600

Architectural Inspection – Exterior Walls

Deficiency

0412-2 Wood and painted sheet metal fascias
Wood surfaces are pealing. Painted sheet metal surfaces are starting to deteriorate at edges. This condition is typical at the Library/Computer Room roof.

Deficiency category: RR

Remedy
Scrape, prime, and paint all exposed wood surfaces. Remove corrosion, prime, and paint sheet metal surfaces. If roof is replaced at the library, these sheetmetal fascia elements will be replaced with new - see Architectural Inspection - Low Sloped Roofing.

Estimated Quantity: 285 LF

Estimated Construction Cost: $1,300

Architectural Inspection – Exterior Walls

Deficiency

0412-3 Cement Asbestos Board Soffits
Paint finish on cement asbestos board soffits is wearing thin and peeling in some places creating the potential for weathering of the soffits. Since the soffits are a known ACM, care should be taken to ensure that the material is protected from degradation.

Deficiency: RR, H

Remedy, Option 1
Pressure wash and Paint 4850 SF of cement asbestos board soffits.

Estimated Construction Cost: $29,100

Remedy, Option 2 (recalculate in Executive Summary for totals)
Remove 4850 SF of cement asbestos board soffits and replace with painted Hardi-panel soffit or similar cement board product.

Estimated Construction Cost: $155,000

Architectural Inspection – Exterior Glazing

0422 Storefronts – Nonstructural window walls

Description of the building system
The 1958 and 1965 classroom wings of the building were designed by the same architect and implemented nearly matching window systems. Comments in this section apply universally to both of these portions of the building.

Two basic window systems have been implemented throughout the older portion of the building. The first is an aluminum storefront type system installed at primary hallway entry/egress doors in the 1958 building. These have heavy reinforced aluminum frames and non-operable glazing units, and typically have single pane tempered glass. The second system is the typical aluminum framed classroom window wall system. These window walls are comprised of modules 44" wide, comprised of each a reverse-hopper lower unit 22" high, and a fixed upper unit 60" high. The modules extend the full length of the exterior wall of each classroom in the 1958 portion of the building, and for all but 4' of each exterior classroom wall in the 1965 portion of the building. The original glass appears to have been un-insulated. The aluminum frames are not thermally broken. This system also appears at a portion of the library work room and at the boiler room.

The 1991 addition implements no glazing system. Most exterior doors are glazed. See Architectural Inspection - Exterior Doors.

Architectural Inspection – Exterior Glazing

Condition of the building system - Entry storefront assemblies
The glazing components of the storefront assemblies appear to be in good and serviceable condition.

Remaining life expectancy: 10-12 years.

Condition of the building system - Classroom window wall
Most of the original glass has been replaced with Plexiglas panels due to damage caused by wind-blown debris. Many of the original glazing stops are missing and have been replaced with wood or Plexiglas stops. In general this system has poor thermal performance and high air infiltration/exchange - the window units loose a lot of heat in the winter; and the south facing classrooms quickly become overheated in the spring, summer, and fall months.

Remaining life expectancy: Due to poor thermal/energy performance and ongoing maintenance, 0 years.

Architectural Inspection – Exterior Glazing

Deficiency

0421-1 Substandard window system and glazing at classrooms
Non-thermally broken aluminum window frames with single pane glass (or Plexiglas) contribute to substantial heat loss through the building weather envelope. Uncoated glass does not reflect solar gain in the spring, summer and fall months, causing classrooms with southern exposure to become overheated during hours of operation. Window system has no screens, allowing insects to get in when open during the day to vent heat. Window system does not seal when closed. Many glazing panels have been replaced with plastic Plexiglas panels, which in many instances have started to discolor from UV exposure and loose their clarity. Older glass panels have been "sandblasted" by wind driven dust, and are loosing their clarity. This condition affects all windows in all classrooms, the windows at the library work area, the windows at the boiler room, and the windows at the administration area.

Deficiency category: RR, E, F

Architectural Inspection – Exterior Glazing

Remedy

The proposed remedy is to replace the substandard windows with a new high quality commercial thermally broken aluminum window system with high performance thermal glass units. Insulated glazing units will also improve acoustic separation between the classroom and the street.

Quantity: 5008 sf

Estimated Construction Cost: $508,000

The thermal performance of a new window system should reduce heat loss through the system by at least 150%, depending on the performance of the replacement glazing system, the thermal performance of the frame, and the installation method. A relative comparison of thermal performance:

Assembly	*R-value*	*U-value*
Single pane glazing (Typical @ Gastineau)	1.15	0.87
Standard double glazing w/ low-E:	2.5	0.4
High performance double Glazing w/ multiple coatings:	3.5	0.28

As the window system typically comprises 3/4 of the wall area in each classroom, improvement to this system will have a significant impact on heating costs. South facing glass with a high shading coefficient will reduce cooling loads in the summer by up to 20%, but may also reduce desirable heat gain in the winter.

Architectural Inspection – Exterior Glazing

0423 Curtain Walls – Structural window wall

Description of the building system - Library window wall

A unique wood framed window wall system occurs at the Library and computer room. Formerly a multipurpose gymnasium, the exterior window wall is comprised of a deep, wood framed window module suspended between heavy glue-lam beam columns. These window openings are field built, and glazed with single pane plastic glazing panels.

In general the system is in fair condition and appears to be intact. Paint on the wood window frames are pealing severely. In some areas the wood appears to be saturated with water, and some leakage into the building is occurring. This is affecting the interior painted finish on the window frames. Glazing is comprised of translucent and transparent Plexiglas panels. None are thermal assemblies. Section *Structural Inspection - Exterior Wall* addresses a structural issue associated with this window wall that must be remedied as a part of any work on the window system.

Remaining life expectancy: 1-3 years

Architectural Inspection – Exterior Glazing

Deficiency

0423-1 Deteriorating paint system at wood window system
See also *Structural Inspection - Exterior Walls 0321-1 Library Columns*
Severe deterioration of paint at wood window system is leading directly to expanding moisture damage on both the interior and exterior sides of the window wall and subsequent damage the structural integrity of the wood window system.

Deficiency category: RR, F

Remedy
Following the structural repairs outlined in *Structural Inspection - Exterior Walls 0321-1 Library Columns*, remove all paint from wood surfaces and dry out all wood elements of the entire window wall system. All wood elements are to be carefully primed, all elements temporally removed are to be back-primed, and all exposed surfaces are to receive two coats of a high quality paint specifically designed for wood windows and trim.

Quantity: 1100 lf @ 1 sf/lf (window wall)

Estimated Construction Cost: $12,000

Architectural Inspection – Exterior Glazing

0423-2 Poor thermal performance of single pane plastic glazing panels
As a part of the work outlined in 0423-1, remove all exterior glazing stops, and all exterior plastic glazing panels, and install new high performance thermal units.

Deficiency category: E

Remedy
Install new painted wood glazing stops, with all backing tapes and sealants necessary for a weatherproof installation. Insulated glazing units will also improve acoustic separation between the Library and Computer Lab and the adjacent street.

Quantity: 1400 square feet

Estimated Construction Cost: $70/sf X 1400 sf = $142,000

See comparable thermal performance of single pane glazing vs. thermal glazing in deficiency 0421-1. South facing glass with a high shading coefficient will reduce cooling loads in the summer by up to 20%, but may also reduce desirable heat gain in the winter.

Architectural Inspection – Exterior Doors

0431 Personnel Doors – Door leafs, frames, finish, and hardware

Description of the building system

Exterior doors on the school are have been upgraded over the years. At the main an entry (northeast side of building), the 1958 building utilizes a full light, all-aluminum outer door doors and frame system. These are not original, but are replacements installed in the mid-1970's. The secondary entry (northeast side of building) was replaced with a painted hollow metal storefront in 1988. This assembly implements 1" insulated glass units.

The inner vestibule doors in both of these locations are the original flush aluminum panel doors, with corrugated faces and three glazing panels. These are integrated into a heavy aluminum storefront window system which extends to the ceiling at approximately 14 feet above the finish floor. Glass at both entry doorway/storefront assemblies is tempered.

The inner vestibule doors at these locations are likewise integrated into a heavy aluminum storefront, but rather than full light, these are aluminum flush panel doors with three smaller glazing penetrations (12"x12"). The doors may be from the original 1956 construction. There are no etched labels on glass in these assemblies to indicate if it is tempered.

Architectural Inspection – Exterior Doors

A single full light aluminum door which appears to be of the same generation as the main entry doors, is provided as a secondary exit from the south side of the library. This appears to match doors installed in the 1970's.

The hallway doors facing the playground, added with the 1965 addition, are full-lite hollow metal with insulated glass. It appears these doors are replacement doors installed in 1988. There is no vestibule at this location. Doors are equipped with closers, weather stripping, and older style panic hardware. Glass is tempered, and a sheet of plastic glazing has been installed on the exterior side to protect the glass from thrown rocks.

Exterior classroom doors in the 1965 addition are painted wood doors and frames, and are equipped with older style push-release hardware (not full width panic bar), and door closers.

Architectural Inspection – Exterior Doors

The north door (end of the hallway) in the 1965 addition is an all aluminum full light door in a standard commercial storefront assembly. The doors have newer panic hardware and closers, and are equipped with weather stripping. These are clearly a later addition to this portion of the building, but the date of this installation is unknown.

The 1991 addition is equipped with hollow metal doors and frames at all exterior penetrations. Utility openings such as the back of kitchen, back of gymnasium storage, and roof access are blank flush doors with standard locking lever hardware inside, and no lever hardware outside. Entry doors are configured in pairs and are full light units - two glass panels each with horizontal intermediate mullions. All are equipped with closers and weather seals, and all exit doors are equipped with panic hardware. All hollow metal doors and frames are painted.

Condition of the building system

1958 building; main entry, secondary entry, and library: The aluminum doors and frames at the main entry door were installed in the mid-1970's and are in good condition. The painted hollow metal door and storefront assembly installed at the secondary entry was installed in the late 1980's and is in good condition, but could be improved with cleaning and repainting. The inner solid panel aluminum doors, part of the 1958 construction of the vestibules at both the east facing main and secondary entries, have sustained some damage, but are for all intensive purposes operational. The steel floor grating in these areas does jamb the inner vestibule doors, resulting in damage to the doors and obstruction of the egress path. This should be remedied promptly. The single door at the library, possibly also from the original period of construction, may be an issue from the standpoint of thermal performance and human comfort. Additionally, the library egress door may be partially obstructed by a parked vehicle. Weather seals should be renewed and closers adjusted to meet current egress requirements.

Remaining life expectancy: 10+ years

Architectural Inspection – Exterior Doors

1965 Building, door at north end of hall: The aluminum door and storefront assembly at the north end of the hall is in good condition. Door glazing has been replaced with plastic glazing panels, and the outer panel of the thermal glazing assembly of one of the side-lights has been broken out. These glazing panels should be replaced.

Remaining life expectancy: 10+ years

1965 building; set of four door exiting to playground: The hollow metal door assemblies that open up to the playground were installed in the late 1980's and are good condition. Doors should be cleaned and repainted.

Remaining life expectancy: 10+ years

1965 building; exterior classroom doors: The wood doors and frames at the classrooms are in fair condition at the northeast side of the building, and in poor condition on the southwest side of the building. At the northeast-facing doors there is a 6" step down to an exterior concrete landing outside each door. This is not permitted by the current code. Southwest facing doors facing the playground have sustained damage to the door faces and several stick when closing. The door thresholds are raised approximately 1" to deter flooding in the winter - the paved exterior grade is approximately 2" below the finish floor elevation. The raised threshold presents a tripping hazard. Paint on these doors is deteriorating and is exposing substrate material. As these doors continue to deteriorate, building security may become an issue.

Remaining life expectancy: 3-5 years

1991 era door systems: Solid panel are full light hollow metal doors and hardware are all in good condition.

Remaining life expectancy: 10+ years

Most doors seem to exceed the maximum force of 5 ft/lb to open. All door closers should be carefully adjusted for proper operation in accordance with ADAAG 4.13.11. If any can not be adjusted into compliance, they should be replaced.

Architectural Inspection – Exterior Doors

Deficiency

0431-1 Southwest facing exterior classroom doors
Solid-core wood doors in the southwest facing classrooms are deteriorating, thresholds represent a tripping hazard, weather stripping is inadequate, hardware is antiquated.

Deficiency category: RR, C (threshold projection > 1/2"), E

Remedy
Remove existing doors and replace them with new galvanized and painted thermally broken hollow metal doors and frames, and new hardware. Repair drainage at adjacent outdoor play area (see Civil Inspection).

Quantity: 5 doors

Estimated Construction Cost: $13,000

Energy savings: Anticipate 50% over existing doors.

Architectural Inspection – Exterior Doors

Deficiency

0431-2 Exterior Library Door
Full light aluminum door is not thermally broken and is equipped with single pane plastic glazing. There is a 6"+ step down at the door threshold which represents a code violation and a hazard to the safe egress of the space served. The door hardware is antiquated.

Deficiency category: RR, C (IBC 2003, 1008.1.5), E

Remedy
Remove existing aluminum door and frame and replace with new galvanized and painted thermally broken hollow metal doors and frames, and new hardware. Door should be provided with a small security glass vision panel. A new 60" wide x 44" deep landing is to be installed outside the new door, and should be configured to promote sufficient vehicle separation from the egress door to preserve minimum egress widths outside the building.

Quantity: 1 doors + concrete landing
Estimated Construction Cost: $4,200

Energy savings: Anticipate 50% over existing doors.

Architectural Inspection – Exterior Doors

Deficiency

0431-3 Repairs at North hallway door assembly
One insulated glazing sidelight in the storefront assembly is broken. All four insulated glazing panels in the pair of doors have been broken and replaces with plastic glazing, which is getting scratched.

Deficiency category: RR

Remedy
Replace broken insulated glass sidelight with new insulated glass panel constructed of 3/16" tempered glass. Remove plastic glazing panels at doors and replace with new insulated glass panels constructed of 3/16" tempered glass.

Quantity: 5 glazing panels, installed in existing aluminum assemblies

Estimated Construction Cost: $1,900

Architectural Inspection – Exterior Doors

Deficiency

0431-4 Steel grating jambs interior vestibule doors.
The walk-off grating in front of the interior vestibule doors is deformed and in several locations jams the out-swinging doors. This could be a life-safety issue if the condition develops where the doors can not be opened.

Deficiency category: RR

Remedy
Replace steel grating with new aluminum, steel, or fiberglass grating system that will better serve maintenance needs, and will not jam doors.

Quantity: 6 units, 4'x4'

Estimated Construction Cost: $5,100

Architectural Inspection – Exterior Doors

Deficiency

(No photo)

0431-5 General door maintenance; Repainting wood and hollow metal doors
Exterior wood and painted hollow metal doors in the 1958 and 1965 portions of the building need to be repainted - both interior and exterior sides. Weather seals are not sealing, or are missing.

Deficiency category: RR

Remedy
Exterior wood and painted hollow metal doors are to be repainted. Weather seals are to be adjusted where they are not sealing, or replaced with new where they are missing.

Quantity: 15 units
Estimated Construction Cost: $10,000

Deficiency

(No photo)

0431-6 Door closer adjustment
Most doors seem to exceed the maximum force of 5 ft/lb to open.

Deficiency category: C - ADAAG 4.13.11

Remedy
All door closers should be carefully adjusted for proper operation in accordance with ADA. If any can not be adjusted into compliance, they should be replaced.

Estimated Construction Cost: $4,300

Deficiency

(No photo)

0431-7 New exterior Door at Kindergarten, Room 31
Classrooms with an occupant load of greater than 50 require two exits. In a school this will mean any classroom greater than 1000 square feet, given 20 square feet per occupant. Classroom #31 is approximately 1600 square feet and will require a second

exit. As a Kindergarten classroom it is also required to have an exit to the outside environment.

Deficiency category: C

Remedy
Integrate a new full light thermally broken aluminum door integrated with the window replacement. Provide a 3'x 6' wet area floor (sheet- vinyl) in front of door. Modify heating distribution as necessary to accommodate new opening in wall. Door is to meet ADA requirements.

Estimated Construction Cost: $13,000

Architectural Inspection – Exterior Accessories

0441 Louvers & Screens – Ventilation system penetrations in exterior wall

Description of the building system
In all generations of building construction exterior louvers have been installed. All appear to be functional and serving their intended purpose

Condition of the building system
Louvers installed in the 1958 building, specifically in the area of the Boiler Room, are galvanized and show evidence of minor corrosion. Louvers serving fan rooms in the 1965 and 1991 portions of the building are painted aluminum, and appear to be in good condition.

Remaining life expectancy: 10+ years

Architectural Inspection – Exterior Accessories

Deficiency

0441-1 Clean and Paint Louvers

Louvers at 1958-65 portions of the building are dirty and showing sighs of corrosion at three locations.

Deficiency category: RR

Remedy
As a part of an overall building painting project, straighten bent louver blades, clean, and paint louvers at exterior walls of 1958 and 1964 portions of the building.

Quantity: 3 units

Estimated Construction Cost: $1,300

Architectural Inspection – Exterior Accessories

0445 Other Exterior Accessories – Signage, decorations, etc. attached to exterior wall
Description of the building system
Exterior signage on building is minimal and primarily is directed towards identifying the building, and identifying accessible routs around the building. This signage is in good condition and serves its intended purpose.

Tile and painted art installations are located at main and secondary entries on the northeast facing elevation of the building (3rd street side). These installations are in good condition and should be considered in any exterior re-finishing project.

Condition of the building system: Good.
Remaining life expectancy: 10 + years

No deficiencies noted for this building system. ADA signage associated with access and parking may need upgrades with site improvements and development.

Architectural Inspection – Pitched Roofing

0511 Pitched Roofing – All components of the roof system including insulation

Description of the building system
Three types of pitched roofing are found at the Gastineau School.

Library: The original multipurpose room, presently the Library & Computer Lab, is an expressive element of the school design as perceived from both the street and from inside the Library space. The roof is sloped approximately 1-1/2:12, and appears to be the only area of roofing remaining from the original 1958 construction. The roof material is multi-ply built-up asphaltic roofing with numerous torch-down membrane patches and flashings. The roof is insulated with 1" of rigid insulation over 2-1/2" of solid wood T&G decking. In the 1980's a coat of fluid applied roofing product was installed to give the roof Class A fire resistive properties.

Multipurpose room/Gymnasium: The 1991 addition implements a 45mil fully adhered EPDM roof over 6" of rigid insulation. The roof slope is approximately 1-1/2:12, and terminated in parapet walls at its rake and an integral drainage gutter at the eave.

Covered outdoor play area: The part of the 1991 addition, the covered outdoor play area has a deep profile corrugated fiberglass roof. This assembly is separated from the adjacent EPDM roof by a 36" tall parapet, and drains into a gutter system at its

eave. Snow-stops are installed over the entire roof area.

Condition of the building system

Library: The library roof is in poor condition with numerous penetrations through the outer layer of built-up roofing. Although it does not appear to be leaking yet, delamitation of the assembly at its perimeter is evident.

Remaining life expectancy: 1-2 years

Multipurpose room/Gymnasium: The gymnasium roof is in good condition. One plastic drain screen is broken and debris should be removed from the area of the drain.

Remaining life expectancy: 25+ years

Covered outdoor play area: The fiberglass roof at the covered outdoor play area is in good condition. Moss and debris should be removed form the entire roof area, as outlined in Deficiency 0142-3.

Remaining life expectancy: 15+ years

Architectural Inspection – Pitched Roofing

Deficiency

(See also photos in description)
0511-1 Roof replacement at library
Existing sloped roof over Library, Computer Lab, and Commons hall appears to be original to 1958 construction, with extensive remedial patching. Numerous penetrations in outer roof membrane were identified. Numerous soft areas of roofing were identified. Roofing is delaminating from its perimeter termination at the eave edge. Original roofing material, and top coatings applied in 1981, should be tested for asbestos content prior to removal. This roof is approximately 4900 square feet, and has three curb-type mechanical penetrations and 2 pipe penetrations. The original roof system as described in the construction documents is substandard in terms of thermal performance, and a substantial improvement to the thermal envelope could be achieved in a roof system replacement project.

Deficiency category: RR, E

Remedy
Remove existing roof system, install new vapor retarder, 6" of new rigid insulation, new roof sheathing, and a new fully adhered EPDM or PVC roof. Roof replacement will

include installation of new painted sheetmetal gravel-stop and fascia at roof area perimeter.

Quantity: 4900 sf

Estimated Construction Cost: $99,000

Energy Upgrades: Current system is comprised of 1" rigid insulation (R5). Replacement with 6" rigid insulation (R30)should result in a 500% improvement to thermal performance at the roof over the library area.

Architectural Inspection – Pitched Roofing

0512 Gutters & Downspouts – All components of the roof drainage system

Description of the building system
The extent of gutter and downspout on the building is fairly minimal, and is comprised of the systems serving the three areas of canopy and the covered outdoor play area. In general all of these systems are intact and are working as they should be.

Condition of the building system
At the Outdoor Covered Play Area, is filled with debris and overflows in heavy rainfall, as water mark on wall suggests in photo above. Gutter and down-spout at all other areas should be cleaned.

Remaining life expectancy: 10+ years

Architectural Inspection – Pitched Roofing

Deficiency

0512-1 Clean debris out of all gutters and down-spouts.
This effort entails cleaning approximately 200 lineal feet of gutter, and should be incorporated in any roof maintenance or replacement project.

Deficiency category: RR

Remedy
Clean gutters. Re-seal any joints and end caps that appear to be leaking.

Quantity: 200 lineal feet, 70 feet of which will require a high-lift vehicle.

Estimated Construction Cost: $2,000

Architectural Inspection – Low Slope Roofing

0521 Low Slope Roofing – All components of the roof system including insulation

Description of the building system
All low sloped roof areas of the building have a black, fully adhered, EPDM roof.

The original roof on the 1958 and 1965 portions of the building was comprised of a asphaltic built-up roof over 1" of rigid insulation. In 1981 a new built-up roof was installed, incorporating a tapered rigid insulation system to improve the thermal envelope and rooftop drainage. In 2000, this portion of the roof was overlain with a new 60mil fully adhered EPDM roof. The insulation on these areas appears to average 5" in thickness, with a slope of approximately 3" in 40'. Sheetmetal fascias from both the 1981 and 2000 installations are seen at the roof perimeter detail.

The 1991 addition included renovation and re-roofing of a small portion of the original 1958 structure. All areas of the 1991 work have a 45 mil fully adhered EPDM roof system over 6" of rigid insulation. This work did include the installation of seismic joints between new and existing construction. The EPDM roofing was extended over approximately half of the seismic joint covers.

Condition of the building system
In general the EPDM roofing installation is in good condition, with minor maintenance issues (i.e. cleaning roof drain screens - see 0522). In one location a seismic joint cover that did not have the roofing extended across it has sustained some damage that is resulting in leakage into the building.

Remaining life expectancy: 10+ years

Architectural Inspection – Low Slope Roofing

Deficiency

0521-1 Holes in seismic joint cover
The seismic joint cover has been damaged in one isolated location.

Deficiency category: RR

Remedy
Patch seismic joint cover with fully adhered EPDM membrane.

Estimated quantity: 3 square feet

Estimated Construction Cost: $400

Architectural Inspection – Low Slope Roofing

0522 Roof Drains & Piping – Drains and piping to 5' from building perimeter

Description of the building system
Roof drains on the 1958-64 portions of the building are comprised of 4" cast iron drains with stainless steel cover/screens. Overflows accommodated by neighboring drains and the roof edge.

Roof drains on the 1991 addition and renovation areas are comprised of 4" drains with plastic cover/screens. Overflow is typically accommodated by scuppers 4-6" above the drain, or the roof edge.

Condition of the building system
In general drains and screens are in good condition, but need to be more regularly cleared of seasonal debris. At the shallow sloped roof of the 1958-65 portions of the building, the lower portion of the screen is plugged, resulting in up to 1" standing water for the full length of the roof valley after a rainfall. At one location in the 1991 addition, a plastic drain cover/screen has been broken and should be replaced.

Remaining life expectancy: 25+

Architectural Inspection – Low Slope Roofing

Deficiency

0522-1 Clogged drain screens
Seasonal debris clog lower openings of screens, causing standing water on the roof areas after rainfall.

This occurs at 12 locations on 1958-65 portion of the building, 6 locations on the1991 additional and renovations portion of the building.

Deficiency category: RR

Remedy
Make regular screen and roof cleaning a part of bi-annual building maintenance .
Estimated quantity and construction cost of remedy work.

Estimated Construction Cost: $300

Architectural Inspection – Low Slope Roofing

Deficiency

0522-2 Leaking internal roof gutter
The internal gutter at the east side of the Gym roof has experienced leaks and some softness was noted at roof sheathing. The school district was preparing to open up the gutter area and investigate the extent of the leaks and water damage.

Deficiency category: RR

Remedy
Remove roofing and replaced water damaged roof sheathing and framing. Reinstall roofing and roof drains.

Estimated Construction Cost: $23,000

Architectural Inspection – Roof Accessories

0535 Other Roof Accessories – Mechanical penetrations, snow control, antennas, etc.

Description of the building system
Mechanical and plumbing penetrations have been flashed in accordance with the requirements of the roofing type in which they are installed. Curb heights appear to be sufficient for each type of roof top equipment or vent. If a new roof is installed at the library, three new flashing assemblies at existing curbs will need to be provided, and associated curbs may need to be extended to accommodate a thicker roofing assembly.

Condition of the building system
Equipment curbs and plumbing vent penetrations and flashing appear to be in good condition.

Remaining life expectancy: Equal to that of adjacent roofing.

No deficiencies noted.

Architectural Inspection – Standard Interior Partitions

0611 Fixed Partitions – All components of the interior wall assembly excluding finish

Description of the building system
Fixed interior are gypsum wallboard over 2x6 wood studs. In the 1965 addition the partition between hallway and classroom is comprised of gypsum wallboard on the classroom side, and a 16" wide by 8'-0" tall Marlite type panel on the hallway side. Under the current code this sprinklered building should no longer be required to have a 1-hour fire rated separation between hallway and classroom, so the fire rating of this material should not be an issue.

Condition of the building system
Typical interior partitions are in good condition.

Remaining life expectancy: Indefinite

No deficiencies noted for this building system.

0612 Soffits – Framing and sheathing of soffits and bulkheads excluding finishes

Description of the building system
Soffits are typically wood framed with gypsum wall board. In the library, the "cloud" element over the Circulation desk is a clear finished wood assembly, and could classify as a "soffit".

Condition of the building system
Typical interior soffits are in good condition. One exception is the soffit at the hallway between the teacher's workroom and the main school hallway. This area had 12x12 ACT glued to the ceiling, and has had extensive water damage dating back to before the 2000 re-roofing project..

Remaining life expectancy: Indefinite

Architectural Inspection – Standard Interior Partitions

Deficiency

0612-1 Water damaged soffit at Admin area
Water leakage from the old roof has damaged this soffit area. The area is approximately 4'x8'. Soffit is clad with 12x12 ACT. Ceiling tile should be tested for asbestos containing material prior to removal.

Deficiency category: RR, H

Remedy
Test ceiling tile for ACMs. If found, remediate in accordance with state and federal laws, providing protection of the surrounding interior environment. Remove all damaged sheetrock and framing, and install new painted gypsum wall board finishes.

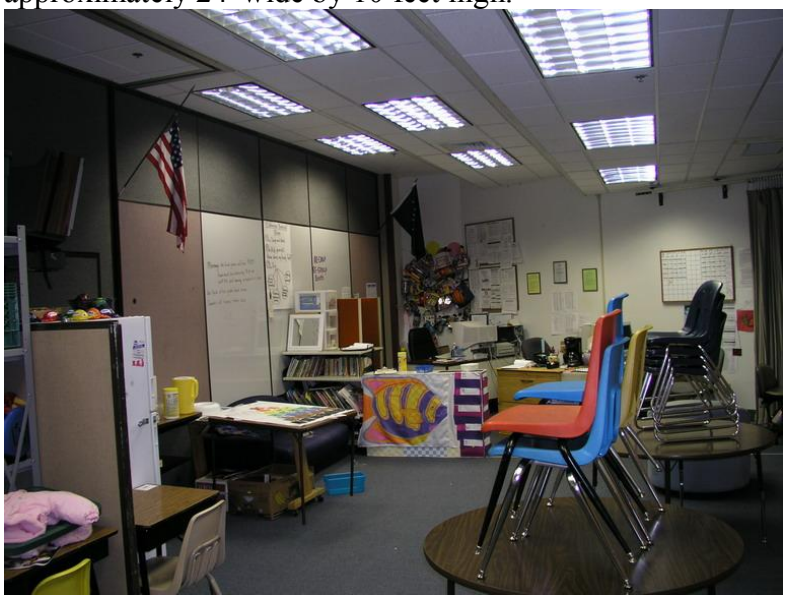
Area: approximately 36 sf

Estimated Construction Cost: $3,200

Architectural Inspection – Special Interior Partitions

0621 Operable Partitions – Folding partitions, accordion partitions, etc.

Description of the building system
One operable partition exists in the building. This partition is situated between the gymnasium and the music room. This is a carpet-faced aluminum framed panel assembly suspended on an overhead track, opening to create a proscenium in the gym approximately 24' wide by 10 feet high.



One cloth-faced accordion type closet door is located in the hallway to the bathrooms adjacent to Kindergarten, room 31.

Condition of the building system
The operable partition at the music room is in sound operating condition. It is rarely opened, since the music room is being used as a more formal music classroom.

The accordion closet door adjacent to the kindergarten classroom is in serviceable condition and does not need to be replaced.

Remaining life expectancy: Indefinite

No deficiencies are noted for these building systems.

Architectural Inspection – Special Interior Partitions

0623 Glazed Partitions – Glazing, glass block, frame, trim, etc.

Description of the building system
A pair of translucent glass panels separate the Administration office from the hallway. This glass has a prismatic pattern which diffuses light. This installation appears to date back to the 1958 period of construction. Wire glass relights are installed between the computer classroom and the Library. These date to the 1995 conversion of the space.

Condition of the building system
All relights in the building appear to be in good condition.

Remaining life expectancy: Indefinite

No deficiencies noted for this building system.

Architectural Inspection – Interior Doors

0631 Personnel Doors – Door leafs, frames, finish, and hardware

Description of the building system
Multiple types of interior personnel doors are used at the Gastineau School.

At an undetermined date (mid 1990's) all hallway doors throughout the 1958 and 1965 portions of the building were replaces with new 20-minute fire rated doors and frames. These are plastic laminate face doors with hollow metal frames with appropriate latching mechanisms, smoke seals, closers and magnetic holders. Door vision lights are correctly sized, and are rated metal frame and wire glass assemblies. Only one (room 32, shown in photo) classroom door has sufficient clearance on the latch side to meet ADA requirements. All, except the one shown in photo, are recessed approximately 32" into the corridor wall, swing outward into the corridor, and have less than the minimum of 18" of clearance between the strike jamb and the adjacent wall on the pull side of the door. A dimension of 4" to 10" is typical at the pull side of the classroom doors.

Doors between classrooms are typically clear finished solid core wood doors, frequently with a half vision light.

All other personnel doors in the 1958-65 portions of the building are painted solid core wood.

Doors within the 1991 addition are typically a wood-grain pattern plastic laminate faced fire rated door. Exceptions are the 120-minute fire rated hollow metal pairs of doors that are between the gymnasium and the hallways. These are painted, and have all hardware and smoke seals required to meet the fire rating.

Architectural Inspection – Interior Doors

Condition of the building system
The colored plastic laminate faced doors with hollow metal frames, and the associated hardware installations typically seen in the hallway walls of the 1958-65 portions of the building are in very good condition. However, the ADA clearance requirements are not met, and therefore a modification at each non-compliant door installation may be required.

Personnel doors between classrooms and between other rooms in the 1958-65 portions of the building, and associated hardware installations, are in good condition. One exception is the door into room 9, a fan room. The hallway side finish at this door appears to have taken a lot of abuse and is chipped and pealing.

The wood-grain print plastic laminate faced doors in the 1991 addition are not holding up well. At five locations the upper door hinge attachment has been stressed and has split apart the door edge. At three of these locations the hinge was removed and a frame face mounted pivot hinge has been installed. At two of these locations (double doors) the hardware associated with locking the inoperable unit (floor and head bolts) have failed, been removed, and replaced with surface mounted head and floor bolts. These doors are all into storerooms and it is suspected they have been closed on and slammed into by carts. Regardless, they are an inferior quality door with particle board edging around the fire resistive core rather than solid lumber, which should typically be seen at hardware attachment points. The installations of this door type at lower traffic locations are in fair condition.

Most doors seem to exceed the maximum force of 5 ft/lb to open. All door closers should be carefully adjusted for proper operation in accordance with ADAAG 4.13.11. If any can not be adjusted into compliance, they should be replaced.

Remaining life expectancy:

Colored P-lam faced doors in 1958-65 hallway:	10+ years
Clear finish and painted wood doors:	10+ years
Fire rated hollow metal doors:	10+ years
Wood-grain P-lam faced doors:	3-5 years*

*some require immediate fix to maintain fire rating

Architectural Inspection – Interior Doors

Deficiency

0631-1 Doors damaged at hinge or hardware attachment
Failure of low quality fire rated doors in 1991 addition in the following locations:
Double Door 4A; 60-min. fire rated double door: Split door panel at upper hinges, broken door edge at floor and ceiling bolts.
Double Door 4B; 60-min. fire rated double door: Closer disconnected, no floor or wall stops.
Double Door 4C; 60-min. fire rated double door: Split hinge attachment point, missing door closer, mortised in hardware at inactive leaf, no floor or wall stops.
Door 5, Gym side; 90-min. fire rated door: Split hinge attachment point, no floor or wall stops - allows door to hit thickened wall.
Door 5, Hallway side; ?-min. fire rated door: Split hinge attachment point, no floor or wall stops, missing UL rating tag.

Deficiency category: RR, C - Confirm code requirements for given locations. The 2003 IBC does not require fire rated enclosures around incidental storage spaces in a sprinklered building, per Table 302.1.1.

Remedy
As incidental use spaces, the current code may not require these rooms to be separated from the adjacent space if they are sprinkled. Careful code examination of room 5 should be made to determine if fire rated doors are required regardless of incidental use - this space is part of the separation between the gymnasium and the hallway.

Architectural Inspection – Interior Doors

A total of *three double door panels and two single door panels* are to be removed and replaced with new hollow metal door panels having required fire resistance listing, give requirements of each location. Replace all hardware with new door hardware in kind with the originals. Originals to be retained as spare parts. Provide overhead stops integrated with new door closers.

Estimated Construction Cost: $14,000

Architectural Inspection – Interior Doors

Deficiency

0631-2 Finish damage at room #9 (fan room) door face and frame.
Finish damage at room 9 (fan room) door face and frame.

Remedy
Repair, fill and paint door and frame. Adjust hardware for proper operation. Provide acoustic seals.

Estimated Construction Cost: $600

Architectural Inspection – Interior Doors

Deficiency

(No photo)

0631-3 Door closer adjustment
Most doors seem to exceed the maximum force of 5 ft/lb to open.

Deficiency category: C - ADAAG 4.13.11

Remedy
All door closers should be carefully adjusted for proper operation in accordance with ADA. If any can not be adjusted into compliance, they should be replaced.

Estimated Construction Cost: $7,200

Architectural Inspection – Interior Doors

Deficiency

0631-4 ADA clearance requirements at classroom doors
Typical doors into classrooms are situated in a recessed (32" deep) opening off the hallway. The doors swing out, and do not have the clearances required on the strike edge pull side of the opening (18" required, 4" - 11" provided). Typical condition occurs at doors 21, 22A, 23, 24, 25, 26, 27, 28, 31, 33, 34, 35, 36, 37, 38, 39, 40, 41, and 42.

Deficiency category: C - ADAAG 4.13.6

Remedy
Remove and reinstall recessed opening wall. Providing a minimum finished width of 18" between strike jambs of door perpendicular finished wall plane. Replace carpet and ceiling tile to accommodate modification

Quantity: 19 locations

Estimated Construction Cost: ~$8,400 per door X 19 = $160,000

Architectural Inspection – Interior Doors

0632 Special Doors – Overhead doors, grilles, access doors, etc.

Description of the building system
One operable security screen exists in the hallway in front of the administration area. This is a folding steel security gate which is closed after hours to control public access to the classroom wing when fully open it is recessed into the wall.

A 6' wide by 4' high 120-minute fire rated overhead coiling counter door separates the Kitchen from the Gymnasium.

Condition of the building system
The folding security screen is in good condition, and is in use on a daily basis.

The overhead coiling counter door between the kitchen and the gymnasium is in good condition and is used on a regular basis.

Remaining life expectancy: 10+ years

No deficiencies noted.

Architectural Inspection – Interior Finishes

0641 Wall Finishes – Paint, wall coverings, tile, acoustic treatment, etc.

Description of the building system
Numerous wall finishes are used ate the Gastineau School.

a. *1958 building north-south hallway:* Original 16"wide x 48" high grey wood-grain faced plastic laminate type wall panel wainscot, with carpet above to ceiling at about 8'-0" above finish floor. If this is truly the original 1958 installation, this assembly has held up remarkably well.

b. *1958 Commons hall; east west in front of library, high volume secondary entry area at north end of 1958 hall:* Original 16"wide x 8' high grey wood-grain faced plastic laminate type wall panel wainscot, with painted gypsum wall board finish to ceiling at approximately 14' above finish floor. As this appears to have been the original installation, their finishes have held up well.

c. *1958 Classroom, service, storage, and administration areas***:** painted gypsum wallboard

d. *1958 Kindergarten classroom # 31:* Cork tile full height at hallway walls, painted gypsum wallboard elsewhere.

e. *1958 Typical bathrooms; general boys and girls, staff area:* Ceramic tile wainscot 6 feet above finish floor, painted gypsum wallboard above. Bathroom at room 22 and bathrooms at kindergarten classroom 31 have ceramic tile wainscot to 44", with painted gypsum wallboard above.

f. *1958 building, 1995 renovation; library and computer classroom:* painted gypsum wallboard, typical. Acoustic wall panels at library. Acoustic wall panels at computer room from 36" above finish floor to ceiling.

g. *1965 addition hallway (north-south) and hallway segment to playground:* full height 16" wide Marlite type panels, painted.

h. *1965 addition bathrooms:* Painted 16" wide Marlite type panels, full height.

i. *1965 addition classrooms:* Painted gypsum wallboard, typical.

j. *1991 addition hallway; play-yard to commons*: carpet, full height.

k. *1991 renovation ADA bathroom and room #10, laundry:* Plastic laminate wainscot to 40", gypsum wallboard above.

l. *1991 addition/renovation area, typical offices and kitchen:* painted gypsum wallboard.

m. *1991 Gymnasium:* Painted plywood wall panels full height. Cloth covered acoustic wall panels placed in field, all walls.

Condition of the building system
Typical gypsum wallboard finishes will last indefinitely with regular maintenance and painting. Regular repairs and careful color selection will contribute to the quality of the educational environment. Older portions of the building may have gypsum wallboard products that contain asbestos. Any walls in the 1958 or 1965 portions of the building should be tested for ACM's (asbestos containing materials) prior to demolition, cutting, or sanding. Regular maintenance repairs and painting should effectively encapsulate ACM's in wall system.

a. *1958 building north-south hallway:* 16"wide x 48" high grey wood-grain faced plastic laminate type wall panel wainscot and carpet wall covering are in fair to good condition. The dark colors are oppressive and do not lend themselves to a spirited educational environment. Remaining life expectancy: 2-4 years*
Remaining life expectancy: 2-4 years*
*These materials will last longer, but do not contribute to the perception of a quality learning environment.

b. *1958 Commons hall; east west in front of library, high volume secondary entry area at north end of 1958 hall:* 16"wide x 8' high grey wood-grain faced plastic laminate type wall panel wainscot is in fair to good condition, as is the painted gypsum wallboard. Remaining life expectancy: 2-4 years
Remaining life expectancy: 2-4 years*
*The wainscot materials will last longer, but does not contribute to the perception of a quality learning environment.

c. *1958 Classroom, service, storage, and administration areas***:** Painted gypsum wallboard is typically in good condition.
Remaining life expectancy: 10+ years (2-3 years prior to repainting)

d. *1958 Kindergarten classroom # 31:* Cork tiles in good condition, painted gypsum wallboard is in good condition.
Remaining life expectancy: 10+ years

e. *1958 Typical bathrooms; general boys and girls, staff area:* Ceramic tile wainscot 6 feet above finish floor, painted gypsum wallboard above. Bathroom at room 22 and bathrooms at kindergarten classroom 31 have ceramic tile wainscot to 44", with painted gypsum wallboard above. All materials are in fair to good condition.
Remaining life expectancy: 10+ years

f. *1958 building, 1995 renovation; library and computer classroom:* painted gypsum wallboard, typical. Wall materials in these areas are n good condition. Note that sills and trim on south facing window will is deteriorating - pealing paint.
Remaining life expectancy: Indefinite. Refinish window wall sills and trim with renovation of window wall system.

g. *1965 addition hallway (north-south) and hallway segment to playground:* The full height 16" wide painted Marlite type panels are typically in good condition. These panels may need to be repainted soon.
Remaining life expectancy: Indefinite life span, 2 years prior to complete repaint.

h. *1965 addition bathrooms:* Painted 16" wide Marlite type panels, full height. The finish on these panels is deteriorating at wet areas, such as behind urinals, toilets, and sinks. Panels have not been patched where antiquated washroom accessories have been removed. Panels are starting to become a health and sanitation concern.
Remaining life expectancy: 2-4 years

i. *1965 addition classrooms:* Painted gypsum wallboard, typical.
Remaining life expectancy: 10+ years (2-3 years prior to repainting)

j. *1991 addition hallway; play-yard to commons*: carpet, full height.Remaining life expectancy: 4 years

k. *1991 renovation ADA bathroom and room #10, laundry:* Plastic laminate wainscot to 40", gypsum wallboard above.
Remaining life expectancy: 10+ years (2-3 years prior to repainting)

l. *1991 addition/renovation area, typical offices and kitchen:* painted gypsum wallboard.
Remaining life expectancy: 10+ years (2-3 years prior to repainting)

m. *1991 Gymnasium:* Painted plywood wall panels, full height, are in good condition and just need repainting. Cloth covered acoustic wall panels at ends of the basket ball court and above the bleachers have sustained damage and are starting to come apart. At the court ends these should be replace with gymnasium style wall mats.
Remaining life expectancy: Plywood wall panels: 10+ years (1-2 years prior to repainting).
Replace damaged acoustic panels at ends of court: replace within 2 years.

Architectural Inspection – Interior Finishes

Deficiency

0641-1 Dark wall materials in 1958 building halls restrict educational experience.
Hallway finishes are durable, but color and organization are dark and oppressive.

Deficiency category: RR, F

Remedy
Remove existing wall finishes and replace with new durable and richly colored finishes that are more in keeping with a primary and elementary education program.

Quantity: 2000 sf

Estimated Construction Cost: $35,000

Architectural Inspection – Interior Finishes

Deficiency

0641-2 Dark wall materials in 1958 building Commons restrict educational experience.
Commons finishes are durable, but color and organization are dark and oppressive.

Deficiency category: RR, F

Remedy
Remove existing wall finishes and replace with new durable and richly colored finishes that art more in keeping with a primary and elementary education program.

Quantity: 875 sf

Estimated Construction Cost: $16,000

Architectural Inspection – Interior Finishes

Deficiency

0641-3 Deteriorating Marlite-type panels in 1965 addition bathrooms
Material finish is deteriorating in damp areas such as behind urinals, toilets, and sinks.

Deficiency category: RR, F

Remedy
As a part of a bathroom renovation and plumbing upgrade project, Remove 800 SF of existing wall finishes and replace with new cementitious backing unit and ceramic wall tile, full height. Adjust all toilet and urinal clearances to meet current design standards and to accommodate provisions of the ADA.

Estimated Construction Cost: $17,000

Architectural Inspection – Interior Finishes

Deficiency

0641-4 Replace court end acoustic wall panels at gymnasium.
Cloth Faced Acoustic pads at court ends are not standing up to abuse of gymnasium use.

Deficiency category: RR, F

Remedy
Remove acoustic panels from en walls and replace with full width gymnasium wall padding mats to an elevation of 6'-6" above finish floor. Configure pads to afford protection at corners and doors.

Quantity: 12 - 4'x8' panels

Estimated Construction Cost: $9,000

Architectural Inspection – Interior Finishes

0642 Floor Finishes – Carpet, tile, resilient flooring, etc.

Description of the building system
Floor finishes at Gastineau school are typically five types: Carpet, Dot-pattern rubber flooring (Roppe, or similar), concrete, the urethane gymnasium flooring, and a the old linoleum or vinyl floor tiles. The floor tiles are known to be typically ACMs, and appropriate consideration is to be made in their removal or encapsulation.

a. *1958 and 1965 building north-south hallway administrative areas, storage areas, and classrooms:* Glued down short loop commercial carpet with rubber cove base. Installation date is unknown, but guessed to be approximately 15-20 years old considering the color and condition. Most classrooms have a taped down vinyl covering over the carpet in the wet areas.

b. *1958 and 1965 building entry area and Commons hall:* Dot-pattern rubber flooring (Roppe, or similar), with rubber stair tread nosing and rubber cove base. Rubber walk-off mat recessed in floor in front of north-east facing vestibule doors.

c. *1958 and 1965 building janitorial areas:* 9"x9" brown resilient flooring tiles with rubber cove base.

d. *1958 Kindergarten classroom # 31:* Carpet typical, with installed sheet vinyl wet area. Rubber cove base.

e. *1958 and 1965 Typical bathrooms; general boys and girls, staff area:* Mosaic Ceramic Tile with tile wainscot or base.

f. *1958 building, 1995 renovation; library and computer classroom:* Carpet with rubber cove base.

g. *1991 addition Commons area and hallway to play yard*: Carpet with rubber cove base.

h. *j. 1991 renovation ADA bathroom and Kitchen:* Sheet vinyl with integral 6" cove base.

i. *k. 1991 Gymnasium:* Monolithic urethane gymnasium flooring with rubber cove base.

Condition of the building system
a. *1958 and 1965 building north-south hallway administrative areas, storage areas, and classrooms:* Carpet is worn should be replaced within the next few years. High traffic areas such as the hallways and the rally classroom show the most wear and

staining and are the higher priority. Seams are starting to show in general classroom areas.
Remaining life expectancy:
High wear areas: 1-2 years to replacement.
Classroom areas: 2-4 years to replacement.

b. *1958 and 1965 building entry area and Commons hall:* Dot-pattern rubber flooring (Roppe, or similar), with rubber stair tread nosing and rubber cove base is in good condition and has several more years of serviceable life. The rubber walk-off mat at recessed in floor areas in front of north-east facing vestibule doors are in serviceable condition, but should be replaced with new recessed carpet type walk-off mats for more effecting dirt removal.
Remaining life expectancy:
Rubber flooring and steps: 8-10 years to replacement.
Walk-off mats: 1-2 years to replacement.

c. *1958 and 1965 building janitorial areas:* As the 9"x9" brown resilient flooring tiles are an ACM, subject to wear, they should be removed.
Remaining life expectancy: 1 year to remove.

d. *1958 Kindergarten classroom # 31:* Carpet in this space should be removed on the same schedule as the other classrooms. The sheet vinyl area is in good condition and should last several more years.
Remaining life expectancy: Sheet vinyl; 4-6 years to replacement.

e. *1958 and 1965 Typical bathrooms; general boys and girls, staff area:* Mosaic ceramic tile in these areas is good and serviceable condition, however the grout retains bathroom odors. These floors should be carefully acid-cleaned and re-sealed with a new penetrating and barrier forming grout and tile sealer.
Remaining life expectancy: Indefinite with successful cleaning and sealing.

f. *f. 1958 building, 1995 renovation; library and computer classroom:* Carpet is starting to pull up in areas where chairs are slid in and out of workstations, specifically in the computer room. With prompt rearrangement of workstations to reposition high wear areas, these carpets should provide several more years of service.
Remaining life expectancy: 6-8 years

g. *1991 addition Commons area and hallway to play yard*: Carpet in these areas is severely stained by foot traffic, but should serve for a few more years with regular cleaning. Replacement should be with high quality vinyl backed walk-off mat type carpet.
Remaining life expectancy: 4-6 years

h. *1991 renovation ADA bathroom and Kitchen:* Sheet vinyl with integral 6" cove base is in fair and serviceable condition.
Remaining life expectancy: 6-8 years

i. *1991 Gymnasium:* With the exception of one large tear area caused by the bleachers, the monolithic urethane gymnasium flooring is in very good condition. With patching repairs at damaged area it should serve for many years. The cove base should be replaced where it is warn through or missing.
Remaining life expectancy:
Urethane flooring, with repairs completed within 1 year; 15+ years
Rubber base; fix damaged or missing areas within 1 year.

Architectural Inspection – Interior Finishes

Deficiency

(Carpet wear in hallways does not photo well)

0642-1 Carpet wear at Halls

The carpets at the 1958 and 1965 portions of the building are approximately 15 years old and becoming worn, with seams and ridges becoming more evident with each cleaning.

Deficiency category: RR

Remedy
Replace all carpet in all1958 and 1965 building hallways.

Quantity: 4500 sf

Estimated Construction Cost: $36,000

Architectural Inspection – Interior Finishes

Deficiency

0642-2 Carpet wear at rooms
The carpets at the 1958 and 1965 portions of the building are 15 years old and becoming worn, with seams and ridges becoming more evident with each cleaning.

Deficiency category: RR

Remedy
Replace all carpet in 1958 and 1965 building classrooms, administration areas, and incidental use spaces.

Quantity: 22,500 sf

Estimated Construction Cost: $181,000

Architectural Inspection – Interior Finishes

Deficiency

0642-3 Provisions for wet area flooring at sinks in classrooms
Most classrooms in the 1958 and 1965 portions of the building have sink areas, but only the kindergarten classroom #31 has permanently installed sheet vinyl flooring. All sink areas should have a water resistant, easy-clean-up type floor in the sink work area.

Deficiency category: RR, F

Remedy
At all classrooms with carpet at sink area, install one 8'x10' area of monolithic resilient flooring in front of sink work areas. This should be completed as a part of the classroom carpet replacement in 0642-3.

Estimated quantity: 80sf in 19 locations = 1520 sf

Estimated Construction Cost: $11,000

Deficiency

0642-4 Remove ACM floor tile from janitor rooms
9"x9" resilient flooring tile at janitor's spaces is in poor condition is falling apart. These products date from the time of the buildings original construction and are known to be Asbestos Containing Materials (ACMs)..

Deficiency category: RR

Remedy
Enlist the services of contractors trained and licensed to remove and dispose of indicated flooring type. All health and environmental safety precautions are to be followed as required by state and federal law.

Replacement flooring to be monolithic resilient sheet material capable of withstanding the traffic of janitorial equipment and cleaning chemicals..

Quantity: 403 sf

Estimated Construction Cost: $8,800

Architectural Inspection – Interior Finishes

Deficiency

0642-5 Cleaning and sealing of all mosaic tile flooring.
All bathrooms in the 1958 and 1965 additions have glazed mosaic flooring in fair condition. A complaint has been that bathroom smells emanates from the tile grout, and no cleaning method to date has successfully eliminated this emanation. (might be a ventilation issue as well)

Deficiency category: RR

Remedy
Clean all tile flooring with a phosphoric acid product made specifically for removing the top layer of grout without damaging the tile. Fill and seal grout joints with permanent grout sealant product.

Quantity: 610 sf

Estimated Construction Cost: $5,800

Deficiency

0642-6 Repair to urethane gymnasium flooring.
A large gouge has formed in the location of the folding gymnasium bleachers. The bleacher break shoe drags when bleachers are extended and retracted if the base panel is not lifted completely during operation. This item appears to have been fixed, but damage to the flooring material remains.

Deficiency category: RR

Remedy
Patch area of urethane floor with products and methods approved by the flooring manufacturer.

Quantity: 100 sf

Estimated Construction Cost: $3,600

Deficiency

0642-7 Repair damaged rubber base at gymnasium
Four outside rubber base corners are missing or damaged at the gymnasium.

Deficiency category: RR

Remedy
Replace damaged rubber base area with new to match existing. Use pre-formed rubber base corners.

Quantity: 450 lf

Estimated Construction Cost: $2,900

Architectural Inspection – Interior Finishes

0643 Ceiling Finishes – Painted GWB, ACT, acoustical panels, etc.

Description of the building system
The majority of the ceilings in the Gastineau School are acoustic ceiling tile (ACT) in a suspended "T" grid. The typical tile at classrooms and halls is a 2'x4' standard fissured tile. At the main entry areas and Commons hall in the 1958 and 1965 portions of the building, the old, large format ceiling tile is still in place. Throughout the rest of the school the original tiles have been replaced with newer ceiling tiles as damage has occurred.

At the 1958 building vestibules, a 12x12 glued-on ceiling tile is used.

Areas such as the library and gymnasium have ceilings that reflect the building structure in those areas, with attached acoustic panels.

Condition of the building system
Approximately 15% of the 2'x4' ceiling tile in the 1958 and 1965 buildings are damaged and should be replaced. This includes individual tiles in classrooms, at the hallways. The larger areas of tile and suspension system at the main and secondary entry and commons hall is over all in poof condition and should be replaced as a part of finish upgrades in these areas. The tile at the hallway ceilings has a fairly dark shadowy texture, and the suspension grid is damaged and discolored in numerous locations. The ceiling tile at the hallways was at one time part of the fire rated separation between the hallway and the classrooms.

Suspended acoustic ceiling tile at the 1991 addition and 1995 renovation (computer classroom) is in good condition, with the exception of 4 water stained tiles in the kitchen.

12x12 glue on tile at the building vestibules is in good condition.

Remaining life expectancy: For the most part the suspended ceiling tile will last indefinitely, but damaged and discolored tiles and system components should be replaced to preserve the integrity of a high quality learning environment.

Architectural Inspection – Interior Finishes

Deficiency

0643-1 ACT replacement at entry area and Commons Hall.
The old large format acoustic ceiling tile at the entry areas and Commons Hall of the 1958 building has been damaged by water in the past, and in some areas is visibly sagging. As part of hallway finish upgrades, the ceiling tile and suspension grid system in this area should be replaced with a new system.

Deficiency category: RR

Remedy
Remove existing ceiling tile and grid, replace with new suspended acoustic ceiling tile system to complement hallway finish upgrades. Test ceiling tile for asbestos content. If found, handle and dispose of materials in accordance with state and federal environmental law.

Estimated quantity: 1300 sf

Estimated Construction Cost: $9,100

Architectural Inspection – Interior Finishes

Deficiency

0643-2 ACT replacement at hallways, classrooms and administration areas.
Approximately 15% of the ACT throughout the building is stained, damaged, or missing, and should be replaced. At hallways the ceiling grid may need repair and cleaning as a part of this work.

Deficiency category: RR

Remedy
Remove damaged ceiling tile in rooms and replace them with sound ceiling tile from the hallways. In conjunction with a hallway finishes renovation, remove all ceiling tile from hallways and replace with new ceiling tile with a fine texture and greater light reflectivity properties..

Estimated quantity: 32,400 x 15% = 4860 sf + relocating cost of sound tile from hallway.

Estimated Construction Cost: $38,000

Architectural Inspection – Interior Fixed Furnishings

0651 Specialties – Toilet partitions, bath accessories, marker boards, signage, etc.

Description of the building system with Condition of the building system

a. Toilet partitions: At girl's bathroom in the 1958 building, the original baked enamel and stainless steel toilet partitions are still in place, and are in serviceable condition. The boy's bathroom toilet partitions were replaced recently with solid plastic partitions, which are in good condition. The boys and girls toilet partitions in the 1965 addition appear to have been replaced at some time since the buildings construction. These are painted steel partitions, and are in serviceable condition. Those in the boy's bathroom have been repainted in areas of vandalism.

   Remaining life expectancy:

1958 Girls Bathroom:	3-5 years
1958 Boys bathroom:	5-8 years
1965 Boys and Girls Bathrooms:	3-5 years

b. Bath Accessories: Bath accessories at all bathrooms appear to be in good condition and appear to have been updated to current requirements. Note: ADA requirements are not met at all bathrooms because a fully ADA compliant bathroom has been made available within the school. With any future bathroom renovations provisions for accessibility should be made a priority.

c. Marker boards and tack boards: Classrooms were originally equipped with chalkboards on the teaching wall, and tack boards at the classroom back wall. At

each classroom one or two dry-erase marker board have been installed over the existing chalkboard. These marker boards are typically 4' tall and 6' wide. While

this does not appear to be a deficiency, an improvement to each classroom would be to replace the chalkboard with a full width marker board. Tack boards are in good condition. This is a functional deficiency and chalkboards should be replaced with marker boards.

d. Signage: At present signage in the building does not meet ADA requirements. At the 1991 addition a simple wall placard with number is fastened to each door. In the 1958 and 1965 buildings a 2"x4" sign with 1" high numbers, with Brail below, is fastened to the wall at an elevation of approximately 60" above finish floor. While the signage technically appears to meet the requirements of the ADA, the signage color blendes into the wall and does not have contrast with the surrounding surfaces sufficient for easy identification.

Architectural Inspection – Interior Fixed Furnishings

Deficiency

0651-1 Missing ADA signage
Doors in the 1991 addition are not equipped with ADA signage.
Description of deficiency and quantity of building system affected.
Deficiency category: C - US Department of Justice, 28 CRF Part 36, Section 4.30

Remedy
Replace existing room signage with new ADA compliant signage.

Quantity: 20 locations

Estimated Construction Cost: $1,400

Architectural Inspection – Interior Fixed Furnishings

Deficiency

0651-2 Toilet Partitions
Toilet partitions are wearing out and should be replaced with new.

Remedy
As part of bathroom renovations, replace toilet partitions with new solid surface type partitions to match newer installations in the facility.

Quantity: 13 units

Estimated Construction Cost: $28,000

Architectural Inspection – Interior Fixed Furnishings

Deficiency

0651-3 Marker Board Replacement
Temporary marker boards have been applied over existing chalkboards in classrooms. This does not provide the necessary marker board area for teaching.

Remedy
Replace chalkboards with metal dry-erase markerboards in each classroom.

Quantity: 21 units

Estimated Construction Cost: $35,000

Architectural Inspection – Interior Fixed Furnishings

0652 Casework/Millwork – Cabinets, countertops, cubbies, display cases, trim, etc.

Casework in the Gastineau School is best identified in relation to the three primary periods of construction.

1958 building: Casework is primarily comprised of painted plywood cabinet boxes and doors, with plastic laminate counter tops. The sink is not accessible. This system is antiquated, presents a maintenance issue, and should be replaced.
Remaining life expectancy: 1-3 years

1965 building: Casework is primarily clear finished veneer plywood faces on painted plywood boxes. This system is in fair condition, but the finish on the cabinet faces is no longer sealing the wood, which presents a cleaning problem. The sink is not accessible. With refinishing and sink modification, this casework will continue to serve in these classrooms.
Remaining life expectancy: 1-3 years. 15-20 years with refinishing.

1991 building and later renovations at Library and Computer Lab: Casework is primarily plastic laminate tops and faces on melamine cabinet boxes. Door edges are thick PVC. These cabinets are in good condition, are tough and durable, and should be serviceable for many years to come.

Architectural Inspection – Interior Fixed Furnishings

Display cases are located in the 1958 portion of the building. Those in the Commons are built into the library wall, and those in the main 1958 hallway are built into the thickened Kindergarten classroom wall (32). These are aluminum framed operable glass faces with cases recessed approximately 18" into the wall. These display cases are in good condition.

One of two similar display cases at the foyer area between the 1958 and 1965 buildings have had its glass faces removed and are currently being used as a coat hanging area and a lost-and-found bin.

Architectural Inspection – Interior Fixed Furnishings

Deficiency

0652-1 Antiquated millwork at 1958 classrooms
Existing millwork is antiquated, requires regular painting and maintenance, and is not ADA compliant.

.
Deficiency category: RR, C

Remedy
Replace upper and lower cabinets and countertops with new PVC edged plastic laminate faced commercial cabinets. Make provisions for ADA clearances at sink and install ADA sink, water bubbler, and faucets (see also 0811-1).

Quantity: 99 lineal feet casework - uppers and lowers (See 0811-1 for sink replacement costs)

Estimated Construction Cost: $67,000

Architectural Inspection – Interior Fixed Furnishings

Deficiency

0652-2 Refinish millwork at 1965 classrooms, ADA compliant
Existing millwork finish is wearing out and sink is not ADA compliant.

.
Deficiency category: RR, C

Remedy Option 1
Refinish upper and lower cabinet faces with new clear urethane finish. Replace existing plastic laminate tops with new, prepared for installation of ADA compliant sink, water bubbler, and faucet. Make provisions for ADA clearances at sink by removing sink base cabinet and extending finishes (see also 0811-1).

Quantity: 92 lineal feet refinished casework - uppers and lowers (See 0811-1 for sink replacement costs).

Estimated Construction Cost: $23,000

Remedy Option 2

Architectural Inspection – Interior Fixed Furnishings

Replace casework.

Quantity: 92 lineal feet refinished casework - uppers and lowers (See 0811-1 for sink replacement costs).

Estimated Construction Cost: $62,000

Architectural Inspection – Interior Fixed Furnishings

Deficiency

0652-3 Hallway coat storage
Existing display case has been converted to a coat storage area and a lost-and-found.

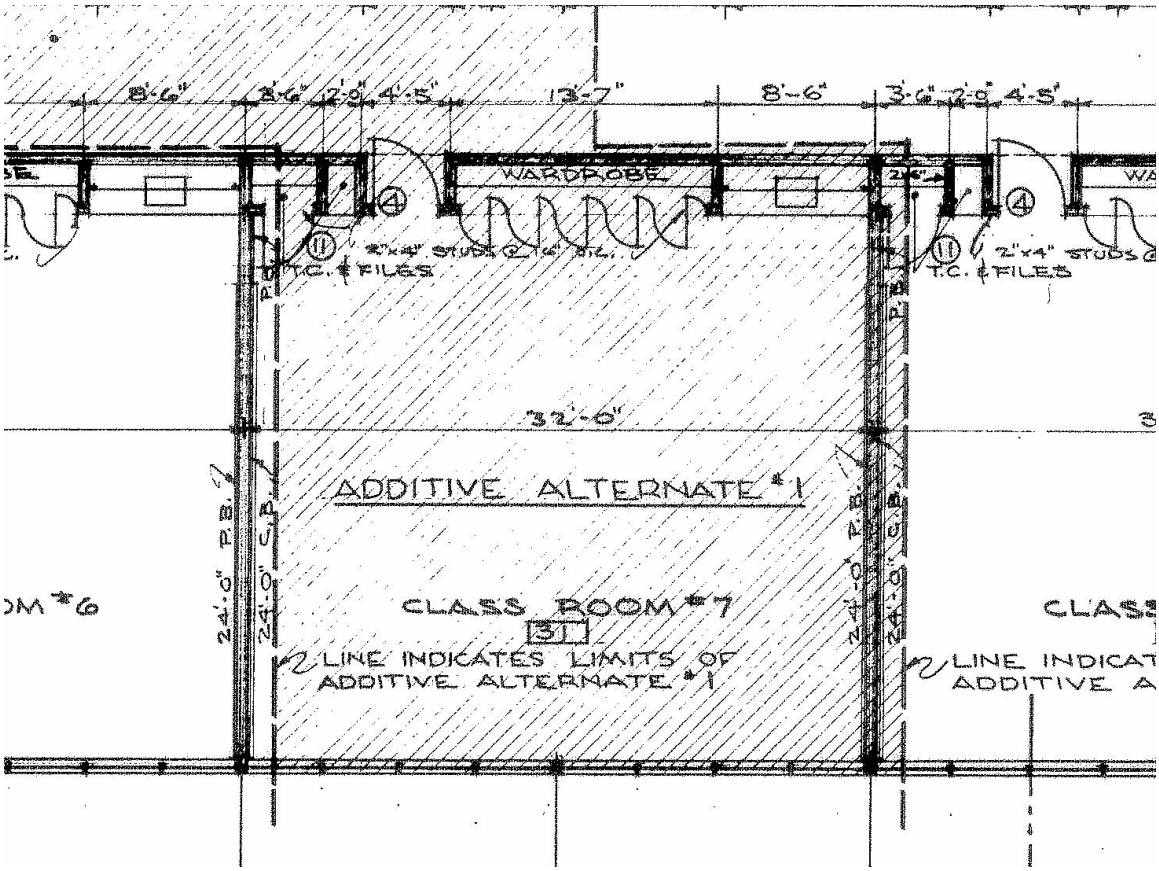
Deficiency category: F

Remedy
Remove clothing and hooks and install new aluminum frames and glass panels.

Quantity: 4 tempered sliding glass panels and associated hardware

Estimated Construction Cost: $1,700

Deficiency



0652-4 Inefficient Classroom Storage
Typical classroom design has ~13 LF of wardrobe space that contains one overhead shelf and a closet rod for coats. This is an inefficient use of storage space in classrooms that lack storage.

Deficiency category: F

Remedy
Replace wardrobe area with casework that provides children's coat storage cubbies below and classroom material storage above.

Quantity: 234 LF

Estimated Construction Cost: $158,000

Architectural Inspection – Interior Fixed Furnishings

0654 Window Coverings – Drapes, blinds, black-out shades, etc.

Classrooms are no longer equipped with horizontally drawn curtains, although the tracks for the system that was once in place are still installed. Daylight is controlled with horizontal double-walled drop down pleated shade, on the same 44" wide by 82" high module as the existing exterior windows.

These blinds were provided as a replacement to the original curtains at an undetermined date (probably 1990's) as a cost effective alternative to an in-kind replacement. The double wall blind affords some thermal insulation in the winter and some shading and light control in the summer months. This system appears to be in serviceable condition.

Remaining life expectancy: 5-7 years

No deficiencies noted for this building system.

Architectural Inspection – Furnishings & Equipment

1011 Food Service Equipment – Ovens, refrigerators, serving stations, dishwashers, etc.

As a part of the 1991 construction, the Gastineau School is equipped with a re-heat kitchen in which school district lunches are warmed and served through an overhead coiling counter door into the Gym. This kitchen also serves the volunteer breakfast program. A three-well sink and a separate hand-wash sink are provided.

The kitchen is equipped with a residential 4-burner with oven stove, a heavy duty commercial style range hood and exhaust fan system, and a residential upright refrigerator/freezer combo. These appliances appear to be of the same era as the 1991 construction.

Architectural Inspection – Furnishings & Equipment

Cabinets, tops, and range hood in this area are in good condition and should last indefinitely. The refrigerator and range are older models and will have a limited lifespan of 5-7 years.

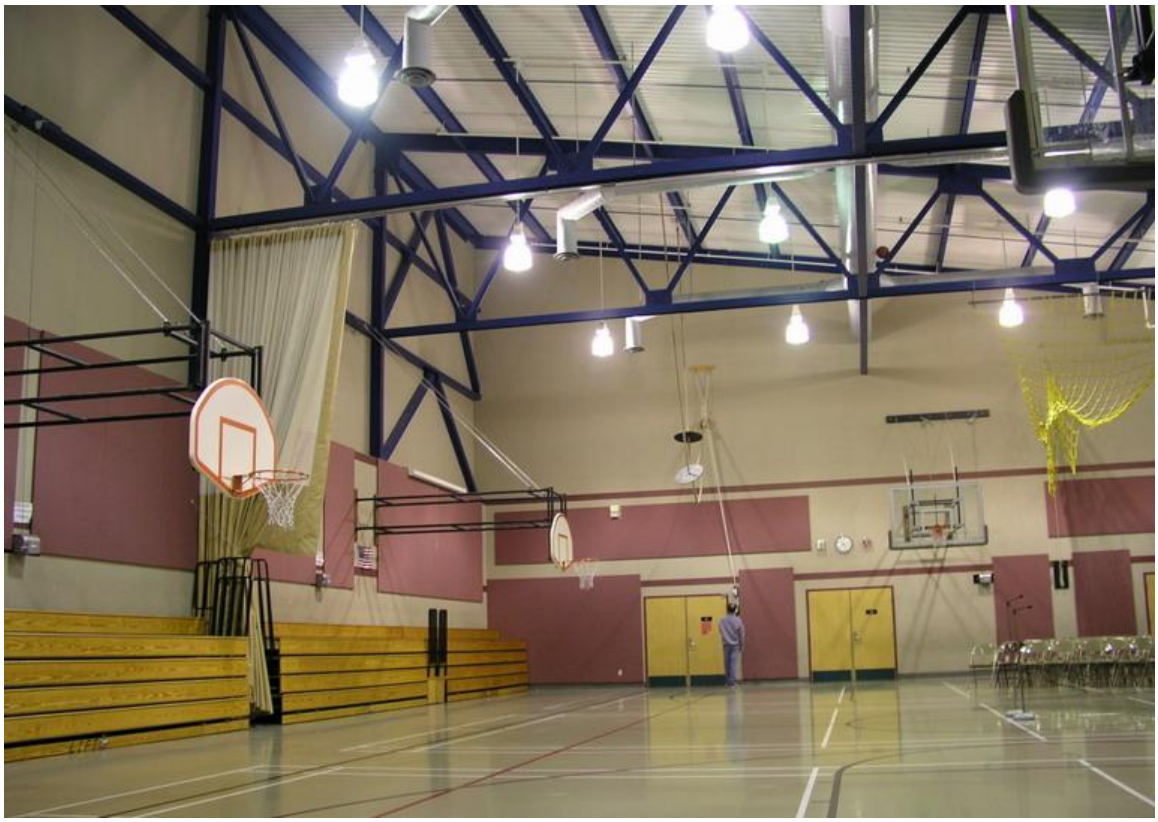
The staff lounge is provided with a full sized residential refrigerator, a microwave oven, a soda machine(non-functioning), and a single piece stove/sink/cabinetry combination unit. All are functioning, but should be replaced in the near future - possibly was a part of the proposed renovation of the Administration area. The soda machine has not been in use for several years and should be removed.

No deficiencies noted for this building system.

Architectural Inspection – Furnishings & Equipment

1012 Athletic Equipment – Bleachers, basketball hoops, climbing ropes, etc.

The athletic equipment in the gymnasium was installed as a part of the 1991 construction.



Bleachers: The 5-tier collapsing wood bleachers are in good condition and are equipped with safety rails at open ends. A break shoe that is out of adjustment has caused damage to the gymnasium flooring and should be re-adjusted as a part of the flooring repair.

Basketball hoops, backstops, and court striping: A total of 6 basketball hoops are provided. All can be folded up against the wall, and all are in good condition.

Gymnasium Curtain: on gymnasium partition curtain and track assembly is provided and is in good condition.

Climbing ropes and nets: A total of two climbing ropes and one climbing net are provided and appear to be in good condition. Climbing ropes are equipped with collars at approximately 14' above finish floor to prevent high climbing.

Remaining life expectancy: 10-15+ years with regular maintenance.

No deficiencies noted for this building system.

Architectural Inspection – Furnishings & Equipment

1015 Library Equipment – Stacks, shelves, desks, etc.

The old multipurpose room was renovated in 1995, and the larger portion of it was turned into the Library. As the stacks, stacks, and desks in this library are of good quality and are only 10 years old, they are in good condition.

Remaining life expectancy: 10-15 years

No deficiencies noted for this building system.

Architectural Inspection – Furnishings & Equipment

1016 Theatre & Stage Equipment – Lighting, sound systems, curtains, seating etc.

The Multipurpose room Gymnasium is equipped with a "stage" area, comprised of an operable partition and curtain between the gym and the Music room. The Music room floor and the Gymnasium floor are at the same elevation. At this time the operable partition is closed and the Music room is operated as a Classroom. The curtain is on the Gymnasium side, and is operated on a system of tracks and pulleys. Stage lighting is mounted on a light bar approximately 14' above the floor, and 12' away from the proscenium wall. The sound system speakers are chain mounted above the stage. Both lighting and sound systems are controlled with portable panels. A 16' wide motor operated projection screen is mounted on the head of the proscenium opening.

The Theater and Stage Equipment appears to be in serviceable condition, no missing or broken components are evident. Given this space is primarily a gymnasium, high quality acoustic performance is not expected.

Remaining life expectancy: 10+ years

No deficiencies noted for this building system.

Architectural Inspection – Furnishings & Equipment

1018 Classroom Equipment – Tables, desks, chairs, etc.

In the past 40 years of service a multitude of classroom furnishing have been purchased and used at the Gastineau School. Most of these furnishing, spanning several generations of students and teachers are currently in place and in use.

The Juneau School District and Gastineau staff have been careful to remove all worn, broken, or potentially dangerous items, and what is in use is in serviceable condition.

Architectural Inspection – Furnishings & Equipment

The variety of furnishing types and styles adds richness to the educational experience at this school, and assists both teachers in grouping students within classrooms and students with claiming an element of individuality as they enter each classroom.

In general the furnishings and classroom equipment are dated, but in fair condition, and will continue to serve the schools needs.

Remaining life expectancy: 7-10+ years

Architectural Inspection – Furnishings & Equipment

Deficiency

1018-1 Classroom Storage Deficiency
Almost all classrooms suffer from lack of in-classroom storage space, so teachers improvise with open shelves and bins.

Deficiency category: F

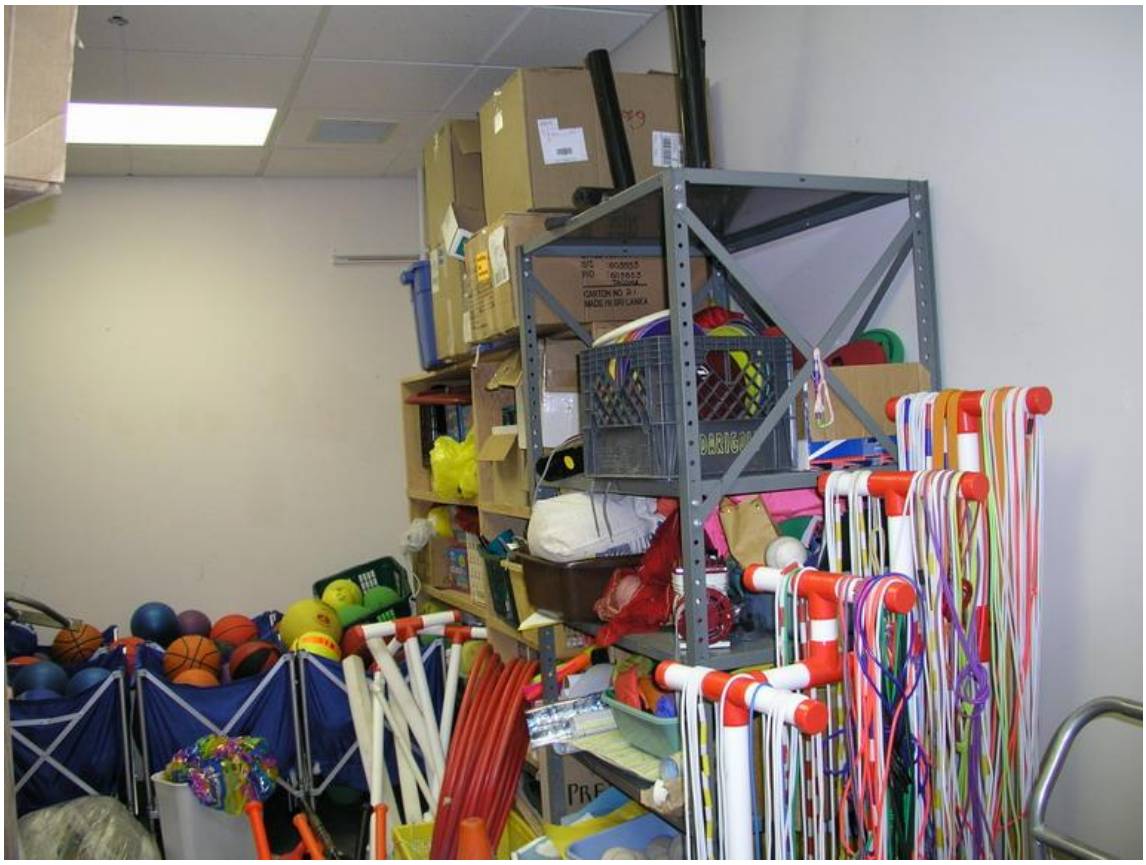
Remedy
Provide two each new high capacity storage cabinets and shelving modules in each classroom, 4' wide x 7' tall x 18" deep. Seismically brace all cabinets to wall structure.

Quantity Shelf module - 42 units, Cabinet module - 42 units

Estimated Construction Cost: $67,000

Architectural Inspection – Furnishings & Equipment

Deficiency



1018-2 Seismic bracing at Storage shelving
Storage room shelving throughout the facility is not seismically braced. Specific locations occur at the Gymnasium Storage Room 4A, 4B, 4C, and 5, at most classrooms with high shelving.

Deficiency category: C

Remedy
Provide seismic bracing connection between all free-standing storage shelving assemblies greater than 48" tall and the adjacent wall.

Quantity: 15 locations

Estimated Construction Cost: $400

Architectural Inspection – Furnishings & Equipment

1019 Other Equipment – High density storage, special education, loading dock, etc.

The staff workroom is equipped with two copy machines, binding machines , paper storage cabinets, shelves, layout areas, and other miscellaneous pieces of equipment necessary for supporting the teaching environment. This equipment is crowded into a small work space that could benefit from careful planning as a part of an administration area renovation.

Remaining life expectancy: 5-10 years

Architectural Inspection – Furnishings & Equipment

The Nurses station and associated equipment including medical cabinets, cots, and casework are in good condition. The space is crowded, and does not have its own bathroom.

Remaining life expectancy: Indefinite

Deficiency

1019-1 Bathroom at nurse's station
The nurse's station does not have a private bathroom for sick children to use.

Deficiency category: F

Remedy
As a part of a renovation of the Administration and Nurses area, provide a private bathroom for this area.

Estimated Construction Cost: $36,000

Mechanical Inspection – Plumbing

Mechanical Inspection - System Summary

The original school, (the south wing) was built in 1956. The original heating and ventilation system (VU-1, EF-1 & EF-2) was installed with in slab black steel heating pipe in the classrooms, unit convectors at entries, and heating coils in the VU-1 units are still being utilized. Heating plant has two oil fired boilers one is the original Birchfield boiler (B-2) and in 1965 the Cleaver Brook fire tube boiler was installed. In 1965 the north wing of the school was added. Heating for this wing was also in slab black steel heating pipe in classroom, unit convectors at entries, and ventilation was provided by a supply fan unit with heating coil (VU-3). VU-3 is still in service. Slab heating pipe has been abandoned through out the school due to failure of tubing. In the 1956 wing heating was replaced in 1978 with exterior classroom walls finned pipe convectors, in 2002 north wing heating was replaced with cabinet unit heaters on the exterior classroom walls. Unit convectors are still being utilized at the entries through out the school. In 1990 renovation and addition of a multipurpose room included installation of a mechanical penthouse to house VU-4, RF-4, VU-5, RF-5, EF-4, and EF-5. Ventilation units (VU) are cabinet fan units with heating coils, return fans are cabinet fan units, and exhaust fans are utility type exhaust fans. Heating for the renovated areas and multipurpose room is accomplished by ventilation air. There is one unit convector installed in a small office on the exterior, and unit convectors are installed at the entries. A small warming kitchen was also installed during this renovation. Warming kitchen has a Type II hood over the oven/range, triple pot sink, hand washing sink. Kitchen is just for warming and no intended for a commercial kitchen. The 1956 multipurpose room was converted to the library and a computer lab. In 1995 ventilation unit VU-6 and RF-6 were installed. VU-6 in a cabinet air handling unit and has a direct cooling coil, heating coil and provides ventilation air, heating, and cooling to the library and computer lab. At each renovation it appears that new pumps were added to the system but none of the old pumps were removed. This has cause a redundancy of pumps.
Domestic hot water, cold water and hot water recirculation were installed in each renovation. Majority of the domestic water is routed in piping through the slab. Original piping material was either black steel or galvanized steel. Copper tube has been utilized for above ground domestic piping. Domestic hot water is provided by one hot water heat exchange, and one electric hot water heater. Date of installation of this equipment appears to be around 2001.

The controls system is an integrated pneumatic and electronic system with last major renovations in the 1980's. The wet sprinkler system is functioning and is certified annually. Wet pipe sprinkler system is installed through out the building in 1990's. There are no tamper switches installed on the gate valves for the backflow preventer.

Major deficiencies and recommended Work include the domestic water piping failure, replacement of all plumbing fixtures over 40 years old, replacement of VU-1, EF-1, EF-2, VU-3, EF for North Wing Toilet Rooms, clean of all ductwork, grilles, diffuser, through out the building, thoroughly cleaning of fan unit, heating coils, and plenums for

Mechanical Inspection – Plumbing

VU-4, VU-5, VU-6, RF-4, RF-5, and RF-6, installing a new boiler plant with (2) cast iron section boiler, removing all heating pumps through out the building and installing (2) base mounted lead/lag pumps with VFDs, removing all black steel pipe from building or installing dielectric unions where black steel meets copper piping, all piping buried in the slab is recommended for pipe lining procedure, provide ventilation air for Nurse's station. It is recommended to update control system to a modern direct digital control system. For wet pipe sprinkler system it is required by code to install tamper switches on the gate valves on the backflow preventer.

0811 Fixtures – Sinks, drinking fountains, water closets, showers, etc.

Classroom Sinks. Classroom sinks are enameled cast iron self-rimming side ledge with gooseneck faucet trim with index handles, and ledge mounted bubbler. Fixtures in the north wing addition were installed in 1965. Fixtures in the south wing were installed in the 1956 in the original construction.
Classroom sinks are in fair condition. Faucet trim and bubblers are in fair condition. Classroom sinks were installed in each wing during the original construction of 1956 and 1965. Fixtures are approximately 50 to 40 years old respectively.
Remaining life expectancy: 0-5 years

North wing girl's toilet rooms: North wing girl's toilet rooms fixtures are vitreous china floor mounted water closets with flush valves, and wall mounted lavatories with manual faucets. Installed in between a set of lavatories is a service sink type faucet for filling of mop buckets.
Plumbing fixtures are in fair condition. Fixtures were installed in the 1965 construction, making the fixtures approximately 40 years old.
Remaining life expectancy: 0-5 years

North wing boy's toilet rooms: North wing boy's toilet rooms fixtures are vitreous china floor mounted water closets with flush valves, urinal with flush valves, and wall mounted lavatories with manual faucets. Installed in between a set of lavatories is a service sink type faucet for fill of mop buckets.
Plumbing fixtures are in fair condition. Fixtures were installed in the 1965 construction, making the fixtures approximately 40 years old.
Remaining life expectancy: 0-5 years

North wing corridor vitreous china drinking fountain: One single drinking fountain is installed in the corridor. This is the only hallway drinking fountain in this wing. It is not an ADA compliant drinking fountain. It was installed in the 1965 addition.
The drinking fountain is in fair condition but does not meet ADA requirement. Fixtures were installed in the 1965 construction, making the fixtures approximately 40 years old.
Remaining life expectancy: 0-5 years

Mechanical Inspection – Plumbing

North wing janitor closet sink: Janitor service sink is an enamel cast iron wall mounted tub with faucet trim. Rough in for a previous wall mounted faucet trim is still present. Service sink is in poor condition. Very dirty and discolored.
Remaining life expectancy: 5-10 years

South wing drinking fountain: Drinking fountain is a stainless steel drinking fountain mounted at kindergartener height.
Drinking fountain is in fair condition: Does not meet ADA requirement. Drinking fountain was installed in the original school construction in 1956. Drinking Fountain is approximately 50 years old.
Remaining life expectancy: 0-5 years

Janitor closet/server room/paper storage: Janitor service sink is an enamel cast iron wall mounted tub with faucet trim. Wall mounted faucet trim. Condensate from fan unit drains into the service sink. It appears to have been installed in the original construction. Service sink condition is fair. Does not appear to be used as a service sink. Only a condensate drains into the service sink. It is located in a room with server equipment. Service sink was installed in the original 1956 construction.
Remaining life expectancy: 5-10 years

Classroom 22 Shower/Toilet room: Shower is now a storage area. Water closet is a vitreous china floor mounted flush valve type and lavatory is a wall mounted with manual faucet trim. This toilet room now serves a pre-school program and the shower is used for storage. Fixtures are in good condition. Would suggest moving nurse's station back in this area to for go renovation to provide ventilation, shower, and toilet room to existing nurse's station area. Fixtures were installed in the original 1956 construction. Fixtures are approximately 50 years old.
Remaining life expectancy: 0-5 years

Teacher Lounge, Integral sink, stove, and counter casework: Integral casework was installed sometime after the 1965 addition. Casework has a stove with range top, single compartment sink with faucet trim.
Sink is in fair condition.
Remaining life expectancy: 0-5 years

Teacher toilet room: Vitreous china floor mounted water closet with flush valve, wall mounted vitreous china lavatory and faucet trim. Non ADA compliant.
Fixtures were installed in the original 1956 construction and are approximately 50 years old.
Remaining life expectancy: 0-5 years

Janitor closet next to Nurses Station: Enameled cast iron wall mounted service sink with wall mounted faucet trim.
Fixture was installed in the original 1956 construction and is approximately 50 years old.

Mechanical Inspection – Plumbing

Remaining life expectancy: 0-5 years

Kindergarten Toilet rooms (Boy's and Girl's): Each toilet room has floor mounted vitreous china water closets with flush valves, and wall mounted vitreous china lavatory with faucet trim. Water closets are at primary height.
Fixtures are in fair condition. Fixtures were installed in the original 1956 construction and are approximately 50 years old.
Remaining life expectancy: 0-5 years

Nurses' station: Stainless Steel double compartment sink with gooseneck faucet trim. Sink was installed in the 1990 multipurpose room addition.
Sink is in good condition.
Remaining life expectancy: 10+ years

South wing girl's main toilet room: South wing girl's main toilet room fixtures are vitreous china floor mounted water closets with flush valves, and wall mounted lavatories with manual faucets. Installed in between a set of lavatories is a hose bib for filling of mop buckets. These fixtures are in fair condition. They were installed in the original 1956 construction and are approximately 50 years old and have reached the end of their service life.
Remaining life expectancy: 0-5 years

South wing boy's main toilet room: South wing boy's main toilet room fixtures are vitreous china wall mounted water closets with flush valves, wall mounted urinals with flush valves, and wall mounted lavatories with manual faucets. Installed in between a set of lavatories is a hose bib for filling of mop buckets.
These fixtures are in fair condition. They were installed in the original 1956 construction and are approximately 50 years old and have reached the end of their service life.
Remaining life expectancy: 0-5 years

South wing ADA Unisex toilet room: South wing Unisex toilet room fixtures are vitreous china floor mounted water closets with flush valves, and wall mounted lavatories with manual faucets. Due to configuration of the walls in the rooms that access to the flush valve does not meet ADA requirements and the side of the trip lever is not ADA.
These fixtures are in good condition.
Remaining life expectancy: 10+ years

Multipurpose room: Multipurpose room has one wall mounted drinking fountain, cooler type.
Drinking fountain is in good condition.
Remaining life expectancy: 10+ years

Multi purpose wing Janitor closet: Janitor closet has one floor mounted corner type enamel cast iron service sink with wall mounted faucet trim with vacuum break and 5

feet of hose. Installed in the room is a single clothes washing machine. There is no cloth dryer in the building. It is reported by staff that washer overflows often. Janitor sink and clothes washer are in good condition.
Remaining life expectancy: 5-10 years

Library Sink: Sink is a single compartment stainless steel sink with gooseneck faucet with wrist blade indexed handles. Sink was installed in the 1990 multipurpose room addition. Sink is in good condition. Signs of corrosion on the faucet trim.
Remaining life expectancy: 5-10 years

Warming kitchen: Warming kitchen consists of one triple pot sink, one hand wash sink. Installed is one residential type oven and range under a type II ventilation hood. Items were installed in the 1990 multipurpose room addition. Kitchen is suitable for warming only. Not suitable for commercial kitchen.
Remaining life expectancy: 10+ years

There are 10 water closets and 10 lavatories in the main girl's toilet rooms and 6 water closets, 8 lavatories, and 9 urinals in the main boy's toilet rooms (this number does not counting the Kindergarten, Nurse and Administration areas), which at 1/50 per IBC Table 2902.1 provides adequate fixtures for 1,250 people. This is more than the population of the school.

Mechanical Inspection – Plumbing

Deficiency

0811-1 Classroom Sinks
Classroom sinks have reached the end of their service life. A few of the faucets have been replaced and are non ADA compliant, a few of the faucets goosenecks are loose and leaking, others have signs of corrosion.

Deficiency category: RR, C

Remedy
Remove (20) classroom sinks and install (20) stainless steel sinks with double ledge at sides. Faucet trim to be gooseneck faucets with wrist blade handles, bubbler with flexible bubbler guard and ADA handle actuator.

Estimated Construction Cost: $32,000 Cost does not include renovation of rooms or new casework. See architectural for requirements and cost.

Mechanical Inspection – Plumbing

Deficiency

0811-2 North wing girl's toilet room
Teachers have stated these toilet rooms' water closets back up and over flow frequently. ADA stall water closet is not at ADA height. Rough in for water closet removed to make an ADA stall is still present. ADA lavatory is one in from end of lavatory wall because of encroachment of convector on ADA clearance. Lavatory on either side of this lavatory also encroaches on the ADA clearance.

Deficiency category: RR, C

Remedy
Remove (5) floor mounted vitreous china water closets and flush valves, (5) wall mounted lavatories, carriers, and faucet trim, and (1) wall mounted service sink faucet trim under lavatories. Install (5) vitreous china floor mounted water closets with manual flush valves, (5) wall mounted vitreous china lavatories, carriers, manual faucet trim, and appurtenances, (1) hose bib under lavatories.
One water closets and one lavatory must meet all ADA requirements. Install insulation shield on piping under ADA lavatory.

Estimated Construction Cost: $16,000 Cost does not include renovation of room. See architectural for requirements and cost.

Mechanical Inspection – Plumbing

Deficiency

0811-3 North wing boy's toilet room
Teachers have stated these toilet rooms' water closets back up and over flow frequently. ADA stall is not ADA compliant. Water closet is not at ADA height nor does it have clearances. No ADA urinal or lavatory in toilet room.

Deficiency category: RR, C

Remedy
Remove (3) floor mounted vitreous china water closets and flush valves, (4) vitreous china urinals, carriers, and flush valves,(5) wall mounted lavatories, carriers, and faucet trim, and (1) wall mounted service sink faucet trim under lavatories. Install (3) vitreous china floor mounted water closets with manual flush valves,(4) vitreous china wall mounted urinals, carriers, and flush valves (5) wall mounted vitreous china lavatories, carriers, manual faucet trim, and appurtenances, (1) hose bib under lavatories.
One water closets and one lavatory must meet all ADA requirements. Install insulation shields on piping under lavatory.

Estimated Construction Cost: $18,000 Cost does not include renovation of room. See architectural for requirements and cost.

Mechanical Inspection – Plumbing

Deficiency

0811-4 North wing corridor drinking fountain
Vitreous china drinking fountain is the only one in this wing and it is not at ADA height or actuated.
Drinking fountain has reached the end of its service life.

Deficiency category: RR, C

Remedy
Remove vitreous china recessed drinking fountain and trim. Install stainless steel ADA Hi/Lo drinking fountain with carrier, ADA push bar, ADA apron, flexible bubbler guard, and trim. Modify piping as required for installation.

Estimated Construction Cost: $4,900

Mechanical Inspection – Plumbing

Deficiency

0811-5 North wing janitor closet service sink
Enameled cast iron service sink is very dirty. Faucet trim has been replaced and old rough in is still above service sink. Service sink has reached the end of its service life.

Deficiency category: RR

Remedy
Remove enameled cast iron wall mounted service sink, two faucet trim, and carrier. Install new enameled cast iron wall mounted service sink, faucet trim with vacuum breaker, screw driver stops, and five feet of rubber hose.

Estimated Construction Cost: $2,300

Mechanical Inspection – Plumbing

Deficiency

0811-6 South Wing Drinking Fountain
Drinking fountain is a single drinking fountain mounted at kindergarten height. No ADA drinking fountain in corridor.
Drinking fountain has reached the end of its service life.

Deficiency category: RR, C

Remedy
Remove stainless steel drinking fountain. Install new stainless steel single drinking fountain with push bar actuator, flexible bubbler guard, and apron. Mount drinking fountain at kindergartener height.

Estimated Construction Cost: $2,600

Mechanical Inspection – Plumbing

Deficiency

0811-7 Janitor Closet/Server/Paper Storage
Service sink is located in a server rooms with computer equipment, paper storage. Remove service sink. Service sink has reached the end of its service life.

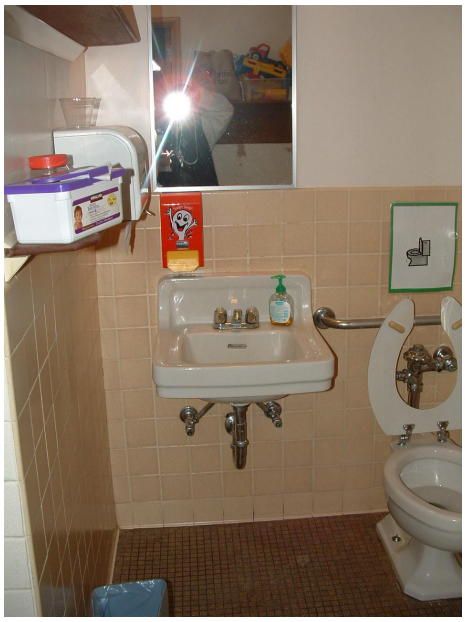
Deficiency category: RR

Remedy
Remove enameled cast iron wall mounted service sink and faucet trim. Install new enameled cast iron wall mounted service sink, faucet trim with vacuum breaker, screw driver stops, and five feet of rubber hose.

Estimated Construction Cost: $2,300

Mechanical Inspection – Plumbing

Deficiency



0811-8 Classroom 22 Shower/Toilet Room
This area in now a pre-school program for the school district. Shower is used for storage and the toilet and lavatory are at ADA heights. Suggest using space as intended for nurse's station. Fixtures were installed in the original construction in 1956 and have reached the end of their service life.

Deficiency category: RR

Remedy
Remove shower trim and shower drain. Remove floor mounted vitreous china water closet and flush valve. Remove wall mounted vitreous china lavatory, carrier, and associated trim. Suggest moving nurse's station back to this location. Install new shower and shower drain. Shower trim should included pressure balanced, temperature limiting anti-scald shower mixing valve, heavy duty shower head, shower head to be on ADA slide bar, ADA shower seat, grab bars, trapped and vented shower drain, and anti-bacterial shower curtain and rod.
Install vitreous china floor mounted water closet with manual flush valve at ADA height and configuration. Install wall mounted vitreous china lavatory, carrier, and manual operated ADA faucet trim. Install insulation shields on piping below lavatory.

Estimated Construction Cost: $8,800

Mechanical Inspection – Plumbing

Deficiency

0811-9 Teacher's Lounge
Integral casework, sink, stove is past service life.

Deficiency category: RR

Remedy
Remove integral casework, stove, sink and trim. Install stainless steel double compartment undercoated sink in casework provided in architectural. Trim for sink to be gooseneck type faucet with wrist blade handles. Install garbage disposer, instant hot water dispenser.

Estimated Construction Cost: $ 2,900 Cost does not include casework and architectural items.

Mechanical Inspection – Plumbing

Deficiency

0811-10 Teacher's Toilet Room
Fixtures are not at adult ADA heights. Fixtures were installed in the original 1956 construction and are past their service life.

Deficiency category: RR

Remedy
Remove vitreous china floor mounted child height water closet and flush valve. Remove vitreous china wall mounted lavatory, carrier, and trim. Reconfigure space to install adult height floor mounted vitreous china water closet and flush valve. Install wall mounted vitreous china lavatory, carrier, and faucet trim, mounted at adult height. Saw cut concrete was required.

Estimated Construction Cost: $4,300 Cost does not include architectural modeling of space, see architectural survey.

Mechanical Inspection – Plumbing

Deficiency

No picture submitted.

0811-11 Janitor's Closet next to nurse's station
Service sink has reached the end of its service life.

Deficiency category: RR

Remedy
Remove enameled cast iron wall mounted service sink and faucet trim. Install new enameled cast iron wall mounted service sink, faucet trim with vacuum breaker, screw driver stops, and five feet of rubber hose.

Estimated Construction Cost: $2,300

Mechanical Inspection – Plumbing

Deficiency

0811-12 Kindergarten Classroom Toilet Rooms
Fixtures have reached the end of service life.

Deficiency category: RR

Remedy
Remove primary vitreous china floor mounted water closet. Remove wall mounted vitreous china lavatory, carrier, and trim. Install vitreous china primary height water closet and flush valve. Install wall mounted vitreous china lavatory, carrier, and manual faucet trim.

Estimated Construction Cost: $3,000

Mechanical Inspection – Plumbing

Deficiency

Mechanical Inspection – Plumbing

0811-13 South Wing Girl's Main Toilet Room
Fixtures have reached the end of their service life. No ADA water closet.

Deficiency category: RR, C (ADA requirement)

Remedy
Remove (5) floor mounted vitreous china water closets and flush valves, (5) wall mounted lavatories, carriers, and faucet trim, and (1) hose bib under lavatories. Install (4) vitreous china floor mounted water closets with manual flush valves, (5) wall mounted vitreous china lavatories, carriers, manual faucet trim, and appurtenances, (1) hose bib under lavatories.
One water closets and one lavatory must meet all ADA requirements. Install insulation shield on piping under ADA lavatory.

Estimated Construction Cost: $13,000 Cost does not include renovation of room. See architectural for requirements and cost.

Mechanical Inspection – Plumbing

Deficiency

No photo submitted

0811-14 South Wing Boy's Main Toilet Room
Fixtures have reached the end of their service life. Fixtures installed in the original 1956 construction. No ADA water closet or urinal installed.

Deficiency category: RR, C (ADA requirements)

Remedy
Remove (3) floor mounted vitreous china water closets and flush valves, (5) vitreous china urinals, carriers, and flush valves,(3) wall mounted lavatories, carriers, and faucet trim, and (1) hose bib under lavatories. Install (3) vitreous china floor mounted water closets with manual flush valves,(5) vitreous china wall mounted urinals, carriers, and flush valves (3) wall mounted vitreous china lavatories, carriers, manual faucet trim, and appurtenances, (1) hose bib under lavatories.
One water closets and one lavatory must meet all ADA requirements. Install insulation shields on piping under lavatory.

Estimated Construction Cost: $16,000 Cost does not include renovation of room. See architectural for requirements and cost.

Mechanical Inspection – Plumbing

Deficiency

0811-15 Unisex Toilet Room Multipurpose Wing
Trip lever and location of water closet does not meet ADA requirement. See architectural condition survey.

Deficiency category: RR

Remedy
Replace flush valve with ADA electronic type.

Estimated Construction Cost: $700

Mechanical Inspection – Plumbing

Deficiency

0811-16 Multipurpose Wing Janitor Closet
Cloth washer has reports of overflowing.

Deficiency category: RR

Remedy
Revise piping arrangement for clothes washer.

Estimated Construction Cost: $2,200

Mechanical Inspection – Plumbing

Deficiency

0811-17 Library sink:
Sink is in good condition. Faucet trim show signs of corrosion.

Deficiency category: RR

Remedy
Install gooseneck faucet with wrist blade handles.

Estimated Construction Cost: $400

Mechanical Inspection – Plumbing

0812 Equipment – Circulation pumps, water heaters, water softeners, etc.

Domestic hot water is provided by a vertical hot water heat exchanger and is supplemented by a 120 gallon electric hot water heater for summer use. Heater exchanger installed approximately 10-12 years ago along with the electric hot water heater. Pump P-3, a Taco 1615, ½ Hp, 120 volt single phase in line circulation pump, supplies heating supply water to hot water heat exchanger. These units appear to have been installed in 2001. No hot water tempering valve is evident. A small cartridge pump provides hot water recirculation for the building.

Condition of domestic hot water heater heat exchanger is good.
Electric hot water heater show signs of corrosion, condition is good.
Domestic hot water heating pump P-3 is in good condition, though it shows signs of corrosion.
Hot water recirculation pump is in good condition.

Remaining life expectancy: 10+ years.

Mechanical Inspection – Plumbing

Deficiency

0812-1 Electric Hot water heater:
Piping to 120 gallon electric hot water heater shows signs of corrosion.

Deficiency category: RR

Remedy
Replace unions, anodes, and corroded piping. Reinsulate piping.
Two unions, 12 feet of copper piping, three magnesium anodes, 12 feet of mineral fiber pipe insulation.

Estimated Construction Cost: $900

Mechanical Inspection – Plumbing

Deficiency

0812-2 Domestic hot water heat exchanger heating pump
Pump P-3 shows signs of leakage and corrosion. Investigate operation, repair seals if necessary or replace pump.

Deficiency category: RR

Remedy
Replace seals and bearing cartridge after investigating damage. Possibly replace entire pump. Reconnect piping and insulate exposed piping.

Estimated Construction Cost: $ 2,900

Mechanical Inspection – Plumbing

Deficiency

No Photo of deficiency

0812-3 No hot water tempering valve installed in the hot water supply line
Hot water should be mixed to 115 F for elementary aged students to prevent scalding.

Deficiency category: C (2003 UPC), RR

Remedy
Install one hot water tempering valve. This will consist of tempering valve, three isolation valves, two check valves on inlet to the tempering valve, two pipe mounted thermometers, unions on three pipes, and testing to insure the proper temperature water is provided.

Estimated Construction Cost: $ 4,300

Mechanical Inspection – Plumbing

0813 Waste & Vent Piping – Pipe, fittings, cleanouts, floor sinks, floor drains, etc.

Sanitary waste and vent piping is the original hub and spigot cast iron piping. Reports of main toilet rooms backing up and overflowing water closets.

Floor drains in the original 1956 South Wing and the 1965 North Wing Addition are not trapped or vented. 1990 multipurpose room addition floor drains are trap primed and vented. These floor drains are in the kitchen addition.

Roof drainage system is the original hub and spigot cast iron piping in the original 1956 building and the 1965 addition. The roof drains for the 1990 multipurpose room addition are hub and spigot cast iron piping.

Overflow roof drainage system is not installed. A secondary, independent roof drainage system is required by code.

Roof drainage, sanitary waste and vent piping in 1956 areas and 1965 areas are over 40 years old is in fair condition.
Roof drainage, sanitary waste and vent piping is the 1990 addition areas is in good condition.
Floor drains are in fair condition but do not meet code requirement for venting and trap primers.

Remaining life expectancy: 5-10 years

Mechanical Inspection – Plumbing

Deficiency

No Photo Submitted

0813-1 Main toilet room drains: Main toilet rooms in both the North wing addition and the original south wing waste system backs up frequently through water closets.

Deficiency category: F

Remedy
Investigate waste system for possible crushed pipe or blockage.

Estimated Construction Cost: $ 7,200

Mechanical Inspection – Plumbing

Deficiency

0813-2 Floor drains not trap primed or vented
Floor drains in both the 1965 North Wing addition and the original 1956 South Wing are not trap primed or vented. This consists of a total of eight floor drains in main toilet rooms and mechanical spaces.

Deficiency category: C, UPC

Remedy
Remove existing floor drains install new floor drains with trap priming valves and vent. This will require modification of the piping. Saw cutting concrete floor in several locations. Total of eight locations.

Estimated Construction Cost: $ 35,000

Mechanical Inspection – Plumbing

Deficiency

0813-3 No overflow roof drain system installed.

Deficiency category: RR, C, 2003 UPC

Remedy
Investigate need for overflow roof drains due to no parapet on roof. Possibility that scuppers could be installed.

Estimated Construction Cost for overflow roof drain system: $43,000

Mechanical Inspection – Plumbing

Deficiency

No Photo Submitted

0813-4 Roof Drains
Roof drains have debris in them. Potential for clogging.

Deficiency category: RR

Remedy
Clean all roof drains of debris. Assume 6 roof drains.

Estimated Construction Cost: $1,700

Deficiency

No Photo Submitted

0813-5 Classroom Plumbing Vents
2/3 of the classroom plumbing vents through roof are clogged with twigs, rock, and debris.

Deficiency category: RR

Remedy
Clean out all plumbing vents through roof. Assume 10 vents.

Estimated Construction Cost: $2,000

Mechanical Inspection – Plumbing

0814 Domestic Water Supply – Pipe, fitting, valves, hose bibs, insulation, etc.

A three inch cast iron cold water service serves the domestic water systems and is routed under the building to the cold water header in the boiler room. Cold water header has branch mains with isolation valves in the boiler room. The original branches served the domestic hot water for the 140F hot water system, the 180F hot water system, the domestic cold water, and the fire hose cabinets. These systems have been renovated over time, and the water header has been reconfigured to serve the domestic hot water and the building cold water service. A separate cold water line enters the building in the computer lab area to serve the fire sprinkler system. Fire hose cabinets have been abandoned with the branch piping demolished since the building has been sprinklered. Domestic water piping was original installed with galvanized steel piping material. Remodels and addition have used a combination of galvanized piping and copper. A hot water recirculation system was installed in later renovation with domestic hot water recirculation pump installed in boiler room. Non freeze type hose bibs are located on the exterior walls of the building at six locations. Piping is insulated with an average of one inch thick mineral fiber insulation with cloth covering.

Condition of piping system is reported to be in fair. In several locations there are signs of the corrosion on faucet trim and piping. There are signs of pipe leakage on ceiling tiles and reports of ceiling tile sagging due to moisture in several locations through out the building.

Remaining life expectancy: 5-10 years

Mechanical Inspection – Plumbing

Deficiency

0814-1 Domestic cold water service piping
Domestic service piping is the original 3 inch cast iron cold water pipe brought into the building in 1956. Through renovations and additions, copper pipe has been added to system. Original pipe is rusted and corroded. Cold water supply to building fixtures is routed underground in slab. Mains are generally below the corridors. Assume that piping materials is steel piping.

Deficiency category: RR

Remedy
Replace cast iron section of domestic cold water service. Approximately 25 feet of 3 inch pipe. Provide epoxy pipe lining to cold water supply, hot water supply, and hot water recirculation piping.

Estimated Construction Cost: $362,000

Mechanical Inspection – Heating & Ventilation

0821 Heating Equipment – Boilers, circulation pumps, etc.

Building is heated with two oil fired hot water boilers. Boiler B-1 is a Cleaver Brooks package fire tube type boiler installed in 1965. Capacity is 3,347,000 BTU/Hr. Chimney for boiler B-1 is a single wall forced draft type and is connected directly to the boiler. Boiler B-2 is a Birchfield boiler installed in 1958. B-2 breeching and chimney has an induced draft fan installed at outlet of the boiler. Both chimneys route to a common masonry chimney chase in boiler room. The masonry chimney is connected to an abandoned waste incinerator. The interior of vertical masonry chimney was not checked for deficiencies. Exterior of masonry chimney is in fair condition.

Heating water is distributed through out the building through a multitude of pumps for service to each wing heating units, heating coils in fan units. Listed below is information on each pump, pump numbers and area served.

- P-1 Serves 3 inch heating supply and heating return piping.
- P-2 Serves 1-1/2 inch heating supply and heating return piping
- P-3 Serves 2-1/2 inch heating supply and heating return piping for hot water heat exchanger
- P-4 Removed pump that used to serve 140F domestic hot water.
- P-5 Removed pump that used to serve 180F domestic hot water.
- P-8 Served north wing addition installed in 1978. Was a base mounted pump. Has been replaced with a pipe mounted circulation pump.
- P-9 Lead Lag pump for north wing classroom cabinet unit heaters installed in 2002.
- P-10 Lead Lag pump for north wing classroom cabinet unit heaters installed in 2002
- P-11 Serves heating supply and heating return for HC in VU-3.
- P-12 Serves convectors and cabinet unit heaters installed in the multipurpose room addition area.
- P-13 Serves heating coils and booster coils for fans installed in the multipurpose room addition area.
- P-22 Replaced 2-1/2 inch heating mains to the north wing.

Condition of boilers is fair. The boilers have reached the end of service life.
Remaining life expectancy: 0-5 years

Condition of pumps is fair. Though it is apparent that at each renovation new pumps were added. It may be advantageous to replace the multitude of pumps through out the building with a duplex lead/lag pumping system with VFD motor.

Remaining life expectancy: 5-10 years

Mechanical Inspection – Heating & Ventilation

Deficiency

0821-1 Boilers are past service life
Boilers are 40 and 47 years old and well past their service life.

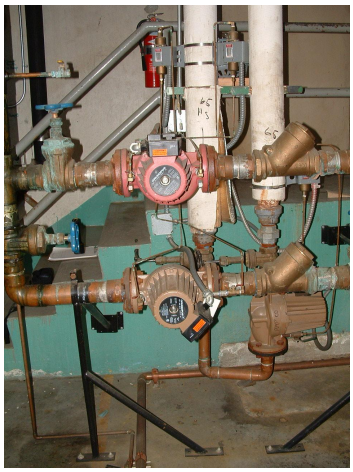
Deficiency category: RR

Remedy
Replace (2) boilers with two cast iron section boilers with two new burners and appurtenances, each sized to serve 75% of full heating load of building. Control the boilers in a lead/lag system. Reconfigure heating supply, heating return, oil supply, and oil return piping as required. Install breeching. Remove existing breeching and induction fan. Breeching to be double wall positive pressure type with 1 inch thick of insulation. Provide house keeping pads under boilers.

Estimated Construction Cost: $319,000 This cost included renovation of boiler room piping and trim.

Mechanical Inspection – Heating & Ventilation

Deficiency



0821-2 Redundant Pumps
Multiple redundant pumps exist through out the building. Waste of energy to operate multiple pumps.

Deficiency category: E

Remedy
Remove all heating pumps (12) through out the building. Install two base mounted end suction pumps with variable frequency drives sized for full heating load of building. Reconfigure piping as required.

Estimated Construction Cost: $ 29,000

Mechanical Inspection – Heating & Ventilation

0822 Heating Distribution – Pipes, fittings, valves, insulation, radiators, etc.

The original heating piping circulation system was constructed out of black steel piping and cast iron fittings in both the 1956 original construction and the 1965 addition. The original heating system for the South and North wings was in slab heating tubes. These systems have been slowly abandoned through out the building due to failure of the in slab heating piping. The heating piping system was renovated in 1978 to supply heating water to finned pipe convectors located on the exterior wall of all rooms in the original 1956 construction and to unit convectors in the entries. In 1978, the 3 inch heating mains in the ceiling space above the corridors were replaced with copper piping. Heating is supplied to the 1991 multipurpose room addition by heating coils and booster coils in the air distribution systems. Heated water is supplied to these units using copper piping. One exterior office/classroom in the 1990 renovation is heated through a convector. In the North Wing in 2002 the in slab heating system was abandon in place and heating of spaces was replaced by Cabinet Unit Heaters installed on the exterior walls and reconnection of piping to existing unit convectors in corridors and at entrances. Piping material in all areas outside the boiler room is copper tubing. In most of the additions and remodel work copper piping was utilized. A chemical pot feeder is installed on the heating piping system to add chemicals. The heating piping system is insulated, though some areas of piping have not been reinsulated after repairs or maintenance work. Automatic air vents are installed at the high points of the system.

Condition of the building heating piping system is fair. There are signs of corrosion on heating piping and on black steel piping and fittings in the boiler room.
Remaining life expectancy: 5-10 years

Boiler room piping system is showing signs of leakage and corrosion. Piping is partially insulated. Areas of remodel or repairs where copper is left un-insulated. Copper pipe shows signs of corrosion.

Condition of the boiler room piping systems is fair.

Remaining life expectancy: 5-10 years

Mechanical Inspection – Heating & Ventilation

Deficiency

0822-1 Heating piping through out building
Signs of corrosion due to mixture of piping material (black steel and copper) and no dielectric union installed.

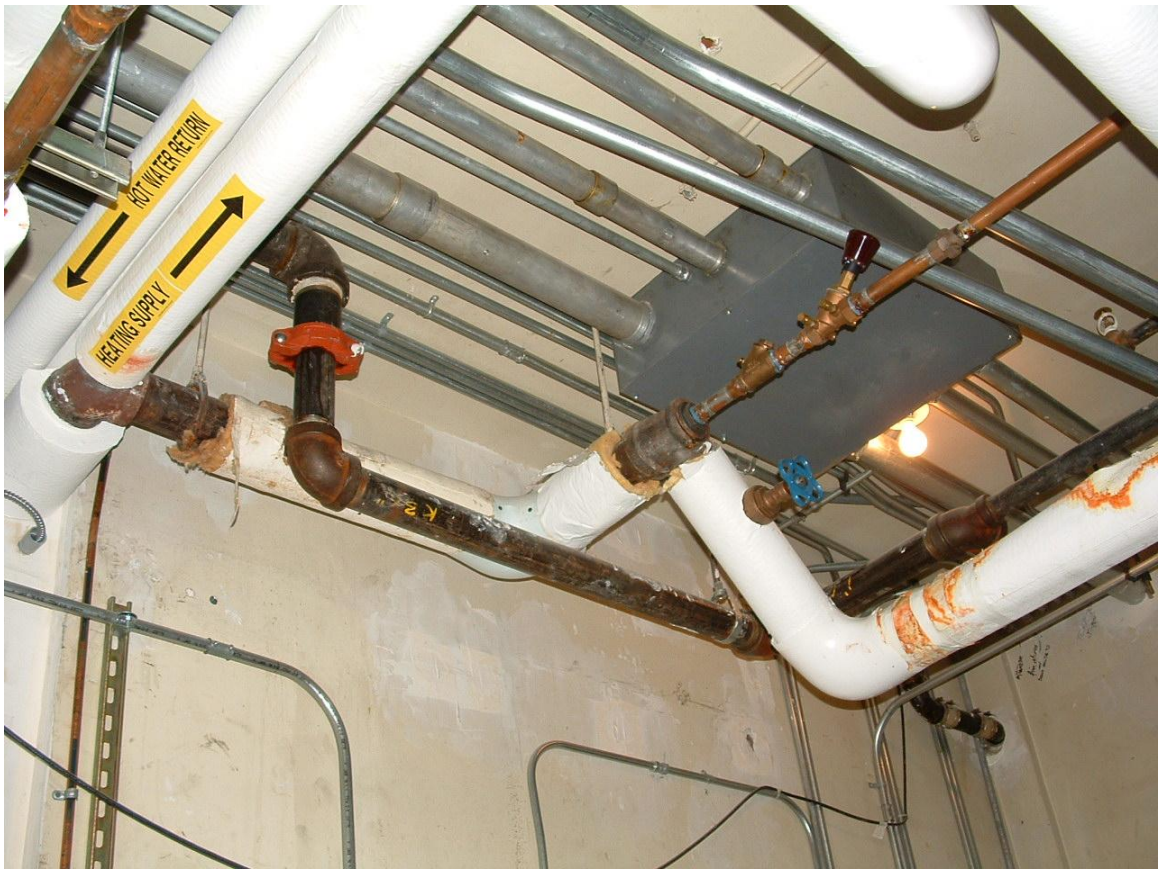
Deficiency category: RR

Remedy, Option 1
Black steel and copper pipe. Install dielectric unions at every location that black steel pipe and copper is connected. Assume 25 locations through out the building.
Estimated Construction Cost: $ 17,000

Remedy, Option 2
Remove all black steel piping from systems and install all new copper piping. This option would be best if complete in conjunction with the replacement of the boiler plant and switching pump system to base mounted pumps with VFDs.
Estimated Construction Cost: $ 87,000

Mechanical Inspection – Heating & Ventilation

Deficiency



0822-2 Heating piping through out building
Insulation has been removed or cut and needs patching.

Deficiency category: RR

Remedy
Pipe insulation: Install 1-1/2 inch mineral fiber insulation with cloth covers on all heating pipe through out building. Repair any damaged pipe insulation through out the building.

Assume 500 lineal feet of pipe insulation.

Estimated Construction Cost: $ 22,000

Mechanical Inspection – Heating & Ventilation

0823 Ventilation Equipment – Fans, make-up units, mixing boxes, etc.

VU-1 fan system is a single fan supply air unit with heating coil, filters. VU-1 serves the original 1956 south wing classrooms. Return air is relieved from classrooms into the corridor through wall grilles. Then the return air is exhausted out of the building by means of the EF-1. EF-1 is a utility type fan. EF-2 is a utility type fan that exhausts air from all the toilet rooms in the 1956 south wing. These toilet rooms include the main girl's and boy's toilet rooms, the teacher's toilet room off the work room, and the shower/toilet room off Classroom 22.

VU-1, EF-1 and EF-2 are the original units. They are dirty and their belts are loose. The fan system is approximately 50 years old and has reached then end of its service life.
Remaining life expectancy: 0-5 years

VU-3 fan system is a single fan supply air unit with heating coil and filters. VU-3 serves the 1965 north wing addition classrooms. At some point in the last 40 years and hole was cut into the outside air duct to re-circulated air into the VU-3. This does not meet code, room where VU-3 is located is not a return air plenum. Items such as paper and chemicals are stored in the room where VU-3 is located and in the outer room. By cutting a hole in the outside air duct that supplies VU-3, the fan unit is unable to provide the amount of outside air required for occupant load. Relief air is relieved through a ceiling mounted cabinet fan CF-2 fan at the ceiling of the north wing janitor room. VU-3 was installed in the 1965 addition. CF-2 was installed in the 1980's.

Condition of VU-3 the fan and casing is very dirty. Filters were dirty. The fan system is 40 years old and reached the end of their service life.
Remaining life expectancy: 0-5 years

VU-4 fan system is a single cabinet fan ventilation unit with supply fan, heating coil, and filters and RF-4 is a single cabinet fan with return fan and plenum section. Fan system was installed in 1990 addition to serve the addition areas which include multipurpose room and additional interior small classroom and office spaces.

VU-4 and RF-4 are in good condition. The fan casings require cleaning and filters on VU-4 should be replaced due to accumulated dirt and dust.
Remaining life expectancy: 10+ years.

VU-5 fan system is a single cabinet fan ventilation unit with supply fan, heating coil, and filters. RF-5 is a single cabinet fan with return fan and plenum section. Fan systems were installed in the 1990 addition to serve the addition areas with include exterior small classrooms and office spaces off the multipurpose room.

Mechanical Inspection – Heating & Ventilation

VU-5 and RF-5 are in good condition. The fan casings require cleaning and filters on the VU-5 should be replaced due to accumulated dirt and dust.
Remaining life expectancy 10+ years.

EF-4 is a utility type fan installed in the 1990 multipurpose room addition and serves to exhaust air from stage and classrooms adjacent to the stage area in the multipurpose room addition.
Remaining life expectancy: 10+ years.

EF-5 is a utility type fan installed in the 1990 multipurpose room addition and serves to exhaust air from the multipurpose wing janitor closets and warming kitchen.
Remaining life expectancy: 5-10 years.

VU-6 fan system is a cabinet type air handling unit with fan section, heating coil, dx cooling coil, mixing dampers, and filter section. This unit was installed in 1995.
VU-6 is in good condition. Fan casing and heating coil have a slight coating of dust.
Remaining life expectancy: 10+ years.

Kitchen exhaust fan for Type II range hood: EF is a side wall mounted exhaust fan on the exterior wall of the building. EF serves the Type II hood over the range in the warming kitchen.
EF is in good condition.
Remaining life expectancy: 10+ years.

Mechanical Inspection – Heating & Ventilation

Deficiency

0823-1 VU-1 and EF-1
Units are approximately 50 years old and have reached end of service life. Casing, filter, heating coil, and ductwork are dirty.

Deficiency category: RR

Remedy
Remove VU-1 and EF-1. Clean all ductwork for this fan system. Install cabinet fan supply air unit (7,500 CFM) with fan section, filter section, heating coil. Connect to existing ductwork. This unit is to be a full outside air unit. Install utility type exhaust fan, connection to existing ductwork. Exhaust fan is to drawing relief air from the corridor of the south wing classrooms, main entry, and administrative offices. Install branch ductwork to provide supply and exhaust ventilation for the Nurse's Station. Seal all ductwork.

Estimated Construction Cost: $91,000

Mechanical Inspection – Heating & Ventilation

Deficiency

0823-2 EF-2
Unit is 50 years old and reached the end of its service life. Casing is dirty.

Deficiency category: RR

Remedy
Remove EF-2: Clean exhaust ductwork. Install utility type exhaust fan to exhaust air from the South Wing main toilet rooms. Size fan to code requirement exhaust air for toilet rooms. (1,000 CFM) Connect to existing ductwork. Seal all ductwork.

Estimated Construction Cost: $ 14,000

Mechanical Inspection – Heating & Ventilation

Deficiency

0823-3 VU-3
VU-3 fan unit is approximately 40 years old and has exceeded its service life. The heating coil is caked with dirt. Inside of fan casing is dirty. No access to dampers. Holes exist in connecting ductwork. Return air opening was installed in outside air duct that allows air from adjacent storage rooms to enter fan system.

Deficiency category: RR

Remedy
Remove VU-3. Clean all supply air ductwork for the north wing. Install cabinet supply fan unit (7,000 CFM) with supply fan section, filter section, heating coil, and discharge. Unit is to be a full outside air unit. Connection to existing ductwork. Seal all ductwork.

Estimated Construction Cost $ 72,000

Mechanical Inspection – Heating & Ventilation

Deficiency

0823-4 VU-4 and RF-4
Units were installed in 1990. The filter, casings, heating coil, outside air plenum, and ductwork are caked with dust. Fan systems controls for dampers appear to be set in full recirculation mode. This does not meet code for outside air requirements.

Deficiency category: RR, C

Remedy
Thoroughly clean fan, casing, heating coils, and install new filter at VU-4 and RF-4. Clean all plenums and ductwork.

Estimated Construction Cost: $ 1,400

Deficiency

0823-5 VU-5 and RF-5
Units were installed in 1990. The filter, casings, heating coil, outside air plenum, and ductwork are caked with dust. Fan systems controls for dampers appear to be set in full recirculation mode. This does not meet code for outside air requirements.

Deficiency category: RR

Remedy
Thoroughly clean fan, casing, heating coils, and install new filter at VU-5 and RF-5. Clean all plenums and ductwork.

Estimated Construction Cost: $ 1,400

Deficiency

0823-6 EF-4 & EF-5
Fan units were installed in 1990. Ductwork is dirty and the belts are loose. EF-5's belt is cracked and fan is very noisy.

Deficiency category: RR

Remedy
Replace belt, clean fan and casing at two fan units.

Estimated Construction Cost: $ 600

Deficiency

No photo submitted

0823-7 Kitchen Hood Exhaust Fan
Kitchen exhaust fan and hood are greasy and dirty. Exhaust fan is dripping grease down side of building.

Deficiency category: RR

Remedy
Thoroughly clean kitchen hood and kitchen hood exhaust fan. Replace grease filters. Refurbish fan as required.

Estimated Construction Cost: $ 1,100

Deficiency

No photo submitted

0823-8 VU-6 Rooftop Chiller Piping
Insulation on refrigeration piping on roof top chiller unit has been damaged by birds.

Deficiency category: RR

Remedy
Install new insulation with protective covering over refrigeration piping on roof.

Estimated Construction Cost: $1,700

Deficiency

No photo submitted

0823-9 EF-1 Roof Exhaust Cap
Roof exhaust cap is rusty and paint is peeling off.

Deficiency category: RR

Remedy
Clean and refurbish exhaust roof cap. Paint exhaust cap with two coats of rust preventative paint.

Estimated Construction Cost: $1,200

Mechanical Inspection – Heating & Ventilation

0824 Ventilation Distribution – Ducts, insulation, diffusers, dampers, etc.

Ductwork is observed to be a combination of round and rectangular galvanized steel. Diffusers are a combination of steel wall grilles and lay in type architectural diffusers. Most supply air ductwork is not insulated in the 1956 South wing and the 1965 North wing. Outside air intakes are have been insulated with board type duct insulation. VU-6 system is insulated with duct wrap type mineral fiber insulation with metallic covers. This system is insulated because it has cooling.

Ductwork is in good condition but dirty through out the building and needs to be cleaned.

Grilles and diffusers are in good condition, however, grilles and diffusers are dirty and need to be cleaned through out the building.

Duct insulation is in good condition.

Remaining life expectancy: 5-10 years

Deficiency

No Photo Submitted

0824-1 Ductwork, grilles, and diffusers
Ductwork, grilles, and diffusers are dirty and need to be cleaned.

Deficiency category: RR

Remedy
Clean all supply air ductwork, exhaust air ductwork, return air ductwork, grilles, and diffusers.

Estimated Construction Cost: $ 43,000

0828 Controls – Heating and ventilation controls

Building automatic system (BAS) controls are pneumatic/electric hybrid controls. Control air compressor and air dryer are located in the boiler room. BAS control panels are located in boiler room, fan room penthouse, VU-1 fan room, VU-6 fan room, and North Wing Janitor closets. A portion of the controls were upgrade in 1987 to tie system into a Barber Colman BAS system. Most controls through out the building are still pneumatically operated.

Room thermostat, automatic valve, and damper actuators are generally pneumatic with all other controls having been changed over to DDC.

Remaining life expectancy: 5-10 years

Deficiency

No Photo Provided

0828-1 Pneumatic controls
The pneumatic controls are antiquated and past their service life. The DDC systems originally installed need to be upgrade to a modern DDC system.

Deficiency category: RR, F

Remedy
Control system upgrade: Complete upgrade of control to facility wide direct digital controls compatible with district wide control system.

Estimated Construction Cost: $290,000

0831 Riser & Equipment – Riser pipe, backflow preventer, etc.

Sprinkler Riser is located in a small room above floor level in the computer lab area. There is a six inch galvanized cold water brought into the building to a six inch back flow preventer with a 4 inch with flow switch serving the building sprinklers and fire department pumper connection. There are no tamper switches on the back flow preventer, however a chain with lock is installed.

Sprinkler riser and backflow preventer are in good condition.

Remaining life expectancy: 10+ years

Deficiency

No photo provided

0831-1 Tamper Switches
No tamper switches installed on gate valves for backflow preventer.

Deficiency category: C (NFPA)

Remedy
Install valve tamper switch on gates valves for backflow preventer.

Estimated Construction Cost: $4,300

Mechanical Inspection – Fire Protection

0832 Sprinklers – Wet, dry, and other fire sprinkler systems, etc.

Building is sprinklered through out with a wet pipe sprinkler system with recessed pendent type sprinkler heads with push on escutcheons and bulb type actuation. Guards are installed on all heads in corridors, toilet rooms, and multipurpose room. All interior areas appear to be covered.

Sprinkler system is in good condition.

Remaining life expectancy: 10+years

Deficiency

No photo provided

0832-1 Dry pipe sprinklers covered outdoor areas
No sprinkler system is provided at covered outdoor areas attached to building.

Deficiency category: C (NFPA) & IFC 903.2.2

Remedy
Extend dry pipe sprinkler system to covered outdoor play area, front entry canopy.
Quantity: 6400sf

Estimated Construction Cost: $65,000

Mechanical Inspection – Special Mechanical

0842 Oil Supply – Fuel oil storage and distribution within 5' of building perimeter

Fuel oil for the oil fired boiler is supplied by a 2,000 gallon underground fuel oil storage tank located in the south parking lot for the building. Oil is supplied to the original 1956 Birchfield boiler with ¾ inch black steel oil supply and oil return piping buried underground. Oil is supplied to the 1965 Cleaver brooks boiler by ¾ inch buried black steel oil supply and oil return piping and oil supply pump mounted next to Cleaver Brooks boiler.

It appears that the original single wall oil storage tank has been replaced at some point in the past. It is assumed that the tank was replaced with a double wall oil storage tank The underground storage tank lacks a monitoring/leak detection system.

Oil storage tank is in good condition.
Remaining life expectancy: 10+ years

Oil piping and oil pump are in fair condition.
Remaining life expectancy: 5-10 years

Deficiency

0842-1 Upgrade Oil Supply Piping & Pump
Oil piping and oil pump are past their service life. Oil piping and appurtenance are the original equipment installed in 1965.

Deficiency category: RR

Remedy
Remove oil piping back to penetration of slab. . Install oil piping and appurtenance to burners on new installed boilers see section 0821. Remove oil supply pump. Install new copper oil piping and appurtenances to new boiler burners.

Estimated Construction Cost: $3,600

Electrical Inspection – Site Electrical

0161 Supply & Distribution – Conduit, feeders, transformers, etc.

Description of the building system
Primary power is delivered overhead on the south side of I Street. Fused cutouts with an underground cable transition and riser conduit are mounted to the pole at I and Fourth Streets. Primary power is delivered underground to a pad mounted, utility transformer south of boiler room. The transformer is rated 150kVA, 120/208 volt. A ground grid is installed at the transformer. The secondary feeder terminates in a 600 ampere, 120/208 volt, 3 phase, 4 wire main switchboard in the boiler room. The secondary feeder contains a grounded conductor, which terminates at the switchboard. The switchboard ground bus is bonded to the water pipe, and one made electrode.

Condition of the building system
All of the service equipment was installed during the 1991 addition and remodel. All components are in good condition.

Remaining life expectancy: 20 years.

No deficiencies noted for this building system.

Electrical Inspection – Site Electrical

0162 Lighting & Equipment – Fixtures, poles, devices, conduit, wires, etc.

Description of the building system
East side of the school: The main entrance to the school is illuminated with semi-recessed, 1x1, lensed fixtures. The face of the building along the main drive lane has (3) additional wall packs mounted below the roof eave. There are (2) surface mounted lights at the entry between the original construction and the 1965 addition. The face of the addition does not have any fixtures.

North side of the 1965 addition: There are two wall packs with wire guards at the roof eave, and one ceiling mounted fixture at the entry door.

West side of the 1965 addition: There are a series of wall packs at the roof eave.

Covered play area: The north side of this structure has (4) floodlights mounted up high, aimed toward the open plan area. Inside the covered play area are (16) pendant mounted high bay fixtures.

West side of the covered play area: There are a series of wall packs at approximately 15-feet above finished grade.

Gravel parking lot on west side of school: This lot is illuminated with pole-mounted lights.

South side of the school: This side does not have any lighting, but there are streetlights on the opposite side of I Street that contribute minimal illumination.

Condition of the building system
East side of the school: These luminaries are predominately original. It appears a couple of the fixtures failed and were replaced during routine maintenance. The date of replacement is unknown. Due to selective replacement, the fixture styles are not consistent. The lenses are discolored, so light output is decreased. Upgrading the lighting along this side of the school is critical to achieve acceptable light levels along the main drive to the site.
Remaining life expectancy: 0 years.

North side of the 1965 addition: The surface mounted fixture at the entry is original and in poor condition. The wall packs were likely added as a maintenance upgrade to provide some illumination in an area that was otherwise a dark spot. These are the only wall packs with wire guards, which may suggest some vandalism occurred when this area did not have adequate security illumination. It is unknown when the wall packs were installed. They are in fair condition, and due for replacement.
Remaining life expectancy: Surface mounted fixture, 0 years. Wall packs, 5 years.

Electrical Inspection – Site Electrical

West side of the 1965 addition: This series of wall packs are not documented on the 1956 or 1965 building drawings. The style of fixture has been fairly consistent over the years, so determination of when they were installed is difficult. Due to the discoloration of the lenses and weathering of the housings, they appear to be approximately 15 years old. They are sheltered fairly well from the predominant wind so they may be even older. They have been maintained and are in fair condition, but replacement is recommended.
Remaining life expectancy: 5 years.

Covered play area: The floodlights appear to be in good condition. These floodlights are mounted to support arms with significant corrosion. Given these fixtures are very heavy, further inspection of the structural integrity of the support system is recommended. The pendant mounted high bay fixtures inside the covered play area have been destroyed. They were pendant mounted with long stems that extend below the roof trusses. It appears they have been consistently battered with balls during the last ten years. Some of the fixtures are completely missing; others have just the ballast housing still intact. They are all overdue for replacement.
Remaining life expectancy: Floodlights, 10 years. High bays, 0 years.

West side of the covered play area: These wall packs appear to be a more recent, compact style and are in good condition.
Remaining life expectancy: 15 years.

Gravel parking lot on west side of school: Documentation is not available for when the pole lights were installed. They are a fairly new style of fixture and probably introduced to the site within the last ten years. There is some surface corrosion at the hand-hole near the base, as well as on the base plate cover. Touch-up painting is recommended to prevent further deterioration. Overall, the poles and fixtures are in good condition.
Remaining life expectancy: 20 years.

South side of the school: It is unlikely the street lights along I Street provide adequate illumination along this face of the school. Further study through lighting calculations is required to determine if supplemental fixtures are necessary. For the purposes of this report, we will assume illumination levels are inadequate.

We broke down site lighting systems to address particular areas of the site. As usual, some areas have higher priority than others when related to safety and vandalism. But, the overall site should be given attention to develop a consistent site-wide lighting philosophy. Due to replacement of fixtures that have failed over the years, there are many different styles and types of fixtures that do not necessarily mesh well aesthetically. Also, application of fixtures with cutoff characteristics is highly recommended. Below are some steps in the right direction.

Electrical Inspection – Site Electrical

Deficiency

0162-1 Upgrade lighting on east side of school
These luminaries are predominately original and past their service life. It appears a couple of the fixtures failed and were replaced different fixture types, thus the fixture styles are not consistent. The lenses are discolored, decreasing light output. Upgrading the lighting along this side of the school is critical to achieve acceptable light levels along the main drive to the site.

Deficiency category: RR, F

Remedy
Current thinking is that this area needs to be reconfigured to address safe foot traffic to the site through the drive lane. With that in mind, we suggest light poles be positioned on the street side of the parking area. These poles will need to be high enough to prevent glare through the east windows and ultimately into interior spaces of the school. There may be an opportunity to integrate some shorter pedestrian style poles between the street and parking area should sidewalks be developed.

Estimated Construction Cost: $31,000

Electrical Inspection – Site Electrical

Deficiency

0162-2 Replace lighting on north side of 1965 addition
The surface mounted fixture at the entry is 40 years old, beyond its service life, and in poor condition. The wall packs were likely added as a maintenance upgrade to deter vandalism on this secluded and dark end of the building. It is unknown when the wall packs were installed. They are in fair condition and due for replacement.

Deficiency category: RR

Remedy
This area is a good hiding place and appears to have taken some abuse over the years. Wall mounted fixtures could be put back in place with an appropriate surface mounted light at the entry. As an a-side, there has also been discussion of cutting back the brush on the north side to help open up the area.

Estimated Construction Cost: $3,000

Electrical Inspection – Site Electrical

Deficiency

0162-3 Replace lighting on west side of 1965 addition
The age of this series of wall packs is unknown as they are not documented on the 1956 or 1965 building drawings. Electricity is supplied via a surface mounted conduit on building soffit that is detached at some locations. The fixture lenses are discolored, reducing light output, and the fixture housings are weathered.

Deficiency category: RR

Remedy
Replace wall packs with similar style wall mount fixture that has some cutoff ability. Rework electrical supply to fixtures so that it is concealed within building.

Estimated Construction Cost: $9,400

Electrical Inspection – Site Electrical

Deficiency

0162-4 Replace covered play area high bay fixtures
High bay pendant mounted fixtures appear to have been consistently battered with balls during the last ten years. Some of the fixtures are completely missing; while others have just the ballast housing still intact.

Deficiency category: RR, F

Remedy
Replace with similar high bay style fixture mounted above the bottom chord of the roof trusses. Provide wire mesh attached to base of the trusses to protect fixtures from vandalism.

Estimated Construction Cost: $21,000

Electrical Inspection – Site Electrical

Deficiency

0162-5 Add light fixtures to the south side of the school
Street lights along I Street do not provide adequate illumination along this face of the school and no lights exist on this face of the school.

Deficiency category: F

Remedy
Add three wall-mounted fixtures on south side of school to increase light levels in this parking area.

Estimated Construction Cost: $5,500

Electrical Inspection – Site Electrical

0163 Communications – Cable, phone lines, satellite dishes, etc.

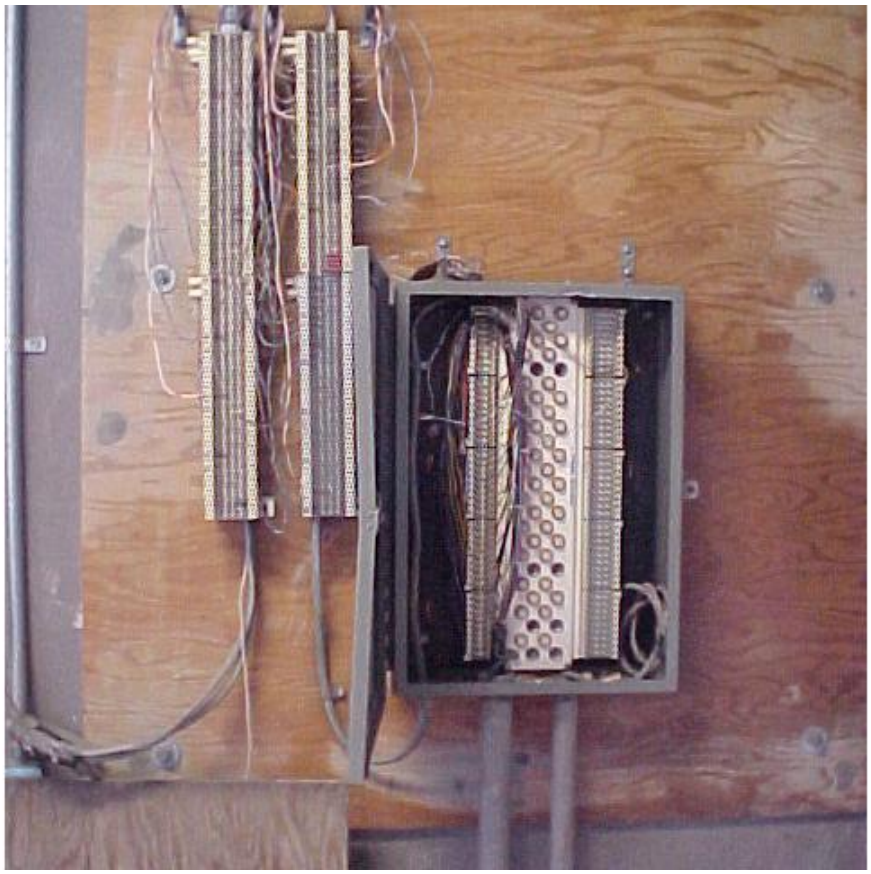
Description of the building system
The telephone service originates from the overhead utilities routed along I Street. The telephone cable tap is made at I and Fourth Streets, with a riser conduit routed underground to the school. A 25-pair cable is installed in the conduit and terminates in a telephone cabinet in the boiler room. The cabinet contains primary protectors and punch down blocks.

Condition of the building system
The original 1-inch conduit between the school and utility pole remains today. It appears some work was done at the pole to upgrade the riser conduit to 2-inch. The service cable was likely replaced when the riser conduit was upgraded. A 25-pair cable is inadequate for a school of this size. The primary protection and punch down blocks are in poor condition. This system is antiquated with very limited infrastructure. Replacement is recommended.

Remaining life expectancy: 0 years.

Electrical Inspection – Site Electrical

Deficiency



0163-1 Replace antiquated telephone system
A 25-pair cable is inadequate for a school of this size. The primary protection and punch down blocks are in poor condition. This system is antiquated with very limited infrastructure.

Deficiency category: RR, F.

Remedy
Further investigation is necessary to determine how much of the raceway system was replaced from the pole at I and Fourth Streets to the boiler room. The 2-inch raceway appears to stop at the bottom of the pole. A continuous 2-inch conduit will be necessary to provide a larger service entrance cable; 50-pair is appropriate. This cable would terminate ideally in a media center, allowing cross-connects to other system such as the computer network.

Estimated Construction Cost: $7,200

Electrical Inspection – Service & Distribution

0911 Distribution Panels & Switchgear – Equipment, conduit, feeders, and grounding

Description of the building system
The main switchboard in the boiler room contains two sections. Section one contains the incoming lug arrangement and utility company metering provisions to support a remote meter mounted on the west exterior wall of the boiler room. The second section contains a main 600 ampere circuit breaker and a series of distribution circuit breakers that feed distributed panel-boards.

Twelve 120/208 volt, 3 phase, distribution panels have been identified in the school. All of the panels route directly to the main switchboard in the boiler room.

Condition of the building system
Main switchboard: The service entrance gear was installed during the 1991 addition and remodel. All components are in good condition.
Remaining life expectancy: 20 years.

Panels A, B, D, and X remain from the original 1956 construction. Panels F and G remain from the 1965 addition. All of these panels are full, with limited circuit breaker space and capacity. Molded case circuit breakers of this vintage generally lose their ability to trip and are considered a fire hazard. All of these panels are overdue for replacement.
Remaining life expectancy: 0 years.

Panel H was recently replaced, probably within the last five years. It is in excellent condition.
Remaining life expectancy: 30 years.

Panels CE and J were installed during the 1991 addition and are in good condition. Panel CE is installed in a closet in the Computer Lab and does not have adequate clearance per the National Electrical Code. The small table and computer terminals installed in the closet should be relocated to a more appropriate area, outside of the closet. Panel P was replaced during the 1991 addition and is in good condition.
Remaining life expectancy: 20 years.

Panels L and M appear to have been installed as part of an information technology upgrade. These panels supply only computer receptacles and printers. Panel M is also equipped with transient voltage surge suppression. The school district conducted a series of these types of upgrades about ten years ago. These panels are in good condition.
Remaining life expectance: 20 years.

Electrical Inspection – Service & Distribution

Deficiency

0911-1 Replace Panels A, B, D, F, G, and X
Panels A, B, D, and X remain from the original 1956 construction. Panels F and G remain from the 1965 addition. All of these panels are full, with limited circuit breaker space and capacity. Molded case circuit breakers of this vintage generally lose their ability to trip and are considered a fire hazard. All of these panels are overdue for replacement.

Deficiency category: RR

Remedy
Replace four panel-boards with units of increased capacity and circuit breaker space. Replace feeders between main switchboard and each panel.

Estimated Construction Cost: $163,000

Electrical Inspection – Service & Distribution

0912 Motor Control Centers – Equipment, conduit, feeders, and grounding

Description of the building system
Boiler room: The boiler, water heater, and several fractional horsepower pumps are located in this space. Starters for these pieces of equipment are simple contactors, with bi-metallic thermal overload relays. In some cases hand-off-auto switches were provided as well.

Main fan room: This space was constructed in 1991 and houses the ventilating units, return fan, and exhaust fans. Each piece of equipment is wired to a combination disconnect/starter units located on a mounting board. The combination units were supplied with thermal overload protection and are capable of being locked in the off position.

Janitor space: The janitor space between the toilet rooms in the 1965 addition houses a unit ventilator, pumps, and an exhaust fan. Starters for these pieces of equipment are simple contactors, with bi-metallic thermal overload relays. In some cases hand-off-auto switches were provided as well.

Condition of the building system
Boiler room: The contactors for these pieces of equipment have been upgraded from the original construction. We suspect the upgrade took place when the hybrid pneumatic-digital control system was installed in 1986. The contactors are in good condition. Circuit breakers feeding each piece of equipment serve as the local disconnect and are not capable of being locked in the off position as required by the National Electrical Code. Compliance can be accomplished simply by fastening hardware to the existing circuit breakers to allow them to be secured.
Remaining life expectancy: 15 years.

Main fan room: All equipment is in good working order. There is a code issue associated with de-energizing these units when smoke is sensed in the ductwork. This issues is outlined in 0941 – Fire Alarm System.
Remaining life expectancy: 20 years.

Janitor space: Contactors for pumps P-9 and P-10 were replaced when the hybrid pneumatic-digital control system was installed in 1986. Contactors for the ventilating unit, pump P-11, and the exhaust fan date back to 1965 and are chattering. This is a sign that they are near the end of their life. We recommend replacement of the older contactors.
Remaining life expectancy: 1986 units, 15 years. 1965 units, 0 years.

Electrical Inspection – Service & Distribution

Deficiency

0912-1 Provide lockable disconnects for equipment in boiler room
Circuit breakers feeding each piece of equipment serve as the local disconnect and are not capable of being locked in the off position as required by the National Electrical Code.

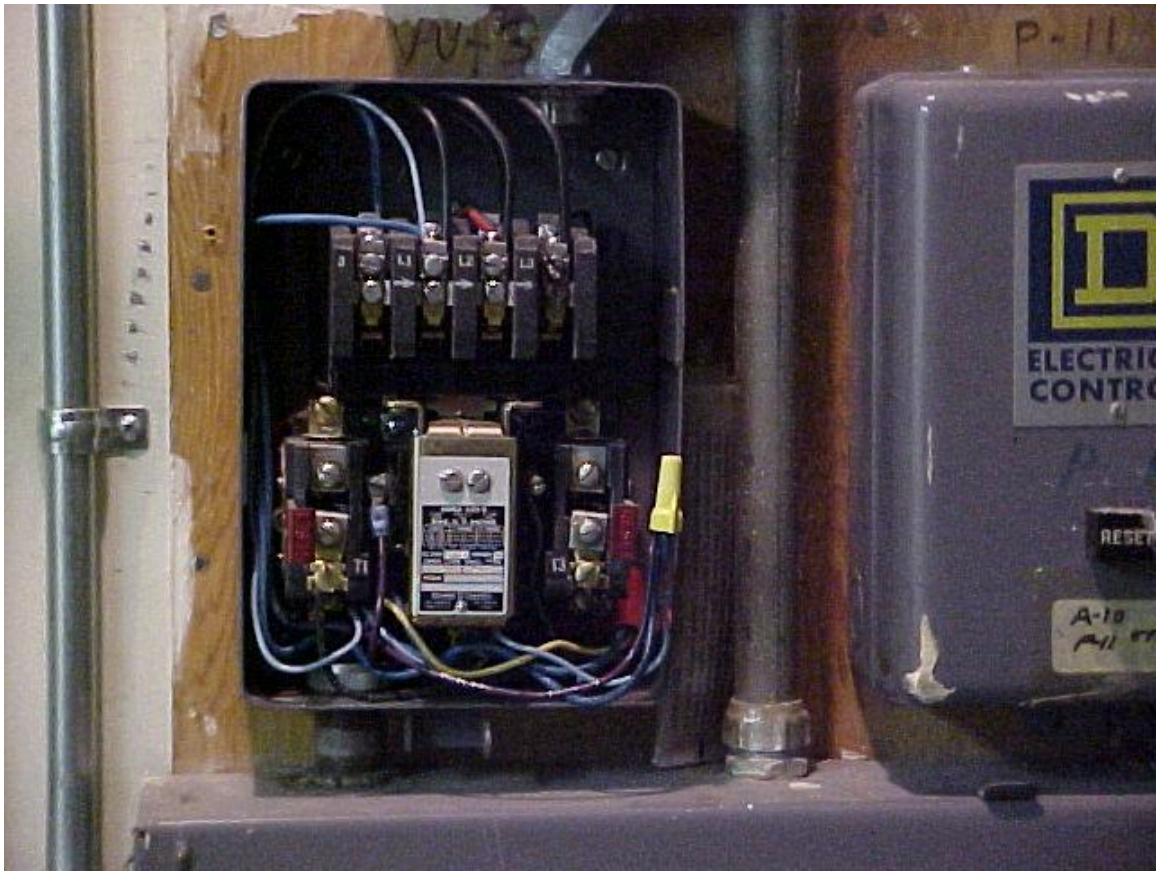
Deficiency category: C, NEC Article 430

Remedy
Fasten metal clips to circuit breaker handle to enable devices to be locked in the off position. This requirement prevents the units from being energized while work is being performed on the equipment.

Estimated Construction Cost: $900

Electrical Inspection – Service & Distribution

Deficiency



0912-2 Replace contactors
Contactors for the ventilating unit, pump P-11, and the exhaust fan date back to 1965 and are chattering. This is a sign that they are near the end of their life.

Deficiency category: RR

Remedy
Replace contactors for ventilating unit, pump P-11 and the exhaust fan.

Estimated Construction Cost: $2,600

Electrical Inspection – Lighting & Power

0921 Light Fixtures & Controls – Fixtures, controls, conduit, wiring, etc.

Description of the building system
Classroom corridors: Corridors in the classroom wings of the 1956 and 1965 areas of the school are illuminated with 2x4 troffers with acrylic lenses and (2) F32T8 lamps. These fixtures are recess mounted in grid ceilings.

Main corridor: The main corridor with the high ceiling, near the library is illuminated with 2x4 troffers with acrylic lenses and (4) F40T12 lamps. These fixtures are recess mounted in grid ceilings.

Main corridor: The main corridor with the low ceiling, leading to the multipurpose space is illuminated with a cove on each side of the corridor. These cove lights utilize (2) F40T12 lamps in a staggered configuration. The fixture housing is equipped with a louver system.

Foyer: Each entrance to the school is illuminated with (2) lensed, recessed, 1x1 fixtures. This design philosophy was first employed in 1956, and was continued at the 1965 addition for consistency. The one exception is the entrance near the boiler room, which is illuminated with cove-mounted lighting.

Trophy cases: The trophy cases are illuminated with F40T12 lamps mounted in a basic housing with an asymmetric reflector system.

Classrooms: Typical classroom lighting consists of (9) 2x4 troffers with acrylic lenses and (4) F40T12 lamps per fixture. The fixtures are switched in 3-rows from the interior wall to the exterior wall. This is an effective switching scheme, considering the exterior wall provides considerable daylight during periods of the day.

Multipurpose room: Illumination is provided by 400 watt metal halide high bay fixtures. The fixtures are equipped with flat lenses to protect the lamps.

Library: The primary lighting consists of large, indirect, pendant mounted bowls with a 400 watt metal halide lamp. Incandescent cylinders are installed through the wooden grid system between the main library space and circulation. The cylinders appear to have an R30 type lamp in the 70 watt range. Recessed, 2x4, parabolic troffers were utilized in the back circulation area with (3) F32T8 lamps.

Main fan room: Industrial fixtures with wire guards and (3) F40T12 lamps were utilized in the fan room.

Miscellaneous spaces 1956 and 1965: Within the 1956 and 1965, utility type spaces like the toilets, storage rooms, and equipment rooms have, for the most part, the original light

fixtures. Exceptions occur when fixtures have failed and were replaced as part of regular maintenance.

Miscellaneous spaces 1991: In the area west of the main entry, beyond the high main entry corridor, some of the lighting was replaced in the utility type spaces. This includes mostly the kitchen and storage spaces. Fluorescent fixtures were introduced into these spaces with F40T12 lamps. The fixtures are in good condition.

Egress lighting: The main corridor with the low ceiling, and the toilets are equipped with emergency lighting units, commonly known a 'bug-eyes'. The multipurpose area has wall mounted self powered units. The classroom corridor system has distributed battery units integral to the 2x4 recessed troffers.

Controls: Spaces are controlled with traditional hard-wired switches. All lighting circuits route through lighting contactors typically located near panel-board, above the ceiling. The coils of these contactors are driven by the building management system allowing for remote control of the lights from the maintenance office.

Condition of the building system
Classroom corridors: These troffers were replaced since the original construction and are in good condition.
Remaining life expectancy: 20 years.

Main corridor (high-bay): The 1956 drawings specified a luminous sphere for this space. Those fixtures were likely replaced with the present troffers some years back. Light levels through this portion of the corridor system are low, due to the inefficiency of the fixtures and possibly a change to the floor finish. The present gray floor does not provide much reflectance. We recommend replacement with a different type of lighting system, such as pendant-mounted bowls. This would allow for increased light levels and add a much needed aesthetic appeal to this high space.
Remaining life expectancy: 5 years.

Main corridor (low-bay): The light levels through this portion of the corridor system are a bit low. The fixtures are inefficient. Replacement is recommended.
Remaining life expectancy: 10 years.

Foyer: The effectiveness of these fixtures is dependent upon ceiling height. At the main entry, for instance, very little illumination actually reaches the walking surface. The fixtures are original and inefficient. The lenses are deteriorated, further reducing the amount of illumination. Replacement is recommended.
Remaining life expectancy: 0 years.

Trophy cases: These fixtures are original and inefficient. One of the reflectors is missing, exposing the bare lamp to viewers. Replacement is recommended.

Electrical Inspection – Lighting & Power

Remaining life expectancy: 0 years.

Classrooms: It is not clear when the classroom lighting was installed. The 1956 and 1965 drawings specify a pendant mounted schoolhouse style fixture. A substitution may have occurred, but it is more likely the original fixtures were replaced some time ago with the present troffer system. In any case, the lighting system is outdated and inefficient. Replacement is recommended.
Remaining life expectancy: 5 years.

Multipurpose room: This lighting system was installed in 1991. The fixture housings and support systems are in good condition. A few lamps have obvious color shift, which suggests they are reaching the end of their life. A couple of the ballasts are quite loud, and may require replacement in the near future. These are considered regular maintenance issues to be tackled as time permits, or when failure occurs.
Remaining life expectancy: 20 years.

Library: The primary lighting in the library was installed in 1991. The 1991 drawings do not detail the wooden grid, or the acoustic ceiling in the circulation area. We suspect this construction and fixture installation occurred in the last ten years, particularly since the parabolic troffers have F32T8 lamps. All of the lighting is in good condition.
Remaining life expectancy: 20 years.

Main fan room: The fixtures in the fan room were installed in 1991. The fixtures are in good condition, but the lamps are inefficient. The light switch is located on the ductwork in the fan room, which is very inconvenient. One has to climb the ladder and crawl into the space before reaching the light switch. We recommend replacing the inefficient fixtures and relocating the light switch to the space below.

Remaining life expectancy: 20 years.
Miscellaneous spaces 1956 and 1965: These lighting systems are outdated, inefficient, and in many cases damaged. Replacement is recommended.
Remaining life expectancy: 0 years.

Miscellaneous spaces 1991: Although these fixtures are in good condition, the lamps are inefficient. Replacement is recommended.
Remaining life expectancy: 20 years.

Egress lighting: Egress lighting throughout the facility is very limited. Fixtures that are installed do not comply with current International Building Code requirements of a minimum of 1 foot-candle along the path of egress. Replacement is recommended.
Remaining life expectancy: 10 years.

Controls: The hard wired switches are due for replacement as fixture replacement occurs. The lighting contactors are in good condition.

Electrical Inspection – Lighting & Power

Remaining life expectancy: Switches, varies 5 to 20 years. Contactors, 20 years.

Deficiency

0921-1 Replace lighting system in high portion of main corridor
Light levels through this portion of the corridor system are low due to the inefficiency of the fixtures and because the present gray floor finish does not provide much reflectance.

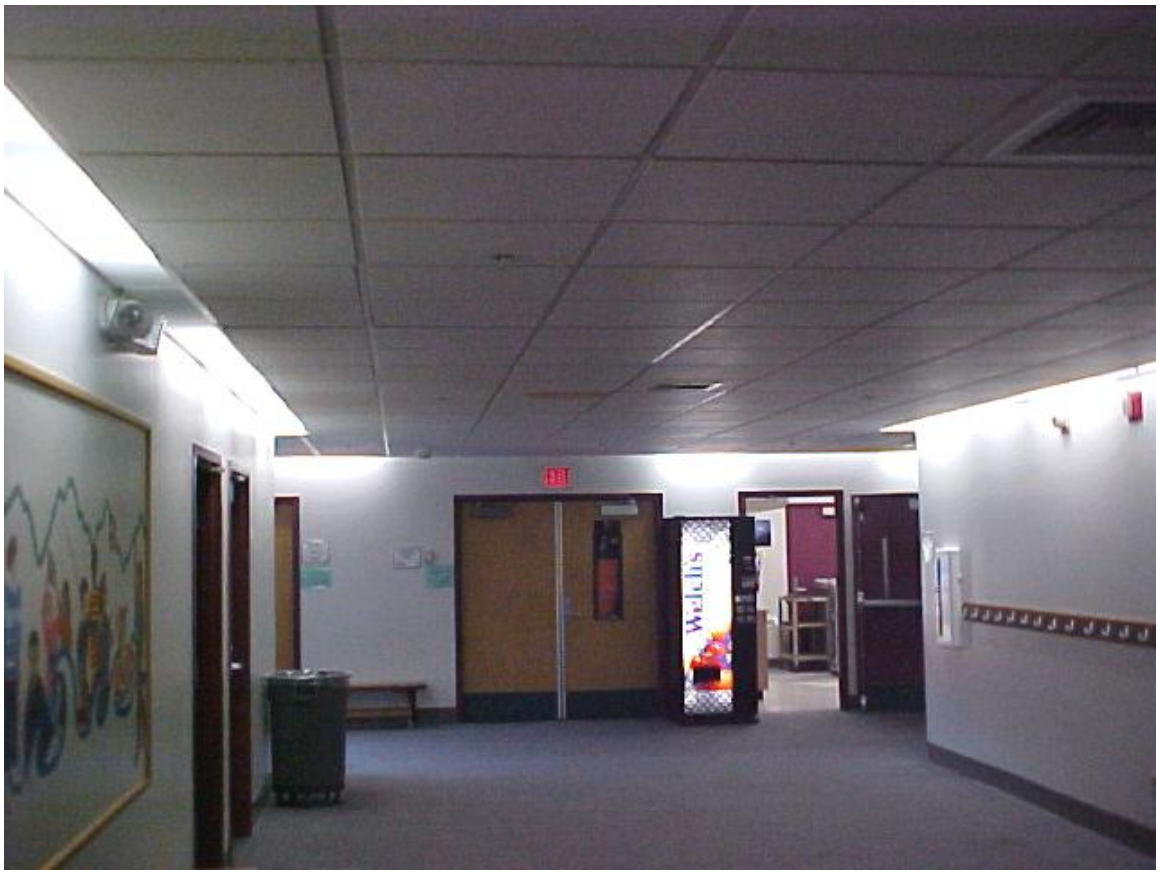
Deficiency category: RR, E

Remedy
Replace with a different type of lighting system, such as pendant-mounted bowls. This would allow for increased light levels and add a much needed aesthetic appeal to this high space.

Estimated Construction Cost: $12,000

Electrical Inspection – Lighting & Power

Deficiency



0921-2 Replace lighting system in low portion of main corridor
The light levels through this portion of the corridor system are a bit low. The fixtures are inefficient.

Deficiency category: E, F

Remedy
A similar, more energy efficient cove type system could be developed here, supplemented by a handful of recessed compact fluorescent down lights. Provide new wiring and conduit.

Estimated Construction Cost: $14,000

Electrical Inspection – Lighting & Power

Deficiency

0921-3 Replace lighting at entries
The fixtures are original, inefficient, do not provide sufficient illumination, and have exceeded their service life. The lenses are deteriorated, further reducing the amount of illumination. The effectiveness of these fixtures is dependent upon ceiling height. At the main entry, for instance, very little illumination actually reaches the walking surface.

Deficiency category: RR, E

Remedy
Because it is so high, recessed metal halide downlights with a 6-inch aperture would work well at the main entry. We could locate three in the space with the outer two grazing light down the wall on the ends of the entry. The entries with low, lay-in-grid ceilings can be illuminated with coves at the edges and a cluster of downlights, similar to our suggestion for deficiency 0921-2. Provide new wiring and conduit.

Estimated Construction Cost: $27,000

Electrical Inspection – Lighting & Power

Deficiency

0921-4 Replace lighting in trophy cases
These fixtures are original, inefficient, and past their service life. One of the reflectors is missing, exposing the bare lamp to viewers.

Deficiency category: RR, E

Remedy
This is a great application for T5 lamps in a simple housing with an asymmetric reflector system. The fixtures could be hidden from sight a little better since they would be about half the profile of the present fixtures. Provide new wiring and conduit.

Estimated Construction Cost: $4,200

Electrical Inspection – Lighting & Power

Deficiency

0921-5 Replace classroom lighting
The age of the present troffer system is not known. The lighting system is outdated and inefficient.

Deficiency category: RR, E

Remedy
High ceilings exist in the classrooms that will allow use of a pendant mounted linear indirect/direct lighting system. Provide new wiring and conduit.

Estimated Construction Cost: $163,000

Electrical Inspection – Lighting & Power

Deficiency

0921-6 Replace lighting in main fan room
The fixtures in the fan room were installed in 1991. The fixtures are in good condition, but the lamps are inefficient. The light switch is located on the ductwork in the fan room, which is very inconvenient. One has to climb the ladder and crawl into the space before reaching the light switch.

Deficiency category: E

Remedy
Replace with similar style fixtures with T8 lamps and electronic ballasts. Relocate the light switch to the space below.

Estimated Construction Cost: $1,200

Electrical Inspection – Lighting & Power

Deficiency

0921-7 Replace lighting in miscellaneous spaces 1956 and 1965
These original lighting systems are outdated, inefficient, in many cases damaged, and past their service life.

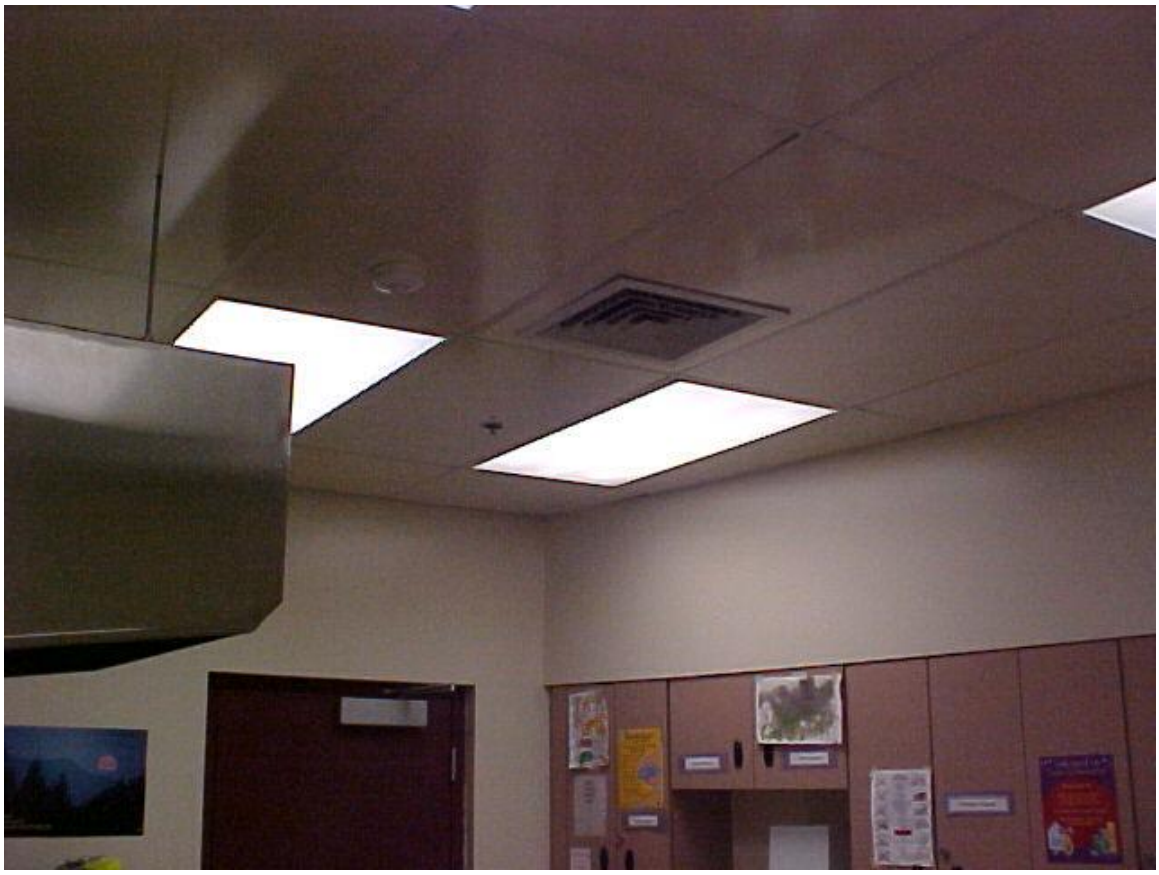
Deficiency category: RR, E

Remedy
These areas need to be treated on a case-by-case basis as ceiling types and heights vary. Recessed troffers, and surface mounted commercial products will work fine for most applications. Provide new wiring and conduit.

Estimated Construction Cost: $13,000

Electrical Inspection – Lighting & Power

Deficiency



0921-8 Replace lighting in miscellaneous spaces 1991
Although these fixtures are in good condition, the lamps are inefficient.

Deficiency category: E

Remedy
These areas need to be treated on a case-by-case basis as ceiling types and heights vary. Most of these spaces are utility in nature with open or lay-in-grid ceilings. Recessed troffers, and surface mounted commercial products will also work fine in most of these applications. Provide new wiring and conduit as necessary.

Estimated Construction Cost: $11,000

Electrical Inspection – Lighting & Power

Deficiency

0921-9 Supplement egress lighting
Egress lighting throughout the facility is very limited. Fixtures that are installed do not comply with current International Building Code requirements of a minimum of 1 foot-candle along the path of egress.

Deficiency category: C: UBC Section 1006

Remedy
In areas where lighting is upgraded, egress lighting will need to be considered and dovetailed into the installation. This lighting will probably take a few forms. A supplemental system is required in multipurpose. Portions of the main corridor can utilize bug-eye style units. Other areas will likely have distributed batteries within the normal lighting fixture. The classroom corridor system is the only area that does not need immediate attention.

Estimated Construction Cost: $10,000

Electrical Inspection – Lighting & Power

Deficiency

0921-10 Replace lighting controls
The hard wired switches are due for replacement as fixture replacement occurs. The keyed switches in the gym no longer function so the panel board is used to control lighting. Switches are not provided for corridor lights, which are controlled by panel boards.

Deficiency category: RR, F

Remedy
Replace switches as light fixture replacement occurs in 1956 and 1965 areas of the school. Provide new wiring and conduit. Replace keyed switch system at gym. Add switches for corridor lights.

Estimated Construction Cost: $22,000

Electrical Inspection – Lighting & Power

0931 Devices & Connections – Outlets, disconnects, equipment connections, wiring, etc.

Description of the building system
Classrooms: The classrooms were originally outfitted with three receptacles, one near the sink, one on the teaching wall, and one on the back wall. These spaces have since been retrofitted with plugmold connected to the original circuiting. Some spaces also have been equipped with an extruded aluminum surface mounted wireway. These wireways were probably installed during the information technology upgrade in 1999.

Corridors: Receptacles are pretty scarce along the corridor walls. The maintenance crews seem to manage with longer cords connected to vacuum cleaners.

Computer room: Receptacles are mounted in an extruded aluminum surface divided raceway.

Miscellaneous spaces: In general, there is a lack of receptacles in the school.

Branch circuits: Conductors in the 1956 and 1965 areas were predominately routed in metal conduit in the slab.

Condition of the building system
Classrooms: There is a general lack of receptacles in the classrooms. Modern classrooms are equipped with a surface divided raceway that contains power and communication devices. This type of raceway system has flexibility in device locations and allows the user to easily add new devices to the system. It is likely that the original circuits are heavily loaded since a series of plugmold replaced what was once a couple of receptacles. The receptacles located at the sinks are not ground fault protected. Given there are small children in these spaces, it is particularly important to safeguard these devices. We recommend a surface raceway system be installed in each classroom along with replacement of the receptacles located at sinks with ground fault protected devices.

Remaining life expectancy: 0 years.

Corridors: Typical spacing for ease of cleaning requires devices to be located not more that 40-feet apart. There are some devices throughout the corridor on a 60-foot spacing. We recommend supplementing the corridor receptacles to achieve a more convenient spacing.

Remaining life expectancy: N/A.

Computer room: The extruded aluminum surface divided raceway is suited to this type of environment. There appear to be sufficient devices, with adequate capacity.

Remaining life expectancy: 20 years.

Electrical Inspection – Lighting & Power

Miscellaneous spaces: The staff seems to be getting by with plugstrips connected to the few outlets that are located in each space. The concern is that plugging multiple pieces of equipment into a plugstrip will tend to overload the circuits. We recommend supplementing devices as required and reconfiguring the circuiting to accommodate appropriate utilization equipment in each space.

Remaining life expectancy: N/A.

Branch circuits: The metal conduit has deteriorated over the years, and is causing fault conditions in the branch circuit wiring which is now basically unprotected.

Electrical Inspection – Lighting & Power

Deficiency

0931-1 Install surface raceways in classrooms
There is a general lack of receptacles in the classrooms. It is likely that the original circuits are heavily loaded since a series of plugmold replaced what was once a couple of receptacles.

Deficiency category: RR

Remedy
Install surface divided raceways with a divider that can house both power and communications devices. Provide new wiring and conduit.

Estimated Construction Cost: $129,000

Electrical Inspection – Lighting & Power

Deficiency

0931-2 Replace receptacles at sinks with ground fault protected devices
The receptacles located at the sinks are not ground fault protected. Given there are small children in these spaces, it is particularly important to safeguard these devices.

Deficiency category: C: NEC Article 210

Remedy
Replace receptacles with ground fault protected receptacles. Provide new wiring and conduit.

Estimated Construction Cost: $10,000

Electrical Inspection – Lighting & Power

Deficiency

0931-3 Supplement corridor receptacles
Corridors lack electrical outlets. Existing outlets in 1956 and 1965 portions of building are past their service life.

Deficiency category: RR, F

Remedy
Replace existing corridor receptacles and supplement with new receptacles to achieve 40-foot maximum spacing. Provide new wiring and conduit.

Estimated Construction Cost: $5,500

Electrical Inspection – Lighting & Power

Deficiency

0931-4 Supplement receptacles in miscellaneous spaces
The staff seems to be getting by with plugstrips connected to the few outlets that are located in each space. The concern is that plugging multiple pieces of equipment into a plugstrip can overload the circuits.

Deficiency category: F

Remedy
Identification of every receptacle in the school is beyond the scope of our efforts here. But, we did observe the use of plugstrips, which indicates additional receptacles are required. New wiring and conduit should be installed as well.

Estimated Construction Cost: $14,000

Electrical Inspection – Special Electrical

0941 Fire Alarm System – Devices, panels, wiring, conduit, etc.

Description of the building system
The school is equipped with a hard wired fire alarm control panel, and automatic dialer. The fire alarm control panel is a Pyrotronics System 3. These head-end pieces of equipment are located in the Principal's office. The fire alarm control panel monitors tamper and flow devices for the sprinkler system, manual pull stations, and duct smoke detectors. The sprinkler header is located in a closet inside the computer lab space. Manual pull stations with protective covers are located at each exit. The protective covers sound an audible signal when raised, which often prevents tampering and false alarms. Main fan room ventilating units and the return fan have duct-mounted smoke detectors. Shut down of these units is accomplished through the building management system. Combination horn/strobe units are sparsely located throughout the corridor system. In addition, the original loudspeaker type fire alarm horns are still in place. It is unknown if the 1956 and 1965 horns are still connected to the system. All classroom doors have magnetic hold opens.

Condition of the building system
The fire alarm control panel is old technology, and parts for these panels are becoming more and more difficult to obtain. The manual pull stations are mounted too high to comply with the American's with Disabilities Act. Shut down of mechanical equipment upon the detection of smoke is required to be accomplished through the fire alarm control panel. The present configuration utilizes the building management system, which is not a UL-Listed product for fire alarm use. Spacing of the combination horn/strobe units does not comply with National Fire Protection Association codes. Strobe-only units are not located in common spaces as required by the American's with Disabilities Act. The fire alarm system is antiquated and non-compliant with several codes. The school would be much better served with an addressable fire alarm system. With that, very little of the existing system will be salvageable.

Remaining life expectancy: 0 years.

Electrical Inspection – Special Electrical

Deficiency

0941-1 Replace fire alarm system
The fire alarm control panel is old technology, and parts for these panels are becoming more and more difficult to obtain. The manual pull stations are mounted too high to comply with the American's with Disabilities Act. Shut down of mechanical equipment upon the detection of smoke is required to be accomplished through the fire alarm control panel. The present configuration utilizes the building management system, which is not a UL-Listed product for fire alarm use. Spacing of the combination horn/strobe units does not comply with National Fire Protection Association codes. Strobe-only units are not located in common spaces as required by the American's with Disabilities Act. The fire alarm system is antiquated and non-compliant with several codes.

Deficiency category: C: ADA, NFPA (various sections)

Remedy
Replace present system with addressable fire alarm control panel and devices. Manual pull stations can probably be salvaged and relocated to a height compliant with the American's with Disabilities Act.

Estimated Construction Cost: $80,000

Electrical Inspection – Special Electrical

0942 Communication Systems – Telephone, data, intercom, TV, sound, cable trays, etc.

Description of the building system
Telephone: The main telephone terminal cabinet is located in the boiler room. Several trunk cables are routed from this cabinet to a series of punch down blocks in a closet across the hall from administration. This closet also houses a Meridian telephone switch. The switch is capable of capturing (8) outside telephone lines and appears to be wired in that configuration. Meridian handsets are located in the administrative area and all of the classrooms.

Data system: Electronics for the school are housed in two wall mounted data racks. One is located in the computer room, the other is in a closet at the north end of the 1956 construction. Data outlets are configured with two jacks per outlet. Most of the classrooms have one outlet, and the administration office is equipped with outlets as needed.

Intercom system: A Dukane intercom console is located in the administration area. This console has the capability to establish communications between the office and classrooms, and to make an all-call page. There is also a tuner and cassette deck, which allow music to be played over the speaker system. Each classroom is outfitted with a speaker and a call-in switch.

Television: Some of the classrooms are equipped with televisions and video cassette recorders mounted to a wall bracket. We did not locate a cable television service in the school.

Condition of the building system
Telephone: The telephone system was installed in 1956 and is not adequate for a school of this size. Given there are a couple fax machines, and two dedicated lines for the fire alarm dialer, that doesn't leave many line free for staff use. It isn't surprising the staff reported having difficulty getting an outside line. The telephone switch, main telephone terminal cabinet, punch down blocks, and wiring are all antiquated. A more appropriate telephone system would be integrated with an overall communications strategy and provided with battery back-up in the event of an emergency. Replacement is recommended.

Remaining life expectancy: 0 years.

Data system: The data system is recent technology and a quality installation. The limited availability of space probably forced the application of the wall mounted data racks. These racks are difficult to maintain, and are not installed to allow future cabling to be easily integrated into the system. There is a general lack of outlets in the classrooms. A more appropriate classroom installation is to integrate the outlets into a surface divided raceway as mentioned in Section 0931. We recommend space be dedicated to

development of a true media center. This space would be provided with floor-mounted racks with clearance on each side to allow for troubleshooting and maintenance. We also suggest a cable tray system be installed to route cables from workstations to the media center. With the proper infrastructure in place, additions and changes to the system can be more easily accomplished.

Remaining life expectancy: 10 years.

Intercom system: The intercom console was a top of the line unit in its day, but communication advances in the educational environment have far surpassed its capabilities. Other than school-wide paging, it appears the console is not used regularly. The staff utilizes the telephone handsets to establish room-to-room communications. Surprisingly, there are very few speakers in the corridor system and none in the multipurpose room. There is one speaker in the main corridor in the high ceiling area. Replacement is recommended.

Remaining life expectancy: 0 years.

Electrical Inspection – Special Electrical

Deficiency

0942-1 Replace telephone system
The telephone system was installed in 1956 and is not adequate for a school of this size. Given there are a couple fax machines, and two dedicated lines for the fire alarm dialer, that doesn't leave many line free for staff use. It isn't surprising the staff reported having difficulty getting an outside line. The telephone switch, main telephone terminal cabinet, punch down blocks, and wiring are all antiquated.

Deficiency category: RR, F

Remedy
Provide for completely new infrastructure, cabling, and outlets. Telephone punch down blocks would ideally be located in a media center as discussed under deficiency 0163-1. Telephone system to be integrated with an overall communications strategy and provided with battery back-up in the event of an emergency.

Estimated Construction Cost: $50,000

Electrical Inspection – Special Electrical

Deficiency

0942-2 Develop media center
The limited availability of space probably forced the application of the wall mounted data racks. These racks are difficult to maintain, and are not installed in a manner that allows future cabling to be easily integrated into the system.

Deficiency category: RR, F

Remedy
The concept of a media center integrates all of the building communication systems. Modern data, telephone, intercom, security, and building management systems are routinely linked together to share information, status, and alarm data. The data network naturally becomes the hub for this shared approach. Centrally located electronics in a media center allows for easy interconnection between these systems and facilitates continuous maintenance.

Estimated Construction Cost: $38,000

Electrical Inspection – Special Electrical

Deficiency

0942-3 Replace intercom system
The intercom console was a top of the line unit in its day, but communication advances in the educational environment have far surpassed its capabilities. Other than school-wide paging, it appears the console is not used regularly.

Deficiency category: RR, F

Remedy
Locate an intercom rack in the media center with a trunk connection to the telephone system or provide an integrated system. This will allow for paging via the telephone handsets to a select space, or an all-call condition. Electronics such as a tuner and compact disc player are recommended as well as background music sources.

Estimated Construction Cost: $81,000

Electrical Inspection – Special Electrical

Deficiency

0942-4 Install television system
Some of the classrooms are equipped with televisions and video cassette recorders mounted to a wall bracket. However, the school is not equipped with an integrated cable television system.

Deficiency category: F

Remedy
Install a cable television service with outlets in each classroom. This solution is the minimum required to bring cable programming to the existing television sets. Thought should be given to supplementing each classroom with a digital projector. This would allow teachers connectivity to computer images. Digital projectors typically also include video and audio inputs for connecting sources such as VCR's, DVD players, and television tuners. This type of technology is more prevalent in modern schools. Costs under this deficiency include only a cable television service, wiring, and outlets.

Estimated Construction Cost: $33,000

Electrical Inspection – Special Electrical

0943 Security System – Sensors, CCTV, accessories control, etc.

Description of the building system
There are motion sensors located in the corridor system that are connected to the building management system. The building management system captures a telephone line and dials a security monitoring entity, usually LJ Alarm, during an alarm condition.

Condition of the building system
The school district has been moving to a new style of security system, similar to the one installed in the Juneau Douglas High School. The system includes exterior keypads at entry doors, in addition to interior monitoring for intruders. These systems are also interconnected to the building management system, but have independent control panels and power supplies for peripheral devices. Replacement with this updated technology is recommended.

Remaining life expectancy: 0 years.

Electrical Inspection – Special Electrical

Deficiency

0943-1 Replace security system
The security system is old technology and does not comply with current school district standards.

Deficiency category: RR, F

Remedy
District maintenance is constantly refining the application of security systems in local schools. The current philosophy is to provide exterior keypads for secure entry during building lockdown. Entries and corridors are monitored with motion sensors. These devices are connected to a polling loop, which terminates in a security control panel. This control panel also houses the power supply necessary to drive peripheral devices. It is worthy of mention that consideration is also being given to integrating camera surveillance systems into the schools. The application of camera surveillance systems is not addressed herein.

Estimated Construction Cost: $70,000

Electrical Inspection – Special Electrical

0945 Other Special Electrical – Clocks, low voltage, heating, etc.

Description of the building system
Clock system: The original clock system was replaced with a Simplex 2350 Master Time System, located in the administration area. Analog secondary clocks are located in each classroom, and there is one in the main corridor. In addition to time correction, the time control unit initiates program bells. Program bells are located throughout the corridor system. We have not been able to confirm if the program bell system is currently active.

Condition of the building system
Clock system: The master clock is a fairly new digital technology and in good condition. The secondary clocks are probably original, but appear to be working just fine. Clocks are basic devices that unless physically damaged will operate for a lot of years. The program bells are probably original. Modern class tone systems utilize the paging speakers to transmit a distinct tone. This is accomplished by providing a connection between the master clock system and the intercom system. Replacement of the program bell system is recommended.

Remaining life expectancy: 10 years.

Electrical Inspection – Special Electrical

Deficiency

0945-1 Replace program bell system
The program bells are probably original and at the end of their service life.

Deficiency category: RR, F

Remedy
Rather than replace the bell system with another stand alone system, its function will be addressed by the new intercom system. Cost for replacement of the intercom system is included with deficiency 0942-3. Cost for removal of the bell system is noted below. (this system should be removed if it is to supplanted by the intercom system. There will be minor costs associated with patching and painting with its removal.)

Estimated Construction Cost: $2,900 for removal of bell system

Cost Estimate Details

Type	ID #	Deficiency Title	Remedy Work	Cost
C	0131-1	Inadequate Parking	Construct or Expand Parking Lots	$67,000
F	0132-1	Inadequate Drop Off Zone	Widen Sidewalk, Construct Pathway and Canopy	$77,000
RR	0132-2	No Landings at Classroom Exits	Construct Landings	$3,700
RR	0132-3	Poor Condition Concrete	Replace Concrete Walk	$21,000
C	0132-4	Inset Grating not ADA Compliant	Replace Grating	$7,600
RR	0132-5	Curb East of Building	Replace Damaged Curb	$3,900
RR	0135-1	Bin Wall Coating	Clean and Paint Wall	$41,000
RR	0135-2	Concrete Wall Poor Condition	Remove and Replace Deteriorated Concrete	$8,000
F	0141-1	Bike rack shelter location grading	Re-grade, install concrete barriers.	$5,800
RR	0141-2	Bike Racks	Fix grade, new racks, refurbish covered structure	$7,200
RR	0141-3	Pea-gravel surrounding swing-sets	Spread new loads of pea gravel around playground equipment	$3,200
RR	0141-4	Outdoor basketball backstops	Remove & replace with new in-ground post & backstop package	$7,400
RR	0141-5	Covered outdoor picnic tables	Repair shingle roofs, power wash	$1,400
F	0141-6	Fall protection @ play equip.	Install new synthetic mat w/ underlayment	$65,000
RR	0142-1	Deteriorating painted wall surfaces inside covered court area	Prep & repaint wall surface	$2,000
RR	0142-2	Deteriorating painted court markings in side covered court area	Re-stripe court markings	$2,200
RR	0142-3	Moss and debris accumulation on court roof assembly	Power wash translucent roof	$1,500
RR	0142-4	Dirt and debris accumulation on aluminum canopy assembly	Power wash alum. decking	$1,500
RR	0142-5	Concrete board soffit likely ACM.	Remove and replace as part of other work.	$14,000
RR	0143-1	Damaged Siding at grounds equipment shed	Remove & replace siding	$2,700
C	0143-2	Tree house	Remove tree house	$1,500
RR	0151-1	Old Water Service	Replace Water Service	$9,400
RR	0151-1	Old Sprinkler Service	Replace Sprinkler Service	$13,000
RR	0152-1	Old Sewer Service	Replace Sewer Service	$16,000
F	0153-1	Catch Basin Aprons	Add Catch Basin Aprons	$3,900
F	0153-2	Improve Playground Drainage	Add Catch Basins, Re-grade to Drain and Re-Pave	$84,000
RR	0153-3	Clean Drainage Swales/Ditches	Clear Growth and Clean of Rubbish	$8,100
F	0162-1	Upgrade lighting on east side of school	Add light poles and building mounted lighting. New conduit and wiring.	$31,000
RR	0162-2	Replace lighting on north side of 1965 addition	Building mounted lighting. New conduit and wiring.	$3,000
RR	0162-3	Replace lighting on west side of 1965 addition	Building mounted lighting. New conduit and wiring.	$9,400

Cost Estimate Details

Type	ID #	Deficiency Title	Remedy Work	Cost
RR	0162-4	Replace covered play area high bay fixtures	High bay fixtures. New conduit and wiring.	$21,000
F	0162-5	Add light fixtures to south side of school	Building mounted lighting. New conduit and wiring.	$5,500
RR	0163-1	Replace antiquated telephone system	New service entrance.	$7,200
RR	0321-1	Library Columns	Remove Rotten Material and Replace	$38,000
C	0322-1	Lateral Load resisting System	Analize and upgrade lateral load resisting elements	$159,000
RR	0411-1	Replace sealant joints at EIFS	Remove & reinstall joint sealant	$14,000
RR	0411-2	Cleaning, repair, and resurfacing of EIFS	Clean, apply new coat of paint, rebuild rated parapet at gym. 5,000 sf	$87,000
RR	0411-3	Failing sealant joints at CMU veneer	Clean, apply new sealing joints	$4,300
RR	0411-4	Cracked surfacing and organic growth at concrete	Blast & resurface with grout & paint	$14,000
RR	0411-5	Deteriorating paint finish at precast concrete	Blast & resurface with grout & paint	$22,000
H	0411-6	Damaged concrete board wall panels	Remove and replace	$8,700
RR	0411-7	CMU cleaning and Sealing	Clean and Seal	$20,000
RR	0412-1	Wood and galvanized fascias	Clean, prime & paint fascias	$4,600
RR	0412-2	Wood and painted sheet metal fascias at Library	Clean, Prime & paint fascias	$1,300
H	0412-3	Cement Asbestos Board Soffits	Pressure wash and paint	$42,000
H	0412-3	Cement Asbestos Board Soffits	Abate and replace with painted cement board	$155,000
RR	0421-1	Substandard window system and glazing at classrooms	Install new window system	$508,000
RR	0423-1	Deteriorating paint system at wood window system	Scrape and paint, repair. Provide protection for work.	$12,000
RR	0423-2	Poor thermal performance of single pane plastic glazing panels	Replace existing windows w/ new high performance thermal glazing and stops (fixed).	$142,000
RR	0431-1	South West facing exterior classroom doors	Remove and replace w/ new ins. Hm door, frame and hardware.	$13,000
C	0431-2	Exterior Library Door	Replace with insul metal door & frame, new concrete landing	$4,200
RR	0431-3	Repairs at North hallway door assembly	Replace glazing with tempered lites	$1,900
RR	0431-4	Steel grating jambs interior vestibule doors.	Replace with new grating	$5,100
RR	0431-5	General door maintenance; Repainting wood and hollow metal doors	Replace weather seals, paint. 15 units.	$10,000
C	0431-6	Door closers	Adjust for ADA	$4,300
C	0431-7	New exterior Door at Kindergarten, Room 31	New door, flooring, threshold to exterior.	$13,000
RR	0441-1	Clean and Paint Louvers	Clean, prep, repaint galvanized metal	$1,300
RR	0511-1	Roof replacement at library	New EPDM membrane	$99,000
RR	0512-1	Clean debris out of all gutters and down-spouts.	Maintenance item, power wash, clean out debris annually	$2,000

Cost Estimate Details

Type	ID #	Deficiency Title	Remedy Work	Cost
RR	0521-1	Holes in seismic joint cover	Repair holes	$400
RR	0522-1	Clogged drain screens	Maintenance item, clean out debris annually	$300
RR	0522-2	Leaking internal roof gutter	Rebuild existing internal roof gutter	$23,000
RR	0612-1	Water damaged soffit at Admin area	Repair gyp board ceiling, investigate source of water, repaint.	$3,200
RR	0631-1	Doors damaged at hinge or hardware attachment	New steel doors and hardware set	$14,000
RR	0631-2	Finish damage at room #9 (fan room) door face and frame	Repair door, hardware, acoustic seals	$600
C	0631-3	Door closure adjustment		$7,200
C	0631-4	ADA door clearances at classrooms	Widen openings, reinstall doors	$160,000
RR	0641-1	Dark wall materials in 1958 building halls restrict educational experience.	Replace with updated resilient wall finish such as tile, plaster or new wainscot to 4'. 500 lf	$35,000
RR	0641-2	Dark wall materials in 1958 building Commons restrict educational experience	Replace with updated resilient wall finish such as tile, plaster or new wainscot to 4'. Finish gyp board wall to 8'.	$16,000
RR	0641-3	Deteriorating Marlite-type panels in 1965 addition bathrooms	Replace with ceramic tile to 6'	$17,000
RR	0641-4	Replace court end acoustic wall panels at gymnasium.	Install gym wall pads	$9,000
RR	0642-1	Carpet wear at Halls	Replace carpet in Hallways	$36,000
RR	0642-2	Carpet wear at Classrooms	Replace carpet at Classrooms	$181,000
RR	0642-3	Provisions for wet area flooring at sinks in classrooms	Install sheet vinyl at sink areas of classrooms.	$11,000
H	0642-4	Remove ACM floor tile from janitor rooms	Abate & replace with new sheet vinyl	$8,800
RR	0642-5	Cleaning and sealing of all mosaic tile flooring.	Heavy cleaning, grout sealant.	$5,800
RR	0642-6	Repair to urethane gymnasium flooring.	Repair poured flooring	$3,600
RR	0642-7	Repair damaged rubber base at gymnasium	Replace with new rubber base	$2,900
H	0643-1	ACT replacement at entry areas and Commons Hall	Abate ceiling and replace with new system & tiles.	$9,100
RR	0643-2	ACT replacement at hallways, classrooms and administration areas.	Remove ceiling and replace with new system & tiles at hallways. Reuse hall tiles into classrooms.	$38,000
C	0651-1	Missing ADA Signage	Replace room signs with ADA signage	$1,400
RR	0651-2	Toilet Partitions	Replace older ones with new	$28,000
RR	0651-3	Marker Board Replacement	Replace w/ new	$35,000
RR	0652-1	Antiquated casework at 1958 classrooms	Replace with new commercial grade casework. 99 lf.	$67,000
RR	0652-2	Aging casework at 1965 classrooms	Refinish casework, modify for ADA compliance. 92 lf	$23,000
RR	0652-2	Aging casework at 1965 classrooms	Replace with new commercial grade casework. 92 lf.	$62,000

Cost Estimate Details

Type	ID #	Deficiency Title	Remedy Work	Cost
F	0652-3	Hallway coat storage in Display Case	Convert back to display case with new glass panels	$1,700
F	0652-4	Inefficient Classroom Storage	Replace classroom coat closet with cubbies	$158,000
RR	0811-1	Classroom Sinks	Replace Classroom Sinks	$32,000
RR	0811-2	North wing girl's toilet room	Replace fixtures	$16,000
RR	0811-3	North wing boy's toilet room	Replace fixtures	$18,000
RR	0811-4	North wing corridor drinking fountain	Replace	$4,900
RR	0811-5	North wing janitor closet service sink	Replace	$2,300
RR	0811-6	South Wing Drinking Fountain	Replace	$2,600
RR	0811-7	Janitor Closet Sink	Replace	$2,300
RR	0811-8	Classroom 22 Shower/Toilet Room	Replace fixtures & shower	$8,800
RR	0811-9	Teacher's Lounge	Replace fixtures w/ new casework	$2,900
RR	0811-10	Teacher's Toilet Room:	Replace fixtures	$4,300
RR	0811-11	Janitor's Closet next to nurse's station	Replace	$2,300
RR	0811-12	Kindergarten Classroom Toilet Rooms	Replace fixtures.	$3,000
RR	0811-13	South Wing Girl's Main Toilet Room	Replace fixtures	$13,000
RR	0811-14	South Wing Boy's Main Toilet Room	Replace fixtures	$16,000
C	0811-15	Unisex Toilet Room Multipurpose Wing	Replace flush valve w/ ADA approved	$700
RR	0811-16	Multipurpose Wing Janitor Closet	Re-arrange plumbing	$2,200
C	0811-17	Library sink	Replace faucet w/ ADA approved	$400
RR	0812-1	Electric Hot water heater	Replace anodes, unions, & corroded piping	$900
RR	0812-2	Domestic hot water heat exchanger heating pump	Replace seals and bearings	$2,900
C	0812-3	No hot water tempering valve installed in the hot water supply line	Install hot water tempering valve in the hot water supply line	$4,300
RR	0813-1	Main toilet room drains	Investigate waste system for possible crushed pipe or blockage	$7,200
C	0813-2	Floor drains not trap primed or vented	Remove and replace	$35,000
C	0813-3	Overflow Roof Drains	Investigateand install	$43,000
RR	0813-4	Debris in roof drains	Remove	$1,700
RR	0813-5	Debris in CR plumbing vents	Remove	$2,000
RR	0814-1	Domestic cold water service piping	Replace CW service in building & distribution piping	$362,000
RR	0821-1	Boilers are past service life	Replace w/ new	$319,000
E	0821-2	Heating Pumps.	Remove and replace	$29,000
RR	0822-1	Corrosion of Heating Piping at dissimilar metals	Dielectric Black steel to copper pipe unions; $12,000 for 25 units	$17,000
RR	0822-1	Corrosion of Heating Piping at dissimilar metals	Replace steel pipe with copper	$87,000
RR	0822-2	Heating piping through out building	Patch all insulation	$22,000
RR	0823-1	VU-1 and EF-1	Remove and Replace. Clean ducting. Add ducting to Nurses office.	$91,000
RR	0823-2	EF-2	Remove and Replace. Clean ducting	$14,000
RR	0823-3	VU-3	Remove and Replace. Clean ducting	$72,000
RR	0823-4	VU-4 and RF-4	Clean and install new air filters	$1,400

Cost Estimate Details

Type	ID #	Deficiency Title	Remedy Work	Cost
RR	0823-5	VU-5 and RF-5	Clean and install new air filters	$1,400
RR	0823-6	EF-4 & EF-5	Clean	$600
RR	0823-7	Kitchen Hood Exhaust fan	Clean	$1,100
RR	0823-8	VU-6 Rooftop Chiller	Install insullation and protective covering	$1,700
RR	0823-9	EF-1 roof exhaust cap	Clean and refurbish Roof Exhaust cap	$1,200
RR	0824-1	Ductwork, grilles, and diffusers are dirty and need to be cleaned	Clean all throughout building	$43,000
RR	0828-1	Pneumatic controls are antiquated and past their service life	Upgrade control system	$290,000
C	0831-1	No tamper switches installed on gate valves for backflow preventer	Install missing equipment	$4,300
C	0832-1	Dry pipe sprinklers covered outdoor areas	Install dry pipe sprinkler system at indicated areas	$65,000
RR	0842-1	Remove oil piping back to penetration of slab	Install new oil piping an appurtenances to new boiler burners	$3,600
RR	0911-1	Replace Panels A, B, D, and X	New panels and feeders.	$163,000
C	0912-1	Provide lockable disconnects for equipment in boiler room	Add clips to existing circuit breakers.	$900
RR	0912-2	Replace contactors	Contactors, conduit, and wiring.	$2,600
RR	0921-1	Replace lighting system in high portion of main corridor	Light fixtures, conduit and wiring.	$12,000
E	0921-2	Replace lighting in low portion of main corridor	Light fixtures, conduit and wiring.	$14,000
RR	0921-3	Replace lighting at entries	Light fixtures, conduit and wiring.	$27,000
RR	0921-4	Replace lighting in trophy cases	Light fixtures, conduit and wiring.	$4,200
RR	0921-5	Replace classroom lighting	Light fixtures, conduit and wiring.	$163,000
E	0921-6	Replace lighting in main fan room	Light fixtures, conduit and wiring.	$1,200
RR	0921-7	Replace lighting in miscellaneous spaces 1956 and 1965	Light fixtures, conduit and wiring.	$13,000
E	0921-8	Replace lighting in miscellaneous spaces 1991	Light fixtures, conduit and wiring.	$11,000
C	0921-9	Supplement egress lighting	Emergency ballasts, fixtures, conduit and wiring	$10,000
RR	0921-10	Replace lighting controls	Switches, conduit and wiring	$22,000
RR	0931-1	Install surface raceways in classrooms	Raceways, conduit and wiring	$129,000
C	0931-2	Replace receptacles at sinks with ground fault protected devices	Receptacles, conduit and wiring.	$10,000
F	0931-3	Supplement corridor receptacles	Receptacles, conduit and wiring.	$5,500
F	0931-4	Supplement receptacles in miscellaneous spaces	Receptacles, conduit and wiring.	$14,000
C	0941-1	Replace fire alarm system	Fire alarm control panel and devices.	$80,000
RR	0942-1	Replace telephone system	Telephone backboards and outlets.	$50,000
F	0942-2	Develop media center	Telecommunications racks and cable tray	$38,000
RR	0942-3	Replace intercom system	Head-end equipment and speakers.	$81,000
F	0942-4	Install television system	Head-end equipment and outlets	$33,000

Cost Estimate Details

Type	ID #	Deficiency Title	Remedy Work	Cost
RR	0943-1	Replace security system	Head-end equipment and devices.	$70,000
RR	0945-1	Program Bell System	Remove and patch walls	$2,900
F	1018-1	Classroom Storage Deficiency	Provide new storage cabinets and shelving	$67,000
C	1018-2	Seismic bracing at Storage shelving	Provide seismic bracing	$400
F	1019-1	Bathroom at nurse's station	Add private ADA toilet room	$36,000

Summary of Construction Costs by Deficiency Type

Total Construction Cost of Renewal and Replacement Work	$3,883,100
Total Construction Cost of Renewal and Replacement Work - Utilizing Option 2 Remedies	$3,992,100
Total Construction Cost of Building Code Related Work	$679,200
Total Construction Cost of Energy Upgrade Work	$55,200
Total Construction Cost of Functional Upgrade Work	$625,400
Total Construction Cost of Hazardous Material Work	$68,600
Total Construction Cost of Hazardous Material Work - Utilizing Option 2 Remedies	$181,600
Maximum Construction Cost of Deficiency Work	**$5,533,500**

Please note a professional cost estimate was not completed as a part of the Condition Survey Report, and estimate figures are based on Consultant team research and experience on recent projects.
Estimated construction costs are escalated to Summer of 2006.