



Performance  
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# Performance Services

## BERLIN AREA SCHOOL DISTRICT

Facilities Assessment and  
Comprehensive Master Plan - Report Part 1  
August 24, 2022

SUBMITTED TO:

**Berlin Area School District**  
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Berlin, WI 54923



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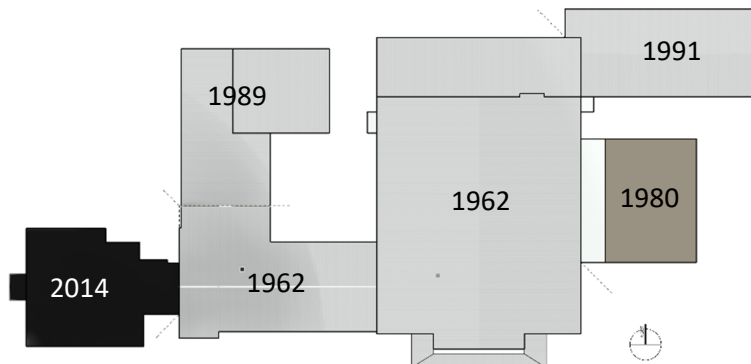
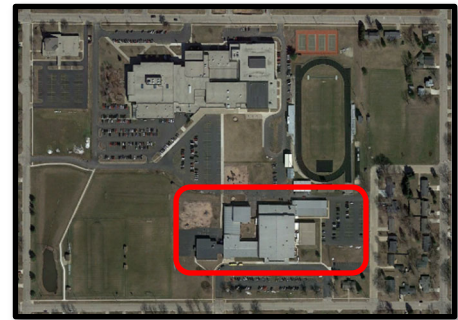
Energy Conservation Measures	Primary Benefit						ECM Category					
	Clay Lambertson Elementary School	Berlin High School	Berlin Middle School	BASD Business Office	BASD Maintenance Facilities	BASD Athletic Fields & Structures	Savings/Driver	Convenience/Maintenance	Capital Improvement	Comfort	Renewable/Educational	
LED Lighting and Occupancy Sensor	✓	✓	✓	✓	✓		✓	✓				Lighting
Outdoor Facilities Improvement								✓	✓			Exterior Work
Plumbing Retrofit	✓	✓	✓	✓			✓	✓	✓			Plumbing
High-Efficiency Boiler/HW Plant Upgrades	✓	✓	✓				✓	✓	✓	✓		Mechanical
High-Efficiency Chiller/CHW Plant Upgrades	N/A						✓	✓	✓	✓		Mechanical
Pumping Improvements	✓	✓	✓				✓	✓	✓	✓		Mechanical
DX Equipment (Packaged or Split) Improvements	✓	✓	✓	✓			✓	✓	✓	✓		Mechanical
Rooftop Unit Improvements	✓						✓	✓	✓	✓		Mechanical
Air Handling Equipment Improvements	✓	✓	✓	✓			✓	✓	✓	✓		Mechanical
Terminal Unit Improvements	✓	✓	✓				✓	✓	✓	✓		Mechanical
Classroom Learning Environments	✓	✓	✓				✓	✓	✓	✓		Mechanical
Replace Aging Controls System	✓	✓	✓				✓	✓	✓	✓		Controls
Domestic HW Heater Replacement	✓	✓	✓			✓	✓	✓	✓	✓		Mechanical
Improved Learning/Working Environment	✓	✓	✓	N/A	N/A	N/A			✓		✓	Behavioral
Interiors Renovation	✓	✓	✓	✓	✓	✓		✓	✓			Building
ADA Improvements	✓	✓	✓	✓	N/A	✓						
Roof Replacement	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		Building
Exterior Drainage	✓	✓	✓	✓	✓	✓	✓	✓	✓			Exterior Work
Paving/Concrete Work	✓	✓	✓	✓	✓	✓			✓			Exterior Work
Building Envelope Improvements (Windows)	✓	✓	✓	✓	✓	N/A	✓	✓	✓	✓		Building
Building Envelope Improvements (Walls)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		Building
Remote Learning Infrastructure	✓								✓		✓	Behavioral
Priority - Based on savings impact and/or customer input	Low	Medium	High									

## Clay Lamberton Elementary School



### Building Overview:

Clay Lamberton Elementary School is a 4K through 5<sup>th</sup>-grade facility located on a contiguous property with the Berlin area school district's middle school and high school. The original building was built in 1962 and housed the elementary school and two-story junior high school. In 1980 the natatorium was constructed east of the two-story junior high portion of the building. The first-grade wing was added to the north of the grade school in 1989, followed by the fifth-grade wing north of the natatorium in 1991. In 2014, the junior high school was moved to a new building, and a kindergarten wing was added to the west end of the facility.



**Building Evolution Diagram**

The building's location is surrounded by residential neighborhoods to the west, south, and east. Having a closely grouped campus allows for maximum efficiency for the Facilities and Grounds staff to effectively manage the district's buildings and grounds. The district's business office is also located just south and east of the paved parking lots servicing the elementary school. The Facilities and Grounds team practices diligence in maintaining the building's assemblies and HVAC equipment. In general, the Elementary School HVAC equipment and assemblies are mostly in good condition.

The district continues to perform regimented annual maintenance on systems, equipment, exterior facades, and interiors but also has a unique opportunity to replace existing systems with newer, more efficient technology and improve the learning environment by addressing some architectural features as well.

**Building's Highest Priorities**

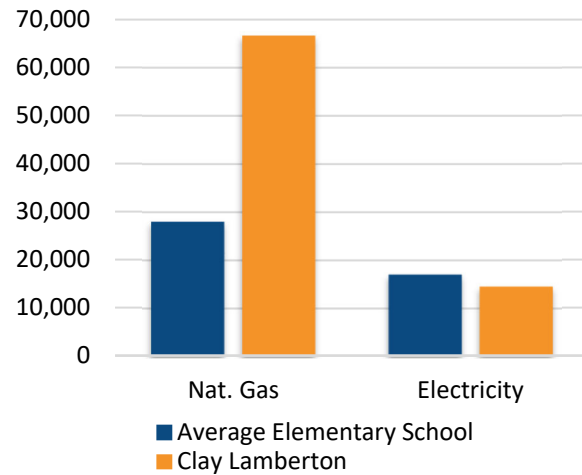
- 1) Site Paving
- 2) Sealant on Metal Roofing
- 3) Interior Finishes
- 4) Administration reconfiguration
- 5) Cooling
- 6) AHU/HRV Replacements

This summary of facility energy consumption and trends is for 2019 only. Due to COVID-19, electric and gas costs are assumed to be skewed for 2020 and 2021. The building performs with a total energy intensity usage of 81,147 BTU/SF. This is about what is anticipated for a high-performing Elementary School in the area.

**Building Performance:**

Building Area (approx.):	143,793 SF	
Annual Electric Cost:	\$60,725	\$0.42/SF
Annual Gas Cost:	\$11,041	\$0.08/SF
Total Utility Cost:	\$71,766	\$0.50/SF
Electric Usage Intensity:	14,488 BTU/SF	
Gas Usage Intensity:	66,659 BTU/SF	
Total Energy Intensity:	81,147 BTU/SF	

**Average Usage vs. Clay Lamberton ES (EUI)**



## Site Features & Improvements

### Existing Condition Assessment:

- **Concrete walks:** There are several locations where the concrete curb is deteriorated significantly (Figure Ext.1a & Ext. 1b). The curb has cracked and crumbled to a condition exposing the subgrade. This will eventually erode and begin to undermine the adjacent concrete walk causing pockets of instability.

This condition occurs in several locations on the south side of the building, which is the facility's main façade.

Some sections of the concrete sidewalk are significantly cracked (Figure Ext.2). These sections, if done properly, can be replaced separately, but full contiguous replacement provides a better solution with a longer life cycle.

Some of these deficiencies are being repaired in the summer of 2022, as seen in Figure Ext. 3.

- **Asphalt Paving:** The asphalt paving is in poor to fair condition. The heavily traveled portions of the paving have significant cracking (Figures Ext.4 – Ext.7).

The main drive aisle in front of the building has some locations that are cracked beyond filling and sealing the cracks. When the cracking in asphalt reaches the point where the cracks form pavement sections with small pieces resembling spiderwebs (Figures Ext.4 & Ext.5), the pieces will eventually dislodge and create potholes.

Note the curb deterioration at the north exit stoop in Figure Ext.6 is an additional concern contributing to the deterioration of the asphalt.



Figure Ext. 1a



Figure Ext. 1b



Figure Ext. 2



Figure Ext. 2



Figure Ext. 3



Figure Ext. 4

The Service drive on the north side of the building is in poor condition in several locations (Figure Ext.5 & Ext. 6). The cracks allow water to infiltrate the substrate. In this climate, the water freezes and heaves the asphalt making more cracks. The cold seams between section installations usually are the first cracks to form. One of the concerns with the extent of the north drive isle condition is that the asphalt will begin to dislodge, and the students running out to the playground surfaces will trip on potholes or loose pieces of asphalt.

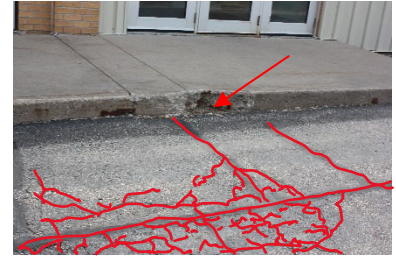


Figure Ext. 5

Sealing the cracks after they first form can slow the deterioration. Eventually, the sections of paving move through freeze-thaw cycles, and the crack gets wider making it more difficult to fill and maintain (Figure Ext.7).



Figure Ext. 6

- **Play Areas and Structures:** The play structures are in fair condition but are showing significant wear (Figure Ext.8 – Ext.10). These structures are dated, and many of the features are not particularly utilized by most of the students.



Figure Ext. 7

The hanging chain bridges are not usually included in today's playground systems. Static bridges are more common safety concerns.

Modern playground systems also integrate more vibrant colors with UV stable materials to prevent fading, as well as more interactive learning stations for Play & Learn functions. Additionally, it is becoming more popular to also create outdoor classroom environments to allow for open-air instruction.



Figure Ext. 8

Paint is faded, chipped, or worn on the older, outdated equipment (Figure Ext.10).

The wood chips implemented for the playing surface, although they may be certified, still provide difficulty in allowing wheelchair-bound individuals to navigate to the playground equipment (Figure Ext.10). Poured surfaces are becoming more popular; providing safer navigable surfaces that don't allow the surface pieces to spread away from the play area.



Figure Ext. 9

The outdoor basketball hoops at Clay Lamberton have some rusted and faded backboards; the goal posts are chipped, and the paint is fading. Most of the backboards do not have the shooter's square. There is also no striping at these hoop locations, which may be desirable for the older students interested in pursuing the sport in the future.



Figure Ext. 10

- **Perimeter Foundation & Drainage conditions:** In some places, particularly at the natatorium, the foundation insulation is exposed (Figure Ext.12). Ultraviolet light from the sun as well as lawn care equipment damage the insulation. This could potentially contribute to compromising the below-grade waterproofing.



Figure Ext. 11

Where the grade changes at the natatorium following a correctly constructed with a stepped brick ledge foundation (Figure Ext.13). The top of the waterproofing and insulation is exposed here as well.



Figure Ext. 12

On the north side of the building where the service drive is located, the asphalt runs right up to the face of the building. It is preferable to have a soft scape or landscape buffer at the perimeter of the building, but in this case, the edge of pavement is being used as part of the stormwater control system. The stormwater flow at the edge of the building has infiltrated below the asphalt and is undermining asphalt and deteriorating the grade at the edge of the wall (Figure Ext.14).



Figure Ext. 13

This condition occurs extensively along the edge of the building, as seen in Figure Ext.15, where the asphalt is sinking (Figure Ext.15).

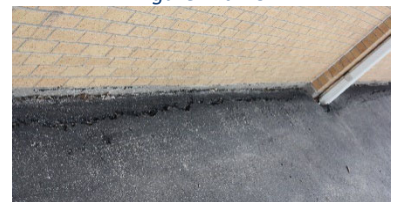


Figure Ext. 14

On the south side of the building, at a location where the lamb's tongue stormwater discharge leaves the building, landscape material is being pushed by the volume of water coming out of the outlet. A better discharge system may be desirable to prevent the displacement of landscape material.

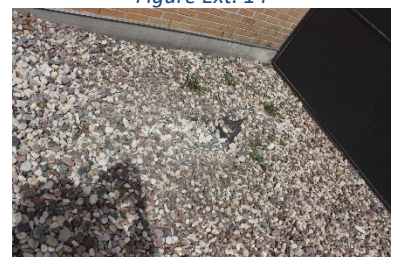


Figure Ext. 15

## Building Envelope Conditions

### Existing Condition Assessment:

- Exterior Openings:
- Exit 1: This door is a double-leaf with sidelights on each side of the door. The opening is in good condition and well protected by the canopy. The perimeter sealant is in good condition, and the continuous hinges will provide longevity to the door leaves and frame. Card reader access is available at this door.

A little rust is forming at the base of the metal frame at the door's hinges (Figure Ext.18). The rust will need to be mitigated before it progresses to keep the rust from spreading and to increase the lifespan of the door assembly.

- Main Exit/Entrance 2: This storefront type of assembly is the main controlled entrance for public access to the facility. The vestibule at the entrance is protected by the canopy (Figure Ext.19). Card reader access is also available at this door

Some gaps in the assembly may cause air infiltration. Sealing these with a caulk matching the frame color will prevent air leakage. The gaskets are in, and the existing sealants are in good condition.

- Exit/Entrance 3: Similar to the interior doors at the main entrance, this metal-framed double door has large sidelights and transoms. The canopy protects the opening, which increases the longevity of the seals and weather stripping. There are impact dents at the base of the door leaves and some rust forming at the bottom of the frames at the hinges (Figure Ext. 21). Card reader access is also available at this door.



Figure Ext. 16



Figure Ext. 17



Figure Ext. 18



Figure Ext. 19



Figure Ext. 20

- Exit/ Convenience 3.5: This door is convenient access to the natatorium (Figure Ext. 22). A hollow metal frame and the insulated flush door panel is in good condition with little rust and intact sealants and door sweep. This door is in better condition since it sees less use than other openings on the building. This door is not intended to be for public use, and no card access is not provided or necessary.



Figure Ext. 21

- Exit/Entrance 4: This hollow metal door has double full-lite leaves and is in good condition. Electronic card reader access is installed on this door as it is adjacent to the staff parking lot and provides public access to the natatorium. The weather-stripping sweep termination bar has a portion missing at the center mullion on both leaves (Figure Ext.23). The sealant at the frame perimeter is intact and functioning. The canopy here helps protect the opening from the elements.



Figure Ext. 22

- Exit/Entrance 5: This hollow metal door has double full-lite leaves and is in good condition. Electronic card reader access is installed on this door as it is adjacent to the staff parking lot. There is rust at the bottom of the door frame that needs attention to arrest the progression of rust (Figure Ext.24). The sealant at the frame perimeter is intact and functioning. The canopy here helps protect the opening from the elements.



Figure Ext. 23

- Exit/Receiving 6: This door has direct access to the main ground level mechanical spaces and facility storage/laundry. With a double leaf with an astragal, the doors can open to a larger opening to move equipment in and out of the building. The sealant around the frame is in good condition; however, there is rust at the bottom of the frames, and the sweep termination bar is loose (Figure Ext.25). In lieu of a canopy, this door is set back in an alcove to provide protection from the elements. Card reader access is also available for this door.

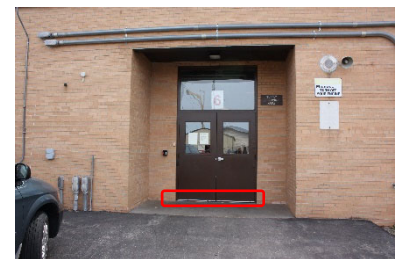


Figure Ext. 24

- Exit/Entrance 7: This door accesses the school through a vestibule and is adjacent to the kitchen. Additionally, there is a direct exterior access door to the kitchen on an adjacent wall (Figure Ext.26).

The steel plate above the opening is sagging (Figure Ext.27). This is a structural steel lintel that may appear to be sagging, but it could be due to rust jacking. When steel is compromised and exposed to water, it rusts. Advanced rusting will cause the steel to separate into stratified layers, becoming thicker and weaker at the same time. If this is what is causing the issue, this will need to be investigated to verify the cause soon. The sealant applied here may be causing the condition to worsen.



Figure Ext. 25



Figure Ext. 26

- Exit/Entrance 8: This set of aluminum framed full-lite doors is exit and access to the first-grade wing of the building. These are set into a metal panel-clad façade. One of the three doors has card reader access for security. There is a crack at the building edge of the stoop and some spalled concrete at the threshold (Figure Ext.28). This location also has a curb at most of the perimeter. The concrete is spalled in a few locations. This curb should also be painted with contrasting paint as a step warning and for the visually impaired (Figure Ext.28).



Figure Ext. 27

- Exit/Entrance 9: This metal framed door accesses the kindergarten wing and has an insulated metal half-lite door with a transom. The bottom of the frame is rusting some (Figure Est.29); however, the sweeps and the perimeter sealants are in good condition. The steel plate at the opening lintel is also showing signs of rust. The door head also has the proper flashing and weeps installed even though the door is set back into an alcove and doesn't usually require weeps in this condition.

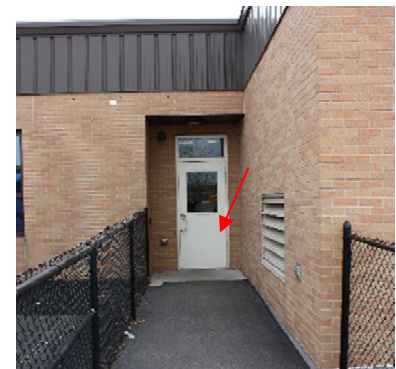


Figure Ext. 28

- Exit/Entrance 10: Accessing the west wing of the building, this exit not only has a canopy for weather protection but also provides ADA ramp compliance. The corner of one of the concrete steps is damaged (Figure Ext.30). The door opening assembly is newer and in all-around good condition. Sweeps gaskets and sealants are in good working order.



Figure Ext. 29

- Gym Exits: As exit access from the multipurpose room in the first-grade wing, these three openings are all double leaf doors with center mullions. These are exit-only doors; thus, there is no hardware on one of the sets of doors (Figure Ext.31). the sealants, seals, and sweeps are all in good condition as well.

The other two openings are identical and in good condition with cylinder locks and pulls on the exterior (Figures Ext.32 & Ext.33). Sealants, sweeps, and seals are in good condition. since these openings see little use and likely not much snow melt salt, they are in good all-around condition.

The concrete and asphalt at the door sill of all three openings are not flush. This is problematic as they likely can't qualify as an ADA exit from the multipurpose room. Making sure at least one, if not all, of these exits have accessible transitions to safety should be a priority.



Figure Ext. 30

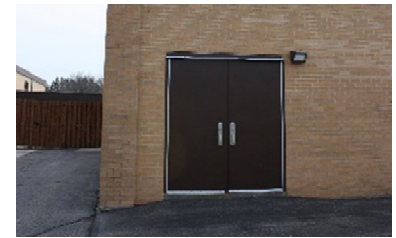


Figure Ext. 31

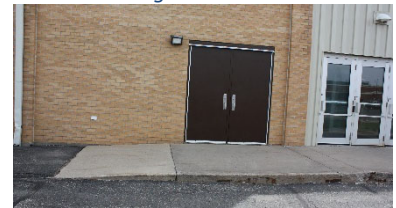


Figure Ext. 32

- Windows General Conditions:

- Window Type 1: This window is aluminum framed and has an operable panel (Figure Ext.34). The enclosures above and below the window assembly are smooth face panels. The panel is held in place with a baton screwed through the panel to the substrate (Figure Ext.35). Not all the panels have this baton installed. There are several locations where the sealant has been applied to the head of the fasteners at the baton and edge trim. There may have been an issue in the past where the fasteners were leaking, requiring action.



Figure Ext. 33



Figure Ext. 34

At the base of the panels are a gap that appears to act as a weep gap. Typically, a piece of flashing is installed at this location for moisture control. The panel is indicated to be below the floor line, which prevents the opportunity for water infiltration.



Figure Ext. 35

Another location with similar windows in the original building has brick above and below the window assembly (Figure Ext.37).



Figure Ext. 36

- Window Type 2: Like window type 1, this is also aluminum framed and has an operable panel (Figure Ext.34), except there is only one band of glazing instead of fixed lites over the operable below. The enclosures above and below the window assembly are smooth-face panels. The panel is held in place with a baton screwed through the panel to the substrate. There are several locations where the sealant has been applied to the head of the fasteners at the baton and edge trim. There may have been an issue in the past where the fasteners were leaking, requiring action. Some panels have significant scratches on the surface and are mainly found by the north drive aisle.



Figure Ext. 37

At the head of some of the window's calk has been installed at the flashing (Figure Ext.39). This may have been intended to mitigate some water

infiltration; however, the flashing at this location usually is the weep relief for the panel assembly.

The sealant at the edge of the windows is showing signs of fatigue, and the sealant at the glazing gaskets is failing (Fatigues Ext.40 -Ext. 42).

The failure of the seals will allow water to infiltrate the system (Figure Ext.41 & Ext.42).

Some of the double pane glazing panels are failing (Figure Ext.43). When moisture gets between the panes of glass, it will condense and cause deposits on the inside faces of the panes. This is an indication that the insulating feature of the glazing is compromised. It is possible to replace the sash or replace the glazing unit within the sash in lieu of replacing the entire window assembly.

The sealant around the window frame perimeters is in good condition (Figure Ext.44). At the base of at least one opening, where the metal panels meet the foundation at grade, the concrete is chipped and may prevent water from properly shedding away. Conditions like these could be patched.



Figure Ext. 38

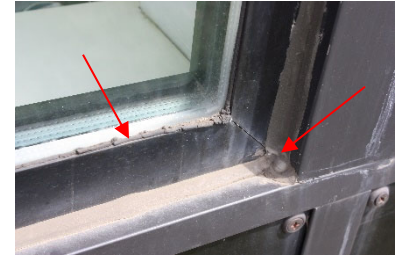


Figure Ext. 39



Figure Ext. 40

Figure Ext. 41



Figure Ext. 42



Figure Ext. 43

Figure Ext. 44

- Window Type 3: Similar configuration to window type 1. These windows are found in the newer portion of the building. They are aluminum framed and have an operable panel (Figure Ext.46) under both fixed glazing units. The enclosures above and below the window assembly are a similar smooth face panel.

The perimeter sealant around the windows is in good condition (Figure Ext.47).

Some of the insect screens have tears or holes in them.



Figure Ext. 45

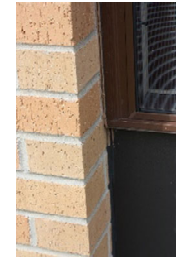


Figure Ext. 46

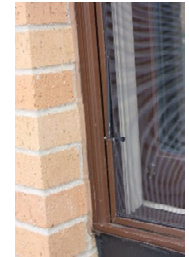


Figure Ext. 47

- Exterior wall conditions:

Most of the walls are similar in construction, having brick masonry and a cum back up. Only the original portion is a mass masonry type construction. The walls are accompanied by a panel at the top of the wall.

- Wall condition type 1: The brick walls are in good condition. No cracking, efflorescence, or spalling was observed during the survey visit. The mass masonry construction (Figure Ext.49) does not have weeps or vents installed, which is to be expected.



Figure Ext. 48

The metal panels are also in good condition (Figures Ext. 50 & Ext. 51), some of which were added when the roof was over-framed, and the pitched standing seam roofing was installed.



Figure Ext. 49

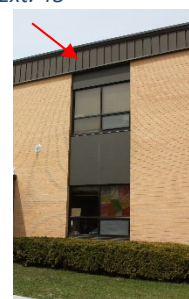


Figure Ext. 50

- Wall condition type 2: Masonry walls have been tuckpointed in various locations, repairing cracks in the mortar. Figure Ext. 52 shows another masonry assembly type which is a cavity wall. The wall has weeps installed at the base of the wall to allow any moisture that infiltrated the cavity to get out.



*Figure Ext. 51*

- Wall condition type 3: Other cavity wall assemblies that are also constructed as cavity masonry walls have tube weeps at the base of the wall (Figure Ext.53). These walls are in good condition and have been recently inspected.



*Figure Ext. 52*

- Wall condition type 4: This type of assembly is a metal panel. The metal panel is in good condition as well. No concerns were observed during the survey visit.



*Figure Ext. 53*

- Wall accessories:
  
- Masonry Weeps & Vents: Not all of the wall systems have weeps. The original portion of the building weeps below the bottom course of brick. Where weeps are installed and appear to be in working order as no major issues were observed with the wall systems. Inoperable weeps usually can cause efflorescence on the face of masonry as well as spalling brick faces when moisture is trapped in the brick.
  
- Flashing: Through wall flashing is in place where it has been installed as part of the wall assembly (Figures Ext. 56 & Ext. 57).
  
- Building Expansion Assemblies: The control joints in the masonry have been maintained, and they are functioning properly (Figures Ext. 58 & Ext. 59). There has been maintenance recently completed in the last few years on some of the joints.



Figure Ext. 54



Figure Ext. 55



Figure Ext. 56

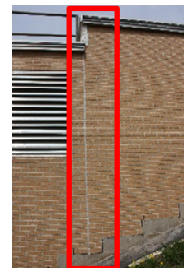


Figure Ext. 57

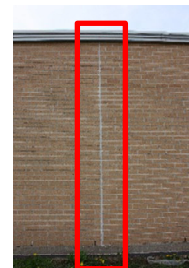


Figure Ext. 58

The control joints need to remain soft and pliable. It is recommended to inspect joint installations 5 years after installation to verify the adhesion to the substrate is intact and to see if ultraviolet light from the sun isn't breaking down the sealant. Figure Ext. 60 shows not only the proper installation of a control joint but also the contractor's attention to detail by applying fine aggregate to the uncured sealant to imitate the mortar joints.

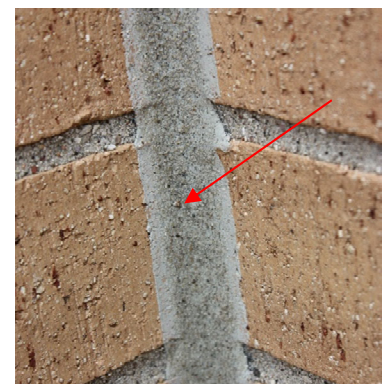


Figure Ext. 59

Control joint placement is also important. Figure Ext. 61 & Ext. 62 indicate proper placement of the joints at masonry openings and changes in masonry configuration.

Very few construction joints were observed to need additional attention, but it is recommended to verify that no installations were missed during the recent maintenance efforts.



Figure Ext. 60



Figure Ext. 61

- Metal Wall Panel:

- Metal Wall Panels: The ribbed metal wall panel at the first-grade wing addition (Figure Ext.63). The metal panel is in good condition despite the slight fading of the finish.

The other ribbed metal panels are installed as a fascia trim at the top of the masonry walls (Figure Ext.64) and color-coordinated with the smooth panels at the windows.



Figure Ext. 62

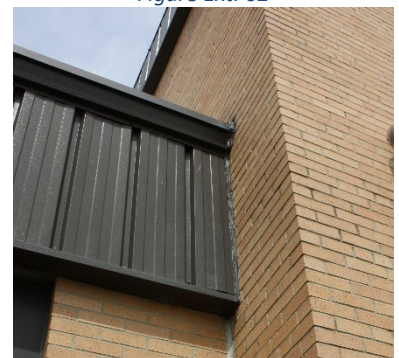


Figure Ext. 63

- Roofing:

- General Roofing condition: The original flat roof on the building was over-framed (Figure Ext.66) and roofed with a galvanized standing seam installation (Figure Ext.65) sometime after the first-grade wing was constructed in 1989.

The standing seam assemblies are in fair to good condition. Where the roof was over-framed, and the metal roof is fastened directly to the framing (Figure Ext.66). Navigating the roof takes a great deal of caution as there is no sheathing or substrate. There is a potential to cause leaks at the fasteners when maintenance is required on the rooftop equipment.



Figure Ext. 64



Figure Ext. 65

The kindergarten wing has a fully adhered EDPM Membrane roofing installation (Figure Ext.67). This is the newest roof covering and has no current issues.



Figure Ext. 66

The natatorium has a ballasted membrane roofing system (Figure Ext. 68). Ballasted systems use stone to hold the loose laid membrane. This roof covering appears to be in good condition as well.



Figure Ext. 67

The service and connecting portion of the natatorium has a replacement PVC roof covering, as well as the nearby entrance #4 that serves the public access to the natatorium. These are fully adhered systems, except for the vertical portion of the flashing does not appear to be adhered and relies solely on the termination bare for support (Figure Ext. 69A). There is also some ponding on the natatorium connector's roof (Figure Ext. 69B). This may not be alarming yet but should be something to keep an eye on to make sure a leak does not form.

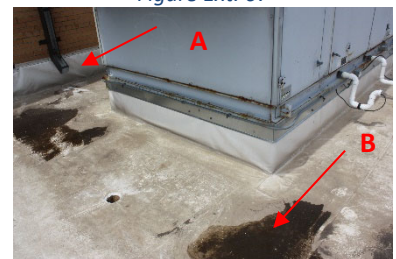


Figure Ext. 68

■ Roof Section Types & Ages:

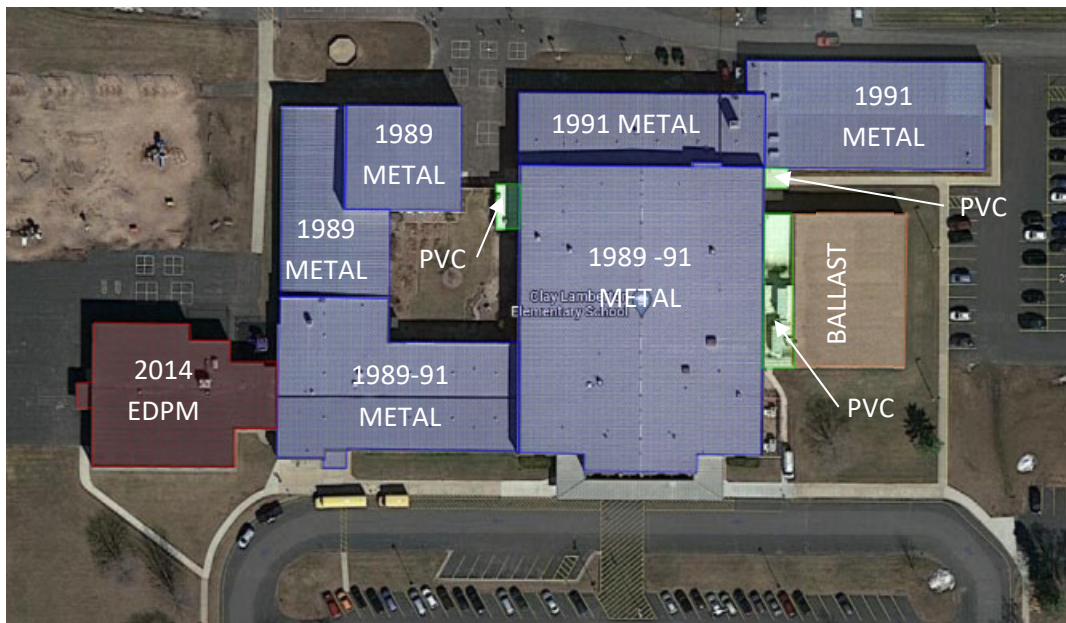


Figure Ext. 69

■ Roof Penetrations: Roof Penetrations are generally flashed for openings such as roof hatches and mechanical, electrical, and plumbing equipment.



Figure Ext. 70

Figure Ext. 72 also identifies a mechanical penetration for a roof vent that has exposed fasteners. Some of the fasteners are showing signs of corrosion, and the gasketing washers may also be nearing serviceability. There are several locations where these types of fasteners have been covered with sealant. The sealant around the penetrations is crudely placed in many locations (Figure Ext.73). If the sealant stays watertight, the craftsmanship may not be important. However, shingle-shedding type installations hold up better than deploying copious amounts of sealant to prevent water infiltration.

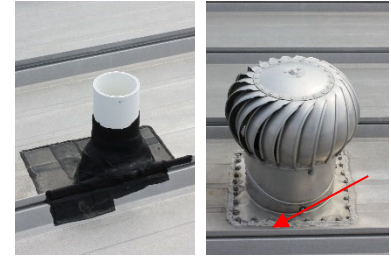


Figure Ext. 71



Figure Ext. 72

- **Roof Over-Framing:** As mentioned previously, the original school roofs were over-framed to deploy a standing seam metal roof as installed on the 1989 and 1991 additions to the building. The roof over the main portion of the first floor has an inverted slope with a built-in gutter in the center. Whereas the two-story portion has a traditional gable slope to the framing. There is a degree of ventilation required for this installation. The other apparent concern is the installed batt insulation above the original roof. If the insulation gets wet from a roof leak, there is a potential for mold cultivation if the moisture does not get removed by the installed ventilation. Further evaluation is recommended to verify the installed ventilation is adequate.



Figure Ext. 73

- **Flashings:** At several locations, the sealant installed in conjunction with the flashing has begun to deteriorate and crack (Figure Ext. 75). This condition will eventually leak, but mostly where wind-driven rain hits the building.

There are locations where the flashing and coping connections have several different types of sealants installed (Figure Ext.76). This indicates there have been issues with leaking at these locations. The exposed fasteners can also be a potential leak hazard in the future.



Figure Ext. 74

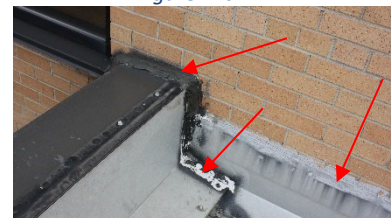


Figure Ext. 75

Most of the flashing on the metal roof cover on the over-framed portion has a termination bar condition with sealant at the top of the bar (Figure Ext.77).

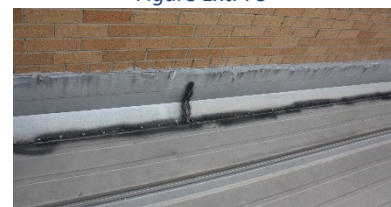


Figure Ext. 76

- **Parapet Copings:** the largest concern with the coping installations on the metal roof conditions is the exposed fasteners on the top of the copings (Figures Ext. 78, Ext. 79, & Ext. 80). Several different preventative measures have been installed to combat leaking at these coping caps.

Coping caps are better served vertical fasteners if exposed fasteners are used (Figures Ext.78, Ext.79, & Ext.80). The top piece of flashing could have been installed with a cleat on the back sides of each installation and have a better chance of water tightness.

The vertical end flashings at the high ends of the sloped are coped over the seams and ribs (Figure Ext.81). Some of the sealant at these locations is a blind condition behind the flashing. It appears some of these are drying out. The sealant in other similar locations that have been applied after the original installation is also drying out and cracking (Figure ext. 82). This sealant is brittle. It will eventually fall out or off, creating an open gap. The high point portions of the roof have a smaller likelihood of leaking than the low points; however, wind-driven rain can penetrate these conditions.

- **Roof Drainage Components:** As mentioned before, the lower roof on the original elementary building has an inverted slope that drains everything to a central building in a gutter (Figures Ext. 83, Ext.84, & Ext.85). This gutter system was connected to the vertical conductors at the original roof drains or overflow system.

At the lamb's tongue outlet (Figure Ext.86), located at the southwest corner of the original building, A steady volume of water is discharged

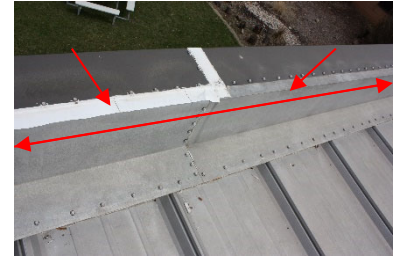


Figure Ext. 77



Figure Ext. 78

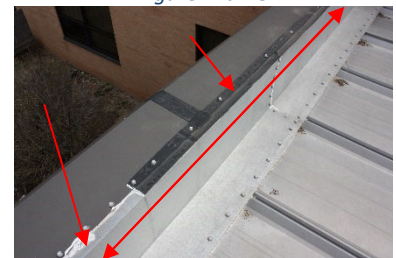


Figure Ext. 79



Figure Ext. 80



Figure Ext. 81



Figure Ext. 82



Figure Ext. 83

here during rain events. This indicates the integrated gutter is connected to this outlet, and the attributing area for this discharge is the first-floor section of the original building. As mentioned before in the site drainage portion of this report (Figure Ext.16), the force at which the stormwater exits this discharge point hits the river rock in the landscaping bed at a velocity great enough to displace the stones.

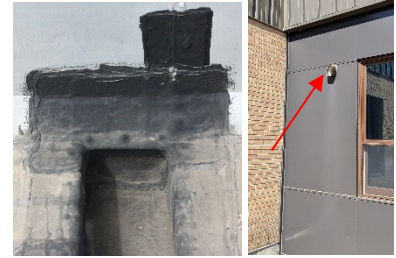


Figure Ext. 84

Gutters are deployed at the metal roofing installations (Figures Ext. 86 & Ext.87). Most of the conductor's discharge via downspouts is discussed later in this report.



Figure Ext. 85

Heat trace elements are installed in several of the gutters (Figure Ext.87). This indicates an issue with ice forming at the gutters. These are installed to melt any ice that forms in the gutter to prevent ice dams and dangerous snow and ice buildup from sliding off the roof.



Figure Ext. 86

Figure Ext. 88 also shows a built-in gutter (Figure Ext.88). this one is placed inside the original parapet at the low point of the roof slope. This particular built-in gutter is harder to maintain from below the over-framed roof system as it is likely very tight quarters in the attic space. Maintenance may be difficult as leaks will be harder to determine.

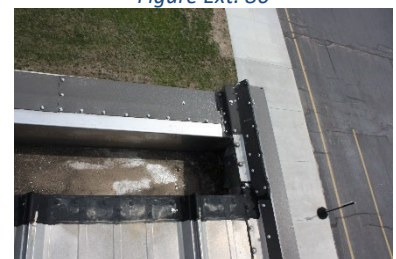


Figure Ext. 87

There are a few locations where downspouts discharge onto the metal roof below (Figures Ext.89 & Ext.90). There are no logistical concerns with these discharge points as long as the final gutters and conductors can adequately handle the stormwater volumes. Further analysis may be recommended if verification is desirable.

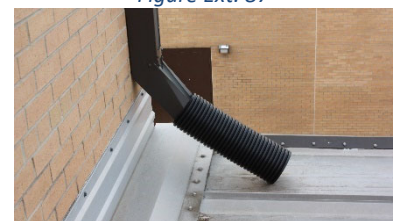


Figure Ext. 88

At the location depicted in Figure Ext.90, the discharge piece of the downspout was split to lay flat. However, this splits over a seam and is not an ideal condition.



Figure Ext. 89

- Roof Access Components:** The original building has a roof hatch both at the single-story and the two-story portions of the building. The hatches have been installed, penetrating the attic spaces created when the over-framed roof was installed (Figure Ext. 91 & Ext. 92). The attic spaces are directly accessible as navigation to the roof occurs.



Figure Ext. 90

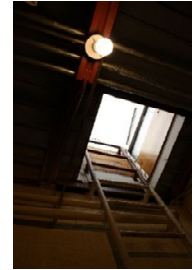


Figure Ext. 91

The roof hatches are located in Figure Ext. 94 by the circled areas. The hatches do not have safety navigation assistance integrated with the hatch making it difficult to transfer from the hatch to the roof surface (Figure Ext. 92).



Figure Ext. 92

There is at least one safety tie-off davit located on the roof (Figure Ext.93). These are important for maintenance or repair work to be done on roofs that have equipment close to the roof edge or if the roof has the potential of being slippery if the roof is wet.

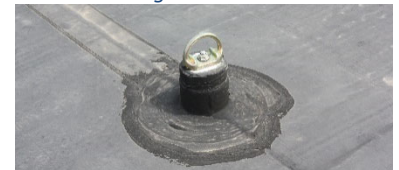


Figure Ext. 93

The orange highlighted roofs in Figure Ext.94 are roofs that have no direct access. These roofs require an extension ladder from the ground or from another roof to gain access. The ground to natatorium connector roof is not as dangerous as needing the ladder to access the first-grade classroom wing multipurpose/Gym Roof.

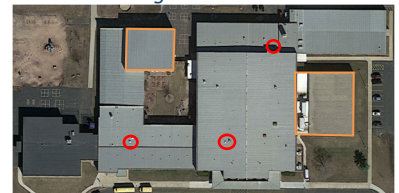


Figure Ext. 94

- Canopies:** The main south canopies have steel supports (Figure Ext.95), and some of the other canopies have brick masonry piers (Figure Et.96).

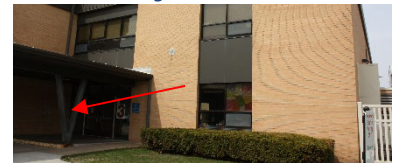


Figure Ext. 95



Figure Ext. 96

The soffit of the canopies is a metal panel to resemble a tongue and groove type appearance (Figure Ext.97).

The main canopy at the front of the building has slanted 'I' shaped steel posts. The posts have significant amounts of rust forming on the base

plate and bottom of the column (Figure Ext. 98). This is due to the years of applying salt to melt ice on the sidewalks.

Other canopies that have a square tube steel column (Figure Ext.99) have the base plate concealed below the sidewalk. The bottom of this column is also rusted.

There are horizontal supports that extend out from beneath the canopy. There is no rust observed on this, but they also do not see the salt that the columns to. There is, however, discoloration that is washing down the face of the brick from these beams.



Figure Ext. 97



Figure Ext. 98

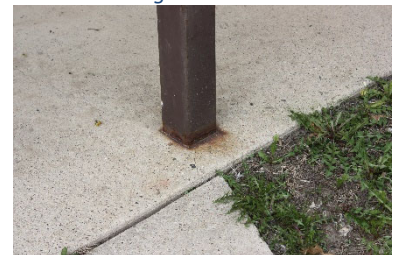


Figure Ext. 99

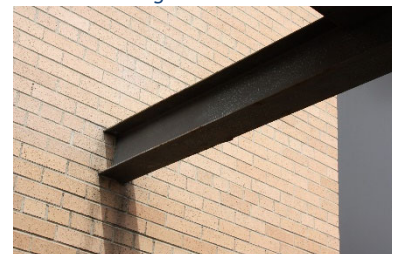


Figure Ext. 100

### ***Proposed Exterior Solutions & Benefits:***

- **Exit Doors:** Where there is rust on the metal frames, consider removing the loose paint and rust, prime, and repaint. This is not an immediate concern but eventually needs to be taken care of. After winter has subsided, it is good practice to rinse down wall and door assemblies that may have come in contact with snow melting salt.
- **Windows General Conditions:** Consider repairing the glazing units that have panels that have or are failing to increase the integrity and thermal performance. Continue to inspect the window openings and maintain the perimeter sealants. It is recommended to eventually replace the non-thermally broken windows with completely thermally broken energy-efficient window systems.
- **Roofing:** The installed sealants on the standing seam metal roofs need to be fully inspected to verify their integrity. The exposed fasteners also should be inspected to verify the gasket or washers are still actively sealing around the fasteners. A future capital improvement project could be the replacement of the roof system to include a sheathing to provide more stability to the roof system.
- **Canopy Assemblies:** The rust should be mechanically removed with wire brushes and the steel primed and repainted to arrest the progression of the rusting. Consider lighting cleaning the brick masonry faces under the beam connection to the wall.
- **Roofing Accessories:**
  - Flashings:** The flashings also need to be inspected and resealed in some locations. Consider replacing the flashing against masonry walls with a reglet style counterflashing for added protection.
  - Drainage Components:** The external gutters and downspouts do not need immediate maintenance. Consider altering the downspout on the roof where the outfall is split around a roofing seam. The built-in gutter systems have a more critical concern. If this leaks, it can cause more issues and be harder to detect as they are in the attic spaces. These need to be inspected more often. If these reroofing systems are ever replaced, it is recommended to reconfigure these to not be built in.
- **Control Joints:** Continue to inspect the control joints on an annual to bi-annual basis on the older portions of the facility. The newest kindergarten wing can differ inspections until it reaches ten years old.
- **Walls:**
  - Masonry Walls:** Facade work has been completed over the last five years. Facade inspections are recommended every five years for masonry over 25 years old. For masonry construction that also has masonry backup walls, the interior walls also are inspected, especially where large cracks are discovered on the exterior.
  - Metal Panel Assemblies:** No immediate actions are expected currently. The metal panel wall assemblies could also be on the same inspection cycle as the adjacent masonry walls. The sealant at the fastener heads could be replaced by removing the fastener and replacing the washers with neoprene washers that remain soft for a better seal.

- Paving and lots:

Asphalt: Portions of the asphalt need replacing. Replacing the worst sections can defer a full lot replacement for some time.

Concrete: Repair the concrete installations that are very deteriorated, and the sections of the concrete walk are cracked. The crumbling stoop edges can be patched with concrete with epoxy additives. Another option would be to replace these portions of concrete. The stoops and sections that get exposed to snow-melting salts can use concrete with additives that are more chemical resistant.
- Perimeter drainage: At the drive isle the downspouts that are connected to the underground conductors, it is recommended to remove the pavement along the edge to inspect the underground drainage system. The paving is getting undermined by storm water leaking under the paving. Once the drainage conductors are repaired, a softscape or mulch bead will be more conducive along the building wall. This could be a narrow strip at 8" -12" wide. Consider adding landscaping where the foundation insulation is currently exposed to cover and protect it.
- Playgrounds: The playground equipment is recommended for replacement with more modern and vibrant installations. Replacing the outdated and faded equipment with newer, more interactive pieces will provide a more exciting environment for the students. The wood chip play surface could be replaced with pourable recycled rubber surfaces for a safer and more accessible playground. Replace the basketball backboards with new ones. Consider replacing one or two goal posts with adjustable goalposts to accommodate the younger students.

## Interior Spaces & Finishes

### **Existing Condition Assessment:**

- **Ceilings General:** The ceilings in corridors and common spaces are typically 2x4 acoustical tile ceilings.

There are some locations observed to have staining on the ceiling tile surface, indicating it had been wet at some point in time (Figures Int. 2 & Int. 4). This could be from a roof leak or a leak in a piece of mechanical equipment. It does not necessarily mean there is an active leak, only that a leak had occurred and may have already been rectified. These conditions should be investigated to verify that there are no active leaks.

There are a few isolated locations where the ceiling tiles are out of place and sagging down. These tiles will need to be replaced as the sagging will not straighten out by simply putting the tile back in place.

Where darker stains are present near penetrations (Figure Int.4), it is a bigger concern to remove the tile and replace as well as verify that no active leak is present.

There are ceiling tiles in locations where tiles that have been in place for some time and they are sagging in the center of the tile and curling upward at the corners. This is a prevalent condition where 2x4 tiles are in a building that does not have air conditioning that would remove humidity from the air. Humid air condenses in the ceiling tiles, and over time the center is weighted down, causing this condition.



Figure Int. 1



Figure Int. 2

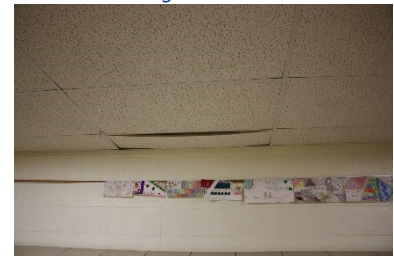


Figure Int. 3

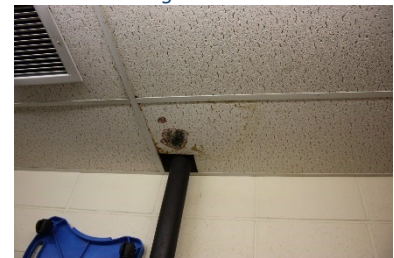


Figure Int. 4



Figure Int. 5

- **Floors General:** The flooring in the corridors has isolated locations with movement cracks. Indicating some building movement over time. Many of the cracks are in straight lines, but others are not (Figure Int.9).

The cracks are being telegraphed through floor coverings but originate in the concrete slab substrate. This typically happens where a building slab settles or movement through horizontal sliding occurs. Most building slabs need control joints placed when constructed.

Good locations for control joints are between major building transitions or planned changes in the flooring. Figure Int. 8 the change in flooring.

Some cracks do not occur in a straight line, and these are much harder to repair, especially when the crack occurs in a homogenous floor installation (Figure Int.9).



Figure Int. 6



Figure Int. 7



Figure Int. 8

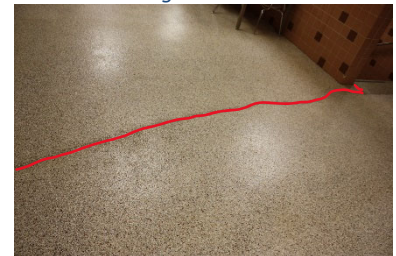


Figure Int. 9

- **Walls General:** In the corridors, the walls are CMU with a ceramic tile wainscot. The ceramic tile is from the original building construction. It is mostly in good condition but is outdated.

Some tiles are chipped or cracked depending on location and conditions (Figure Int.11). At corners, wall coverings are susceptible to impacts, particularly from machinery.

At the stairwell, the half wall is a safety concern as it is open on two sides (Figure Int.12). A full enclosure would provide additional safety but require additional lighting to make sure the staircase is not too dark.

The hard surfaces do not allow for easy installation of decor or educational material. Decorating on a ceramic tile surface is more permanent (Figure Int.13).

There are locations there are cracks, at least in the grout lines of the ceramic tiles (Figure Int.14).

In Figure Int.15, shelves and coat hooks are installed in the corridor. These were not observed to be fully utilized.

There are locations with cracks in the CMU (Figures Int.16 Int.17). Some of these cracks are quite extensive and need to be evaluated to verify there is no compromise of structural integrity.



Figure Int. 10



Figure Int. 11

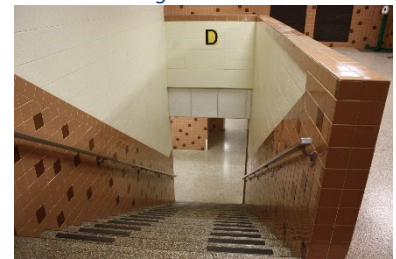


Figure Int. 12

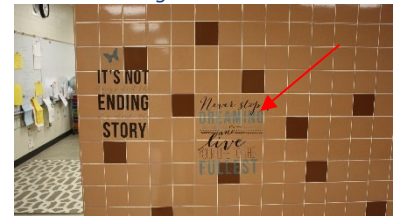


Figure Int. 13



Figure Int. 14

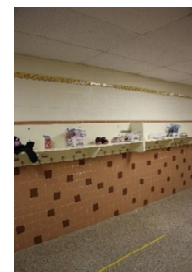


Figure Int. 15



Figure Int. 16



Figure Int. 17

- Classroom General Condition:

- Classroom Doors: The classroom doors are in fair to good condition. Doors in the original school have some faded finishes making them appear dirty in spots. Typically, the veneer on these types of doors gets damaged, and some of the doors have damaged veneer. Some doors have kick plates that have protected the bottom of doors from getting more damage than they currently have.

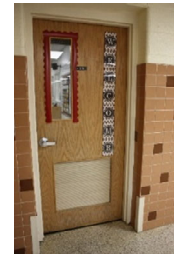


Figure Int. 18

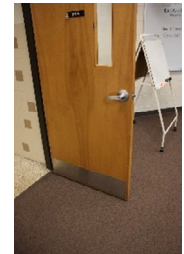


Figure Int. 19

- Classroom Ceilings: The ceilings in the classrooms are typically 2x4 ceiling tiles (Figure Int.20). Like the corridors, the oldest portions of the building have some tiles that are sagging in the middle, and there are tiles with damage and stains (Figure Int.20).

In the newest addition to the building, ceiling tiles are 2x2 ceiling tiles. 2x2 tiles have a longer life cycle as the surface area is smaller than 2x4 tiles. This lengthens the time that the humidity and gravity affect the ceiling tile, making them sag at a much slower rate.



Figure Int. 20

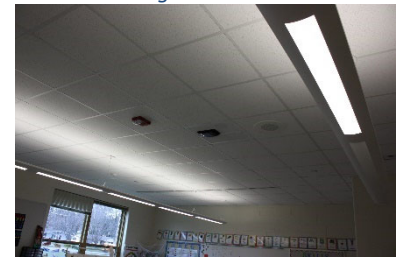


Figure Int. 21

- Classroom Floors: Some of the newer classroom flooring installations are large format Luxury vinyl tiles (Figure Int.22). these floors are in good condition and have no immediate concerns.

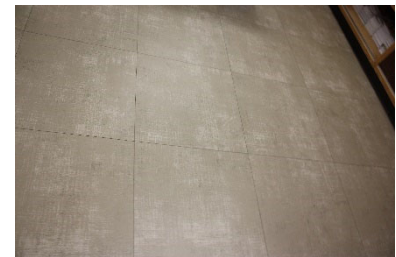


Figure Int. 22

There are classrooms with a homogenous resilient epoxy floor system installed (Figure Int.23). These are typically a good application for a classroom; however, the product or installation method has not lived up to the typical standards. The topcoat appears to be too thin, and the finish is wearing too quickly. These types of floor systems also need the control joints to be planned for. If done properly, an epoxy floor will reduce maintenance costs and be very durable.



Figure Int. 23

There are sheet carpet floor coverings in some classrooms as well (Figure Int.24). carpet is appropriate for elementary school environments as it offers a softer surface for the younger students.

The carpet does have the potential of getting stained and damaged from extensive use (Figures Int.25 & Int.26). Once this happens, large sections or the entire installation will need to be replaced to mitigate damage.

Sheet carpet in the commercial industry has been replaced with carpet tiles with new technology, making them much more resistant to damage and staining. This also allows individual tiles to be replaced in lieu of the entire floor covering, dramatically reducing maintenance costs.

- Classroom Walls: The majority of the classroom walls are painted CMU. This is a resilient wall type and typically only needs repainting occasionally. There are locations with cracks in the mortar joint that are not necessarily alarming but could but filled before the next painting cycle.

There are also gypsum board walls in various locations (Figure Int. 28). They are in good condition but certainly need to be inspected for damage more often than CMU walls.



Figure Int. 24



Figure Int. 25

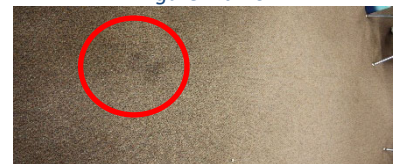


Figure Int. 26

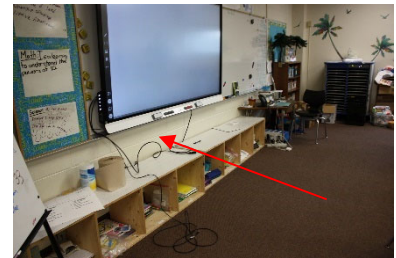


Figure Int. 27



Figure Int. 28

- Casework:** There are open shelves in some of the classrooms allowing for deployment of storage totes and book storage (Figure Int.29). These are plastic laminate and appear to be in relatively good condition. The caveat of open shelving is that the contents cannot be secured, limiting what can be stored on the shelves. Although the benefit is no moving parts to require maintenance.



Figure Int. 29

The older casework has laminated tops and peg board style sliding doors (Figure Int.30). These are in fair condition but are starting to show their ages. These pieces of casework are also not lockable, limiting the capacity of securing education items.



Figure Int. 30

In newer classrooms, plastic laminate wall-mounted casework is in good condition, and the cubby style lower tote storage. The use of the upper cabinets in this situation can allow the instructor to secure some materials from students' reach that may be sensitive for unsupervised access.



Figure Int. 31

The other casework configuration is plastic laminate upper cabinets and lower cabinets located in several rooms. The cabinets are in good condition; however, there are locations with chipped veneer. These are also not lockable, which may be desirable in the future to secure equipment and materials.



Figure Int. 32

There did not seem to be any wardrobe casework in the classrooms. These are desirable to allow staff to secure their personal items in the room and not need to store items in a workroom or faculty lounge.

- Classroom Furnishings:** Most classrooms are equipped with individual desks for the students (Figure Int.33). The desks are in good condition and allow for student storage below the desktop.



Figure Int. 33

Some classroom spaces have larger tables for more collaborative interaction for the students (Figure Int. 34). This is limited to a few rooms but is generally available. The tables and chairs are in relatively good condition.



Figure Int. 34

- **Technology:** All the classrooms have been upgraded and fitted with multimedia touch screen smart panels.

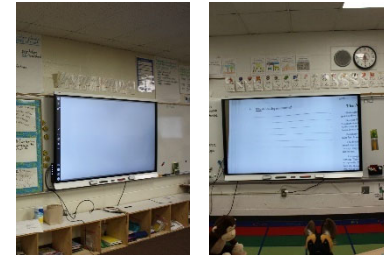


Figure Int. 35

- **Restrooms:** The restrooms are outdated with individual sinks and manual control faucets (Figure Int.36). Manual controls allow water waste if the students leave the faucet running after use. These types of controls also provide multiple surfaces that can potentially contribute to the spread of bacteria and viruses.

The mosaic tile floor (Figure Int.36) can be problematic for maintenance as the grout can absorb and trap fluids and collect dirt easily, especially older grouts that do not contain epoxy additives. These conditions will, in turn, cause odors to persist in the spaces.

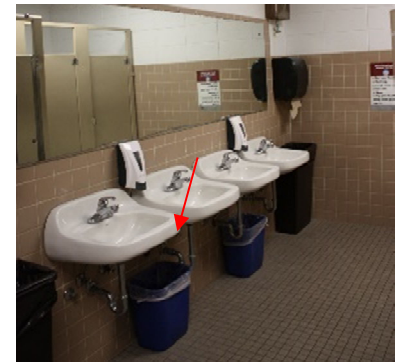


Figure Int. 36

There is old, abandoned equipment in some of the restrooms that could be removed.



Figure Int. 37

The urinals are floor mounted and, in some cases, have a gang flush function, likely on a timer (Figure Int.38). This is another example of where water waste can be improved upon.

The floor around the urinals is a very stained terrazzo.



Figure Int. 38

The urinals do not have privacy screens as a modern restroom would have.

The water closets also have manual flush valves. Automatic touch valves could reduce water usage, prevent unflushed conditions and limit surfaces to touch, reducing the spread of bacteria and viruses.

There are some Full ADA-compliant toilet stalls (Figure Int.40), but most of the facilities only have ambulatory stalls available (Figure Int.41). This is quite typical of older buildings.

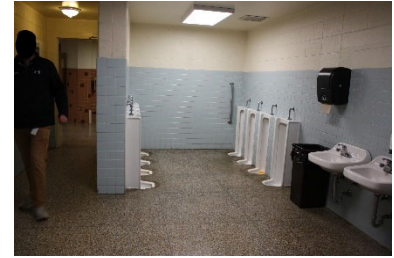


Figure Int. 39



Figure Int. 40

Figure Int. 41

- Kitchen: The kitchen functions well. The main cooking island has an exhaust hood (Figure Int.42).

The kitchen staff restroom is small and not ADA compliant. There is not adequate locker storage for the kitchen staff to keep belongings.



Figure Int. 42

The work surfaces are all stainless steel, in good condition, and appear to be health code compliant.



Figure Int. 43

There is a separate dish return that allows for the kitchen and cleaning to operate simultaneously.

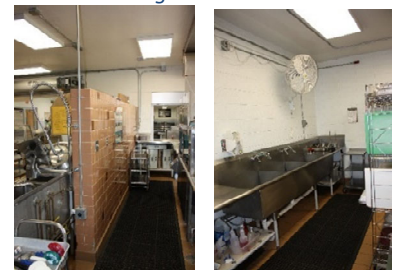


Figure Int. 44

Figure Int. 45

The serving lines are positioned to allow food service without requiring students to enter the kitchen (Figure Int.46).



Figure Int. 46

The floor is a quarry tile floor that is very common in school kitchens of this vintage. There is a crack through the tile in one location on the floor (Figure Int.47).

The dry storage area has a window-style air conditioner to attempt to control humidity and temperature within the space. There also is a desire for additional cooler/freezer space for the kitchen.



Figure Int. 47

- Cafeteria: The dining area of the cafeteria is tight (Figure Int.48 & Int.49). This requires six lunch periods to get all the students through the lunch program.

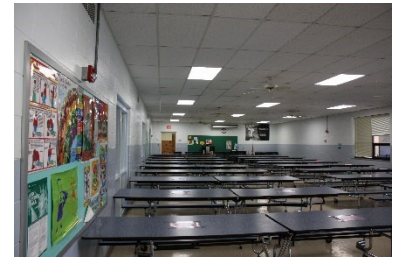


Figure Int. 48

Tape arrows are placed on the VCT flooring for traffic direction (Figure Int.50). This could potentially be a permanent strip added before refinishing.

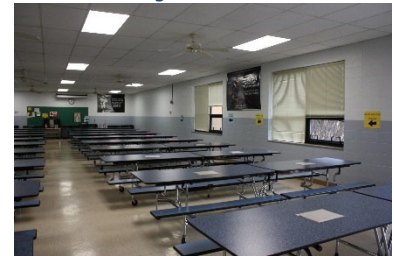


Figure Int. 49

The VCT (Vinyl Composite Tile) flooring itself is beginning to shrink and separate at the joints. In nonfood spaces, this is less of a concern except for aesthetics. In areas where food is served, you would want to have minimal opportunity for dirt and food particles to get ground into the gaps on the floor.



Figure Int. 50

There is a sliding patio door located in the cafeteria, which is the only access from inside the building that leads to the courtyard. The threshold is not ADA Compliant, so a wheelchair-bound individual would need to access the courtyard from the exterior fence gate. The sliding door is not used as the courtyard is reportedly not used very much. The door is opened to allow the natural venting of warm air from the space.

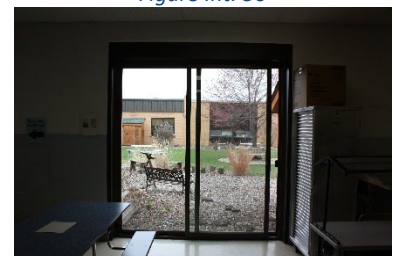


Figure Int. 51

- Multipurpose /Conference:** This space is a long rectangular-shaped space and is used as a conference room and meeting space, often by the school district administration. It is not set up to function well for large meetings and does not have dividers for conducting smaller simultaneous meetings.



Figure Int. 52

The space has sheet carpeting in good condition; however, if a tear or stain should occur, the entire floor will need replacing. Carpet tile would prevent this requirement upon damage discovery.

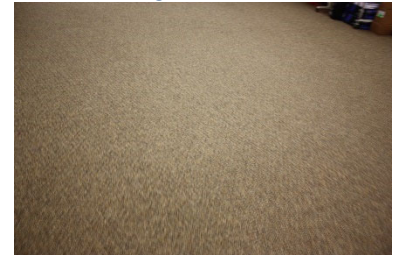


Figure Int. 53

The walls are CMU with protruding block patterns to assist in acoustical quality. They help a little, but the room seems a little more live than it should be.

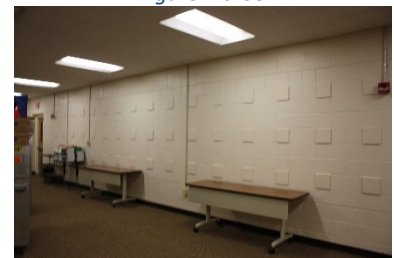


Figure Int. 54

The ceiling is a 2x4 acoustical ceiling (Figure Int.55), and there are some stains resulting from some sort of leak. There are also various scars from tile damage during some process of hanging objects.



Figure Int. 55

- Drinking Fountains:** There are several different kinds of drinking fountains in the facility, including modern chilled water electric coolers and, original to the building, porcelain un-cooled drinking fountains (Figure Int. 56)



Figure Int. 56

Some are flush mounted, and some are also recessed into the wall (Figure Int.57). the older drinking fountains do not have a touchless bottle filler associated with them.



Figure Int. 57

The newer wing of the building does have drinking fountains with bottle filling stations. In other locations, the drinking fountain has been replaced

with bottle filling station/drinking fountain combination units (Figures Int.59 & Int.60).

Replacing the older uncooled drinking fountains with new bottle filling stations could assist in the reduction of spreading bacteria and viruses.



Figure Int. 58



Figure Int. 59



Figure Int. 60

- Gymnasium: The gymnasium flooring is natural wood in pretty good condition (Figure Int.61) with a few scratches and scuffs. The bleachers have been replaced with telescoping bleachers containing accessible spectator capabilities.

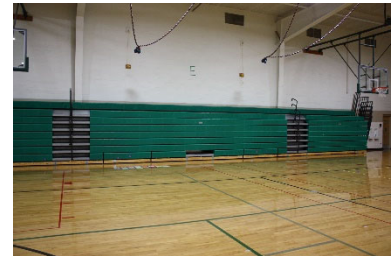


Figure Int. 61

The lighting in the gym read at 38 Foot Candles which is right at the center of the recommended range of 30-50FC



Figure Int. 62

The gym doubles as a performance space; however, the stage is not currently used and requires the deployment of portable risers for choral productions.



Figure Int. 63

- Locker rooms: There are newer lockers in the boy's locker room (Figure Int.64) but not in the girl's locker room (Figure Int.65). The original wood benches are still in both locker rooms, and the finish is very worn.

The floors are terrazzo in the main locker areas and showers.



Figure Int. 64

In the changing/locker rooms of the pool, there are two-tier units and much fewer of them (Figure Int.66). The floor covering in the pool changing area and the rinse-off station is an epoxy coating (Figure Int.67). The wood benched also need to be refinished.



Figure Int. 65

The gang showers in the locker room are not utilized as they have gym equipment stored in them (Figure Int.67). It is becoming common that students do not shower after the gym class is concluded, even if they change clothing for class. This typically comes down to a privacy issue.

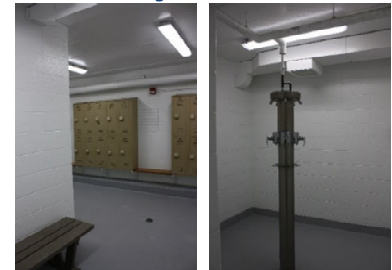


Figure Int. 66

The girl's locker room does have a few individual shower stalls located in the locker room; however, none of these are ADA-compatible.



Figure Int. 67

At both locker room entries, a partition screen is installed to maintain visual privacy from the corridor. This is not an ideal solution as the partitions do not run down to the floor.

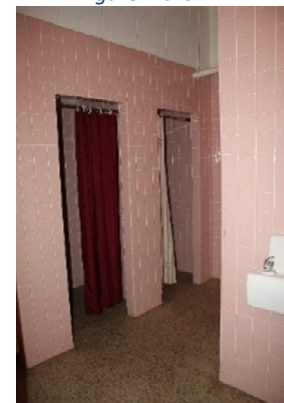


Figure Int. 68

The gym coach's office in the boy's locker room is very dim (Figure Int.70). With the ceiling light on the light meter only reading 2.52 FC (Figure Int.71). This is not adequate task lighting for an individual using this space. There is an observation window that would allow light from the locker room to filter into the office; however, the space should be able to be usable by itself.

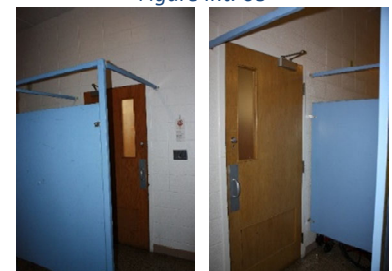


Figure Int. 69

The gym coach's office in the girls' locker room is much better for its lighting conditions and appears to be utilized more.

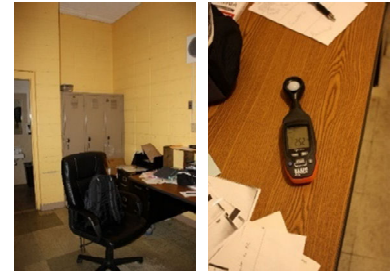


Figure Int. 70

Figure Int. 71

The office/observation room for the pool is adjacent to the pool itself. There are no concerns with the functionality or conditions of this space.



Figure Int. 72

Each of the main locker rooms has a restroom (Figure Int.74). Neither location is completely accessible, but the girl's restroom is pseudo-modified for ADA assistance. The boy's restroom has a water closet and a urinal but no privacy between them, so it can only be used as a single-occupant facility.

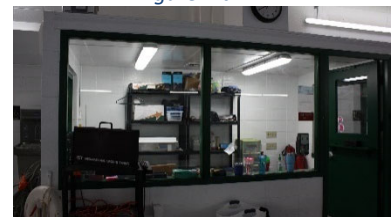


Figure Int. 73

The restrooms in the pool changing area are only equipped with ambulatory toilet stalls (Figure Int.75).

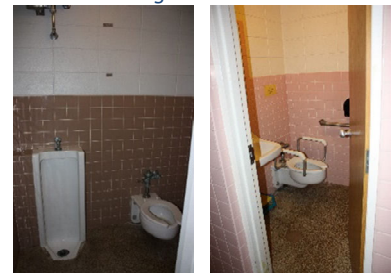


Figure Int. 74

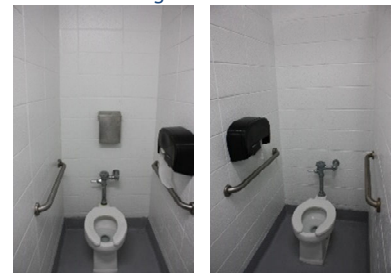


Figure Int. 75

- Music Room:** The music room is a large, uncooled space. There are nine ceiling fans installed to help provide comfort in the classroom (Figure Int.76). The ceiling is a 2x4 acoustical ceiling tile, and the walls are hard CMU. There are no significant acoustical treatments on the walls to assist with acoustical control. There is casework used for storage; however, there is loose storage at the back of the room. There is a horizontal crack at the lintel line of the windows (Figure Int.77). There may not be a structural concern; however, evaluation is recommended.



Figure Int. 76

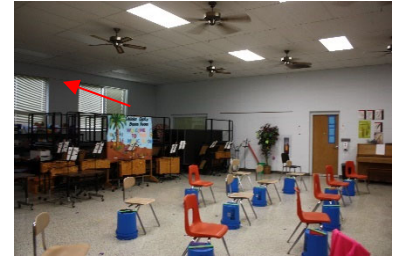


Figure Int. 77

- Art Room:** The room is tall as it is adjacent to the music room, but the 2x4 acoustical tile ceiling is lower than in the music room (Figure Int.78). The ceiling tiles are in good condition in the main space with only a few tiles starting to sag in the middle. There is a section of the room along the north wall that has a lot of loosely stored equipment and material.



Figure Int. 78

The casework is in good condition (Figure Int.79 & Int.80). There is tall material storage for art supplies (Figure Int.79) and base cabinets with a sink for working space (Figure Int.80).

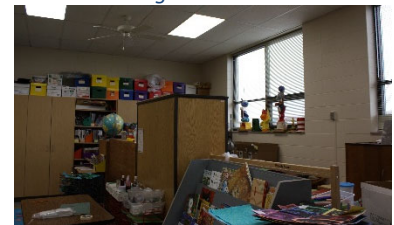


Figure Int. 79

The homogeneous flooring in the art room has portions of discoloration from where the casework of shelving used to be located.



Figure Int. 80

There are plaster traps located at some of the sinks to prevent material waste from getting into the plumbing system (Figure Int.81).

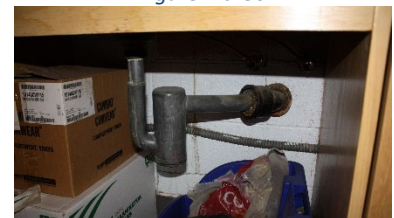


Figure Int. 81

The kiln is in a small room with additional storage (Figure Int.82). It may be necessary to minimize the amount and type of items located in this space.



Figure Int. 82

- **Library:** The Media Center is located on the second floor. There are several smaller rooms associated with this space, including an office, small conference rooms (Figure Int.83), and storage spaces.



Figure Int. 83

There are several bookshelves for collection storage as well as tables (Figure Int.84), soft seating (Figure Int.85), and open floor seating.



Figure Int. 84

The carpeting is a sheet carpet product and is showing some signs of its age. As previously mentioned, sheet carpeting can be maintenance intensive. Modern carpet installations in school spaces are typically carpet tiles that are designed for greater durability. Carpet tiles reduce maintenance costs because they allow for the replacement of individual tiles to mitigate damage.



Figure Int. 85

There is no cooling integrated into the building in this area. Small window air conditioning units are installed in the media center (Figure Int.86). These units likely struggle to keep the space comfortable. This is not a viable long-term solution to the need for cooling.



Figure Int. 86

There is discoloration between the glazing panes on some of the windows (Figure Int. 87). This indicates the gaskets and seals for the double pane glazing units have failed and are no longer preventing heat transfer as condensation is occurring between the glass.



Figure Int. 87

- **STEM Lab:** the new STEM lab location also has failed glazing and evidence of leaking at the window frame (Figure Int.88). the plastic laminate sill in Figure Int. 88 is severely damaged and delaminating. The cause of the water intrusion may have been rectified with the recent envelope repairs, but the damage to the interior will need to be addressed next.



Figure Int. 88

The ceiling in this area is a newer 2x2 ceiling replaced during the renovation. This ceiling system will have a greater life span than the 2x4 systems as there is less surface area for humidity to collect in unconditioned spaces.

The technology in the classroom has been upgraded with the rest of the school. Figure Int.89 shows the smart touch panel recently installed.

The casework is newer and in good condition (Figure Int.90). The flexible seating style is great for adjusting from collaborative to individual instruction and is also in good condition.

The pendant-style lighting is not very bright and is not preferred for an instruction space (Figure Int.90). The upward portion of the lighting does not effectively reflect downward off the ceiling tiles diminishing its efficacy.

There is plenty of work counter space (Figure Int.91). The new use as a STEM lab space may require access to more power outlets. In a stem space, it is common to install overhead pull-down power reels to get power located to the workstations in the middle of the instruction space. Depending on the type of activities planned for this lab, this might be a consideration.

This room has epoxy flooring installed. The top finish is worn quite a bit, exposing some to the anti-slip material, and the floor has lost its sheen. This may have been installed incorrectly or not completely.

The STEM lab is also inheriting a prep area with direct access to the lab (Figure Int. 93). This will be helpful for the instructor to secure more sensitive materials to control use for safety.

- Administration: The offices and resource area in the administration portion of the main office are in working order.



Figure Int. 89



Figure Int. 90

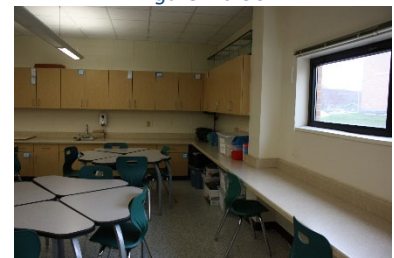


Figure Int. 91

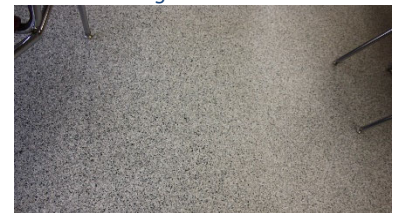


Figure Int. 92



Figure Int. 93

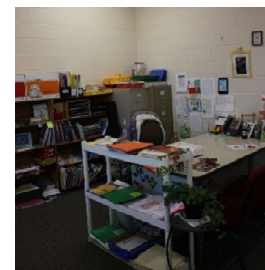


Figure Int. 94

The staff restrooms are outdated and do not meet the current accessibility code. The faucet and flush controls are manual; however, since adults typically utilize these fixtures, there is less of a concern for having them left on or unflushed. There would still be an advantage to using touchless controls for reducing water usage and control of bacterial and viral spread.

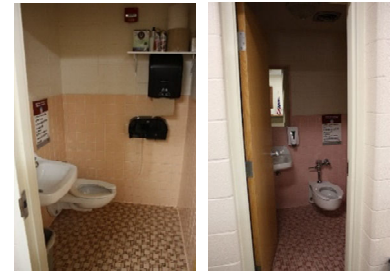


Figure Int. 95

The workroom for the main office is located at the east end of the suite. It has newer casework installed during a renovation (Figure Int.96). The workroom has an adjacent restroom and an additional storage room.

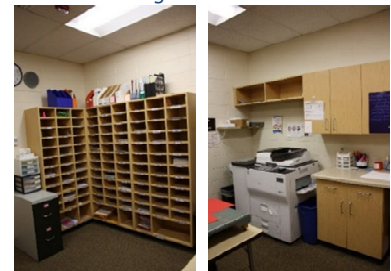


Figure Int. 96

The Nurse's area is not enclosed or segregated from the main reception area (Figure Int.97). This causes issues with noise control being a distraction from staff in the reception area. This also creates a privacy issue for a student that needs to see the Nurse. There is no segregated room to be utilized as a sick room as the cot is in the open. The casework is older and does not appear to have access to a sink except for in the adjacent restroom. The workroom at the east end of the suite and the Nurse's station at the west end of the suite would be better served if the trade places.

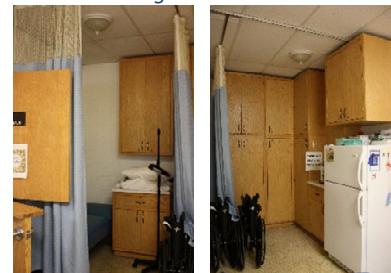


Figure Int. 97

The reception area also serves as a secure check-in (Figure Int.98). The staff checks-in visitors in the entry vestibule. Visitors can walk into the school first into the vestibule without the staff first buzzing them in as the first point of challenge. The exterior outside the vestibule is protected from the weather with a canopy. A better condition would be to have a video phone system outside the locked vestibule for the first point of challenge and keep the additional locked door to the school as a second challenge door for post-check-in. Additionally, seating can be deployed in the vestibule if a visitor needs to wait for an escort.



Figure Int. 98

The main office reception area has workstations not adjacent to the security window (Figure Int.99). It is also reported that only one staff workstation has the ability to buzz-in visitors.

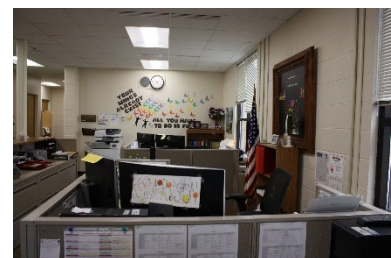


Figure Int. 99

The security window has ballistic safety glazing, but there is some concern that the windows adjacent to the public approach to the school are not protected by a ballistic film (Figure Int.100). The staff workstations are orientated to the side or in front of the windows as they need visual control of the office putting their backs uncomfortably facing the windows.

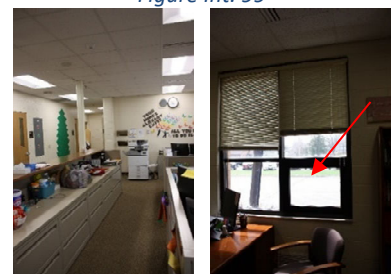


Figure Int. 100

The faculty break area is outdated with original cabinets, range, and dishwasher (Figures Int.101 & Int.102). The flooring is older Vinyl composite tile and appears to be original. The tile or the mastic for this flooring may be an ACM (Asbestos Containing Material). This is only an issue if planned renovations are to occur.



Figure Int. 101



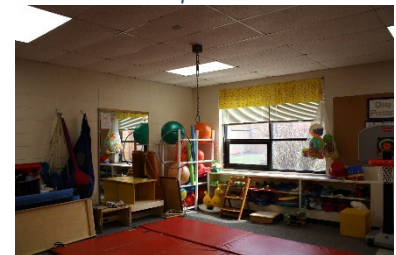
Figure Int. 102

- **Resources:** The speech suite was part of the administration renovation. The casework is in good condition. No major deficiencies were observed during the survey visit.



Speech

The PT/OT room could benefit from additional deep shelving for storage organization.



- **Acoustical readings and analysis:** When evaluating educational spaces, it is important to keep in mind how rooms perform acoustically. Two distinct criteria can be evaluated for a sample set of rooms. These evaluations are best conducted in empty rooms with the normal operation of the HVAC systems.
  1. First is the ambient or background noise that persists in a classroom (noise from lighting, mechanical systems, exterior environment). It is important to keep these noises in check because instructors must be distinctively louder than the background noise at all locations where students are seated and listening for the student to adequately hear. Ideal Classroom Noise Criteria (NC) should be between 25-30. Alternatively, background noise, in general, should not exceed 35 dBA. We conclude that several learning spaces should be evaluated further to reduce noise from the mechanical systems.

- 
2. The second factor that should be evaluated is the reverb timing in the 500 Hz octave band, a band that is closely related to human speech. Reverb is the persistent echo of noise within a space, so the longer a space echoes (more live), the muddier the speech will sound and become less intelligible. Conversely, humans are naturally used to some reverberance, so too little reverb results in a space sounding too dead. The Acoustical Society of America has published a range of acceptable reverb times for different types of spaces within a school setting.

### ***Proposed Interior Solutions & Benefits:***

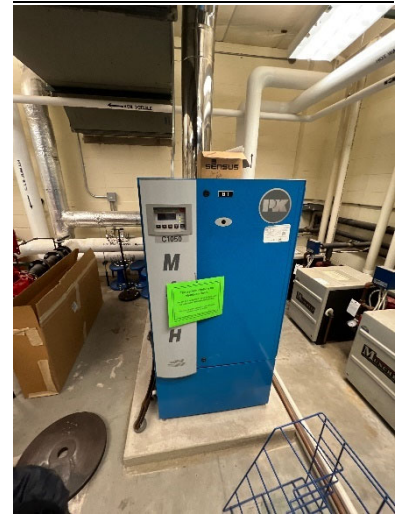
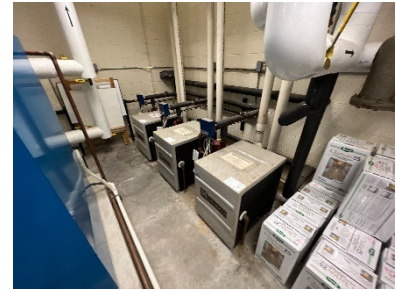
- Ceilings General: Continue general maintenance on ceilings. During large replacement efforts, consider adding cross bars and converting the ceiling grid and tile system to a 2x2 ceiling system.
- Floors General: Consider repairing the cracks in the floor. This may require removing portions of the flooring to repair the crack and installing a proper floor control joint. If a new floor covering is desirable for a uniform look throughout the school, a luxury vinyl tile flooring (LVT) or VCT with a diamond 10 finish is recommended to greatly reduce maintenance costs. These flooring types typically do not require stripping and rewaxing, and the initial finish needs very little attention for the first three years.
- Walls General: Where cracks are located in the masonry walls, evaluate the cracks for structural integrity. The cracks should be filled and repainted to match the wall finish. Consider updating the ceramic tile wainscot to a more modern finish. The tile could be left in place and a new finish applied over the top; however, removal and installing a new finish is more viable.
- Drinking fountains: Consider replacing the rest of the porcelain drinking fountains with electric cooler-style fountains with bottle filling stations.
- Classroom Doors: Inspect the oldest doors, repair the chipped veneer, and refinish the doors, bringing them closer to the finish level of the new kindergarten wing.
- Classroom Ceilings: Continue general maintenance on ceilings. During large replacement efforts, consider adding cross bars and converting the ceiling grid and tile system to a 2x2 ceiling system where it doesn't already exist.
- Classroom Floors: Consider repairing the cracks in the floor. This may require removing portions of the flooring to repair the crack and installing a proper floor control joint. Consider replacing sheet carpeting that is stained and damaged with newer stain-resistant carpet tiles. We recommend adding two coats of clear topping to the installed epoxy flooring that does not have discoloration or cracks through it. If salvaging the epoxy flooring is not desirable, an LVT could be installed over the top.
- Classroom Walls: Where cracks are located in the masonry walls, evaluate the cracks for structural integrity. The cracks should be filled and repainted to match the wall finish. Fill any of the holes left from equipment removal and repaint to match the existing walls.
- Casework: Consider replacing the older, outdated casework with casework to match the newer installations.
- Furnishings: No actions are required currently. When there is an opportunity to cycle out the oldest furniture to bring the facility furnishings to a level of matching the newer furnishings is desirable.
- Technology: No actions are recommended currently.

- Boy's / Girl's Restrooms: Consider renovating the older, outdated and non-compliant restrooms to modernize the functionality. This would also include replacing the flush and faucet controls to be touchless controls.
  
- Gymnasium: No immediate concerns are recommended currently.
  
- Media Center: Consider replacing the carpet with a carpet tile for a more resilient and lower maintenance installation. Refer to the mechanical analysis portion of this report for recommendations on cooling.
  
- Administration: Consider swapping the locations of the Nurse's station with the workroom to give better access for the main office staff to the workroom and to better isolate the Nurse's station for privacy and control. Consider adding ballistic film to the windows in the administration area adjacent to the pedestrian traffic in front of the building for safety. Consider adding an air phone buzzed at the exterior of the main entrance to add a level of security.

## Heating System

### *Existing Conditions:*

- These boiler plants provide hot water heating to the building through unit HW heating coils located in air handling units (AHUs), unit heaters, and cabinet unit heaters.
  
- The NE equipment room boiler plant serving the building consists of two (3) HW boilers from HTP. The boilers are 500 MBH input each and up to 94% efficient. The boilers were installed in 2003 and are in fair condition.
  
- The north equipment room boiler plant serving the building consists of one (1) HW boiler from Bryan. The boiler is 750 MBH input each and up to 80% efficient. The boilers were installed in 1991 and are in fair condition.
  
- The pool equipment room boiler plant serving the building consists of two (2) HW boilers from Lochinvar. The boiler is 750 MBH input each and up to 80% efficient. The boilers were installed in 1991 and are in fair condition.
  
- The school has a series of HW cabinet unit heaters which are located at the building perimeters and at entryways. These units are in good condition but, in almost every case, serve transitional spaces.



- The rooftop units (RTU) are equipped with indirect-fired gas heat exchangers. These heat exchangers provide all the space heating for multi-zone systems serving the office or preheating mixed air for variable air volume systems.

***Proposed Solutions:***

- Review boiler supply water reset curve to determine if additional energy savings can be achieved.
- Replace the Bryan Flextube boiler with new condensing boiler technology capable of increased efficiency during shoulder heating months. Replace the HW pumps and provide new pumps with VFDs to vary system flow.



## Classroom Air Distribution

### *Existing Conditions:*

- All areas of the school are served with overhead air distribution from the packaged RTUs, AHUs, and fan coil units. The RTUs and AHUs typically serve multiple spaces. Some units may have variable air volume (VAV) boxes, but most are multi-zone type units that should be replaced. The VAV boxes vary airflow and air temperature supplied to the space(s) to maintain temperature setpoints.



### *Proposed Solution:*

- Replace the multi-zone AHUs with new AHUs that utilize VAV terminal units (VAVs) and new distribution air ductwork to increase thermal comfort and energy efficiency.
- Replace/refurbish the kitchen hood and/or exhaust fan serving the kitchen hood.

## Temperature Control System

### *Existing Conditions:*

- The building controls systems are a mix of pneumatic controls with/and without DDC transducers, DDC Siemens (BAS) interface, and what appears to be standalone controls. This system is not comprehensive over all major HVAC equipment with zone/space controllers. The BAS appears to have some ability to fully control, trend, alarm, and notify the Customer of needs and inconsistencies in the system, and existing and new systems should be fully integrated into the BAS.



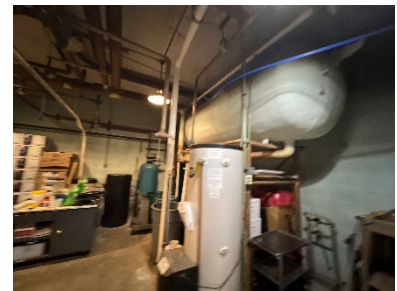
### *Proposed Solution:*

- Upgrade needed HVAC systems and integrate new controls into the BAS.

## Domestic Hot Water System

### *Existing Conditions:*

- The building is served by two standard-efficiency gas-fired water heaters and recirculation pumps. These units are in good condition.



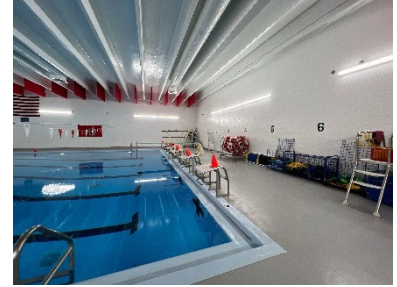
### *Proposed Solution:*

- No recommendations currently.

## Lighting System

### *Existing Conditions:*

- All of the interior lighting appears to be LED fixtures that illuminate the space learning environment. Most of the spaces were observed to have adequate light levels.



### *Proposed Solution:*

- No recommendations currently.

Clay Lamberton Elementary School												
Building HVAC Equipment Inventory												
Equipment	Make	Model	Location	Quantity	Age	Expected Useful Life	Condition	Targeted Replacement Date				Outstanding Issues and/or Notes
								1-2 Years	2-5 Years	5-10 Years	10+ Years	
Boilers	HTP	Munchkin HW	NE Equip Room	3	19	24	Fair			✓		Boilers have a maximum efficiency of 94% and has an input capacity of 500 max MBH each.
HW Pumps	Taco	Fractional hp	NE Equip Room	3	10+	10	Poor/Fair		✓	✓		Inline pumps for boiler circulation.
Boiler	Patterson-Kelly	Mach	NW Equipment Room	1	8	24	Good				✓	Boilers have a maximum efficiency of 94% and has an input capacity of 1050 max MBH each.
HW Pumps	Armstrong	380	NW Equipment Room	2	8	10	Poor/Fair		✓	✓		Constant speed Inline pumps for distribution HW.
Rooftop Unit	Trane	YSC-090	Ground - South	1	8	15	Fair/Good			✓		7.5ton DX Cooling, Gas heating,
Rooftop Unit	Trane	YSC-048	Ground - South	1	8	15	Fair/Good			✓		4ton DX Cooling, Gas heating,
HRV	Venmar	9215-1G0400	Pool Roof	1	20	15	Poor/Fair	✓	✓			Singlezone, HRV
HRV	Venmar	9218-1G0400	Pool Roof	1	20	15	Poor/Fair	✓	✓			Singlezone, HRV
Air Handling Unit (AHU)	JuneAire	841-GRB	East Equip. Room	2	59	25	Poor	✓	✓			Built-in, Heating only, 25hp CV, 2500MBH
Air Handling Unit (AHU)	JuneAire	841-GRB	West Equip. Room	1	59	25	Poor	✓	✓			Heating only, 15hp CV, 1580MBH
Air Handling Unit (AHU)	JuneAire	-	Upstairs - Gym	1	59	25	Poor	✓	✓			Heating only, 5hp CV, gas-fired
Air Handling Unit (AHU)	JuneAire	-	Upstairs - SE Area	1	59	25	Poor	✓	✓			Heating only, 5hp CV, gas-fired
Air Handling Unit (AHU)	Carrier	39LF1152AA	NW Equipment Room	1	33	25	Poor	✓	✓			Heating, DX Cooling, 7.5hp CV
Air Handling Unit (AHU)	Carrier	39LF1152AA	NW Equipment Room	1	33	25	Poor	✓	✓			Heating, DX Cooling, 7.5hp CV
Air Handling Unit (AHU)	Trane	Performance Climate Changer	New Mech Room	1	8	25	Good				✓	(2) 5hp VFDs, DX Cooling
Air-cooled Condenser	Trane	RAUJC30	Roof	1	8	18	Good				✓	DX Cooling
Air Handling Unit (AHU)	Carrier	40RR-028	North Equip Room	1	31	25	Poor		✓	✓		5hp fan
Air-cooled Condenser	Carrier	38AK-028-501	Roof	1	31	18	Poor	✓	✓			DX Cooling - 25ton
Boiler	Bryan	Flextube	North Equip Room	1	31	24	Poor	✓	✓			Boilers have a maximum efficiency of 80% and has an input capacity of 750 max MBH each.
Primary Pumps	B&G	-	Ground - South	1	8	10	Fair		✓	✓		3/4 hp
Boilers	Lochinvar	Knight	Pool Mech	2	1	24	Good				✓	Boilers have a maximum efficiency of 92.3% and has an input capacity of 285max MBH each.
HW Pumps	Grundfos	Fractional hp	Pool Mech	2	1	10	Good				✓	Inline pumps for boiler circulation.
Exhaust Fans	Various	Various	Roof	7	10+	25	Poor/Fair	✓	✓			Exhaust fans for lockers, restrooms, and/or kitchens.

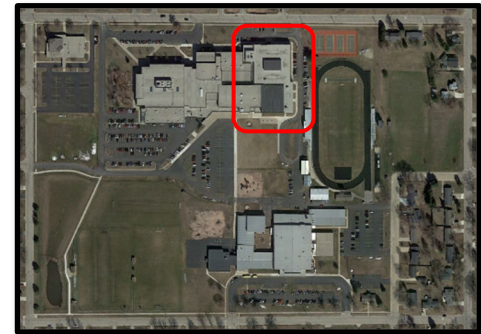
Clay Lamberton Elementary School												
Building HVAC Equipment Inventory												
Equipment	Make	Model	Location	Quantity	Age	Expected Useful Life	Condition	Targeted Replacement Date				Outstanding Issues and/or Notes
								1-2 Years	2-5 Years	5-10 Years	10+ Years	
Lighting	LED			Various	2-15+	20	Good				✓	
Building Automation Systems	Various			Various	10+	15	Fair		✓	✓		DDC and Pneumatics

## Berlin Middle School



### Building Overview:

Berlin Middle School is a sixth through eighth-grade facility directly connected to the high school. The middle school was completed in 2015 and features classrooms, a media center, athletic facilities, and administration offices. The athletic facilities added during this construction include a middle school gym, a multipurpose athletic room, and a fitness center that is accessible to the public. This portion of the combined facility does not have cafeteria commons or an auditorium exclusive to the middle school but rather shares these functions with the high school.



The building's location is surrounded by residential neighborhoods to the west and east, with local businesses to the north and the elementary school to the south. The proximity to the Elementary School and being attached to the High School facility to the west on a contiguous property allows for convenient bus routes. Having a closely grouped campus allows for maximum efficiency for the Facilities and Grounds staff to effectively manage the District's buildings and grounds. The District's business office is also located just south and east of the paved parking lots servicing the elementary school. The Facilities and Grounds team practices diligence in maintaining the building's assemblies and HVAC equipment. The Middle School HVAC equipment and assemblies are not very old and are in good condition.

The District continues to perform regimented annual maintenance on systems, equipment, and interiors but also has a unique opportunity to replace existing systems with newer, more efficient technology and improve the learning environment by addressing some architectural features as well.

### Building's Highest Priorities

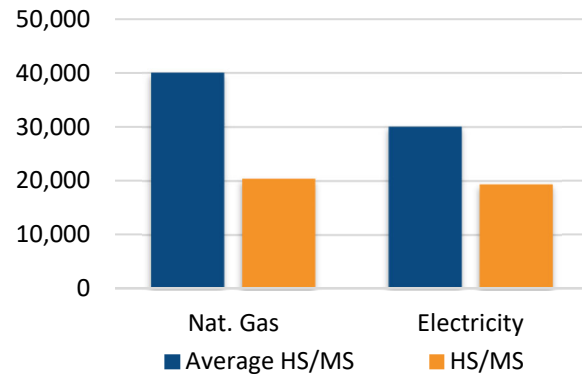
- 1) Reconfiguring public and high school locker areas for better public access to the fitness center
- 2) Repair undermining catch basin conditions

This summary of facility energy consumption and trends is for 2019 only. Due to COVID-19, electric and gas costs are assumed to be skewed for 2020 and 2021. The building performs with a total energy intensity usage of 39,645 BTU/SF. This is about what is anticipated for a high-performing High School/Middle School in the area.

### Building Performance:

Building Area (est):	298,500 SF (includes HS)	
Annual Electric Cost:	\$187,176	\$0.63/SF
Annual Gas Cost:	\$8,836	\$0.03/SF
Total Utility Cost:	\$196,012	\$0.66/SF
Electric Usage Intensity:	19,277 BTU/SF	
Gas Usage Intensity:	20,367 BTU/SF	
Total Energy Intensity:	39,645 BTU/SF	

**Average Usage vs. HS/MS (EUI)**



## Site Features & Improvements

### Existing Condition Assessment:

Concrete walks: An observed condition is the patches installed as corrective action, where concrete has spalled near the edges of a control or construction joint (Figure Ext.1). These repairs, although unsightly, are to ensure that pedestrian traffic does not trip on the pothole created at the spalling.



Figure Ext. 1

Where the patching has not been installed, the concrete edges are gradually spalling and eroding (Figure Ext.2). This might be slowed down by sealing the concrete to protect this particular concrete mixture from the salt.



Figure Ext. 2

- Asphalt Paving: The asphalt paving is in generally fair condition. The cracks have been filled to prevent water from getting into the substrate. Some areas have tighter knit cracks that need to be monitored.



Figure Ext. 3

Maintenance may be deferred in most areas; however, one location is reported to have a potential issue. Figure Ext.4 shows the approximate location where a catch basin may be compromised, and the underground erosion is occurring. This could mean a storm pipe may be compromised and the catch basin leaking into the soil, washing soil into the storm system. This is causing the asphalt to sink around the immediate area of the catch basin (Figure Ext.5).

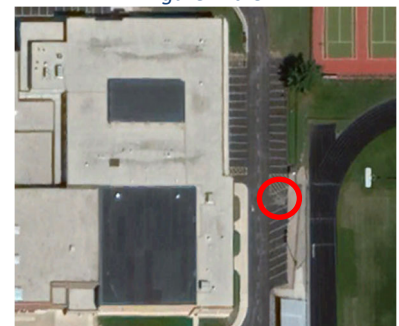


Figure Ext. 4

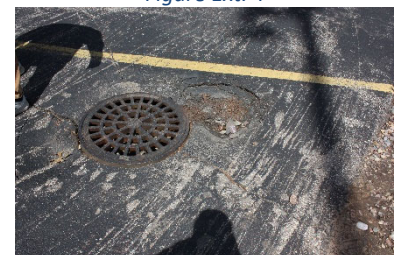


Figure Ext. 5

- Play Areas and Structures: These basketball hoops are newer than the ones at the elementary school. They are in much better condition and have the shooter's square on the backboard. There are no immediate concerns with these.

There is also a Gaga ball pit that is in good condition just south of the basketball hoop area, as well as open grass space for the students to use. No issues with these spaces were currently observed.



Figure Ext. 6

- Perimeter Foundation & Drainage conditions: At the front of the middle school on the north side of the building, the site required landscaping to adjust for the grade. At the northeast corner, there is a storm inlet that picks up the stormwater that runs around the corner of the building. No issues were observed at this installation.



Figure Ext. 7

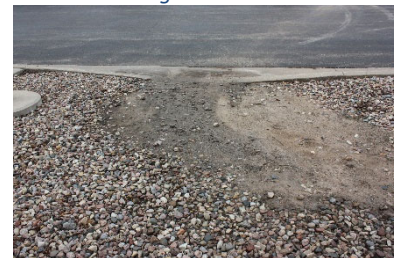


Figure Ext. 8

At the bike rack, there is an area with river stones in the landscaping. This is adjacent to a drainage path to a storm inlet; however, this area is too low and ponds water. The ponding is depositing sediment and causing an unsightly condition directly adjacent to the public entrance.



Figure Ext. 9

South of the building near the maintenance access drive is another catch basin in the grass that may have a compromised basin and pipe connection. The soil here is also getting undermined, and a sinkhole is beginning to form. This is causing a dangerous condition at the edge of the catch basin/yard drain (Figure Ext.10).



Figure Ext. 10

## Building Envelope Conditions

### **Existing Condition Assessment:**

- Exterior Openings:
- Exit/Entrance H: These doors are the main access for the public to the middle school gym for athletic events. These are aluminum framed full-lite leaves and in good condition. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.

There is a door panel that has had a glazing unit replaced as it was taped up for glazing sealant curing.



Figure Ext. 11



Figure Ext. 12

- Gym Storage Access: This is a hollow metal door opening used to directly access the gym storage from the exterior and as an exit from the space. It appears students have drawn on the door, but the writing is only ghosted in the chalky film that has oxidized on the paint. The balance of the door is in good condition. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.
- Locker Room Access: These two doors are the mud room access for athletic teams to get to the locker rooms during outdoor sporting events. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.



Figure Ext. 13

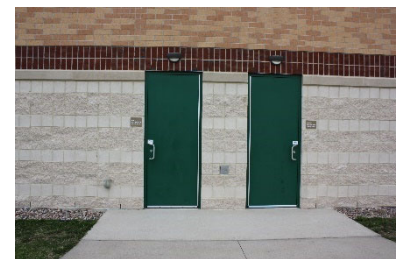


Figure Ext. 14

- Exit I: These full-lite doors are exit-only doors from the school serving as emergency exits. This is a hollow metal frame and door assembly, and there is a small amount of rust forming at the bottom of the jambs and center mullion. It is recommended to clean the rust off and touch up paint the frame to get ahead of the issue. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.



Figure Ext. 15

- Exit/Entrance J: This triple leaf door is an aluminum framed entrance that has card reader access on the southern door leaf. The door is intended for public access to the fitness room. The door also serves as an emergency exit. The canopy protects against the weather allowing fewer salt requirements in the winter. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.



Figure Ext. 16

- Exit/Entrance K: This full-lite aluminum framed entrance has card reader access and serves as an administrative staff entrance. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.



Figure Ext. 17

- Locker Room Access: This door is the mud room access for public access locker rooms. The door has some slightly chipped paint and mastic residue from previous temporary signage being applied to the exterior surface. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.



Figure Ext. 18

- Exit/Entrance L: The main public entrance to the middle school has a canopy and windbreaks to protect the entrance from the elements. It is an aluminum framed entry and has card access equipment. The doors are aluminum framed entry doors and are in good condition. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.

This is the main security entrance to the school. Visitors arrive at the school and can access the first vestibule immediately. An added level of security could be to have these exterior doors locked and add a video phone to visually verify and verbalize the intent or reason for a visit before any access to the building.



Figure Ext. 19



Figure Ext. 20

- Exit M: This opening serves strictly as an emergency exit from the building. It connects to a stairwell from the second floor and to the interior corridor. This is also an aluminum framed assembly with two full-lite door panels. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.



Figure Ext. 21

- Exit N: This opening serves as an emergency exit from the building near the music rooms. There is no lock cylinder or card reader, but this door does possess a handle indicating that it may be used for moving music equipment in an out of the building for off-campus events. This is also an aluminum framed assembly with two full-lite door panels. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.

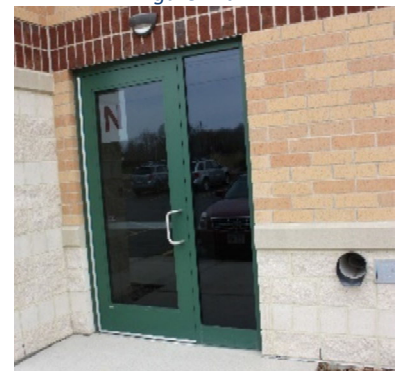


Figure Ext. 22

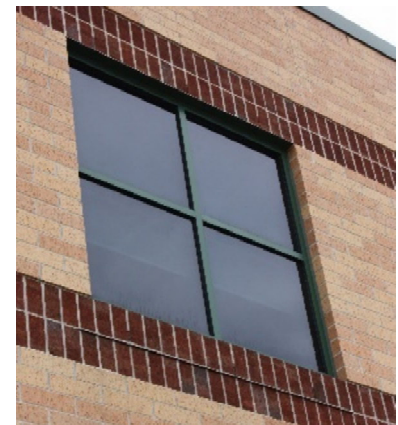
- Windows General Conditions:

- Window Type 1: These window openings are aluminum framed and have spandrel panels on the second-floor plane to match the look of the high school windows. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.



*Figure Ext. 23*

- Window Type 2: These window openings are aluminum framed to match the look of the high school windows. The sealant, seals, and sweeps are in good condition as they are new from the recent construction.



*Figure Ext. 24*

- Exterior wall conditions:

- Wall condition type 1: Most of the building enclosure falls under one wall type construction. The masonry wall is a cavity wall with CMU structural back-up and brick over a decorative masonry base stacked wall system. The wall consists of a modern cavity wall assembly. The masonry and grout are in good condition as it is still considered new construction.



*Figure Ext. 25*

- Wall condition type 1: In the penthouse areas on the roof, the walls are metal wall panels. These are all in good condition, and no immediate concerns were observed.



Figure Ext. 26

- Wall accessories:

- Masonry Weeps & Vents: The Vents (Figure Ext.27) and the weeps (Figure Ext.28) are amply placed in the wall. This will allow proper drainage and ventilation of the wall cavity. There are not any concerns currently with this installation. No issues were observed during the survey visit.



Figure Ext. 27



Figure Ext. 28

- Masonry Flashing: The through wall flashing installed at the base of the masonry walls is a stainless-steel flashing (Figure Ext29). This is the preferred material for this application as it is very durable and has a longer life cycle than a coated metal.



Figure Ext. 29

There are some locations where the flashing drip edge is bent. This may have happened during backfilling procedures. This may not have any negative effects, but it could be mechanically straightened out.

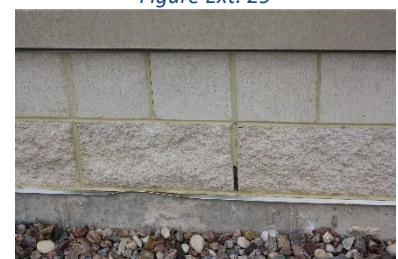


Figure Ext. 30

- Building Expansion Assemblies: The masonry expansion control joints are placed in the appropriate locations and frequency in the middle school. These installations are not very old and are in good condition; no separation, drying, or cracking was observed.

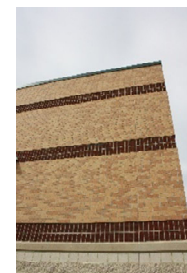


Figure Ext. 31

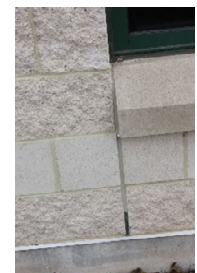


Figure Ext. 32

- Roofing:
- General Roofing condition: The roofing installations on the middle school roof are approximately 7 years old. They should be performing well. No issues were reported or observed during the survey visit.



Figure Ext. 33



Figure Ext. 34

- Roof section Types, Ages, and conditions: The roofing was installed in 2015 when the middle school addition was constructed. Two assembly types are finished with a fully adhered membrane on the high roofs and stone ballast on a single-ply membrane for the balance of the roof (Figure Ext.35).

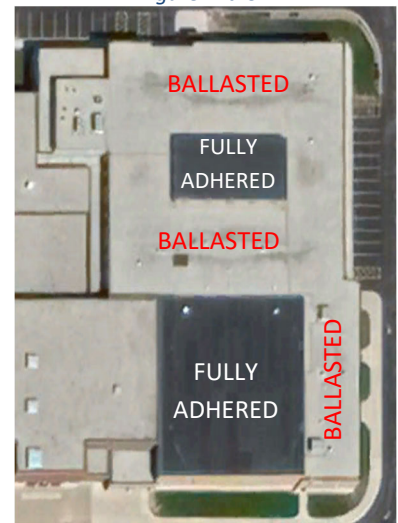


Figure Ext. 35

- Roof Penetrations: The penetrations are properly installed as expected. The mechanical curbs should be at least 8" above the roofing surface to properly combat snow drifting. A minimum 12" high curb is preferable but 8" is acceptable.



Figure Ext. 36

When multiple penetrations can be clustered together, deploying these curb caps with pipe portals (Figure Ext.37) are very effective.



Figure Ext. 37

Figure Ext. 38 shows the correct flashing for vent stacks and heat stacks. It is important that if repairs or roofing replacements happen in the future that these types of features are reinstalled or replaced to maintain the roofing warranty.



Figure Ext. 38

- Flashings: Other roof flashings included in this roofing installation are the base flashings at the metal wall panels enclosing the penthouses' high roofs (Figure Ext. 39). These flashings are properly seamed and bent and have no observed deficiencies currently.



Figure Ext. 39

There is another high roof that has a fully adhered vertical flashing up to the high roof (Figure Ext.40).



Figure Ext. 40

- Parapet Copings: The coping caps are in good condition and appear properly seamed and mitered. The copings at uneven levels are shingle lapped (Figure Ext.41). This prevents water from infiltrating under the coping cap requiring sealant at the top edge, which eventually can fail like at some locations of the high school roofing.



Figure Ext. 41

- Roof Drainage Components: The roof drains have strainer covers to keep debris from getting in the storm conductors and prevent clogs.



Figure Ext. 42

There are overflow relief drains in locations that are enclosed by high walls on all sides (Figure Ext. 43)

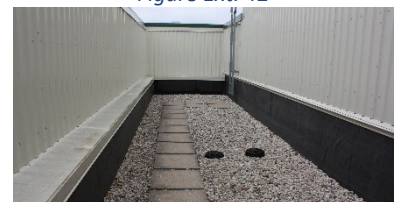


Figure Ext. 43

- Roof Drainage Components: At the clear stories, sealant has been added to the window frames to mitigate apparent window leaks (Figure Ext.44).



Figure Ext. 44

It is recommended to investigate this issue further to verify the issue behind this condition.



Figure Ext. 45

- Roof Walking Pads: The Highschool roof had very few walking pads, which are on the middle school roof (Figure Ext.46). These are recommended around all mechanical equipment and to and from roof access points to protect the roof membrane as maintenance contractors will be eventually walking on the roof. The middle school has these installed but not on every piece of equipment that might need servicing. We also typically recommend having these lead to the roof drains.

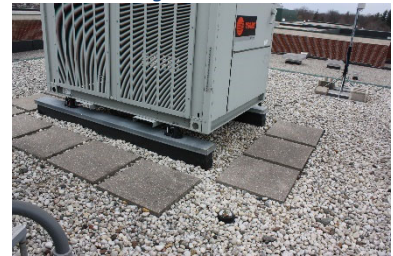


Figure Ext. 46

### ***Proposed Exterior Solutions & Benefits:***

- Exit Doors: No recommendations currently.
- Windows General Conditions: No recommendations currently.
- Stone and masonry sills: No recommendations currently.
- Roofing: No recommendations currently.
- Roofing Accessories: No recommendations currently.
- Control Joints: No recommendations currently.
- Walls: No recommendations currently.
- Paving and lots: Consider concrete replacement at the severely rust-stained stoops. Using a concrete additive and coated reinforcement can prevent rust staining. Consider replacing the concrete walks and curbs that are deteriorated and patched. Include the sections of concrete that are uneven and ones that need to be ground down.

Continue filling the cracks in the asphalt to keep water from infiltrating the subgrade. Monitor the cracking after every winter to verify the asphalt doesn't crack into small pieces or create potholes.

- Stormwater catch basin: Investigate the potential undermining at the two indicated catch basin locations. Repair these conditions to prevent dangerous sinkhole conditions.

## Interior Spaces & Finishes

### *Existing Condition Assessment:*

- **Ceilings General:** The common and circulation spaces have a 2x2 acoustical tile ceiling, and it is in good condition. The 2x2 tile will have a longer life cycle than the traditional 2x4 ceiling tile installation.

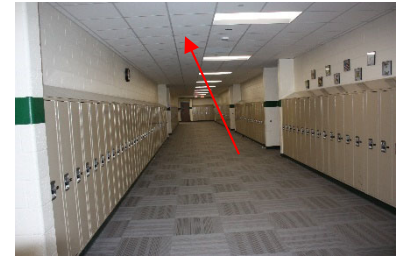


Figure Int. 1

- **Floors General:** There are several types of flooring in the middle school common and circulation spaces (Figure Int.2). Carpet tile is in some corridors and is in good condition. Carpet tile is recommended over sheet carpeting as individual tiles can be replaced when stains and damage occurs.



Figure Int. 2

Ceramic tile is also installed in some corridors on the first floor (Figure Int.3). This is a resilient type of flooring, but the grout may require maintenance eventually. If the grout does not have a stain-resistant additive, the maintenance will gradually increase to a higher frequency.



Figure Int. 3

There is also LVT (Luxury Vinyl Tile) in some locations (Figure Int.5). There may be a product issue or an installation issue with this flooring. There were observed locations where corners had chips, and some seams were slightly open.

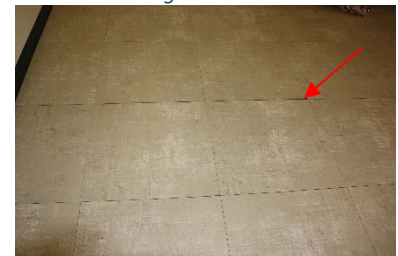


Figure Int. 4

At the vestibules, a durable walk of type carpet tile is installed (Figure Int.5). These are resilient and chemical resistant, making them have a robust life cycle.



Figure Int. 5

- Walls General: The corridor and circulation spaces have CMU walls. There are decorative niches located at corridor intersections (Figure Int.6). These are burnished or polished blocks to resemble the common spaces in the adjacent high school.



Figure Int. 6

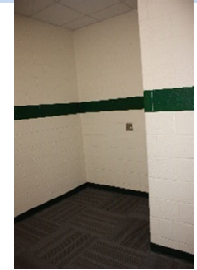


Figure Int. 7

There is an accent stripe on the corridor walls. Some locations have a painted stripe (Figure Int.7), and others have a polished block accent that resembles the CMU in the high school (Figure Int.8).



Figure Int. 8

- Classroom General Condition:

- Classroom Doors: The doors are wood veneer doors with narrow-lite glass. The doors are in good condition, and no immediate issues were observed currently.



Figure Int. 9

- Classroom Ceilings: Classrooms have a 2x2 acoustical tile ceiling, and it is in good condition. The 2x2 tile will have a longer life cycle than the traditional 2x4 ceiling tile installation.



Figure Int. 10

There was some small damage on a few tiles observed. Small damage does not need to be remediated, but periodic visual inspection of ceiling tiles is recommended to maintain aesthetics.



Figure Int. 11

- Classroom Floors:** There is sheet carpeting in some locations. In-room MA204, the sheet carpet has both stains, and the seam is fraying in one spot (Figure Int.12). There was also cracking in the concrete slab beneath the carpet that was detected during the survey by visible and tactile buckling.



Figure Int. 12

There is Luxury vinyl tile in many of the lab classrooms (Figure Int.13). This tile is usually resilient and requires less maintenance than traditional vinyl composite tile (VCT). There were a few locations where a tile corner was chipped. The damage was small and can be deferred, but it may be desirable to eventually replace individual damaged tiles with attic stock.



Figure Int. 13

- Classroom Walls:** The exterior and corridor walls are CMU (Concrete Masonry Units) which are painted and very durable (Figure Int.14).



Figure Int. 14

The balance of the walls are framed, painted gypsum board, and are in good condition (Figure Int.15). These walls are in good condition but will need additional maintenance as they can be more easily damaged than the CMU walls.



Figure Int. 15

- Casework:** The wood look plastic laminate casework is in good condition (Figure Int.16). There are select cabinets with lockable cylinders, which are important for securing classroom supplies and teachers' items.



Figure Int. 16

- **Furnishings:** Newer modern furnishings is deployed in the classrooms. Larger tables for the science labs, allowing for lab partnering and collaborative learning (Figure Int.17).



Figure Int. 17

In the other classrooms, a modern-style table is flexible and configurable for collaborative learning (Figure Int.18). These furnishings are in good condition.



Figure Int. 18

- **Technology:** Some classrooms have projector smart boards installed (Figure Int.19). The District is planning to replace these with smart, multimedia touch panel screens (Figure Int. 20) installed in other locations.



Figure Int. 19



Figure Int. 20

- **Restrooms:** The restrooms are clad in ceramic tiles on the floor and the ceilings. The partitions are still in good condition (Figure Int.21), and the urinals have privacy screens (Figure Int.22).



Figure Int. 21

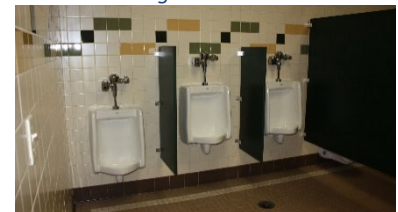


Figure Int. 22

The restrooms are ADA compliant as expected of a 2015 construction project.



Figure Int. 23

The water supply controls are touchless (Figure Int.23 & Int.24), offering water efficiency and reducing the potential spread of bacteria and viruses.



Figure Int. 24

- Drinking Fountains: The drinking fountains have bottle filling stations (Figure Int.25) installed, offering a touchless option to reduce the potential spread of bacteria and viruses.



Figure Int. 25

- Gymnasium: The middle school gymnasium has handicapped spectator accommodations (Figure Int.26).



Figure Int. 26

The flooring is in good condition and has light scratches and scuffs (Figure In.27). No immediate concerns for the floor finish were observed during the survey visit.

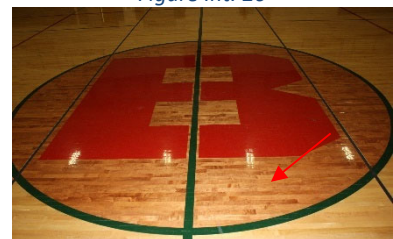


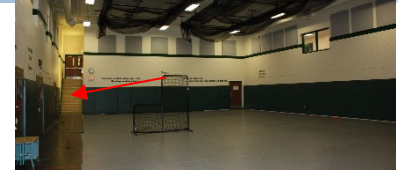
Figure Int. 27

The wood athletic floor has a ventilation system installed (Figure Int.28). This is designed to pull air under the flooring sleeper supports to ensure that the flooring stays dry and that humidity does not have adverse effects on the wood flooring.



Figure Int. 28

- **Multipurpose Room:** The multipurpose gymnasium is a two-story space with a floor level below the first floor. The space is accessible by two staircases (Figure Int.29) and an elevator.



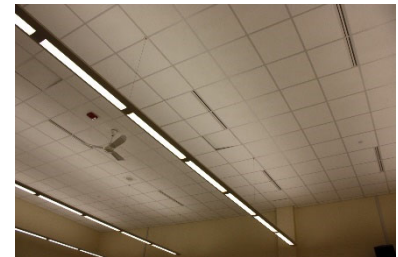
*Figure Int. 29*

The floor in the multipurpose room is a painted concrete slab and has many scratches in the finish (Figure Int.30). The floor should be refinished; however, it may be desirable to install a resilient athletic flooring to offer a surface that will provide less fatigue for the users.



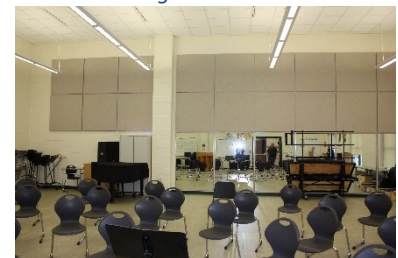
*Figure Int. 30*

- **Music Room:** The music rooms are tall spaces that have acoustical tile ceilings (Figure Int.31) and sound dampening panels on the walls for added acoustical control (Figure Int.32).



*Figure Int. 31*

The lighting installed is a bidirectional light, and the housings cut off the sides limiting the light distribution. It is recommended to do a lighting study to make sure the lighting is adequate for the task of reading sheet music.



*Figure Int. 32*

- **Art Room:** The middle school art room appears to have adequate casework for storage and sinks for cleaning up (Figure Int.33).



*Figure Int. 33*

The art room is equipped with a kiln with a dedicated exhaust hood.



*Figure Int. 34*

The floor is painted concrete floor slab (Figure Int.35). The painted finish is severely chipped and flaking. This is likely due to the moisture level in the concrete when it was originally painted. It is recommended to refinish the floor. One popular option is to polish the concrete and sealing with clear epoxy. Additionally, decorative epoxy flooring is also a popular modern flooring installation for art rooms.



Figure Int. 35

- **Media Center:** The media center (MC) has a high clearstory over the stacks and main reading area (Figure Int.36). The ability to have natural light is very beneficial for learning environments.

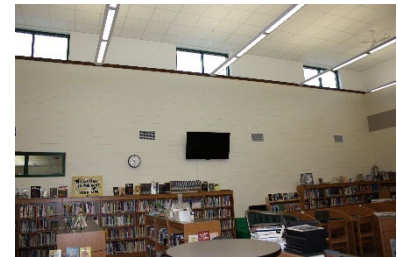


Figure Int. 36

The portion of the media center with the lower ceiling is used as an instructional space (Figure Int.37). The MC staff reported the benefit of having this space separable.

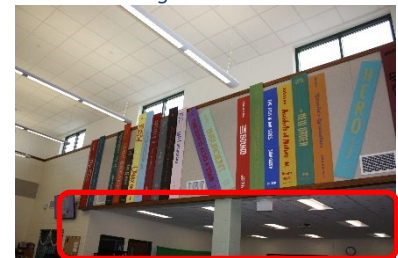


Figure Int. 37

There is modern individual study furniture with power ports for recharging workstations and personal phones.



Figure Int. 38

The storage and office spaces are mostly used for storage, and there is a network data rack in one space (Figure Int.39).



Figure Int. 39

- Lighting Concerns:** The pendant lighting installed in many of the classrooms are not very effective (Figure Int.40 & Int.41). The configuration of the housing serves as a cutoff and limits the light distribution. Also, the upward lighting does not reflect well and is ineffectual.

The light fixture also allows for debris, such as pencils (Figure Int.41), to be lodged above the light bezel.

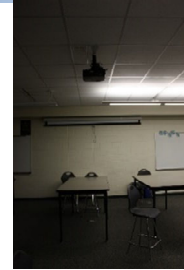


Figure Int. 40

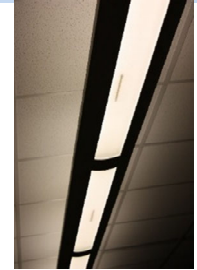


Figure Int. 41

- Fitness Center:** The fitness center was constructed interior to the building's exterior wall. This is only an issue as the public's access to the space is difficult.

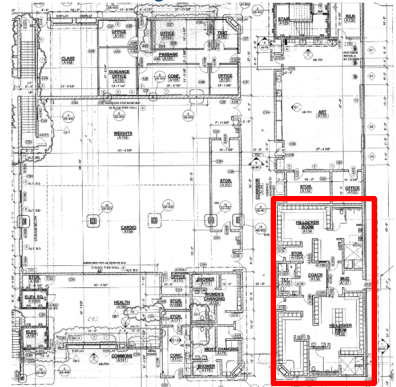


Figure Int. 42



Figure Int. 43

The public access to the fitness center takes users through portions of the school. This is an unsecured condition, and a new solution should be considered. The designated high school locker rooms located east of the fitness center are reported as very underutilized.



Potentially, these locker rooms could be reconfigured to allow the public to use them in conjunction with the fitness center, and a segregated entrance could be provided for public access. Additionally, the adjoining corridor can then have secured access installed.

- High School Lockers:** The high school locker rooms are intended for outdoor sporting events. The locker rooms are ADA compliant (Figure Int.44). It is reported that these locker rooms are underutilized.

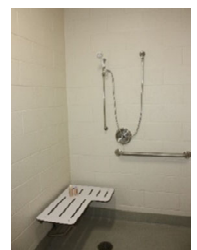
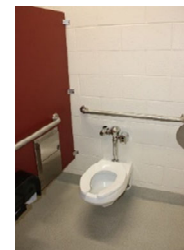


Figure Int. 44

There is a crack in the flooring in one of these locker rooms.

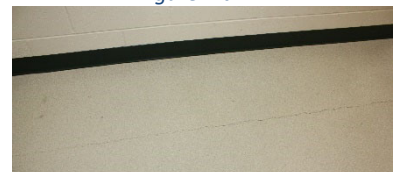


Figure Int. 45

- Acoustical readings and analysis: When evaluating educational spaces, it is important to keep in mind how rooms perform acoustically. Two distinct criteria can be evaluated for a sample set of rooms. These evaluations are best conducted in empty rooms with the normal operation of the HVAC systems.
  1. First is the ambient or background noise that persists in a classroom (noise from lighting, mechanical systems, exterior environment). It is important to keep these noises in check because instructors must be distinctively louder than the background noise at all locations where students are seated and listening for the student to adequately hear. Ideal Classroom Noise Criteria (NC) should be between 25-30. Alternatively, background noise, in general, should not exceed 35 dBA. We conclude that several learning spaces should be evaluated further to reduce noise from the mechanical systems.
  2. The second factor that should be evaluated is the reverb timing in the 500 Hz octave band, a band that is closely related to human speech. Reverb is the persistent echo of noise within a space, so the longer a space echoes (more live), the muddier the speech will sound and become less intelligible. Conversely, humans are naturally used to some reverberance, so too little reverb results in a space sounding too dead. The Acoustical Society of America has published a range of acceptable reverb times for different types of spaces within a school setting.

### ***Proposed Interior Solutions & Benefits:***

- Ceilings General: No recommendations currently.
- Floors General: No recommendations currently.
- Walls General: No recommendations currently.
- Classroom Doors: No recommendations currently.
- Classroom Ceilings: No recommendations currently.
- Classroom Floors: No recommendations currently.
- Classroom Walls: No recommendations currently.
- Casework: No recommendations currently
- Furnishings: No recommendations currently
- Technology: No recommendations currently.
- Boy's / Girl's Restrooms: No recommendations currently.
- Gymnasium: No recommendations currently.
- Media Center: No recommendations currently. Consider adding a folding partition or folding glass partition to separate the instruction area from the main media center.
- Public lockers / High school lockers: Consider reconfiguring the high school locker rooms and public locker rooms to make them more useable and gain better public access to the fitness center.

## Heating System

### *Existing Conditions:*

- These boiler plants provide hot water heating to the building through unit HW heating coils located in VAV terminal units, unit heaters, and cabinet unit heaters.
- The boiler plant serving the building consists of two (2) HW boilers from PK. The boilers are 2,850 MBH input each and up to 94% efficient. The boilers were installed in 2014 and are in good condition.
- The heating plant capacity equates to roughly 58 BTU/SF (output), which is slightly more than typical heating requirements in Wisconsin of approximately 40 BTU/SF, which provides some redundancy. A holistic approach is required when assessing the heating capabilities of the boiler plants.



- The hot water plant distributes hot water to the building by two (2) inline primary pumps and two (2) base-mounted distribution pumps. The inline boiler pumps are at a constant speed. The base-mounted distribution pumps are powered by variable frequency drives. The pumps are in good condition.
  
- The Middle School has a series of HW cabinet unit heaters which are located at the building perimeters and at entryways. These units are in good condition but, in almost every case, serve transitional spaces.
  
- The air handling units (AHUs) are equipped with HW heating coils that provide all the space heating for single zone and variable air volume systems.

***Proposed Solutions:***

- Review boiler supply water reset curve to determine if additional energy savings can be achieved.

## Cooling System

### *Existing Conditions:*

- All occupied spaces within the school are provided with air conditioning from (5) split DX air-cooled condensing units.
  - CU-1: 50 Tons
  - CU-2: 25 Tons
  - CU-3: 150 Tons
  - CU-4: 40 Tons
  - CU-5: 60 Tons
  
- The condensing units are all from the renovation project in 2014 and are in good condition. All units are located on the middle school roof on equipment rails with easy access for service.
  
- One (1) split DX condensing unit is located on the roof and serves the IT closet. This unit is in good condition and should last the District for some time with proper maintenance.



### *Proposed Solutions:*

None at this time.

## Classroom Air Distribution

### *Existing Conditions:*

- All areas of the school are served with overhead air distribution from the AHUs and terminal equipment. The AHUs typically serve multiple spaces and utilize variable air volume (VAV) boxes with hot water reheat coils serving one or more rooms. The VAV boxes vary airflow and air temperature supplied to the space(s) to maintain temperature setpoints.
  - AHU-1: Multizone Variable Air Volume
  - AHU-2: Multizone Variable Air Volume
  - AHU-3: Multizone Variable Air Volume
  - AHU-4: Multizone Variable Air Volume
  - AHU-5: Multizone Variable Air Volume
  - AHU-6: Single Zone



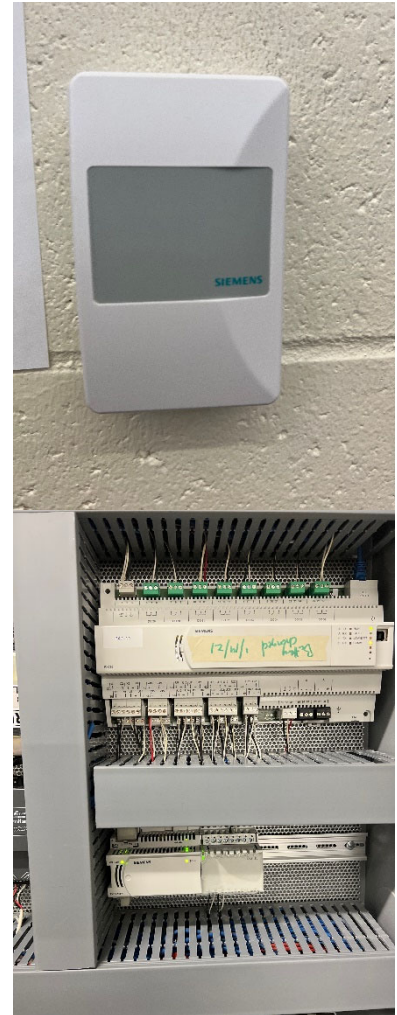
### *Proposed Solution:*

- Continue maintaining the existing HVAC equipment.

## Temperature Control System

### *Existing Conditions:*

- The building controls systems are DDC with Siemens (BAS) interface. This system is comprehensive over all major HVAC equipment with zone/space controllers. The BAS appears to have the ability to fully control, trend, alarm, and notify the Customer of needs and inconsistencies in the system.



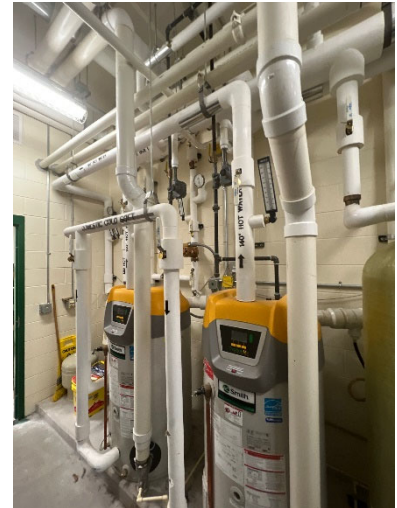
### *Proposed Solution:*

- No recommendations currently.

## Domestic Hot Water System

### *Existing Conditions:*

- The building is served by two high-efficiency gas-fired water heaters and recirculation pumps. These units are in good condition.



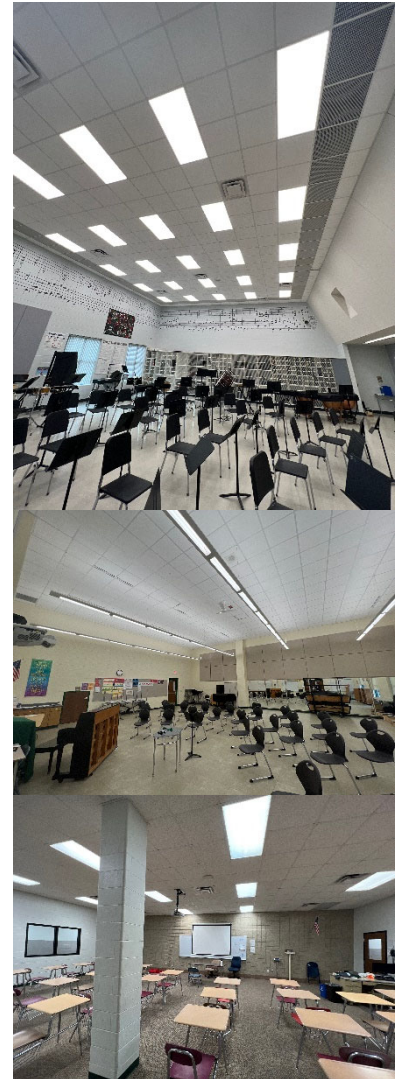
### *Proposed Solution:*

- No recommendations currently.

## Lighting System

### *Existing Conditions:*

- All of the interior lighting appears to be LED fixtures that illuminate the space learning environment. Most of the spaces were observed to have adequate light levels.



### *Proposed Solution:*

- No recommendations currently.

Berlin Middle School												
Building HVAC Equipment Inventory												
Equipment	Make	Model	Location	Quantity	Age	Expected Useful Life	Condition	Targeted Replacement Date				Outstanding Issues and/or Notes
								1-2 Years	2-5 Years	5-10 Years	10+ Years	
Air Cooled Condensing Unit (CU-03)	Trane	TTAE150E	Middle School Roof	1	8	15	Fair		✓	✓		R410 Refrigerant
Air Cooled Condensing Unit (CU-02)	Trane	RAUJC25	Middle School Roof	1	8	15	Fair		✓	✓		R410 Refrigerant
Air Cooled Condensing Unit (CU-01)	Trane	RAUJC50	Middle School Roof	1	8	15	Fair		✓	✓		R410 Refrigerant
Air Cooled Condensing Unit (CU-04)	Trane	RAUJC40	Middle School Roof	1	8	15	Fair		✓	✓		R410 Refrigerant
Air Cooled Condensing Unit (CU-05)	Trane	RAUJC60	Middle School Roof	1	8	15	Fair		✓	✓		R410 Refrigerant
Air Cooled Condensing Unit (CU-01)	Trane / Mitsubishi	TRUYA012	Middle School Roof	1	2	15	Good				✓	R410 Refrigerant
Air Cooled Condensing Unit (CU-02)	Trane / Mitsubishi	TRUYA024	Middle School Roof	1	2	15	Good				✓	R410 Refrigerant
Air Handling Unit (AC-6)	Trane	Climate Changer CSAA040U - HW/DX/NAV / 18,500cfm / 10hp	Middle School Mezzanine	1	8	22	Good				✓	R410 Refrigerant
Air Handling Unit (AC-5)	Trane	Climate Changer CSAA035U - HW/DX/NAV / 17,000cfm / 10hp	Middle School Mezzanine	1	8	22	Good				✓	R410 Refrigerant
Return Fan (RF-5)	Greenheck	Axial type 9,000cfm / 5hp	Middle School Mezzanine	1	8	20	Good				✓	
Air Handling Unit (AC-2)	Trane	Climate Changer CSAA017U - HW/DX/NAV / 8,275cfm / 10hp	Middle School Mezzanine	1	8	22	Good				✓	R410 Refrigerant
Return Fan	Greenheck	Axial type 6,000cfm / 3hp	Middle School Mezzanine	1	8	20	Good				✓	
Air Handling Unit (AC-3)	Trane	Climate Changer CSAA010U - HW/DX/NAV / 4,250cfm / 5hp	Middle School Ground FI Mech Room	1	8	22	Good				✓	R410 Refrigerant
Return Fan	Greenheck	12,500cfm / 7.5hp	Middle School Ground FI Mech Room	1	8	20	Good				✓	
Air Handling Unit (AC-1)	Trane	Climate Changer CSAA025U - HW/DX/NAV / 11,500cfm / 7.5hp	Middle School Ground FI Mech Room	1	8	22	Good				✓	R410 Refrigerant
Return Fan	Greenheck	Axial type 3,000cfm / 1hp	Middle School Ground FI Mech Room	1	8	20	Good				✓	
Boiler	PK Mach	2.85MMbu Condensing	Middle School Ground FI Mech Room	2	8	24	Good				✓	With boiler pumps
HW Pumps - Distribution	Armstrong	400gpm / 20 hp / 1750rpm / VFD	Middle School Ground FI Mech Room	2	8	20	Good				✓	
Cabinet Unit Heaters	Various	Used at entry and transition spaces	Various	Multiple	Varies	20	Fair/Good			✓	✓	
Air Handling Unit (AC-4)	Trane	Climate Changer CSAA025U - HW/DX/NAV / 12,000cfm / 7.5hp	Middle School Ground FI Mech Room	1	8	22	Good				✓	R410 Refrigerant
Water Softener - Boiler Room	Hellenbrand	H-2000	Middle School Ground FI Mech Room	3	8	18	Good				✓	
DHW Heater - Boiler Room	AO Smith	Cyclone Mx BTH120 / 200 gal	Middle School Ground FI Mech Room	2	8	15	Good			✓	✓	120MBH with 138.18 gal/hr recovery
Roof Mounted Exhaust Fans	Greenheck, Twin City, Cook	Various / 1/4-1.5hp	High School and Middle School Roof	31	Varies, many 15+	20	Fair		✓	✓	✓	No indicated inefficiency
Roof Mounted Exhaust Fans	Greenheck, Twin City, Cook	Various / 1/4-3hp	High School and Middle School Roof	30	Varies, many 15+	20	Fair		✓	✓	✓	No indicated inefficiency
Lighting	LED			Various	2+	20	Good				✓	Flourescent, HID, and LED
Building Automation Systems	Siemens		High School and Middle School Roof	Various	5+	15	Fair/Good		✓	✓		Direct Digital Controls with Electric Actuation

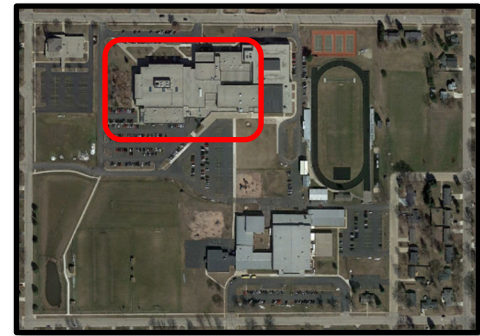
## Berlin High School



### Building Overview:

Berlin High School is a grade 9 through 12 facility with a grade 6 through 8 middle school attached and shares resources. The high school was constructed in 1995 on the same property as the district's elementary school. Constructed of concrete masonry with clay brick veneer.

The building's location is surrounded by residential neighborhoods to the west and east, with local businesses to the north and the elementary school to the south. The proximity to the Elementary School and being attached to the Middle School facility to the east on a contiguous property allows convenient bus routes. Having a closely grouped campus allows for maximum efficiency for the Facilities and Grounds staff to effectively manage the district's buildings and grounds. The district's business office is also located just south and east of the paved parking lots servicing the elementary school. The Facilities and Grounds team practices diligence in maintaining the building's assemblies and HVAC equipment. In general, the High School HVAC equipment and assemblies are mostly in good condition.



The district continues to perform regimented annual maintenance on systems, equipment, and interiors but also has a unique opportunity to replace existing systems with newer, more efficient technology and improve the learning environment by addressing some architectural features as well.

### Building's Highest Priorities

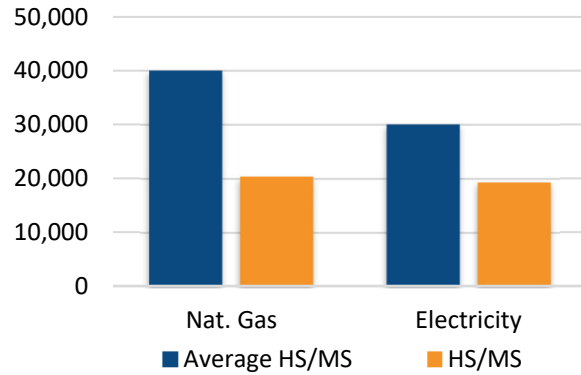
- 1) Select Paving
- 2) Interior Finishes
- 3) HVAC

This summary of facility energy consumption and trends is for 2019 only. Due to COVID-19, electric and gas costs are assumed to be skewed for 2020 and 2021. The building performs with a total energy intensity usage of 39,645 BTU/SF. This is about what is anticipated for a high-performing High School/Middle School in the area.

**Building Performance:**

Building Area (est):	298,500 SF (includes MS)	
Annual Electric Cost:	\$187,176	\$0.63/SF
Annual Gas Cost:	\$8,836	\$0.03/SF
Total Utility Cost:	\$196,012	\$0.66/SF
Electric Usage Intensity:	19,277 BTU/SF	
Gas Usage Intensity:	20,367 BTU/SF	
Total Energy Intensity:	39,645 BTU/SF	

**Average Usage vs. HS/MS (EUI)**



## Site Features & Improvements

### Existing Condition Assessment:

- Concrete walks: There are several conditions with the concrete that could be addressed.

There are locations where the sidewalk has a simple crack (Figure Ext.1). Filling the crack with an epoxy patch may allow deferring replacement. If the condition is left alone, freeze-thaw cycles may heave a portion of the concrete. If a concrete path becomes out of flush by more than one-half inch, it is considered a trip hazard.

Several of the stoops have rust staining the surface (Figure Ext.2 & Ext.3). This is caused by salt and water penetrating the concrete, meeting the uncoated steel reinforcement in the concrete structure. The oxidized iron breaks down and makes its way to the surface. Replacing the concrete is the only way to mitigate the issue at this point.

There are a few locations where heaved concrete surfaces had to be ground down to allow a smooth transition condition between the adjacent pieces of the concrete sidewalk (Figures Ext.4 & Ext.5). This is necessary if the concrete surfaces become out of flush more than one-half inch to prevent a trip hazard and keep the path of travel accessible.

Another observed condition is the patches installed as corrective action where concrete has spalled near the edges of a control or construction joint (Figure Ext.6 & Ext.7). These repairs, although unsightly, are to ensure that pedestrian traffic does not trip on the pothole created at the spalling. The repair may eventually come out as the slated moisture penetrates below the patch. This is intended as a temporary solution to stave off complete replacement, but eventually, replacement will be required. New concrete additives can provide more chemical resistance and reduce the likelihood of this happening.



Figure Ext. 1



Figure Ext. 2



Figure Ext. 3



Figure Ext. 4



Figure Ext. 5

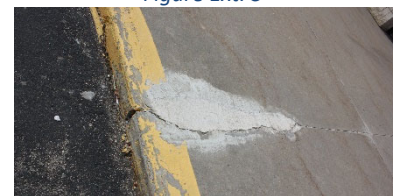


Figure Ext. 6

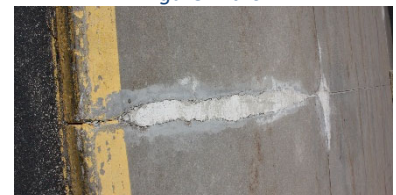


Figure Ext. 7

- Asphalt Paving: Asphalt paving on the high school lot is in good condition despite the number of cracks that have been filled (Figure Ext.8 & Ext.9). Not all the surface area was observed; however, when the asphalt cracks and the sections remain large, the serviceability remains better. When smaller sections are formed, and more of a tight-knit spider web type of condition occurs, the asphalt shifts easily under traffic, dislodges, and creates potholes.



Figure Ext. 8



Figure Ext. 9

## Building Envelope Conditions

### **Existing Condition Assessment:**

- Exterior Openings:
- Exit/Entrance Door A: This is the main secure entrance to the high school. The full-light doors are aluminum framed with an enamel finish.

The sweeps, gaskets, and perimeter sealant are in good condition, and no immediate concerns were observed.

There is no immediate action required.



Figure Ext. 10

- Exit Door B: This door is secure and intended to be an exit door. The west leaf has a card reader operation for staff to use as needed.

The door and frame are aluminum and in good condition. The perimeter sealant is intact, not drying out, and should be functioning well. The sweeps at the bottom of the doors have been replaced (Figure Ext.12). The scar from the previous sweep installation could be cleaned up and painted to match, but not necessary for the door to function.



Figure Ext. 11

No action is required for this opening at this time.



Figure Ext. 12

- Exit Door C: This door is secure and intended to be an exit door. There is no card reader operation installed for this assembly.

The stoop has iron oxide staining as described in the exterior concrete assessment. There is also patching around the stoop here to accommodate where the sidewalk has settled (Figure Ext.13).



Figure Ext. 13

- Exit Door D: This door is secure and intended to be an exit door.

The door and frame are aluminum and in good condition. The perimeter sealant is intact, not drying out, and should be functioning well. There is some stressed sealant at the base of the door, likely from snow melting salt. The sweeps at the bottom of the doors have been replaced (Figure Ext.14). The scar from the previous sweep installation could be cleaned up and painted to match but not necessary for the door to function.

No action is required for this opening at this time.



Figure Ext. 14

- Exit Door E: This door is secure and intended to be an exit door. It has been reported that his location is frequently used by the student occupants to let other students in and sometimes, in the past, even propped open.

The door and frame are aluminum and in good condition. The perimeter sealant is intact, not drying out, and should be functioning well. The insulated glazing unit above the western door leaf appears to be failing (Figure Ext.15). There are deposits on the interior surface of the glazing due to the glazing seal being compromised, allowing condensation between the glass.

The compromised glazing unit may need to be replaced. However, there is a security risk that should be addressed.

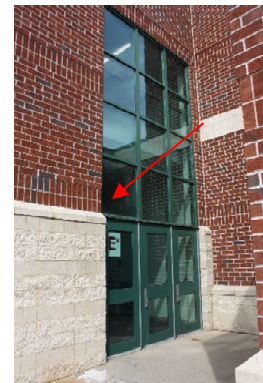


Figure Ext. 15

- Exit Door @ Greenhouse Passage: This door is exit-only as there is no hardware on the exterior side.

This hollow metal door is in good condition, including the perimeter seals, weather stripping, and sweep. There is some rust forming at the base of the frame jambs with bubbling paint (Figure Ext.16).

No immediate action is required, but addressing the rust at the bottom of the jambs will eventually need mitigation.

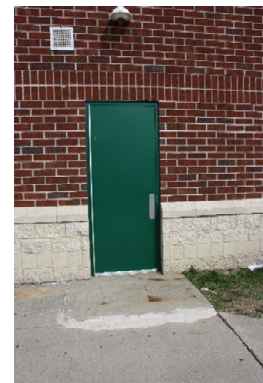


Figure Ext. 16

- Access Door @ Woods Storage: This door is an access door to the woods technical class material stock storage.

This is a hollow metal pair of doors in good condition, including the perimeter seals, weather stripping, and sweep. There is a small dent on the western (Figure Ext.17).

No immediate action is required, but addressing the rust at the bottom of the jambs will eventually need mitigation.



Figure Ext. 17

- Exit Door @ Woods Shop: This door is an exit with only a pull and deadbolt cylinder hardware on the exterior side.

This hollow metal door is in good condition, including the perimeter seals, weather stripping, and sweep.

There is no immediate action required currently at this opening.



Figure Ext. 18

- Access Door @ Dust Collector: This door is an access door to the dust collector.

This is a hollow metal pair of doors in good condition, including the perimeter seals, weather stripping, and sweep.

There is no immediate action required.



Figure Ext. 19

- Exit Door @ Small Engines Shop: This door is an exit that only has only a pull and deadbolt cylinder hardware on the exterior side.

This hollow metal door is in good condition, including the perimeter seals, weather stripping, and sweep. There is a filtered port on the door that serves some function in the small engines/trades shop area.

There is no immediate action required currently at this opening.

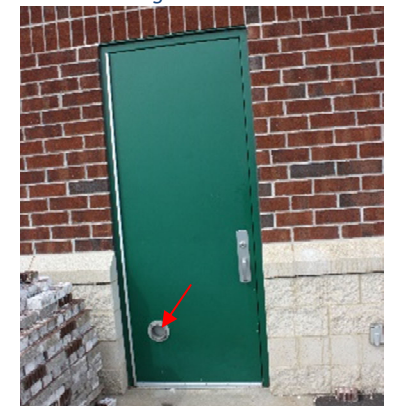


Figure Ext. 20

- Overhead Door @ Small Engines Shop: This is an insulated roll-up door that allows access to the small engines shop area. The door is in overall good condition. There is rust along the bottom stiffener connected to the door bottom seal. The rust hasn't reached an alarming condition, but repainting the metal will prevent further deterioration.



Figure Ext. 21

- Access/Exit Door @ Metals Shop: This door is an access door to the metal's technical education shop.

This is a hollow metal pair of doors in good condition, including the perimeter seals, weather stripping, and sweep. It also appears to have been repainted to cover previously chipped paint.

There is no immediate action required.

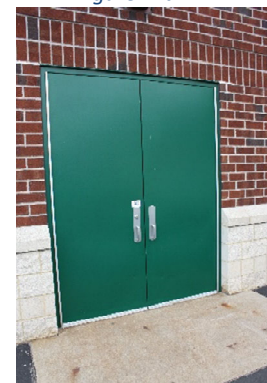


Figure Ext. 22

- Exit Door F: These doors are exit doors, but there is a card reader at the center leaf for staff access as it is near staff parking. It has been reported that this door is also frequently used by the student occupants to let other students in and sometimes, in the past, even propped open.

This is a hollow metal set of doors in good condition, including the perimeter seals, weather stripping, and sweep.

There is no immediate action required. However, there is a security risk that should be addressed.

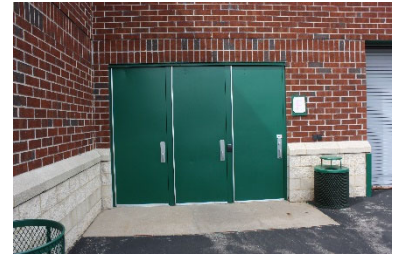


Figure Ext. 23

- Overhead Door @ Mechanical Room: This is an insulated roll-up door that allows access to the mechanical room. The door is in overall good condition. There is rust along the bottom stiffener connected to the door bottom seal. The rust hasn't reached an alarming condition, but repainting the metal will prevent further deterioration.

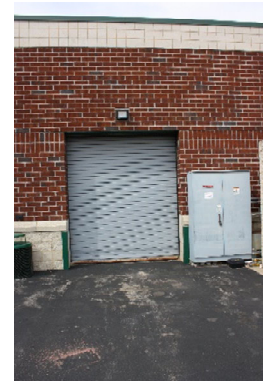


Figure Ext. 24

- Overhead Door @ Receiving: This is an insulated roll-up door that allows access to the receiving area. The door is in overall good condition. There is rust along the bottom stiffener connected to the door bottom seal. The rust hasn't reached an alarming condition, but repainting the metal will prevent further deterioration.

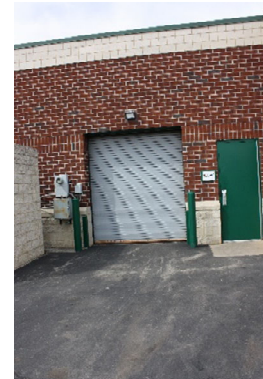


Figure Ext. 25

- Exit Door @ Receiving: This door is an exit and an access door for staff and has a card reader.

Most of the hollow metal door is in good condition, including the perimeter seals, weather stripping, and sweep. There is a severe rust issue on the hinge side of the frame at the bottom of the jamb. The rust has compromised the frame here, and there is a hole in the frame cavity (Figure Ext.27).

The rusted-through hole needs to be addressed as soon as possible. The frame may need to be replaced to correct this deficiency.

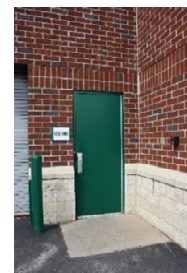


Figure Ext. 26



Figure Ext. 27

- Exit/Entrance Door G: This entry has three pairs of full-light hollow metal doors. These doors serve as the main public entrance for after-school events and activities in the high school and middle school. There is a card reader next to the east set of doors.

This is a hollow metal set of doors in good condition, including the perimeter seals, weather stripping, and sweep. The doors are protected from the weather, being set back from the face of the building in an alcove.

There is no immediate action required.



Figure Ext. 28



Figure Ext. 29

- Exit Doors @ Gym: This entry has three pairs of flush hollow metal doors. These doors serve as exit doors from the high school gym.

This is a hollow metal set of doors in good condition, including the perimeter seals, weather stripping, and sweep. There are a few dents in some of the doors, but they do not compromise the integrity of the doors. The doors are protected from the weather, being set back from the face of the building in an alcove.

There is no immediate action required.



Figure Ext. 30

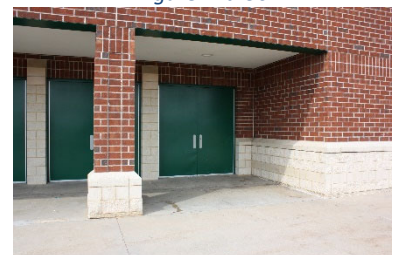


Figure Ext. 31

- Exit Doors @ Gym: This entry has three pairs of flush hollow metal doors. These doors serve as exit doors from the high school gym.

This is a hollow metal set of doors in good condition, including the perimeter seals, weather stripping, and sweep. There are a few dents in some of the doors, but they do not compromise the integrity of the doors. There is rust at the bottom of the jambs.

No immediate action is required, but addressing the rust at the bottom of the jambs will eventually need mitigation.

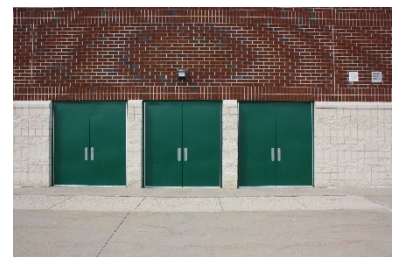


Figure Ext. 32

- Exit Door @ Music room: This is the exit and access door to the larch music room. The full-light door is aluminum framed with side light and has an enamel finish.

The sweeps, gaskets, and perimeter sealant are in good condition, and no immediate concerns were observed.

There is no immediate action required.

- Exit Door @ Music room: This is an exit door from the smaller senior high school music room.

This is a hollow metal pair of doors in good condition, including the perimeter seals, weather stripping, and sweep. There is a chip in the paint on the surface of the west door.

There is no immediate action required. Consider touching up the exposed primer at the paint chip.

It is reported that this exit door from the music room leaks at the lockset when there is a wind-driven rain event. This should be repaired or the lockset replaced.

- Exit/Entrance Door O: This entry has three pairs of full-light hollow metal doors. These doors serve as the main public entrance for after-school events and activities in the high school and middle school. There is a card reader next to the east set of doors.

This is a hollow metal set of doors in good condition, including the perimeter seals, weather stripping, and sweep. The doors are protected from the weather, being set back from the face of the building in an alcove.

There is no immediate action required.

- Exit Door @ Dressing rooms: This door is an exit from the auditorium dressing room area.

Most of the hollow metal doors are in good condition, including the perimeter seals, weather stripping, and sweep.

There is no immediate action required.

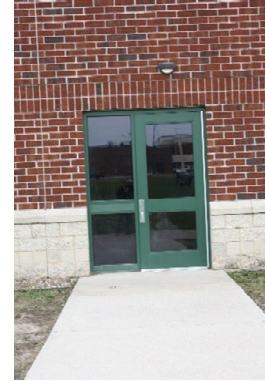


Figure Ext. 33

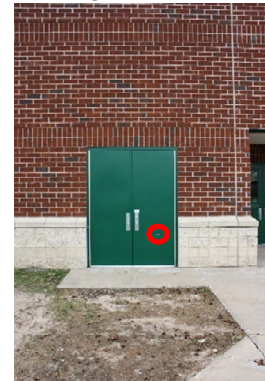


Figure Ext. 34



Figure Ext. 35



Figure Ext. 36

- Exit Door @ Dressing rooms: This door is an exit from the auditorium dressing room area.

Most of the hollow metal doors are in good condition, including the perimeter seals, weather stripping, and sweep.

- There is no immediate action required.

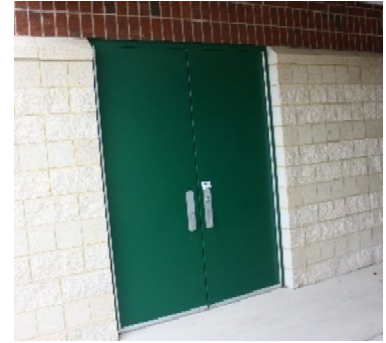


Figure Ext. 37

- Exit/Entrance Door P: This entry has two pairs of full-light hollow metal doors. These doors serve as the main public entrance for after-school events and activities in the high school. There is a card reader next to the east set of doors.

This is a hollow metal set of doors in good condition, including the perimeter seals, weather stripping, and sweep. The doors are protected from the weather, being set back from the face of the building in an alcove.

There is no immediate action required.



Figure Ext. 38

- Exit/Entrance Door Q: This entry has two pairs of full-light hollow metal doors. These doors serve as the main public entrance for after-school events and activities in the high school. There is a card reader next to the east set of doors.

This is a hollow metal set of doors in good condition, including the perimeter seals, weather stripping, and sweep. The doors are protected from the weather, being set back from the face of the building in an alcove.

There is no immediate action required.



Figure Ext. 39

- Windows General Conditions:

- Window Type 1: The windows are aluminum framed storefront style windows. The perimeter sealant is in similar condition as the aluminum entries. The aluminum entries are also storefront installations. The glazing units are insulating a double pane with spandrel glass on the second-floor plane.

There is no immediate action required.



Figure Ext. 40



Figure Ext. 41

- Exterior wall conditions:

- Wall condition: The facility's exterior is brick masonry with a decorative concrete masonry base. The structural backup is concrete masonry units.

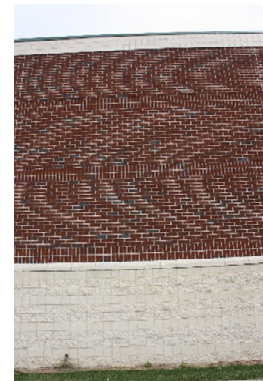


Figure Ext. 42

The mortar on most of the brick portions of the walls is in good condition. No significant issues were observed with the brick mortar or face brick at the time of the survey visit.



Figure Ext. 43

The horizontal mortar joint below the cast stone accent band is discolored and separated horizontally (Figure Ext.43 & Est.44). This discoloration appears to be mildew or mold. The condition may be caused by water escaping from the wall cavity at these locations.

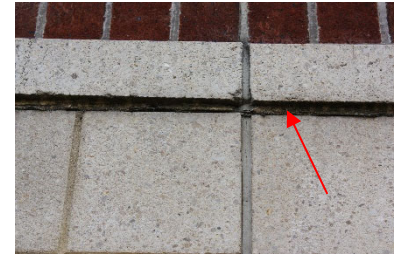


Figure Ext. 44

- Wall accessories:
- Masonry Weeps & Vents: Weeps appear to be installed at the bottom of the decorative concrete block (Figure Ext.45). However, the frequency of the installation is not apparent. The mortar joint at the bottom of the wall is mostly open and may be acting as a naturally formed weep location.



Figure Ext. 45

In at least one location, the head joints at the bottom block have been saw cut (FigureExt.46). This may have been done to relieve water head pressure if water had been trapped in the cavity.

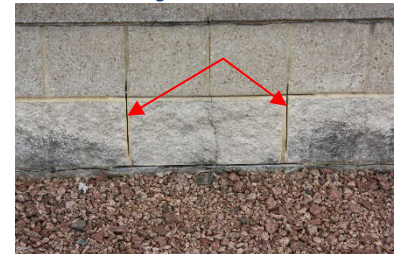


Figure Ext. 46

- Flashing: A flexible through wall flashing that terminates behind the face plane of the masonry. This type of installation is usually acceptable, but without the benefit of a drip edge, there is a chance of capillary action that could pull water in under the flashing. It is not known to be the case with this wall.

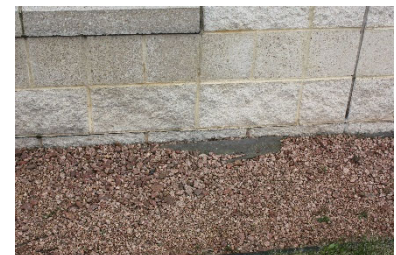


Figure Ext. 47

- **Building Expansion Assemblies:** The control joints installed were correctly spaced and installed. Some of the joints appear newer and may have been replaced. Some of the joints appear original and under the stress of their age (Figure Ext.48).

The joints typically run from the base of the wall to the parapets (Figure Ext.49).

There are a select few locations where a control joint should have been installed where the building's natural movement stresses certain conditions and causes cracking through the masonry units (Figure Ext.50). This condition isn't necessarily alarming, but when control joints are replaced in the future, it would be recommended to install a control joint in these locations.

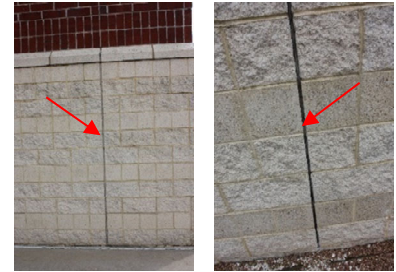


Figure Ext. 48

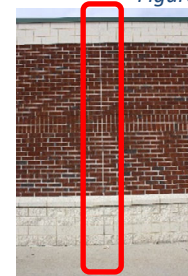


Figure Ext. 49



Figure Ext. 50

- **Roofing:**
- **General Roofing condition:** The high school roof is in good condition and was replaced in 2018. This is a ballasted EDPM roofing installation. There should be no immediate concerns with the roofing currently.



Figure Ext. 51

- **Roof Penetrations:** All mechanical and skylight penetrations have been correctly addressed during the re-roofing project (Figures Ext.52 & Ext.53). This means the contractor removed the mechanical equipment to properly flash under the equipment built-in flashings.



Figure Ext. 52



Figure Ext. 53

- **Flashings:** Some flashing conditions have needed additional sealant that likely was to mitigate a leak. Figure Ext. 54 is at one of the skylights shared between two classrooms.



Figure Ext. 54

- **Parapet Copings:** The parapet sheet metal was also replaced during the last re-roofing project for high school.

Some of the terminations and intersections of the coping cap pieces are not installed by the industry best practices. The sealant applied is already drying and cracking (Figure Ext.55). Typically, a wall termination would have an additional counterflashing to cover the upturned flange (Figure Ext.56).



Figure Ext. 55

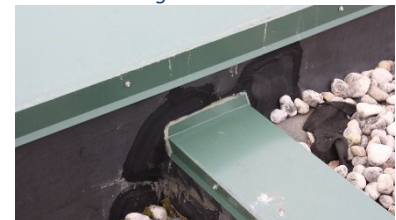


Figure Ext. 56

- **Roof Drainage Components:** The roof drains are in good condition and have the strainer cover over the inlet. The overflow drains do not have a strainer installed over the inlet (Figure Ext.57).



Figure Ext. 57

The lower canopies have a scupper opening and downspout for stormwater control (Figure Ext.58).



Figure Ext. 58

### ***Proposed Exterior Solutions & Benefits:***

- **Exit Doors:** Rust at the bottom of the hollow metal doors need to be mechanically removed, primed, and painted. The exit door at receiving needs to be repaired where a hole has rusted through. The hole might be unable to repair and potentially will need to have the frame replaced. These repairs will increase the longevity of the doors and frames.

It is recommended to rinse the exterior doors and frames down in the spring to remove any latent salt deposits left on the assemblies. This will assist in keeping the salt from deteriorating the finish and rusting the metal.

- **Windows General Conditions:** Consider replacing the failing glazing units that have compromised glazing seals. This will increase the thermal performance of that glazing unit to at least the original performance.

Inspect the perimeter sealants around the openings at a minimum of five-year increments until fifteen years after original implementation. After that, two-year inspection cycles are recommended.

- **Stone and masonry sills:** Replace the cracked and mildew-stained mortar joint just below the stone cap above the decorative CMU base. Where there are cracks located in the vertical mortar joints at this stone band and similar sills, consider installing soft calk joints

- **Roofing:** No action is required currently.

- **Roofing Accessories:** it is recommended to add strainers to the overflow drains.

It is recommended to add fixed ladders to the roof areas that are currently only accessible by a loose ladder. This will provide safety to navigate to those roofs when necessary.

- **Control Joints:** Replace old joints that are cracking and beginning to separate from the substrate.
- **Walls:** inspect the walls for cracks in the masonry units and the mortar joints. Remove mortar and tuckpoint joints for cracks greater than 1/16" in with and greater than 8" long vertically and 16" long horizontally.
- **Paving and lots:** Consider concrete replacement at the severely rust-stained stoops. Using a concrete additive and coated reinforcement can prevent rust staining. Consider replacing the concrete walks and curbs that are deteriorated and patched. Include the sections of concrete that are uneven and ones that need to be ground down.

Continue filling the cracks in the asphalt to keep water from infiltrating the subgrade. Monitor the cracking after every winter to verify the asphalt doesn't crack into small pieces or create potholes.

## Interior Spaces & Finishes

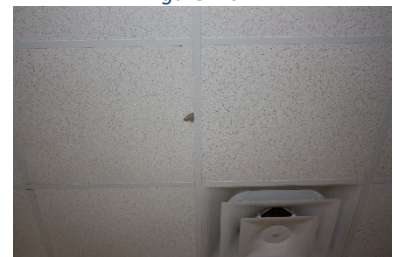
### *Existing Condition Assessment:*

- **Ceilings General:** The 2x2 acoustical tile ceiling installed will stand up to humidity longer than the typical 2x4 ceiling tiles usually installed. Some tiles have stains indicating a previous leak (Figure Int.1). It is recommended to verify there are no active leaks in the roof or mechanical equipment above ceilings when replacing the ceiling tile.



*Figure Int. 1*

Some damaged tiles might be desirable to be replaced. (Figure Int.2)



*Figure Int. 2*

- **Floors General:** There are a few different types of floor coverings in the corridors and common spaces.

Some of the sheet carpeting is still in fair to good condition (Figure Int.3). the sheet carpeting is more difficult to maintain as an unrecoverable stain or damage to sheet carpeting requires entire sections of carpet to be replaced.



*Figure Int. 3*

On the second floor, there is a large water stain on the carpet that has been reported from a planter previously installed in the space (Figure Int.4).



*Figure Int. 4*

There is original VCT still present in some areas (Figure Int. 5). The tiles have shrunk over time and now have many gaps in the seams. It is recommended to replace this floor tile as maintaining this floor covering will get increasingly more difficult.



*Figure Int. 5*

The main commons space has ceramic tile flooring (Figure Int.6).



Figure Int. 6

The tile surface has many scratches, and the tile finish is compromised. The grout lines are also very stained and need a deep cleaning (Figure Int.7). The grout would need to be sealed frequently to prevent additional staining.



Figure Int. 7

At the vestibules, a resilient sheet floor covering was installed (Figures Int.8, Int.9, & Int.10). This product has not stood up to the traffic in and out of the doors where salt and moisture are carried into the building.



Figure Int. 8

This flooring is failing at all locations installed. Particularly at the door thresholds (Figures Int. 9 & Int.10) as well as under the walk-off mats where water may have seeped under the mat by capillary action (Figures Int. 8 & Int.9).



Figure Int. 9



Figure Int. 10

- Walls General: Walls in most of the common spaces in the high school are typically burnished concrete blocks with a polished-looking surface.



Figure Int. 11

The concrete block is very resilient and will last for a very long time. No major issues were observed with the burnished block installations.



Figure Int. 12

There are also areas where plain CMU is installed with a painted finish (Figure Int. 14). This is mainly in the 'back-of-house' areas of the building, such as the service corridors. The painted CMU is also in good condition in most locations.

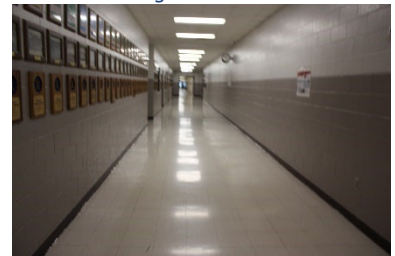


Figure Int. 13

Some locations have cracks in the masonry walls (Figures Int.15 & Int. 16). In these instances, the wall may need to be analyzed by a structural engineer to verify that a major structural issue has not occurred. The engineer would be able to recommend structural repairs or verify a standard tuck-pointing procedure would be adequate.

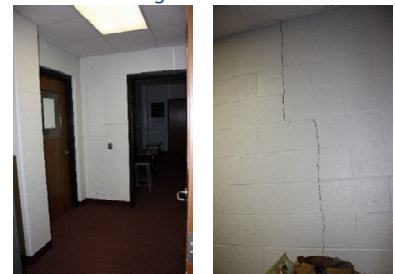


Figure Int. 14

Figure Int. 15

- Classroom General Condition:
- Classroom Doors: The classroom doors are typically flush wood veneer (Figure Int.17). The doors are generally in good condition, and no immediate action is required. We recommend inspecting the wood doors for any chips in the veneer and keeping up on maintenance. The glass in the side-lites is not likely ballistic-rated glazing. This is a concern for active shooter safety.



Figure Int. 16

- **Classroom Ceilings:** The majority of the 2x2 ceilings (Figure Int.18) are in good condition, with some stained and damaged tiles in select locations that can easily be swapped out with new tiles.

The ceiling in the consumer education area does have a higher exposure to humidity as this is a large kitchen area (Figure Int.19). These tiles are recommended to be replaced with a washable vinyl-faced ceiling tile, more typical for areas with higher moisture susceptibility.



Figure Int. 17



Figure Int. 18

- **Classroom Floors:** There is original VCT still present in some classrooms (Figure Int. 20, Int.21, & Int.23). The tiles have shrunk over time and now have many gaps in the seams. It is recommended to replace this floor tile as maintaining this floor covering will get increasingly more difficult.

Many classrooms have sheet carpeting installed (Figure int.23). Some of the sheet carpeting is still in fair to good condition. The sheet carpeting is more difficult to maintain as an unrecoverable stain or damage to sheet carpeting requires entire sections of carpet to be replaced.



Figure Int. 19



Figure Int. 20



Figure Int. 21



Figure Int. 22

Classroom A-113 has had the flooring replaced with modern carpet tile (Figure Int.24). Today's modern carpet tile is very stain resistant and allows for mitigating damage or stains to the carpet as only the damaged tiles are required to be replaced in lieu of replacing whole sections of sheet carpeting.

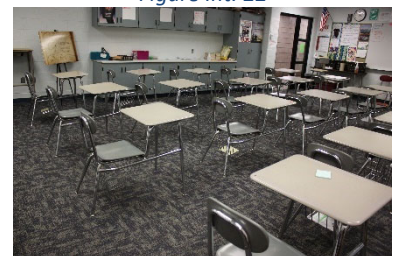


Figure Int. 23

- Classroom Walls:** Most walls of the gypsum board-covered walls in the classrooms are painted and in good condition. Some walls have vinyl wall coverings on them. In areas like these, unless the space is air-conditioned, the vinyl wall covering is susceptible to humidity and can peel. (Figure Int.25).



Figure Int. 24

Some locations have cracks in the masonry walls (Figures Int.26). In these instances, the wall may need to be analyzed by a structural engineer to verify that a major structural issue has not occurred. The engineer would be able to recommend structural repairs or verify a standard tuck-pointing procedure would be adequate.



Figure Int. 25

- Casework:** Plastic laminate casework is installed in classrooms (Figures Int. 27, Int.28, & Int.29). The casework is in pretty good condition except for the countertops in the consumer education room, and most of the cabinets in the classrooms have lockable tumblers installed on the cabinets. Having lockable cabinets are important to secure materials for student safety, especially in the science labs (Figure Int.28).



Figure Int. 26

The cabinets are two color schemes, light blue and pinkish color. These might not be a modern color scheme, but they are still functional, and no major issues were observed during the survey visit.



Figure Int. 27

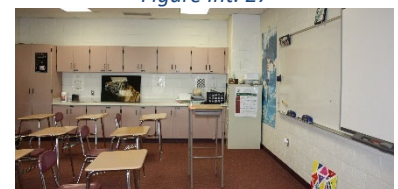


Figure Int. 28

- **Furnishings:** The student desks are typically single desks and chairs in the traditional subject classrooms (Figure Int.31). These are mostly in good condition for the desk that was observed, but not every desk was looked at.



Figure Int. 29

The science labs and art rooms have traditional lab tables and chairs (Figure Int.32). The chairs are older but still in good working order.



Figure Int. 30

Some of the technical and special subject classrooms have standard type, multi-student tables.



Figure Int. 31

- **Technology:** Most classrooms have a video screen that can be connected to a workstation (Figure Int.34). Many of the classrooms also have smartboards (Figures Ext.35 & Int. 36) that are reported to have systematically started failing over recent years.

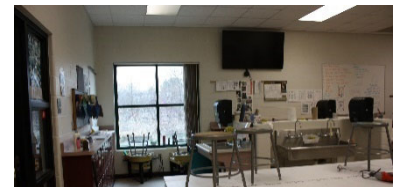


Figure Int. 32

The school district is currently working on a technology upgrade plan to replace television screens and smart boards with multimedia smart touch panels. The elementary school has been completed, and it is reported the high school will get the technology upgrade next.



Figure Int. 33



Figure Int. 34

- Music Room:** The music rooms for the chorus and band are tall spaces (Figures Int.37 & Int.38). The band teacher reported that more storage could be useful for the chorus. There is an underutilized staircase just west of the band room that could be added to the band to be used for more storage and band space. The exterior exit door from this room leaks at the lockset when there is a wind-driven rain event. This should be repaired, or the lockset replaced.

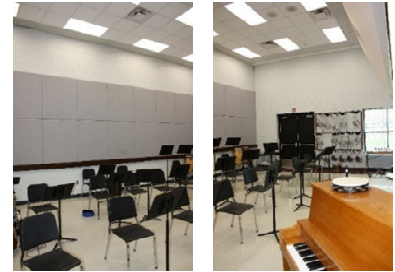


Figure Int. 35

The band room is east of the chorus room (Figure Int.38) and could use more acoustical treatment on the walls.

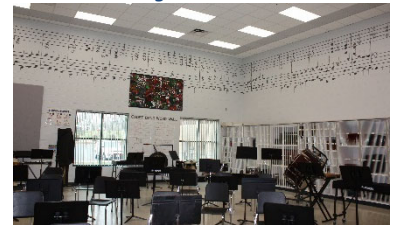


Figure Int. 36

One recommendation is to also install carpet tile on the floor instead of the current VCT to add additional acoustical performance.

The lighting in these rooms has been replaced with LED light panels providing ample light for the spaces, reading, and 81.2-foot candles. These LED lights are tunable and dimmable to allow for different room settings.



Figure Int. 37

Figure Int. 38

Across the corridor from the music spaces are practice rooms (Figure Int.38).

- Art Room:** The art classrooms are equipped with several different learning opportunities, including pottery wheels (Figure Int.39) and a kiln room.



Figure Int. 39

The workstations are lab-type tables for extra space and collaborative learning. The floors are original VCT but are in better condition than some of the other areas in the school. Eventually, the flooring will need more than traditional maintenance can provide. There is no immediate concern currently, though.



Figure Int. 40

There is a storage area segregated for art supply materials.



Figure Int. 41

- Agricultural Studies: The agriculture classroom has casework and two student desks like the other labs. The casework and furnishings are in good condition.



Figure Int. 42

The Ag Lab space used for food processing has three sink stations but only one cooktop. The lab workstations are counter height tables and have the versatility of mobility. The casework and workstations are also in good condition. There are no concerns to report currently.



Figure Int. 43

The floors in these spaces are still the original VCT which have shrunken over time, and there are gaps at the seams.

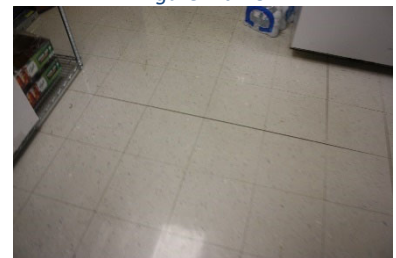


Figure Int. 44

The passage to the greenhouse is used for the storage of the greenhouse. Most of this is open containers and equipment. Lockable storage cabinets would be recommended to install in this space.



Figure Int. 45

The greenhouse is physically in relatively good condition. The shading system is non-functional and damaged. It may be desirable to repair the shading system.

- Tech Ed (Woods): The wood shop has an epoxy-painted floor that will need to be touched up or repainted eventually for aesthetics. No deficiencies were reported with the equipment, and the dust collection system appears to be functioning.

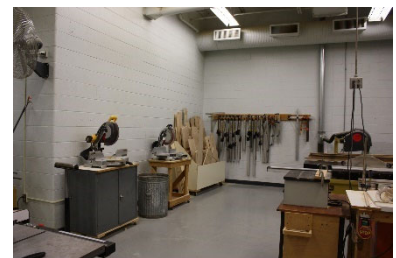


Figure Int. 46

The worktables are in good condition and provide storage in the bases. The CNC machine is located in the tool storage room, and the computer is used for operating it as well. The workstation should be located in a cleanroom-type space and connected to the CNC through networking cables to keep dust away from the workstation.

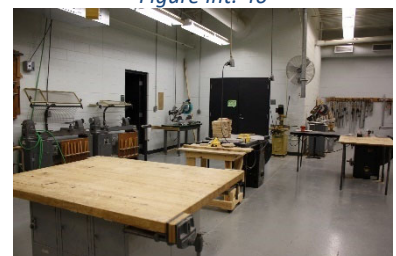


Figure Int. 47

The woods department also has a lot of storage for stock materials and is organized pretty well.

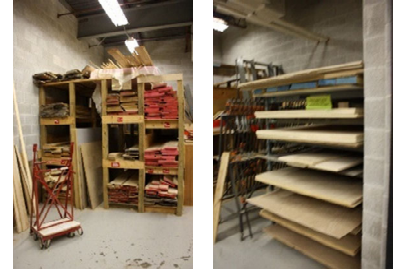


Figure Int. 48

- Tech Ed (Engines/Trades): The small engine shop also has an epoxy-painted floor that will need to be touched up or repainted eventually for aesthetics. No deficiencies were reported with the equipment.



Figure Int. 49

This space is shared with the construction trades curriculum. This shop has metal worktables needed for the engine repair classes. This classroom also has a tool storage area and parts storage racks.



Figure Int. 50

- Tech Ed (Metals): The metal shop also has a bare concrete floor. There is a CNC cutter with a fume extraction hood that is appropriately sized above the equipment (Figure Int.51).



Figure Int. 51

The welding stations along the wall are enclosed by welding curtains and do not have hard walls. The fume extraction system is a ducted system served by one exhaust unit (Figure Int.52). Each station has a point-of-use extension hose with a magnetic foot to hold the point-of-use hood in place (Figure Int.53).

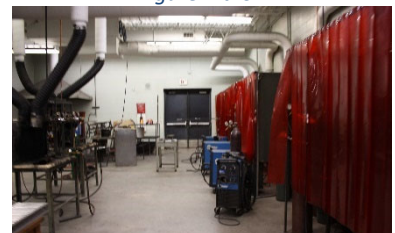


Figure Int. 52

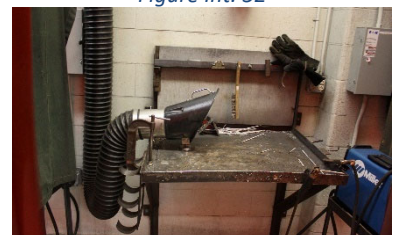


Figure Int. 53

There are additional welding stations that do not have the protection of welding curtains (Figure Int.54). It is recommended to have welding curtains around these stations. It may be desirable to reconfigure the welding stations to be more efficient, with hard walls on the welding booths. It is also recommended to add task lighting at the welding booths.

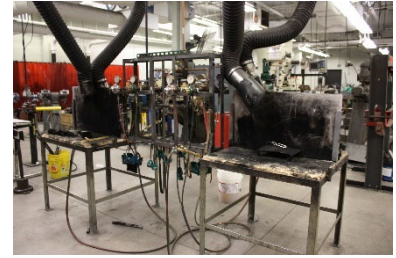


Figure Int. 54

- **Family & Consumer Ed:** The Family and consumer education classroom has two different flooring types. The commercial kitchen used for commercial culinary instruction has quarry tile flooring, which is the same tile installed in the high school kitchen.



Figure Int. 55

The equipment is typical of what you would find in a commercial restaurant kitchen.



Figure Int. 56

There are several residential kitchen stations. The plastic laminate countertops are beaten up a little and have delaminated countertop sections, especially at some of the edges.



Figure Int. 57

There is open shelving with containers and cooking implements (Figure Int.58). There are side rooms that were offices used as storage. Storage could be laid out better.



Figure Int. 58

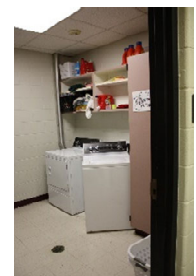


Figure Int. 59

There is a laundry room that has one set of washer and dryer (Figure Int.59).

- **Restrooms:** The restrooms typically have ceramic tile finishes on the walls (Figure Int.60) and mosaic tile flooring (Figure Int.61). The ceramic tile is in good condition, but the grout will need periodic deep cleaning and re-sealing. The installed grout does not likely contain epoxy additives that newer grout has.



Figure Int. 60

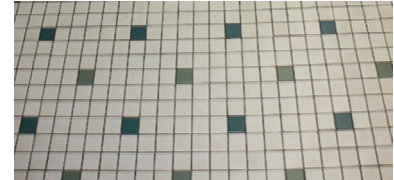


Figure Int. 61

The metal toilet partitions are in fair condition (Figure Int.62), and there is an accessible toilet stall available (Figure Int.63). The wall-hung urinals in the men's restroom have privacy screens installed (Figure Int.64). All these features make the restroom compliant with modern building codes.

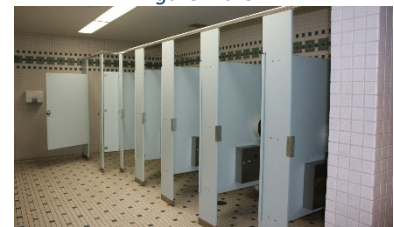


Figure Int. 62

The flush valve (Figures Int.63 & Int.64) and faucets (Figure Int.60) are manual controls. We recommend installing touchless controls for the water delivery controls for water savings and to reduce the number of surfaces occupants would touch. This will reduce the spread of bacteria and viruses. The faucets are the push-down spring controls. At the survey site visit, a stuck open control was observed, causing water to run continuously. This is where water savings could be improved upon.



Figure Int. 63



Figure Int. 64

- **Kitchen:** The high school kitchen is a full-service commercial kitchen and services both the high school and the middle school. The floors are quarry tile with dark grout that conceals stains (Figure Int.65). All the fixtures and equipment are stainless steel.



Figure Int. 65

The walls in the kitchen are porcelain-faced CMU (Figure Int.66). This is very durable and easily cleanable. Exhaust hoods are located above the equipment that requires them.



Figure Int. 66

The lighting in the kitchen may be a little dimmer than a kitchen requires. It might be desirable to install a brighter LED light panel.



Figure Int. 67

The Kitchen serving lines are securable by the overhead coiling doors installed at the serving line and the dish return. These are in good working order.

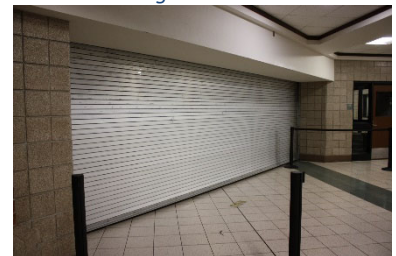


Figure Int. 68

- Commons/Cafeteria: The main commons area has several purposes (Figure Int.69). This space serves as the cafeteria space, student commons area, and a public reception gathering area as it is adjacent to both the gymnasium for athletic events and auditorium for music and theatrical productions. There is an abundance of trophy cases that reportedly have outdated contents. These could potentially be overhauled or updated.



Figure Int. 69

This space is a two-story space and requires destratification. There are adjacent clearstory windows to let in natural light allowing daylight visibility through the second-floor borrowed lights into the media center.

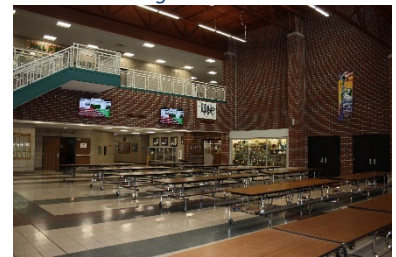


Figure Int. 70

The flooring in this area was covered under the general flooring section previously in this report.

The furnishings are folding tables and are left deployed most of the time during the school year.

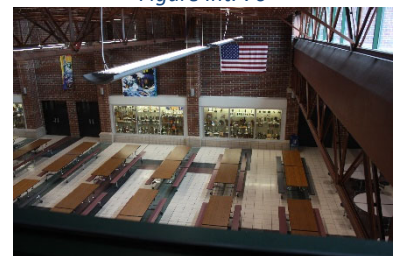


Figure Int. 71

- Marketplace:** There are a couple of marketplaces located in the high school. There is a coffee shop (not pictured), a school store (Figure Int.72), and a concession stand (Figure Int.73).

The store is underutilized now and being used as kitchen overflow storage since closing during the pandemic. It has been reported that the school desires to get the store operating again, and the space could use some light renovations.



Figure Int. 72

No major deficiencies have been reported for the concessions. The plastic laminate counter is chipped (Figure Int.74) and could use repair or replacement. A stainless-steel countertop is recommended for cleanliness and sustained durability.



Figure Int. 73



Figure Int. 74

- Drinking Fountains:** The drinking fountains located in the high school are original to the building (Figures Int. 75 & Int. 76). None of these have bottle filling stations. It is recommended that at least one drinking fountain at each location is replaced with a bottle filling station, or, in some cases, a bottle filling station is added to at least one of the drinking fountains. The recessed drinking fountains in the gymnasium should be upgraded to bottle filling stations.



Figure Int. 75



Figure Int. 76

- The Media Center:** The media center is carpeted with sheet carpeting, and the seating is typical older style library furniture (Figure Int. 77). Updating the carpet to a carpet tile is recommended, and it may be desirable to update to modern collaborative style seating.



Figure Int. 77

The open collaboration space (Figure Int.78) does not have seating making these areas less usable.



Figure Int. 78

The translucent panel skylight, intended to add diffused natural light to the space, is a little ambered or yellowed, which can happen over time. There is also peeling paint in the skylight well, indicating that there had been a leak (Figure Int.79).



Figure Int. 79

The computer lab located in the media center is currently underutilized (Figure Int.80). This space is being used as a storage area and as a workroom. Since the school district operates as a one-to-one technology, computer labs are not needed as much as they had been in the past.



Figure Int. 80

There are more stacks with the collection than modern school libraries typically have (Figure Int.81). With online resources being available to students, the collection may be able to be reduced, opening the possibility for added collaborative spaces.

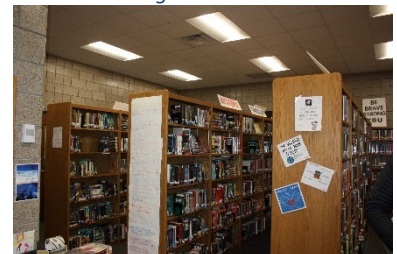


Figure Int. 81

Also located in the media center are the IT production departments. An audio department as well as a video production department (Figure Int.83) is adjacent to the media center. These spaces are a little cramped but are reported as functional. The IT resource repair is also conducted from this space.



Figure Int. 82

Some conference spaces are reported to be underutilized as well. These spaces may need to be renovated to modernize them as collaborative spaces.



Figure Int. 83



Figure Int. 84

- **Gymnasium:** The gymnasium is in good condition, and the wood floors have been well maintained. The bleachers are modern and have ADA spectator accommodations included (Figure Int.85).



Figure Int. 85

This gymnasium also has additional space that can be divided with an operable partition. No issues with the partition were reported at this time. This space serves as a physical education break-out space and an additional basketball court.



Figure Int. 86

- **Locker Rooms:** The locker rooms are in good condition, including the lockers and benches. The locker rooms were renovated when the middle school was added in 2015 (Figure Int.87).

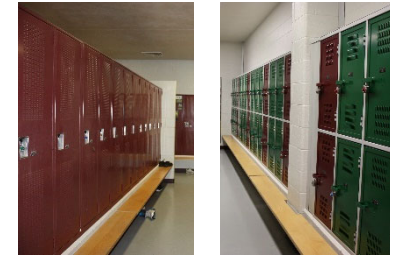


Figure Int. 87

The passage entry to the locker rooms is the original VCT. This floor covering is shrunken, and gaps are present between the tiles (Figure Int.88).

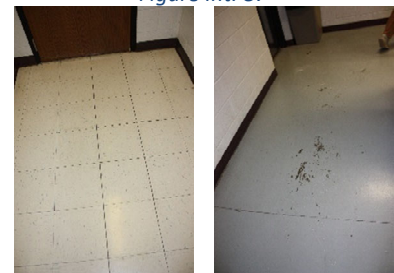


Figure Int. 88

Figure Int. 89

The epoxy-painted floor is worn and chipped in some spots. This should be patched or recoated to prevent the floor covering from worsening (Figure Int.89).

The locker rooms have gang shower posts in the shower rooms. This may limit the use as most students prefer individual shower stalls. It may be desirable to renovate the showers to include individual shower stalls. This may reduce the capacity of the shower room but will increase its usability.

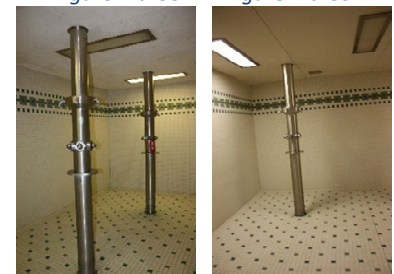


Figure Int. 90

The restroom facilities included in the locker rooms are accessible and provide privacy at the urinals.



Figure Int. 91

The flush controls are manual and could use the same benefits of touchless controls as the main restrooms in the high school.



Figure Int. 92

- Administration:** The main reception is where visitors arrive at the school. The arrival sequence is reported to be awkward between the staff as operations ensue during a normal day. The layout may be better served to be renovated, and operations flipped between the reception desk and the workroom/conference room. This could allow better flow and more convenient control when checking in visitors or adjusting attendance while keeping the desk open to help other students.



Figure Int. 93

Still located in the original admin and student services are the guidance offices and conference rooms, as well as other administrative offices. These spaces have adjusted in function but operate adequately. No concerns have been reported; however, there are opportunities that light renovations will upgrade the functionality.

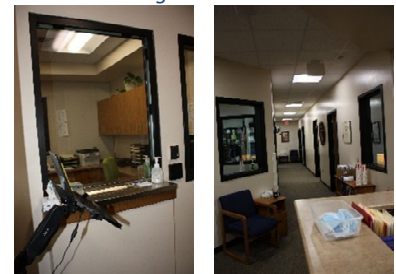


Figure Int. 94



Figure Int. 95

- Acoustical readings and analysis: When evaluating educational spaces, it is important to keep in mind how rooms perform acoustically. Two distinct criteria can be evaluated for a sample set of rooms. These evaluations are best conducted in empty rooms with the normal operation of the HVAC systems.
  1. First is the ambient or background noise that persists in a classroom (noise from lighting, mechanical systems, exterior environment). It is important to keep these noises in check because instructors must be distinctively louder than the background noise at all locations where students are seated and listening for the student to adequately hear. Ideal Classroom Noise Criteria (NC) should be between 25-30. Alternatively, background noise, in general, should not exceed 35 dBA. We conclude that several learning spaces should be evaluated further to reduce noise from the mechanical systems.
  2. The second factor that should be evaluated is the reverb timing in the 500 Hz octave band, a band that is closely related to human speech. Reverb is the persistent echo of noise within a space, so the longer a space echoes (more live), the muddier the speech will sound and become less intelligible. Conversely, humans are naturally used to some reverberance, so too little reverb results in a space sounding too dead. The Acoustical Society of America has published a range of acceptable reverb times for different types of spaces within a school setting.

### ***Proposed Interior Solutions & Benefits:***

- **Ceilings General:** Replace damaged and stained ceiling tiles. Clean ceiling tile not only improves the visual appearance of the spaces but also provides a way to detect new leaks quicker.
- **Floors General:** Replace damaged carpeting. Consider replacing the sheet carpet installations when replacement is necessary with newer stain-resistant commercial carpet tile. This will greatly decrease maintenance costs.

Consider replacing the VCT with flooring like LVT with diamond 10 finish to significantly reduce the maintenance cost required for the flooring.

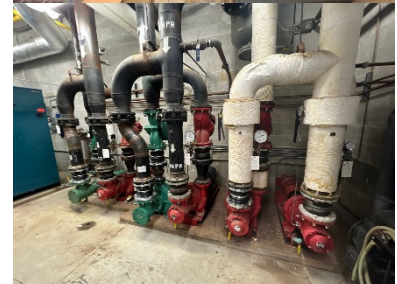
- **Walls General:** Evaluate crack CMU walls with a structural engineering consultant to verify that there are no structural issues. Repair the cracks in the CMU walls and paint to match the existing wall color.
- **Drinking Fountains:** We recommend adding bottle filling stations where existing equipment allows and/or replacing drinking fountains with bottle filling stations. This will allow touchless stations to reduce bacteria and virus spreading.
- **Classroom Doors:** Consider refinishing the scratched doors. Fill small, chipped veneer before refinishing. For doors will be extensively scratched and damaged at the base of the door, it is recommended to install a stainless steel kickplate to as longevity to the door.
- **Casework:** Replace the countertops in the Culinary/Family and Consumer Education room. These countertops are in the worst shape in the classrooms. Plastic laminate would provide a lower first cost for countertops, but a solid surface will provide a longer-term solution with lower maintenance costs.
- **Furnishings:** There is no immediate concern for the general furnishings in the school. Consider modern collaborative furnishings for replacement in some areas, including the Media Center.
- **Technology:** It is understood that there is currently a plan to upgrade classroom technology with smart touch flat panels. No additional recommendations are needed currently.
- **Boy's / Girl's Restrooms:** Planned renovations of the restrooms could include new modern tile for the walls, refreshed toilet partitions, replacing banks of lavatories with wash fountains, and all touchless flush controls.
- **Gymnasium:** No recommendations are currently required. Continue to maintain the flooring and refinishing as required. Consider staining the floor striping instead of painting when next doing a major refinishing of the gym floor.

- Locker rooms: Refinish the locker room floors, including the VCT entry passages. Consider an epoxy floor for durability and significantly reduce maintenance. Consider renovating the gang showers into individual shower stalls to provide privacy for the users.
- Media Center: Consider renovating the Media center to be a more modern space with additional collaboration areas and spaces. Consider reverting the workroom to its original use for student and staff resources.
- Administration: Consider renovating the administration and reception area to allow the staff to better control the entry sequences and administration services.

## Heating System

### *Existing Conditions:*

- These boiler plants provide hot water heating to the building through unit HW heating coils located in water source heat pumps, unit heaters, and cabinet unit heaters.
- The boiler plant serving the building consists of two (2) HW boilers from Thermal Solutions. The boilers are 3,000 MBH input each and up to 88% efficient. The boilers were installed in 2020 and are in good condition. There is also a decommissioned steam boiler that is not in use.
- The heating plant capacity equates to roughly 25 BTU/SF (output), which is less than typical heating requirements in Wisconsin of approximately 40 BTU/SF; however, primary heating is done through water source heat pumps which traditionally require less capacity than HW heating coils. A holistic approach is required when assessing the heating capabilities of the boiler plants.
- The hot water plant distributes hot water to the building by two (2) inline primary pumps and two (2) base-mounted Taco distribution pumps. Both sets of pumps are at a constant speed and are in good condition. Another set of distribution pumps are base-mounted, constant speed, and should be targeted for replacement.



- The High School has a series of HW cabinet unit heaters which are located at the building perimeters and at entryways. These units are in good condition but, in almost every case, serve transitional spaces.
  
- The gym air-handling units (AHUs) are equipped with hot water heating coils for primary heating.

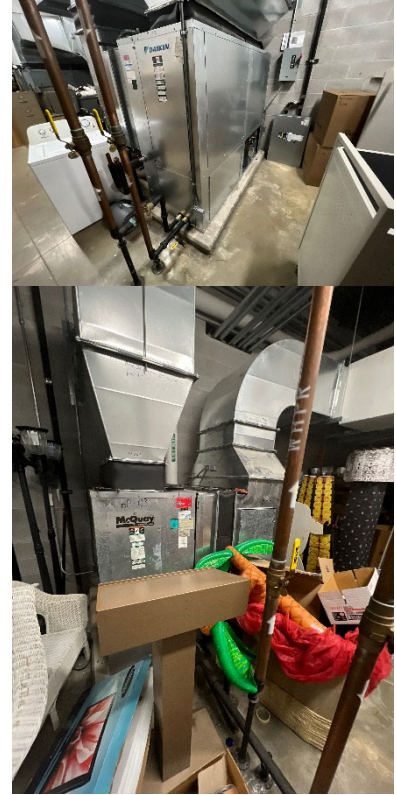
***Proposed Solutions:***

- Review boiler supply water reset curve to determine if additional energy savings can be achieved.

## Cooling System

### *Existing Conditions:*

- All occupied spaces within the school are provided with air conditioning from (96) packaged DX water-source heat pumps that provide cooling and heating to the high school spaces. Though a handful of these units have been replaced due to failure, the majority of them are past their service life and should be targeted for replacement.
- The cooling tower is located on the roof and rejects heat to the outdoors from the loop while the system is in cooling mode. The cooling tower is in fair condition but has more recently been reconditioned and balanced to extend the operational life of the unit.



### *Proposed Solutions:*

- Replace the water source heat pumps that have extended past their service life with either new units or evaluate a different system type if the facilities group has a different preference.

## Classroom Air Distribution

### *Existing Conditions:*

- All areas of the school are served with overhead air distribution from the packaged water-source heat pumps and fan coil units. The heat pumps typically serve either one of a couple of rooms and provide conditioned air to the space based on space requirements. The units can slightly vary airflow and air temperature supplied to the space(s) to maintain temperature setpoints.



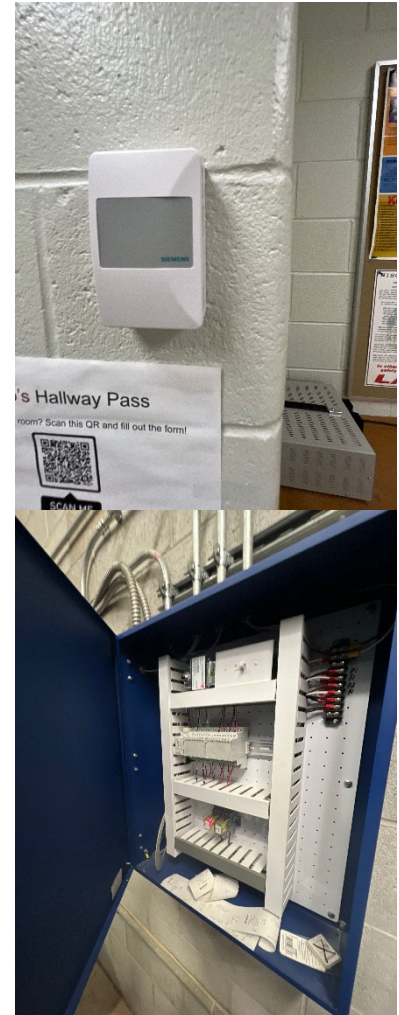
### *Proposed Solution:*

- Replace the water source heat pumps that have extended past their service life with either new units or evaluate a different system type if the facilities group has a different preference.

## Temperature Control System

### *Existing Conditions:*

- The building controls systems are DDC with Siemens automation system (BAS) interface. This system is comprehensive over all major HVAC equipment with zone/space controllers. The BAS appears to have the ability to fully control, trend, alarm, and notify the Customer of needs and inconsistencies in the system.



### *Proposed Solution:*

- No recommendations currently.

## Domestic Hot Water System

### *Existing Conditions:*

- The building is served by two high-efficiency gas-fired water heaters and recirculation pumps. These units are in fair condition.



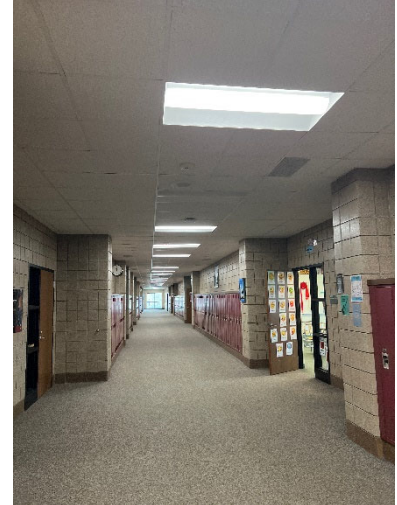
### *Proposed Solution:*

- No recommendations currently.

## Lighting System

### *Existing Conditions:*

- All of the interior lighting appears to be LED fixtures that illuminate the space learning environment. Most of the spaces were observed to have adequate light levels.



### *Proposed Solution:*

- No recommendations currently.

Berlin High School													
Building HVAC Equipment Inventory													
Equipment	Make	Model	Location	Quantity	Age	Expected Useful Life	Condition	Targeted Replacement Date				Outstanding Issues and/or Notes	
								1-2 Years	2-5 Years	5-10 Years	10+ Years		
Boiler	Thermal Solutions	EVCA3000BNI / 3MMbtu / 88% near condensing	High School Boiler Room	2	10	24	Good					✓	Condensing boiler
Boiler Pump	Primary HW Pump	Taco / 172gpm / 1hp / CV	High School Boiler Room	2	10	10	Fair	✓	✓				Inline pump ready for replacement
Boiler	Hartford Steam	150WBHE / 6MMbtu / Not Used	High School Boiler Room	1	32	24	Poor/Fair						Not used.
HW Pumps - Distribution	B&G	FE11BF / 20hp / 1750rpm / CV	High School Boiler Room	2	17	20	Poor/Fair	✓	✓				Constant Volume
HW Pumps - Distribution	Taco	CI3013E2 / 20hp / 1750rpm / CV	High School Boiler Room	2	1	20	Good					✓	Constant Volume
CHW Pumps - System	B&G	4BC / 7.5hp / 1750rpm / CV	High School Boiler Room	2	17	20	Poor/Fair	✓	✓				Constant Volume
DHW Pumps - Boiler Room	B&G	Inline, brass / 1/6hp	High School Boiler Room	2	11	10	Fair		✓	✓			Constant speed Inline pumps for DHW recirc.
DHW Heater - Boiler Room	HTP Water Heater	Phoenix	High School Boiler Room	2	11	15	Fair		✓	✓		✓	199MBH with 119 gal storage
Water Softener - Boiler Room	Hellenbrand	H-2000	High School Boiler Room	2	5+	18	Good					✓	
Plate-to-plate Heat Exchanger	ITT	GPX678-121	High School Boiler Room	1	27	20	Poor/Fair	✓	✓				
Generator	Onan Genset	150DGEA	High School Generator Room	1	27	20	Good			✓		✓	
Air Handling Unit (AHU-3) - Gym Area	McQuay	MBAF	High School Gym Mezzanine	1	30+	25	Poor/Fair	✓	✓				HW heat / split coil, No Cooling
Air Handling Unit (AHU-4) - Gym Area	McQuay	LHD, 22DH	High School Gym Mezzanine	1	30+	25	Poor/Fair	✓	✓				HW heat, No Cooling
Cooling Tower (CT-01)	Evapoo	LSTA 10-123	High School Roof	1	15+	20	Fair			✓			Recently refurbished w/drives
Heat Recovery Unit (HRV-01)	Heatex	E-RHXC-IB-209000 / 10SF hp / 7.5EF hp	High School Mezzanine	2	27	25	Fair			✓			Recently refurbished w/drives
Water-Source Heat Pump (HP-103)	McQuay	LHP12M / R-22 (1 comp) / 5 hp	High School Theatre Mezz.	1	27	19	Poor/Fair	✓	✓				
Water-Source Heat Pump (HP-104)	McQuay		High School Theatre Mezz.	1	27	19	Poor/Fair	✓	✓				
Water-Source Heat Pump (HP-102)	Daikin	LVD / R-410A (2 comp) / 7.5 hp	High School Theatre Mezz.	1	2	19	Good					✓	R410 Refrigerant
Water-Source Heat Pump (HP-107)	McQuay	LHP27D / R-22 (2 comp) / 10 hp	High School Theatre Mezz.	1	27	19	Poor/Fair	✓	✓				

Berlin High School												
Building HVAC Equipment Inventory												
Equipment	Make	Model	Location	Quantity	Age	Expected Useful Life	Condition	Targeted Replacement Date				Outstanding Issues and/or Notes
								1-2 Years	2-5 Years	5-10 Years	10+ Years	
Cabinet Unit Heaters	Various	Used at entry and transition spaces	Various	Multipl	Varies	20	Fair/Good			✓	✓	
Water-Source Heat Pump	McQuay	1/8hp 3/4ton cooling / 300cfm	High School Classrooms	8	25+	19	Poor/Fair	✓	✓			Concealed in ceilings
Water-Source Heat Pump	McQuay	1/8hp 1ton cooling / 400cfm	High School Classrooms	3	25+	19	Poor/Fair	✓	✓			Concealed in ceilings
Water-Source Heat Pump	McQuay	1/8hp 1.25ton cooling / 500cfm	High School Classrooms	7	25+	19	Poor/Fair	✓	✓			Concealed in ceilings
Water-Source Heat Pump	McQuay	1/8hp 1.5ton cooling / 630cfm	High School Classrooms	5	25+	19	Poor/Fair	✓	✓			Concealed in ceilings
Water-Source Heat Pump	McQuay	1/3hp 2ton cooling / 800cfm	High School Classrooms	4	25+	19	Poor/Fair	✓	✓			Concealed in ceilings
Water-Source Heat Pump	McQuay	1/3hp 2.5ton cooling / 1000cfm	High School Classrooms	31	25+	19	Poor/Fair	✓	✓			Concealed in ceilings
Water-Source Heat Pump	McQuay	1/2hp 3ton cooling / 1200cfm	High School Classrooms	11	25+	19	Poor/Fair	✓	✓			Concealed in ceilings
Water-Source Heat Pump	McQuay	1/2hp 3.5ton cooling / 1400cfm	High School Classrooms	4	25+	19	Poor/Fair	✓	✓			Concealed in ceilings
Water-Source Heat Pump	McQuay	3/4hp 4ton cooling / 1600cfm	High School Classrooms	4	25+	19	Poor/Fair	✓	✓			Concealed in ceilings
Water-Source Heat Pump	McQuay	3/4hp 5ton cooling / 2000cfm	High School Classrooms	19	25+	19	Poor/Fair	✓	✓			Concealed in ceilings
Automatic Transfer Switch	Onan	400amps	High School Electrical Room	1	27	25	Fair		✓			
Building Electrical Service	GE	3000amps	High School Electrical Room	1	27	25	Fair		✓	✓	✓	No indicated inefficiency
Fire Alarm Panel	Simplex	4100 ES	High School Electrical Room	1	27	25	Fair		✓	✓	✓	No indicated inefficiency
Elevator Machine	Schindler	E-0181	High School Generator Room	1	27	30	Fair		✓	✓	✓	No indicated inefficiency
Kitchen Hood	Greenheck	GCEWX-13-S	High School Kitchen	1	20	30	Fair		✓			No indicated inefficiency
Roof Mounted Exhaust Fans	Greenheck, Twin City, Cook	Various / 1/4-1.5hp	High School and Middle School Roof	31	Varies, many 15+	20	Fair		✓	✓	✓	No indicated inefficiency
Roof Mounted Exhaust Fans	Greenheck, Twin City, Cook	Various / 1/4-3hp	High School and Middle School Roof	30	Varies, many 15+	20	Fair		✓	✓	✓	No indicated inefficiency
Lighting	LED			Various	2+	20	Good				✓	Flourescent, HID, and LED
Building Automation Systems	Siemens			Various	5+	15	Fair/Good		✓	✓	✓	Direct Digital Controls with Electric Actuation

## Berlin Area School District Business Office

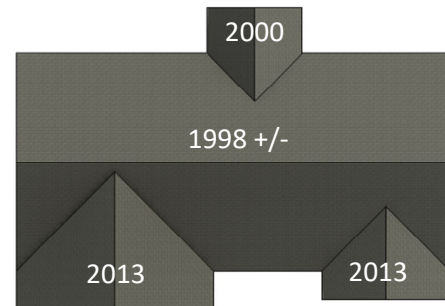
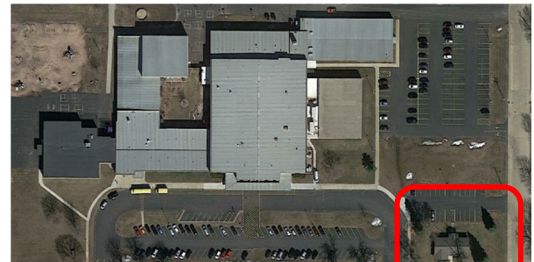


### Building Overview:

Berlin Area School District Business Office is a stick-framed residential style building. The original building was built before 2000 when the rear vestibule was added. In 2013, expansions were added to the front of the building, expanding the superintendent's office and the open office to also include an entry vestibule.

The building is on the southeast corner of the district's property, with residences to the south and east. The district business office has a dedicated parking lot to the north. The elementary school is directly adjacent to the northwest.

The district continues to perform regimented annual maintenance on systems, equipment, and interiors but also has a unique opportunity to replace the building with a facility that not only houses all the district admin team members with appropriate collaboration spaces but also the alternative learning program that is housed off-site.



**Building Evolution Diagram**



### Building's Highest Priorities

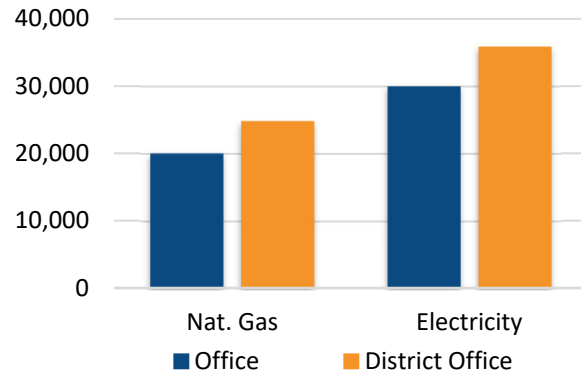
- 1) Water infiltration under the rear vestibule
- 2) Security for staff safety
- 3) Increasing the building size to accommodate full district staff

This summary of facility energy consumption and trends is for 2019 only. Due to COVID-19, electric and gas costs are assumed to be skewed for 2020 and 2021. The building performs with a total energy intensity usage of 60,709 BTU/SF. This is about what is anticipated for a high-performing office in the area.

### Building Performance:

Building Area (est):	1,580 SF	
Annual Electric Cost:	\$2,101	\$1.33/SF
Annual Gas Cost:	\$474	\$0.30/SF
Total Utility Cost:	\$2,576	\$1.63/SF
Electric Usage Intensity:	35,899 BTU/SF	
Gas Usage Intensity:	24,810 BTU/SF	
Total Energy Intensity:	60,709 BTU/SF	

**Average Usage vs. District Office**



## Site Features & Improvements

### *Existing Condition Assessment:*

- Asphalt Paving: This lot was added after the 2013 expansion. The asphalt is in good condition, and there are no immediate concerns with the condition.

The concrete walks are also in good condition and need no immediate attention.

- Perimeter Foundation & Drainage conditions: There are no issues with most of the perimeter drainage and foundation. There is periodically exposed foundation insulation (Figure Ext.2) that should be covered to protect it from deterioration.



Figure Ext. 1



Figure Ext. 2

## Building Envelope Conditions

### *Existing Condition Assessment:*

- Exterior Openings:
  - Exit/Entrance 1: This main entrance was added in 2013. This is an aluminum full-lite entry and had no deficiencies observed during the survey visit. This entry is not secure, and visitors can walk straight into the open office area.



Figure Ext. 3

Exit/Entrance 2: This entrance, on the north side of the building, was added in 2000. Typically used for a staff entrance, as the main entrance is on the south side of the building, there is an Aiphone® video buzzer for secure access.

There is moisture infiltration around the foundation of this vestibule installation, as outlined later in this report.



Figure Ext. 4

- Windows General Conditions:

- Windows: the windows in this building are residential-style casement windows. They all appear to be in good condition, as observed during the survey visit.



Figure Ext. 5

- Exterior wall conditions:

- Wall condition type 1: The exterior walls are vinyl lap siding clad with a brick knee wall accent on the main south façade. No issues were observed regarding the condition of these installations.



Figure Ext. 6

- Roofing:

- General Roofing condition: the roof is an asphalt shingled residential style gable roof. The roofing was replaced during the last additions in 2013. All the trim and soffits are in good condition, and there are no immediate concerns.



Figure Ext. 7

- Roof Drainage Components: The gutters and downspouts are in good working order (Figure Ext.8).



Figure Ext. 8

- They are appropriately sized, and the downspouts are configured to hug the exterior wall (Figure Ext.9).

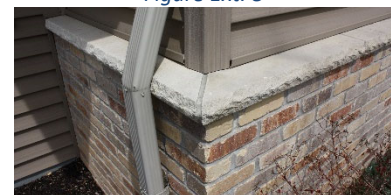


Figure Ext. 9

The downspouts terminate at the ground level onto hubs connected to underground conductors. This likely feeds into the public stormwater collection system.



Figure Ext. 10

***Proposed Exterior Solutions & Benefits:***

- Exit Doors: No actions are required currently.
- Windows General Conditions: No actions are required currently.
- Masonry: No actions are required currently.
- Roofing & Roof Drainage: No actions are required currently.
- Exterior Walls: No actions are required currently.
- Paving and lots: No actions are required currently.
- Perimeter Foundations: Investigate the water infiltration into the added vestibule foundation to verify the grade waterproofing and drainage aren't' compromised.

## Interior Spaces & Finishes

### *Existing Condition Assessment:*

- Ceilings General: The Main open spaces and the office areas have a 2x2 tegular tile. These are all in good condition, and no deficiencies were noticed during the survey visit.

The rest room and portion of the corridor have a hard gypsum board lid that also is in good condition as some of these spaces were renovated in 2000 and 2013.

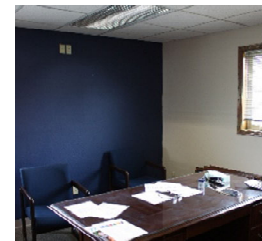
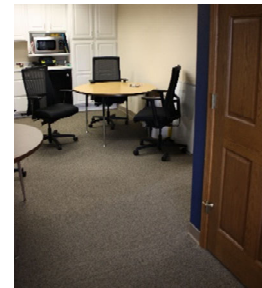
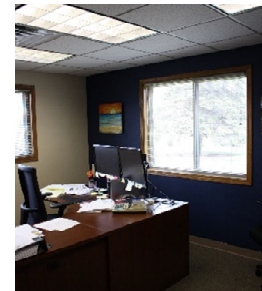
- Floors General: The floors are sheet carpeted and are in very good condition. These areas see far less traffic than the school buildings, so the floor finishes have a longer life cycle because of it.

- Walls General: The walls are all painted gypsum board and in good condition, and the baseboards are intact. There are no concerns currently for the walls.

- Casework: The casework is a laminate cabinet with thermofoil-faced door and drawer faces. This type of construction is typically installed in residential applications, and frequency of use for some of the cabinets may wear on the hinge connections as the doors are typically a medium density fiberboard.

- Furnishings: The office furniture is a standard laminate desk and cabinet storage group (Figure Int.5). They appear to be in good condition.

The open office workstations are demountable assemblies typical to open office reception areas. These are in good condition as well, and no concerns were reported during the survey visit.



*Figure Int. 3*



*Figure Int. 4*



*Figure Int. 5*

There is not a good area in the open office reception space for visitor seating. It has been reported that visitors typically stand near the desks while waiting for a meeting.

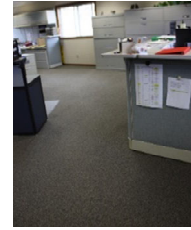


Figure Int. 5      Figure Int. 6

- Technology: Television monitors are available for video screens, but not all locations where there should be located.

There should be video conference capable equipment in the conference area and potentially the business manager and super intendants office.



Figure Int. 7

- Conference Room/Kitchenette: The conference area is too small to hold a meeting with more than a few people effectively. The kitchenette is located in the same room and is used as a break area. The dual function can hinder its effectiveness in scheduling meetings. The size of the space also prohibits the ability to have larger district-level team meetings. The PLC room in the elementary school is frequently used for larger district collaborations and meetings.



Figure Int. 8

- Restrooms: The rest has ADA functional features but does not appear to have the proper clearances for a wheelchair-turning radius in the restroom. The finishes are otherwise all in good condition.



- Basement Storage: The basement of this building is used for storage (Figure Int.10). Records, manuals, and other information are kept on open shelving and in file cabinets located at the perimeter of the original building's basement.



Basements by nature are damp and not conducive to storing paper items unless environmental conditions are closely monitored and carefully controlled. The space currently has a dehumidifier that likely runs nearly constantly (Figure Int.11). This piece of equipment will likely fail and need replacing often as humidity is continually being added to the space. Not only is the dehumidifier draining in the floor drain, but also the condensate for the heating/cooling equipment and domestic water conditioning system.

The foundation that was constructed under the rear vestibule added in 2002 is leaking into the basement space. The waterproofing and foundations drain tile is compromised or likely not installed correctly. This space under the rear vestibule was likely designed as a vault to store sensitive material but can't be used as such since too much moisture is infiltrating the space.



Figure Int. 11



Figure Int. 12

- Drinking Fountains: The drinking fountain in the district office does not have a bottle filling station. It may not be as critical as in the education spaces, but a visitor may be wary of using the equipment after the conditions of the COVID – 19 pandemic.



Figure Int. 13

### ***Proposed Interior Solutions & Benefits:***

- Ceilings General: No actions are required currently.
- Floors General: No actions are required currently.
- Walls General: No actions are required currently.
- Casework: No actions are required currently.
- Furnishings: No actions are required currently. If there is an opportunity to reconfigure the open space, it would be recommended to add formal seating for a waiting area for visitors.
- Technology: Potentially add a video monitor in the conference area, although the conference area size may prohibit the functionality.
- Restrooms: Removing the cabinet under the vanity and only having the vanity with open knee space may be enough to allow a wheelchair turning radius in the restroom.
- Basement Storage: The moisture infiltration needs to be mitigated to continue using for paper storage to not damage the records stored in this location. Excavating the foundation around the rear vestibule is required to locate the water infiltration points. After the repair is complete, the space will need dedicated dehumidification to keep it dry enough to store paper reports, records, and manuals.
- Conference Area: This space is too small for district team meetings. Consider adding a conference room by adding square footage to the building.

#### Capital Considerations:

Constructing a new District office may help the district solve several issues. A new building could house all the district level staff as well as a properly sized conference/training room. It would right-size the reception area to include a proper waiting area. A more appropriate records storage and secure vault area can be included as well with a new facility.

The alternative learning curriculum that is currently located off campus could also find a permanent home in the facility. A new district office and alternative learning center can fit at the existing office locations.

## Heating/Cooling/Ventilation System

### *Existing Conditions:*

- All areas of the building are served with overhead air distribution from the split DX unit in the gas heating furnace. This unit serves multiple spaces.



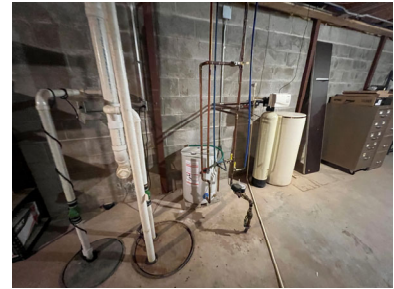
### *Proposed Solution:*

- Continue maintaining the existing HVAC equipment

## Domestic Hot Water System

### *Existing Conditions:*

- The building is served by one gas-fired water heater and recirculation pump. This unit is in good condition.



### *Proposed Solution:*

- No recommendations currently.

## Lighting System

### *Existing Conditions:*

- All of the interior lighting appears to be LED fixtures that illuminate the space learning environment. Most of the spaces were observed to have adequate light levels.



### *Proposed Solution:*

- No recommendations currently.

## Berlin Area School District Maintenance Facilities



### Building Overview:

Berlin Area School District Maintenance Facilities are metal-clad or vinyl-clad wood and steel storage buildings. They are located between the elementary school and the middle school near the football field and track. The largest of the three buildings is the main maintenance facility.

The buildings are centrally located to the education facilities. Being in such proximity allows for quick response time for the district staff to assist the site-specific staff.



### Building's Highest Priorities

- 1) Site Paving
- 2) Interior Finishes

## General Building Conditions

### *Maintenance Building: (Approx. 4,000 SF)*

- **Enclosure:** The building enclosure is a metal panel with interior insulation on a metal building frame. The wall openings are functional and appear in relatively good condition. The exterior siding is dented and showing light damage; however, there were no holes in the exterior walls observed during the survey visit.

  - No immediate recommendations for the exterior. Any damage causing holes in the siding will recommend panel replacement. Panels may be difficult to color match.
  
- **Paving:** There are no issues to report for the paving surrounding the buildings and grounds' main facilities. The asphalt was reconfigured and installed when the middle school addition was built.

  - No action is required for all site asphalt repair recommended to be done as required in conjunction with the adjacent education facilities. It is recommended to install concrete aprons at the overhead and service doors in lieu of running the asphalt directly up to the overhead doors. The aprons can be dowelled into the building slab to ensure a smooth transition from outside to inside.
  
- **Interior Conditions:** The insulation on the walls is a little beat-up. A foil tap could be used to repair the holes in lieu of replacement.

  - Consider installing a liner panel up to 8'-0" to protect the wall insulation. This could also allow for brightening up the space.
  
- **Floor Slab:** Some areas are severely pitted (Figure 4). The pitting will continue to happen as salt gets tracked in on the vehicles.

  - This could potentially be repaired with concrete patching. Industrial grade floor coatings are recommended as an option to increase the life span of the slab.



Figure 1

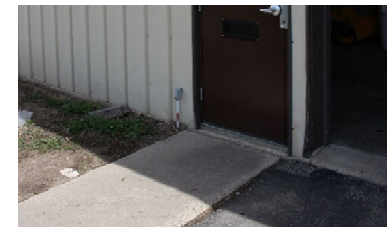


Figure 2

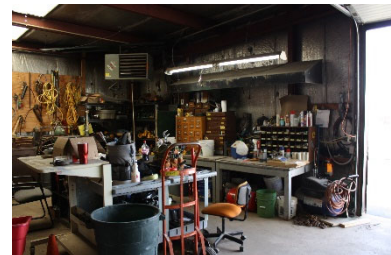


Figure 3



Figure 4

- **Office:** The Director of Operations has a framed cube office located in this building. The office space is well maintained and has technology for video conferencing.
  - There are no immediate concerns with this space or function. If this office was located with other district-level staff, the space this office is occupying could be turned back over to functional buildings and grounds staff functions.

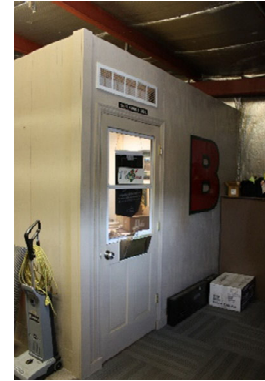


Figure 5

**Lawn Equipment Storage: (Approx. 1,400 SF)**

- **Enclosure:** This building is a basic metal panel on a pole shed frame. There is no structural overhang support (Figure 6) which eventually will cause an issue. The roof panel has already begun to sag some at the edge. Potential the ribs could reach a point of failure under the weight of snow and fold over. This may not cause catastrophic failure to the building but likely will cause leaks.

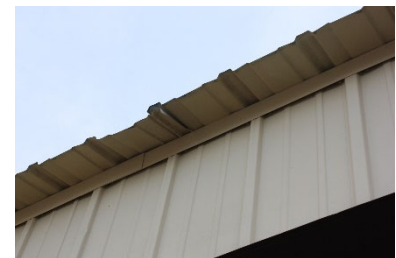


Figure 6

There are also dents in the metal siding (Figures 7 & 8). This building is not heated, so penetrations in the siding are not as much of a concern as for the heated maintenance building. It is important to protect the wood framing from getting wet to prevent conditions that would allow the wood to rot.



Figure 7

The doors are in relatively good condition; however, the service door has fading paint and could use refinishing (Figure 8).



Figure 8

- Consider adding some kind of support to the roof overhang to prevent the roof panels from bending any further. Another option would be to cut the overhang back to only an inch or two from the top of the wall trim.

- **Interior Conditions:** This building is used for storing lawn care equipment. However, some athletic equipment and stock furnishings for the schools are also stored here (Figures 9 & 10).

It would be recommended if the non-lawn care items could be moved to a new location.

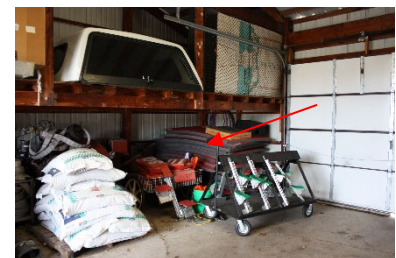


Figure 9

- One proposed suggestion is to construct an enclosure under the home bleachers that could utilize that space for athletic storage.

A potential additional solution could be to purchase a shipping container for athletic storage and place that under the edge of the bleachers. This is pre-built, securable, and could be painted with Berlin school colors.



Figure 10

- **Floor Slab:** This floor slab is cracked in a few spots (Figure 11). There is no immediate concern currently, but the cracks could be repaired to prevent further deterioration.

- No recommendations currently. Consider patching the cracks in the slab.



Figure 11

**Storage: (Approx. 2,000 SF)**

- **Enclosure:** This building is a vinyl-sided pole shed building. The walls are sheathed with OSB and likely have a weather barrier behind the siding.

Translucent panels were installed to allow natural light, which can reduce the need for artificial lighting on some days.



Figure 12

- No recommendations currently.



Figure 13

- **Interior Conditions:** The interior is bare wood structure and sheathing. There is a vapor barrier of some kind installed over the rafters and under the roofing.

This building stores various items, including attic stock construction materials, classroom furnishings, and maintenance materials. Most of the items are classroom and office furnishings.



Figure 14

- No recommendations currently. Consider simply reorganizing the storage to better inventory stock.



Figure 15

- Floor Slab: This floor slab is in very good condition. This facility was constructed in 2014-2015 when the middle school was built.
- No recommendations currently. Consider installing a concrete apron, as mentioned previously.



## Heating System

### *Existing Conditions:*

- The building has unit heaters serving the space to ensure property temperatures in the heating season.

### *Proposed Solutions:*

- None at this time.

## Berlin Area School District Athletic Fields and Structures



### **Field & Structures Overview:**

Berlin Area School District Athletic Fields and Structures are mostly contained on the main campus property. The baseball field is located a few blocks south of the original high school football field sight. Having the bulk of the athletic facilities in such proximity makes it easier for grounds crews to maintain the fields together. The fields are kept well by the grounds crews.

### **Fields and Structures' Highest Priorities**

- 1) Grading issues by the discus station
- 2) Tennis Court Cracks
- 3) Field Lighting
- 4) ADA issues to Restrooms & Concessions Stands

## Football Field & Track Structures Field:



### Existing Condition Assessment:

- **Grading Issues:** There are a couple of low spots in the grading that pools water during storm events. Location B above and in Figure 1 does not impede the track & field events, but the long jump pit is very close to this grading depression. Location A above is a more critical condition. This area does get flooded during a storm event and can render the discus stations unusable.
  - Location A needs to be regraded, so there is no ponding to impede the track and field events.
  
- **Oval Track:** The track was reported to have recently been resurfaced. Figure 2 highlights two locations where cracks are forming in the running surface. These can potentially get worse if the cracks reach the subgrade and freeze/thaw conditions have the running surface.
  - The cracks need to be filled or repaired by the appropriate contractor to prevent any further damage.



Figure 1



Figure 2

- Accompanying structures:

The west bleachers and press box are from 2014, when the middle school project was constructed. These bleachers are in good condition and include a wheelchair ramp to provide ADA access to the spectator area.

- There were no immediate concerns observed currently.

The original press box is now used for athletic storage. The original home bleachers are used as the visitors' bleachers (Figure 4).

There are issues with the piers and the subgrade. Their concrete piers are heaving, and portions of the bleacher structure are floating instead of resting on the ground (Figure 5). This makes the bleachers bouncy, and they could be dangerous.

This is also occurring at the post piers of the chain link fence to the east of the old press box as well (Figure 6).

- A civil engineer should be engaged to evaluate what is causing this condition, and it should be mitigated to prevent further damage and to make it safer. It would be recommended to prohibit the use of the top three or four rows of the bleacher until repaired.



Figure 3



Figure 4



Figure 5



Figure 6

- Concession Pavilion: The concession stand is approximately 10 years old and in good condition. There is an outdoor seating area adjacent to the vending windows (Figure 7).

The vending windows are roll-up security gates (Figure 8).

The restrooms on the east end of the concession stand are ADA compliant (Figure 9). The walls are covered with fiberglass reinforced plastic panels. The floor is bare concrete which will, over time, absorb moisture and create orders, particularly in the men's restroom.

- Consider a durable floor covering in the restrooms like epoxy or at least a tile.



Figure 7



Figure 8

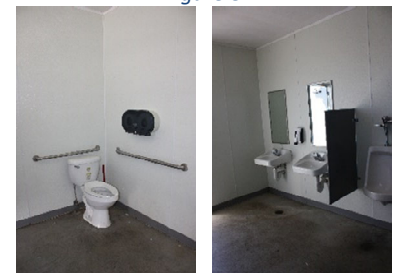


Figure 9

## Soccer Field & Structures Conditions



### Existing Condition Assessment:

- **Grading:** The soccer fields are graded well, and the stormwater shed of the field flows to the west and into the retention pond. The highlighted blue area above is an enclosed depression and could potentially pond stormwater.

Some bare patches may need additional grass seed.

- No immediate maintenance is imperative currently.



Figure 10



Figure 11

- Press Box: The press box is very run down, and many portions of the structure are rotting.
  - This structure is beyond saving. If this structure serves an essential function, it is recommended to demolish and replace it.



Figure 12

- Team Bench Boxes: The team bench boxes are covered structures for the players and coaches. These are in good condition except for the wood floor. The plywood floors are showing wear and are rotting a little.
  - Consider some flooring cover, such as an outdoor carpet over a rubber membrane, to prevent the floor from rotting more.



Figure 13

- Concession Stand: This structure is in good condition from what was observed. The surface in front of the stand is not an ADA navigable surface. This prevents wheelchair access.
  - A navigable path should be installed.



Figure 14

- Rest Rooms: The competition soccer field does have a restroom facility. This is located south of the concession stand. The exterior has vinyl lapped siding and a shingled roof and is in good condition. The plywood sightline screens could use a new coat of paint (Figure 15).



Figure 15

The painted floor is flaking and chipping. The interior walls are painted OSB sheathing, which isn't a good finish for a restroom (Figure 16). The fixtures are installed to be ADA compliant.



Figure 16

The slab sits above grade, and there is no navigable path to the restroom entries. The thresholds at the residential-style doors are also not compliant.

- A navigable path should be installed in the restrooms. The thresholds should be removed and larger sweeps installed to make this a truly accessible rest room.

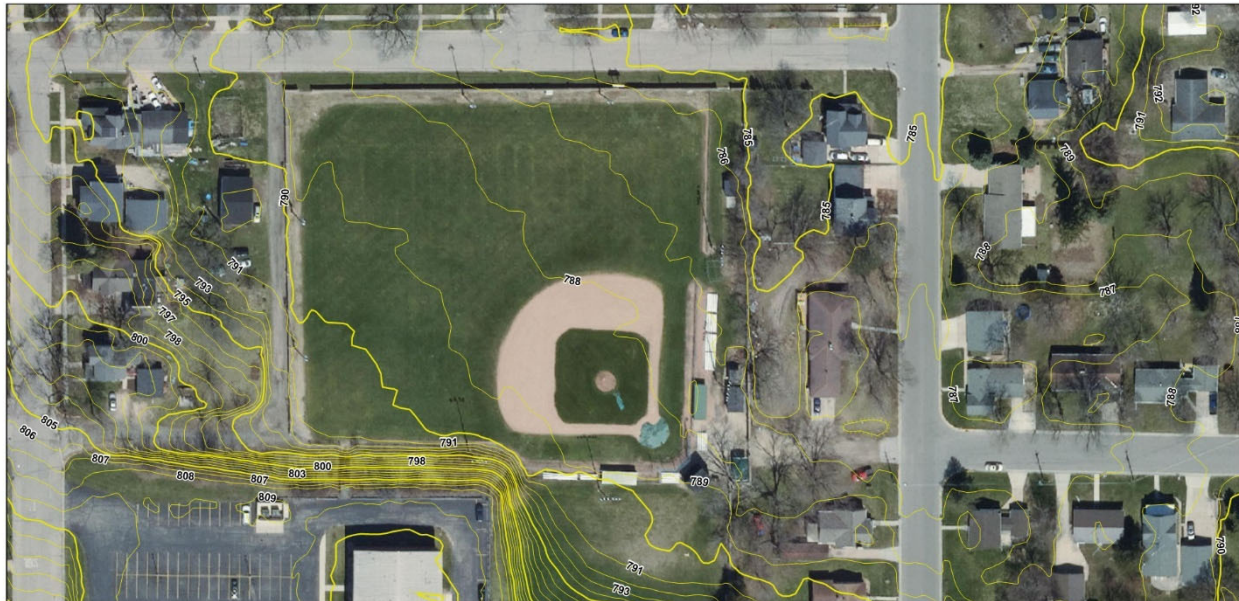
Consider adding RFP panels to the walls similar to the restroom at the football field concession stand. Also, consider recoating the floor with a more resilient product.



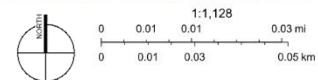
Figure 17

## Baseball Field & Structures Conditions

GIS Viewer Map



7/27/2022, 7:37:58 PM



Green Lake County, WI  
www.greenlakecountywi.gov

### Existing Condition Assessment:

The baseball field is located about 3 blocks south of the district campus. It is located at the sight of the former high school football field.

- **Field of Play:** The outfield and infields are well graded and, judging by the topography, has no areas where ponding should occur. The baselines appear graded and flat.
  - No immediate concerns were observed currently.
- **Perimeter Wall:** The original football field had a granite stone wall at the perimeter, which has been maintained since becoming the baseball field. The walls have been repointed over the years and are in fairly good condition.
  - No immediate concerns were observed currently. Continue the diligent maintenance to keep this nice feature looking great.



Figure 18



Figure 19

- **Bleachers:** The bleachers are common free-standing aluminum bleachers. There are four sections along the third baseline for the visiting spectators and five along the first baseline for the home team.
  - No immediate concerns were observed currently. Consider adding a safety rail at the top bench. The



Figure 20

- **Score Board/lighting:** The scoreboard is functional but is outdated. There are a lot of modern options that could deploy LED messaging and allow advertising revenue.

The stadium lights are older technology (Figure 22). The lights require more maintenance and more frequent replacement than modern LED technology. They also use more electricity than modern lights.

- Consider replacing the scoreboard potentially with a modern scrolling message capability for advertising revenue.
- Consider replacing the stadium lighting with more energy efficient and better performing LED lighting.



Figure 21

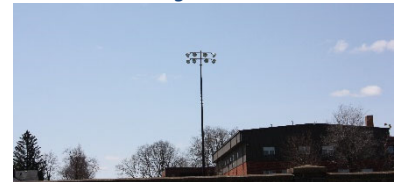


Figure 22

- **Dugouts:** The dugouts are a robust CMU construction with paint that is fading a little. The balance of the construction is vinyl sided with a shingled roof.

The structure is in good condition, but the benches in the home team dugout are very weathered, and the paint is peeling (Figure 24). The player's bench in the visiting team dugout is newer and in much better condition (Figure 25). Both dugouts have a set of loose wood steps that are in poor condition and quite rotted.



Figure 23



Figure 24

- The wood steps in both dugouts should be replaced. Consider a formed concrete installation in lieu of wood.
- Consider replacing the home team dugout players' bench with similar construction to what is in the visitor's dugout. It is recommended to construct the frame with treated lumber and to construct the seat and shelf surfaces with composite deck boards.



Figure 25

- Press Box Concessions: The press box is a two-story wood-framed structure with the concession stand on the first floor having a split-faced CMU base. The building is in fairly good condition. The access door at the rear was installed with just the primer and never painted. There is no rust on the door and frame. The overhead rolling gates are adequate and functioning. The walls are exposed, and unfinished CMU and OSB which does not convey a sense of cleanliness, and there is no ceiling, only a bare structure. The press box on the second floor has painted walls but not a finished floor.



Figure 26

- Consider painting the walls and ceiling structure in the concession stand space white for a more finished look. This will also give the customers a better experience as well as better light from reflection for the workers in the concession stand. Consider an outdoor carpet on the floor in the press box.



Figure 27

- Equipment Storage: These storage buildings are in good condition. They are used to hold the equipment for the field prep and practice equipment.

- No immediate concerns were observed currently.



Figure 28

- Restrooms: The restroom facility is constructed from split-faced CMU and a metal roof (Figure 29). The restroom spaces are set up for ADA compliance (Figure 30) but are not accessible at the entries. Access to the restrooms requires a step up (Figure 29). The interiors are painted CMU and a bare concrete floor.



Figure 29

- It is recommended to add a transition ramp to the entries to make the restrooms fully accessible. Many premanufacture products could accommodate this condition.

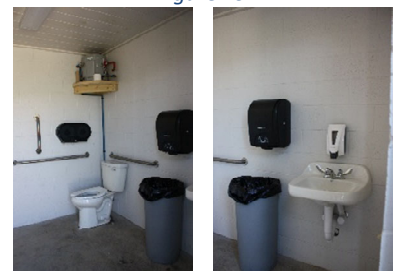
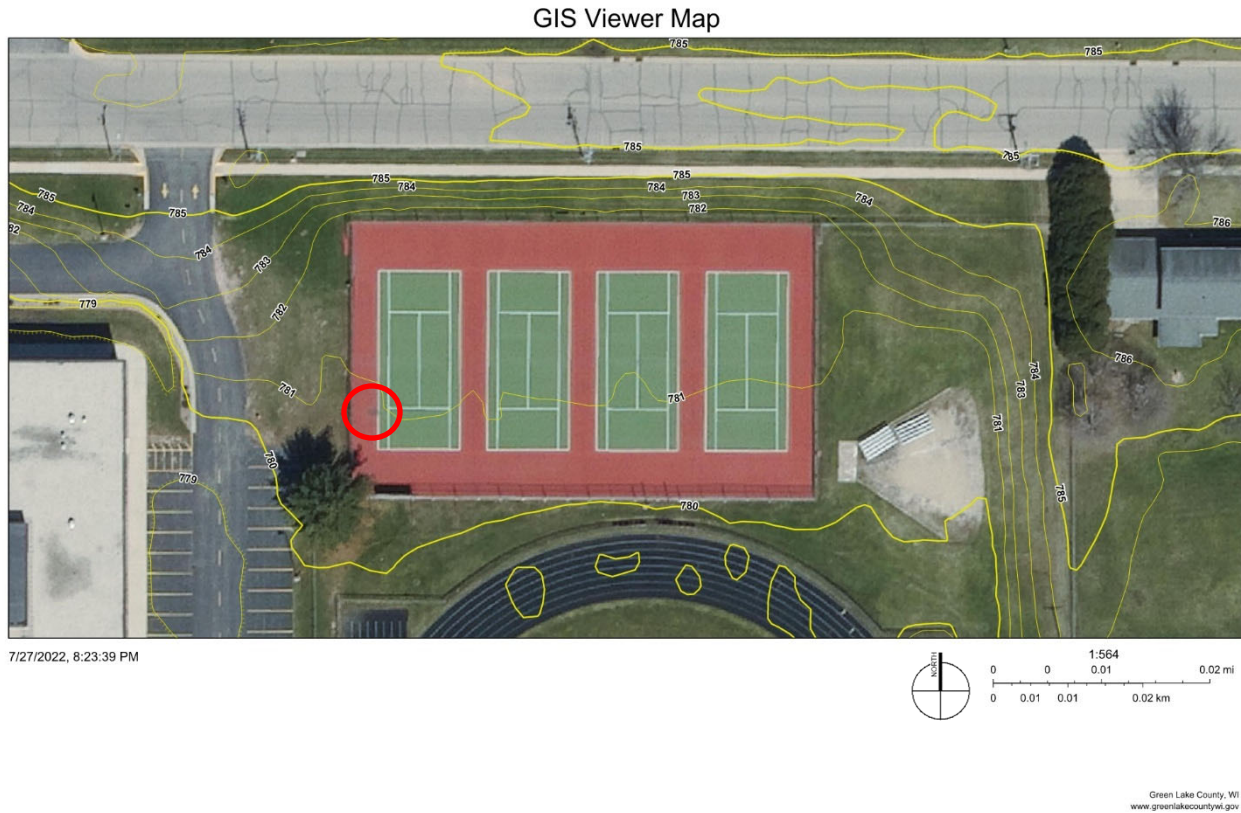


Figure 30

## Tennis Court & Structures Conditions



### Existing Condition Assessment:

- **Playing Surface:** The playing surface is mostly well drained. There is a low spot on the edge of the westernmost court that caused ponding (Above). The surface was even still wet during the survey visit (Figure 31).

There are cracks in the court playing surface. The cracking between the courts is a concern, but not as much as the cracks that are within the court boundaries. If water infiltrates these cracks and freezes in our climate, it will cause heaving. The court surface can crumble and become uneven, making it unsafe for play.

- The cracks in the court should be repaired if they can be. Eventually, the court surface may need to be replaced.



Figure 31

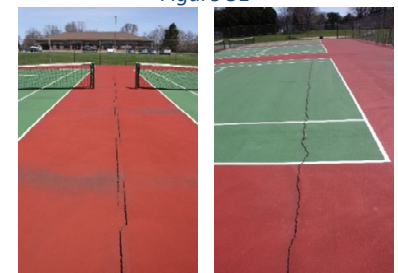


Figure 32

## Domestic Hot Water System

### *Existing Conditions:*

- The restrooms are served by a small point-of-use tank heater in the remote restrooms and a mid-sized tank heater in the concession stand.



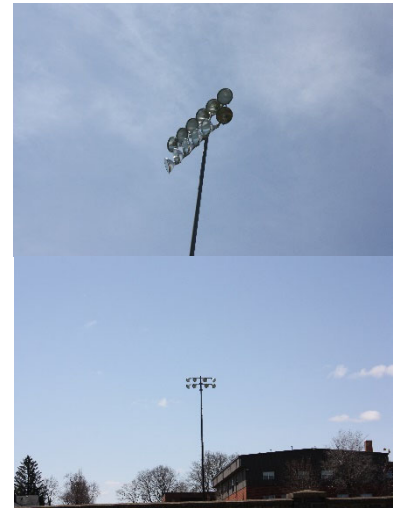
### *Proposed Solution:*

- No recommendations currently. Consider installing tankless point-of-use water heaters for the outdoor athletic restrooms.

## Lighting System

### *Existing Conditions:*

- The outdoor stadium lighting is an older technology that has a shorter life span and uses higher amounts of energy.



### *Proposed Solution:*

- We recommend replacing the stadium lighting at both the baseball field and the football field with LED lighting.

## Berlin Area School Corporation

*Today's Learners, Tomorrow's Leaders*

### EDUCATIONAL PROGRAM STATUS PROFILE DISTRICT STAFF INPUT July 2022

*“Berlin Area School District serves its community through a commitment to children by supporting them, challenging them, and preparing them for their futures. We believe professional growth promotes educational excellence, we are responsive to change through strategic planning, we provide an inclusive culture where all are engaged and valued, and our learning environment ensures student growth.”*

-Berlin Schools per Wisconsin DPI Website

District-level staff members were interviewed to provide input on both physical and programming conditions from their unique perspectives. Those thoughts have been organized by departments and/or schools below:

#### **Technology**

A plan does exist to upgrade technology throughout the district. The district network needs to be upgraded, and the PA sound systems throughout the district need to be assessed to determine if they need to be upgraded or replaced. The video surveillance system continues to be unreliable, and more cameras are desired. The district has been in the process of upgrading to SMART TVs throughout the buildings.

Cyber security is being emphasized going forward.

Would like to see designated data closets in facilities vs. sharing areas with other functions such as storage.

A classroom standard has been established for technology, including the appropriate combination of SMART TV, document camera, teacher desktop, and amplification system.

#### **Auditorium**

The auditorium experiences heavy utilization for school curricular and extracurricular needs as well as use for community-related events. The mix board in the auditorium and the communication system need services and/or replaced. The choir risers are aging and may need to be replaced. The workshop space is undersized, and storage remains an issue for sets.

The seats and carpeting are reported in good shape.

### **Clay Lamberton**

The playground equipment is aging and poses safety issues. The community room is dated and does not present a strong image to Berlin constituents. The building is only partially air-conditioned.

The roof over the kindergarten area has been recently replaced, but the rest of the roof needs to be addressed.

### **Berlin Middle School**

The main entrance needs better signage for visitor wayfinding. A more distinct entrance for the public is needed. Overall, new signage on the site is needed to guide visitors better when they enter campus.

Temperature variations are reported throughout the building.

### **Berlin High School**

As with the middle school, the front entrance is difficult to notice. New signage and a more distinct front entrance are needed. Overall, new signage is needed on the site to guide visitors better when they enter campus.

The commons area is outdated and cluttered with trophies. This is a gathering place for students and the community, thus presenting a need for updates to present the school better. Overall, more graphics and areas displaying school pride would be appropriate. The media center needs to be upgraded to provide areas to increase collaboration and flexibility of instruction.

Temperature variations are reported throughout the building.

There is a strong desire to grow an at-risk program for students to address both academic and emotional needs. Better access to career/technical programs is a goal for the district.

The gym would benefit from new finishes such as paint and wall padding.

### **District Office**

The district office does not present an updated image to the school community. The way the entrances are configured creates confusion for patrons entering the building. The front door to the office lacks a secured entry. The staff enters the back door, which is a secured entry. The front entry is uninviting and lacks an appropriate area for seating. Therefore, patrons choose to stand and wait vs. sit in the chairs located directly in front of staff working areas. The office area for staff is open, and staff reports this works well for collaboration.

The district office lacks adequate meeting space, and all meetings with more than four people are moved to Clay Lamberton Elementary.

### **Food Service**

The Food Director's office is at the high school as space is limited in the district office. The lack of office space at the high school is a concern as the high school manager is currently in a space originally designed as a closet.

Lack of storage is a concern at the high school as food service also uses the school store for storage needs. An additional freezer at the high school would be welcome. Overall, all kitchen-related equipment is in good shape. The district has maintained an adequate replacement schedule for equipment.

At Clay Lamberton, ventilation in the kitchen area is inadequate. The dry storage would benefit from a cooling unit being installed. The student dining area is undersized. During COVID, this issue was helped by students also eating in the multipurpose room. The kitchen setup at Clay Lamberton could be improved as the space is more cumbersome and crowded for staff to work. The elementary dining room is loud and could benefit from sound treatment.

The picnic seating works well, and no issues with serving area student flow were reported.

### **District Site**

Parking lots are generally in good shape. There are some cracks and areas where asphalt is crumbling and need to be addressed.

The track will need to be resurfaced and painted soon. The visitor-side bleachers on the football field are a safety hazard.

There is a concern that baseball and softball lighting need to be replaced soon. They are original, and LED lighting is preferred.

The tennis courts have been resurfaced recently, but cracks have developed and should be sealed in the near future.

Appropriate signage is an issue for the whole site. Review for the location of new electronic signs out front designating each building is desired.

The greenhouse is aging and requires updating.

The site would benefit from an updated landscaping design. Plants are aging, and maintenance in some areas is problematic.

Exterior doors, primarily at the high school, are worn due to weather at the bottom.

Overall, HVAC units are at the end of their useful life.

The entrance to the weight room is problematic for the community to access.

### **District Communications**

The exterior and interior of the central office building do not reflect the desired level of branding for the Berlin Area Schools. There is a strong desire to create buildings that reflect 21<sup>st</sup>-century learning and promote the curriculum offerings of the district. There is a commitment to promote both CTE offerings and college preparatory offerings to attract and retain student enrollment in the district.

### **Special Education**

It was reported that some building areas are not accessible for students with disabilities (some playground equipment, dignified space to change students, etc.). The elevator is not reliable.

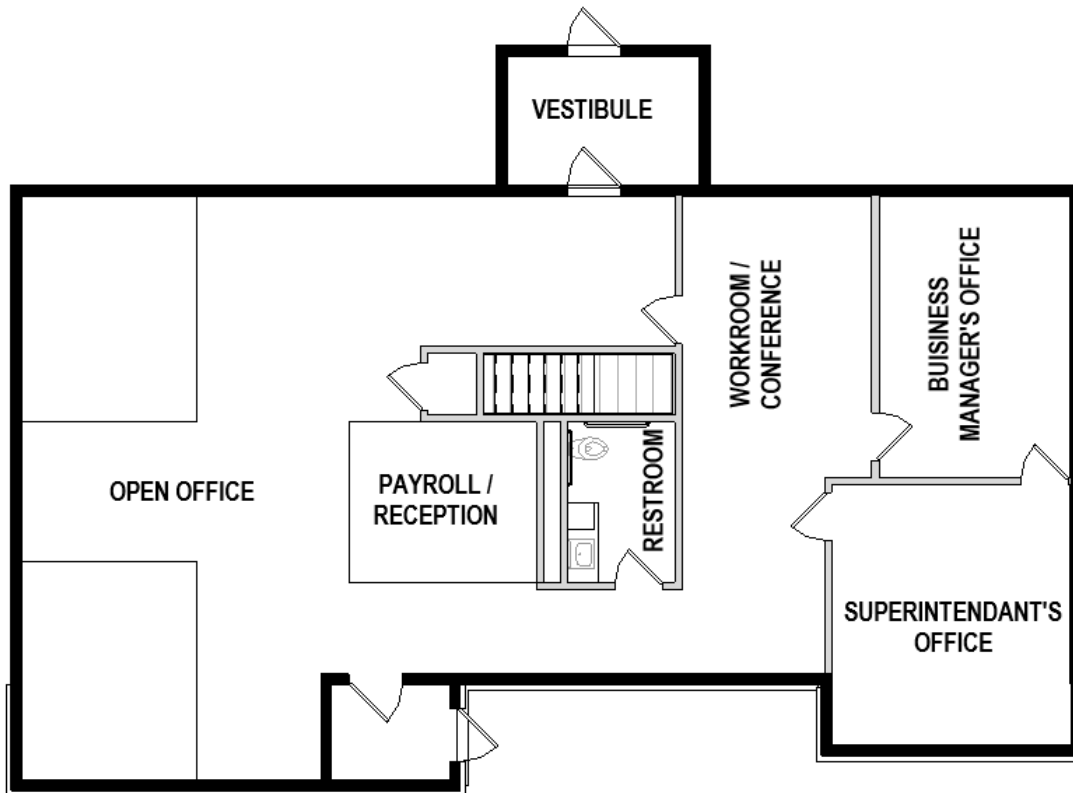
Overall, the middle school special education suite is a model for the elementary and high school space needs.

### **General Comments**

Feedback has consistently demonstrated the desire for district administration to be centralized into a facility that can accommodate the office and collaboration spaces needed for optimal work productivity. A decentralized central office staff decreases opportunities for efficient communication and collaboration. Also, because staff are decentralized, it is problematic for stakeholders to locate the appropriate contact when needed.

Consolidation of the central office staff would provide opportunities at the impacted buildings to recapture and redesign spaces to improve some programming functions. In general, this would reduce environments currently used for functions in which they were not originally intended.

## Berlin Area School District's Business Office Floor Plan



First Floor Plan



## Business Office Site Plan



Site Plan



## Berlin Area School Corporation

### EDUCATIONAL PROGRAM STATUS PROFILE BY SCHOOL

July 2022

**School #1: Clay Lamberton Elementary School**

**Grade Levels: 4K-5 plus Early Childhood for Age 3**

**Enrollment: 625 +/-**

**Building Administrators: Jena Nolan, Principal; Michael Dexheimer and Josh Ray, Assistant Principals**

Facility program space was analyzed through interviews with building-level administration. The status of programming for Clay Lamberton Elementary is captured in the chart below:

Facility Status of Supporting Programs	
Program	Comments
<b>Art</b>	All students receive art rotation K-5 weekly; certified position in designated art
<b>Music</b>	All students receive music rotation K-5; certified position in designated music room; 1 hour per week per classroom
<b>Physical Education</b>	All students receive physical education K-5; certified position in the gymnasium and multipurpose room; PE is offered 30 minutes 3 times per week; 2 staff
<b>Library</b>	Staff with non-certified position for book exchange
<b>Core Subjects</b>	All students receive math, language arts, science, and social studies instruction
<b>Technology</b>	1:1 Chromebook school; Computer lab transitioning to special education space
<b>Guidance</b>	2 lessons monthly during SEL Block
<b>STEM</b>	Part of related arts rotation
<b>Speech &amp; Language</b>	Provided per required minutes
<b>Special Education Program: Resource/Inclusion</b>	EBD classroom is in a resource setting; Special Education students are grouped by needs in classrooms
<b>Sensory Space</b>	Located in the behavioral specialist area
<b>English Language Learners</b>	Inclusion model; 1 certified staff and 1 paraprofessional
<b>OT/PT</b>	CESA 6 contracted services
<b>Title I</b>	School-wide Program with Enrichment and Intervention WIN Block by grade level

<b>Reading &amp; Math Specialists</b>	6 staff push in during core literacy instruction (3) and math (3), student-centered coaching model utilized
<b>Gifted/Talented</b>	Instruction provided by grade level during WIN time block K-5
<b>Small Group Work Areas</b>	Occurs mostly within classrooms
<b>Large Group/Multipurpose Area</b>	Available upon request Ex: Gymnasium, media center, Multipurpose Room
<b>Supports for Administration</b>	
<b>Administration</b>	Full-time principal and 2 assistant principals; assistant principals housed away from the main office near students served
<b>Guidance/Counseling</b>	2 staff; 1 for 4K-2 and 1 for 3-5; push in model
<b>Technology</b>	Need to upgrade PA system; system from 1962; Smart TV recent upgrade in classrooms
<b>Itinerant Office Space</b>	On-site therapist near the office, need for additional space when the conference room is unavailable
<b>Conference Room</b>	Located in main office
<b>Work Room</b>	Desire for large space
<b>Facility Status for Operations</b>	
<b>Health Services</b>	Nursing services are shared among all buildings
<b>Food Services</b>	Lunches from 10:50 – 12:40; Cafeteria undersized, serving area and back of the house is inadequate; serving line flow is of concern
<b>Staff Lunch Area</b>	Undersized
<b>Playgrounds/Athletic Fields</b>	Space is sufficient; Need to update some equipment, and safety issues with materials (ex: bridge)
<b>Service Areas</b>	Deliveries are a concern with playground
<b>Service Areas/Parking &amp; Parent Lanes</b>	The circle drive procedures would benefit from a review
<b>Visual Environment/Lighting</b>	No concerns
<b>Audible Environment (noise level)</b>	Cafeteria and gymnasium need noise reduction measures
<b>Thermal Environment (Heating/Cooling)</b>	Temperatures fluctuate throughout the facility
<b>Communication</b>	Security/Monitoring software and system review desired
<b>Accessibility</b>	Elevator has issues occasionally, playground needs ADA equipment
<b>Secure Entrance(s)</b>	Review of system/protocols desired; updated system desired

## Clay Lamberton Elementary Introduction

Clay Lamberton Elementary is a 4K-5 elementary school within the Berlin Area School Corporation and is the Home of the Cougars. The building was initially opened in 1962 as an elementary and junior high school. In 1980 the natatorium was added with a first-grade wing and multipurpose gymnasium following in 1989. A wing north of the pool was added in 1991, and a kindergarten wing with an administrative renovation occurred in 2014. The building services students in early childhood through fifth grade. Clay Lamberton Elementary enrollment supports two certified staff for the 4K program providing half-day sessions. Special education support is provided in the 4K program with inclusion and play-based learning. The grade level sections include four in kindergarten, 1st, 2nd, 3rd and 5th grades and five sections of 4th grade. The building also supports an early childhood program with two sections of students served by one teacher and one paraprofessional. Students in the early childhood program range from age 3 to 4, with approximately eight students, served. The overall student enrollment is 625 students, and the class size range in kindergarten through fifth grade is 16-21 students. Approximately 6% of the student population is from open enrollment, 20% receive special services, 56% are economically disadvantaged, and 3% are English Language Learners. Clay Lamberton Elementary School received a 3-Star rating of "Meets Expectations" on the 2020-21 Report Card as calculated by the Wisconsin Department of Public Instruction. Report Card priority areas include achievement, growth, target group outcomes, and on track to graduation. Clay Lamberton Elementary is located on the Berlin Area School Corporation campus, approximately 20 miles west of Oshkosh.

## Clay Lamberton Elementary Academic Program Description

**General Education Programming:** Clay Lamberton Elementary is a 1:1 technology environment with all students having access to Chromebooks K-5. Teachers have access to new SMART TVs, portable microphone systems, document cameras, projection systems, and MacBook Air laptops. In addition to the core subjects of math, language arts, science, and social studies, all students receive art, music, guidance, STEM, and physical education as regular rotations in the student schedule. 4K-4<sup>th</sup> grade classrooms are self-contained, while fifth-grade staff provides departmentalized instruction for designated academic areas.

**Special Education Programming:** Students are strategically grouped into classrooms by grade level to accommodate needs. A spectrum of services is provided both within classrooms as well as in the resource room per requirements outlined in each student's Individualized Education Plan. There are currently six special education teachers and 19 paraprofessionals supporting the needs of identified students in the building.

**Federal Programming:** In addition to general education and special education programming, the federal Title 1 Program supports the What I Need (WIN) program, which provides intervention for students in each grade level daily.

**Supports for Administration:** There is a full-time principal as the administrator for Clay Lamberton Elementary. The principal is supported by two assistant principals and two full-time secretaries: one for

attendance and student registration and the other as treasurer/receptionist. Additionally, a part-time secretary is primarily responsible for general office needs. A nurse works between all buildings with a nurse's aide available when the nurse is at another building. Two school counselors provide guidance lessons bi-weekly and traditional duties for the role. Counseling offices are not original to the building, and therefore proximity and location are not optimal. The school collaborates with county services and itinerant staff to provide additional services to students and families. The principal and office staff have access to a video monitoring system with cameras. However, an updated security system is desired.

**Facility Status of Operations:** Students have daily access to a school breakfast and lunch program. The systems in place for meal service at breakfast and lunch would benefit from a review to improve the process. The cafeteria is reportedly undersized, and the serving area and food preparation spaces are inadequate. The traffic circulation for student drop-off and pick-up system on the circle drive is of concern. The student play area is large and sufficient; however, deliveries during recess are of concern. There is a gymnasium and multipurpose gym available to support large group events. Staff have access to a courtyard to support outdoor education lessons if desired. The school houses the swimming pool for the district, primarily used by the high school swim team, Berlin Barracudas Swim Club, and the City of Berlin Recreational Department. The intercom and communication system work but are outdated with sound level issues in parts of the building. The administrators/office have access to radios for daily communication during the student day.

**Facility Condition Input:** Via conversation with the building administrator and staff, the following list of facility concerns was documented and compiled here for further review.

### Administration

- The lunch area is undersized, serving and prep areas are inadequate, sound is an issue, and traffic flow to and from the lunch area is difficult to navigate
- Need A/C in the building as well as updating of the heating system
- Playground issues: delivery trucks interfere with playground operations, access to playgrounds is problematic, playground equipment needs to be upgraded and be ADA compliant
- In the office area, it can be difficult at times to have visual access to visitors
- No good reception area for the clinic
- The vestibule needs a more secure entrance
- Guidance counselor offices are in either the kindergarten or 5<sup>th</sup>-grade wing away from the main office
- Multipurpose Room flooring is in poor condition
- Rooms need general updates
- Believe that as a whole size of classrooms is good
- Staff provide a good mix of whole group and smaller group instruction
- Circle Drive traffic would benefit from a review for improved procedures

### **Office Staff**

- The long counter provides proper separation between office staff and visitors
- View of visitors is obstructed until arrival at the building window
- A blind spot in the corner of the vestibule
- Additional lockdown button needed for second secretary station
- Concerned about the safety of outdoor windows of the office
- Speaker in the office cannot be adjusted
- Parents wait in the vestibule
- A/C is desired

### **Counselor**

- Improved proximity to grade levels served desired
- Most case conferences are held virtually
- Desire display area in the office area
- Other counselor needs storage
- Temperature is an issue
- Pool needs own secured pool entrance

### **5th Grade Staff**

- Need for adult bathrooms
- Classroom sq. ft., and storage are ample
- Heating and cooling issues reported
- Flooring is aging and in need of replacement
- Noise from the gym is evident
- Need electrical outlets for charging/electronic devices

### **1st Grade Staff**

- Special ed students are clustered in one specific classroom
- Classrooms are a small footprint and feel undersized, with the potential for 20-25 students per class
- Desire to have flexible furniture options
- All portable storage except for one wall
- Restrooms are shared by 3 grade levels and be overcrowded/capacity issues at times
- The furnace room is a storage room and a staff lounge with limited access lack of space in the workroom
- Temperature variations in rooms, air conditioning desired
- Sound near MPR is loud

### **Related Arts and Reading Specialist**

- Next year students will participate in PE 3 times a week for 30 minutes
- Art, PE, music, STEM, and guidance are part of the related arts rotation

- MPR floor and basketball rims need to be replaced, mats replaced and additional storage needed
- No air conditioning in MPR, when heat is on, there is a noise issue
- The main gym floor is in good condition, adjustable basketball hoops desired
- The main gym stage is used for storage
- The offices are functioning well; however, flooring could be replaced in the office
- Locker rooms are not utilized daily but are utilized for tornado drills
- Reading specialist is in classrooms to support core literacy instruction

### Music

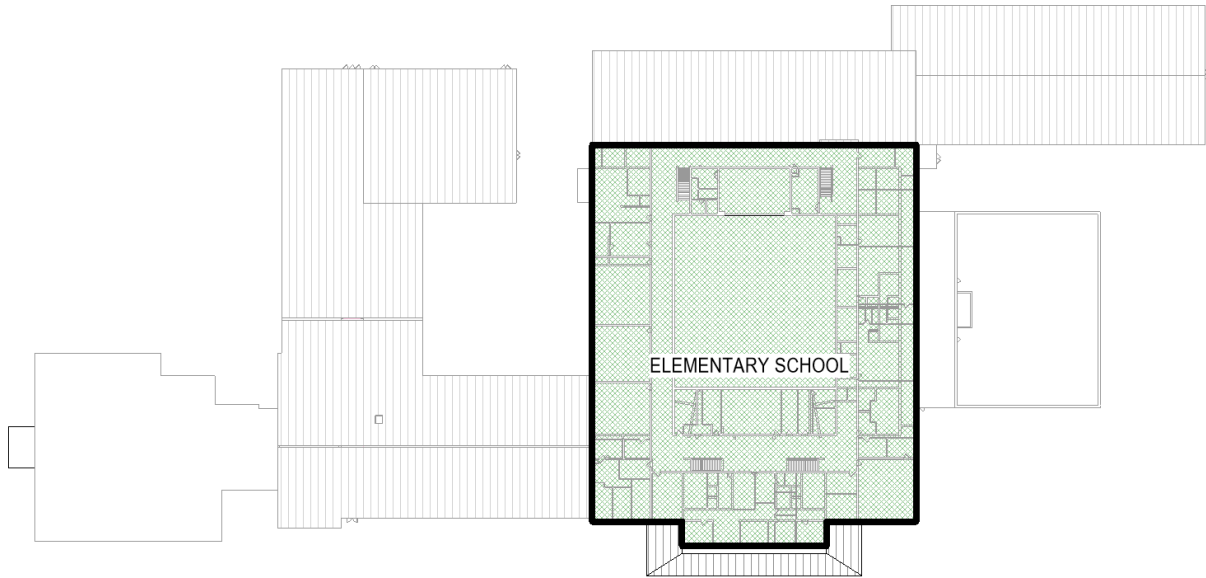
- The stage is not used for performances; rather, performances are held on the gym floor
- The sound system works well
- The large music room is conducive for the staging of programs
- Would like a permanent storage solution
- Smart TVs are nice and utilize technology system for DHH students
- Sound concerns between calm down room adjacent to the music room

**General Comments:** This document provides a status profile of the educational programming for Clay Lamberton Elementary School. To that end, conversations occurred with administration and selected staff to achieve the goals of:

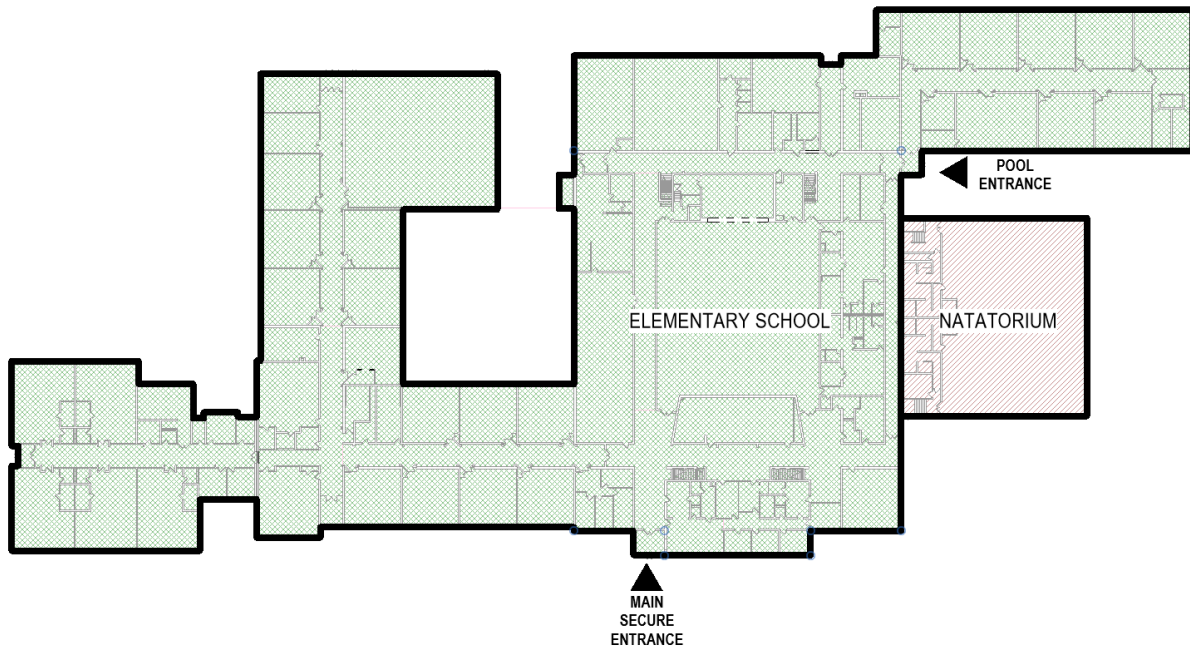
1. Obtaining an accurate status and perspective of educational programming from those interviewed, and
2. Gaining insights into how the facility impacts the quality of program delivery.

Information contained within may be instrumental in the identification and prioritization of future improvements for the program and facility. While many key stakeholders were interviewed in the process, it is advised to examine a list of all other potential stakeholders and determine if any additional input is needed prior to establishing a comprehensive list of improvements and/or priorities going forward.

## Clay Lamberton Elementary Floor Plan



### Second Floor Plan



### First Floor Plan

## Clay Lamberton Elementary Floor Plan



Site Plan



## Berlin Area School Corporation

### EDUCATIONAL PROGRAM STATUS PROFILE BY SCHOOL

July 2022

**School #2: Berlin Middle School**

**Grade Levels: 6-8**

**Enrollment: 330+/-**

**Building Administrator: Colleen Pariso, Principal; Jeffrey Gardon, Assistant Principal & Activities Director**

Facility program space was analyzed through interviews with building-level administration. The status of programming for Berlin Middle School is captured in the chart below:

Facility Status of Supporting Programs	
Program	Levels/Courses/Comments
<b>English/LA</b>	Grades 6-8; ELA 6, CT ELA 6, ELA 7, CT ELA 7, ELA 8, CT ELA 8
<b>Mathematics</b>	Grades 6-8; Math 6, CT Math 6, Math 7, CT Math 7, Math 8, CT Math 8
<b>Social Studies</b>	Grades 6-8; SS 6, SS 7, SS 8
<b>Science/Labs</b>	Grades 6-8; Science 6, Science 7, Science 8
<b>Foreign Language</b>	Grades 7-8; Spanish
<b>Art</b>	Grades 6-8; Art 6, Art 7, Art 8
<b>Physical Education/Health</b>	Grades 6-8; Physical Education; Health; 2 staff members
<b>PLTW</b>	Grades 6 & 7 nine-week rotation Grade 8 semester-based 2 staff members
<b>SEL/Careers</b>	Life 6, ACP
<b>Music – Band or Choir</b>	Grades 6-8; 2 staff members Choir Options: Chorale Choir 7, Music History 7/8, Cantata Choir 6, Bucket Band, Chamber Choir 8 Grade 7 & 8 Band Options: Allegro Band 7, Bucket Band, Beginning Band, Bucket Band, Encore Band 8
<b>Remediation Math and LA</b>	Labs, Reading Coach
<b>Library/Coding</b>	Certified librarian teaches elective half day with the library closed to others during that time. Coding 7, Coding 8
<b>Technology</b>	1:1 school
<b>Speech &amp; Language</b>	Provided per required minutes

<b>Special Education</b>	Grades 6-8; CT ELA 6, CT Math 6, Learning Strategies 6, CT ELA, 7, CT Math 7, Learning Strategies 7, CT ELA 8, CT Math 8, Learning Strategies 8; Life Skills
<b>English Language Learners</b>	Grades 6-12 Certified position
<b>OT/PT</b>	Corporation contracted services
<b>Gifted/Talented-Accelerated</b>	Accelerated Math as Qualify
<b>Large Group/Common Areas</b>	Multipurpose Room utilized by all grade levels for assemblies, etc.
<b>Facility Status for Administration</b>	
<b>Administration</b>	Principal office on the main level and assistant principal, oversized waiting area for patrons
<b>Guidance/Counseling</b>	Space is sufficient
<b>Technology</b>	Access to computers, security measures, phones
<b>Itinerant Office Space</b>	External county organizations; 1 office available
<b>Conference Room</b>	Space is sufficient for both special education and general purposes
<b>Work Room/Mail Room</b>	Undersized more work area desired
<b>Assistant Principal/Activities Director</b>	Responsible for both duties
<b>Facility Status for Operations</b>	
<b>Food Services</b>	No issues reported; 2 forty-minute lunch periods for MS students prior to HS schedule
<b>Athletic Facilities Indoor</b>	Locker rooms underutilized; fitness center difficult for community access and security
<b>Athletic Facilities Outdoor</b>	Drainage issues
<b>Performing Arts</b>	Shared spaces between MS and HS; sound insulation issues reported
<b>Service Areas/Bus</b>	Review of traffic flow is desired
<b>Service Areas/Parking</b>	Review of traffic flow is desired; Parking quantity is sufficient
<b>Visual Environment/ Lighting</b>	Concerns with auditorium front lights
<b>Audible Environment (noise level)</b>	Concerns around Fitness Center and Performing Arts classroom area noise into adjacent spaces; Auditorium sound system failing
<b>Thermal Environment (Heating/Cooling)</b>	Reported variation of temperatures; External door leaking in music dept.
<b>Communication</b>	Difficult for office staff as mailroom and guidance are located away from the main office area
<b>Accessibility</b>	No issues reported
<b>Security</b>	Entrances are secure; Entry awareness for visitors is unclear; Desire to increase the number of cameras and upgrade the security system

## **Berlin Middle School Introduction**

Berlin Middle School is one of three schools within the Berlin Area School Corporation. Berlin Middle School is located on the Berlin Area School Corporation campus, approximately 20 miles west of Oshkosh. The main structure was originally built as a high school in 1995, with an addition and renovations in 2014. The high school and middle school physically share one facility with strategic entrances and separations to divide students into “two schools” and support access to common programming needs. The middle school portion of the building enrolls approximately 330 students in grades 6-8, with 6.6% of students attending via open enrollment, 16.3% receive special services, 52% are economically disadvantaged, and 4.5% are English Language Learners. Berlin Middle School received an “Exceeds Expectations” rating on the 2020-21 Report Card as calculated by the Wisconsin Department of Public Instruction. Report Card priority areas include achievement, growth, target group outcomes, and on track to graduation.

## **Berlin Middle School Academic Program Description**

**General Education Programming:** Berlin Middle School is a 1:1 technology environment with all students having access to Chromebooks and teachers utilizing a SMART TV projection system within the classrooms. Students experience a 7-period day, with each period being approximately 50 minutes. In addition to the core curriculum of science, social studies, English/language arts, and math, elective courses are offered, including art, choir or band, and physical education/health. New courses in PLTW are beginning in the fall of the 2022-23 school year, with all 6<sup>th</sup> and 7<sup>th</sup>-grade students participating in a 9-week schedule rotation and 8<sup>th</sup> grade scheduled in semester courses. Specific PLTW courses will include Medical Detective, Design & Modeling, Science of Technology, Energy & the Environment, and Flight & Space. Additionally, students may participate in tech education courses or Spanish as a foreign language option. Learning labs are in place for students in need of additional support in math and/or language arts by a certified teacher. For students requiring intervention, a Learning Lab supported by a certified teacher provides support in math and language arts. Additionally, the school counselor provides students social/emotional learning and career instruction as scheduled.

**Special Education Programming:** Special education programming is provided by both inclusionary and pullout resource room services as designed in each student’s Individualized Education Plan (IEP). The overarching goal for special education services is to provide inclusionary instruction as much as possible. There are four certified teachers, one per grade level in resource room settings, and three paraprofessionals providing support for students requiring programming. Occupational and physical therapy services are supported through special education contracted services supplied by the local Wisconsin Education Agency. The school corporation supports speech-language pathologist positions and school psychologist staff positions with a district-created schedule to accommodate each student’s required services.

**Federal Programming:** In addition to general education and special education programming, federal funding to support English Language Learners provides a certified staff member for students in grades 6-12.

**Supports for Administration:** There is a full-time principal and an assistant principal comprising the administrative team for Berlin Middle School. The administrative team is supported by two full-time secretaries, a school nurse or nursing assistant, and a school counselor. The administrators have access to school corporation partnerships with county social workers and Youth Justice. Identified staff have access to a video monitoring system with cameras placed throughout the campus.

**Facility Status of Operations:** The majority of the classrooms to support middle school educational programming occur on the second floor of the facility. Students have access to a school breakfast and lunch program daily. The middle school has two forty-minute lunch periods with two hot food service lines and one cold food option. The systems in place for meal service at breakfast and lunch are adequate. The traffic flow for student drop-off and pick-up system would benefit from a study to improve and ensure optimal procedures are in place. The intercom and communication system work but are outdated with sound level issues in parts of the building. The administrators/office have access to radios for daily communication during the student day.

**Facility Condition Input:** Via conversation with the building administrator and identified faculty, the following list of facility concerns was documented and compiled for further review.

### Principal

- Would like to have more classrooms on the first floor and/or group students more by grade levels within the building rather than by departments
- Upgrade environments to support PLTW and STEM appropriately
- Improve library with flexible furniture and environment to support STEM and collaboration
- STEM Programming is increasing staff from one to two to support needs
- The goal is to build up in-house programming (Ex: STEM, Spanish, and explore the addition of more electives)
- Bus drop-off and pick-up; would benefit from more signage; traffic flow
- The music program is positive in the community
- Building extracurriculars and athletics are a positive piece of student programming

### Office Staff

- Office space is tight and lacks workspace; wasted space between the cubicles would like to see the cubicle spaces expanded
- Seating for parents, four chairs, very squished, many times wait in the vestibule
- No privacy in the reception area concerns with confidentiality
- Parents that come from other districts are unclear where to enter

### Library

- Currently have heavy round wood tables, prefer flexible furniture options
- Lacking storage, especially for makerspace
- Instructor for Coding and Book Club courses

- Need for charging stations
- Book collection is adequate, and the system for book checkout use Destiny and Power School; there is not a good system to track Chromebooks
- No display boards in the library, and they are desired
- Traditional setting with no place for students to gravitate in a kid-friendly environment
- Believes space is underutilized; would like to see a more active student workspace
- Would like to see designs that show school pride not only in the library but the school as a whole

### Music Dept.

- The band room is original; storage is all in one location, so kids interrupt class from HS to get instruments; Middle School storage is separate and difficult to monitor
- Doesn't use MS practice rooms due to proximity so far from the classroom; does use some of HS practice rooms
- The office is great, no issues
- The front bank of lights buzzes, so do not use
- Temperature control issues
- The schedule is difficult to create annually between two schools
- Sound leaks from upstairs to downstairs; math lab and choir room
- Ensemble room lighting issue; not bright enough

### Science

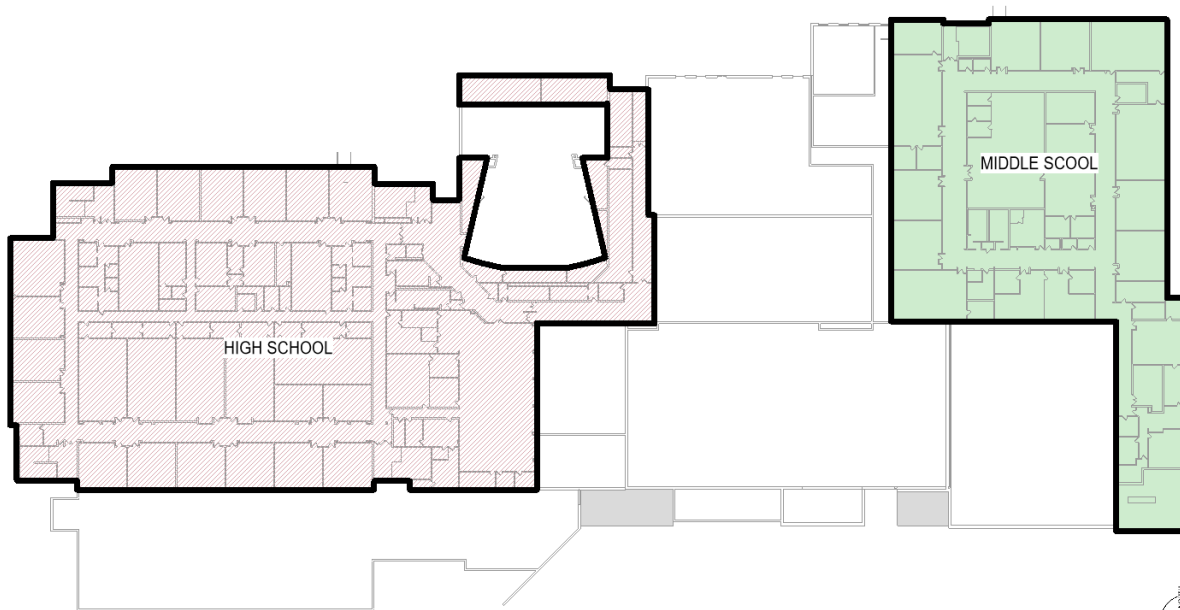
- Sinks create a splash mess due to regulators, and a deeper design would improve the situation
- Teacher technology is top notch; likes the new smart board; wonders about "dead spot" with wi-fi

**General Comments:** This document provides a status profile of the educational programming for Berlin Middle School. To that end, conversations occurred with administration and selected staff to achieve the goals of:

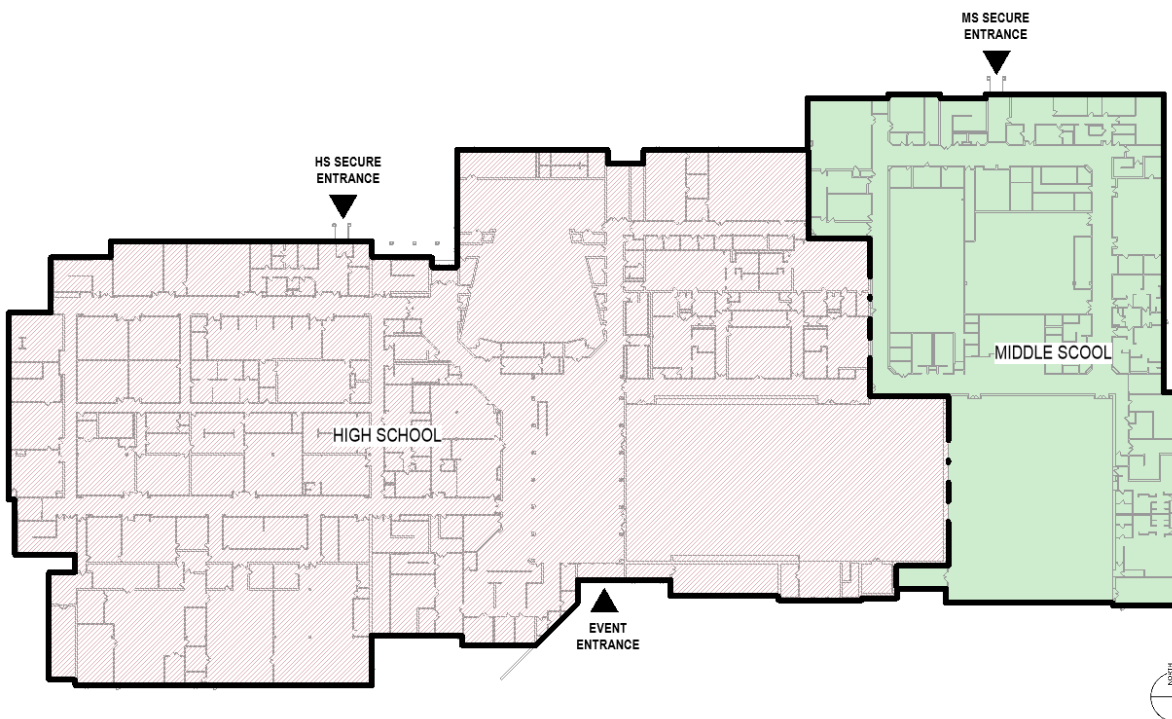
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## Berlin Middle School Program Floor Plan



**Second Floor Plan**



**First Floor Plan**

## Berlin Middle School Site Plan



Site Plan



## Berlin Area School Corporation

### EDUCATIONAL PROGRAM STATUS PROFILE BY SCHOOL

July 2022

**School #3: Berlin High School**

**Grade Levels: 9-12**

**Enrollment: 465 +/-**

**Building Administrator: Bryant Bednarek, Principal; Ben Schmidt, Assistant Principal**

Facility program space was analyzed through interviews with building-level administration. The status of programming for Berlin High School is captured in the chart below:

Facility Status of Supporting Programs	
Program	Levels/Courses/Comments
<b>English</b>	Grades 9-12; 5 staff members; Adv Grammar, Con Am Lit, Early Am Lit, Film as Lit, Frosh English, H-Adv Comp, Human Spirit, Oral/Int Com, Practical Writing, Prep for College, Pub I & II, Public Speaking, Soph English, Soph Lit, Survival Stories, True Stories, Writ for Pubs, Written Comm
<b>Mathematics</b>	Grades 9-12; 5 staff members; Algebra 1, Algebra 1A, Algebra 1B, Algebra II, Calculus, Consumer Math, 8 <sup>th</sup> Grade, Geometry, H-Algebra II, Math Lab, Pre-Algebra, Pre-Calculus, Stat/Prob,
<b>Social Studies</b>	Grades 9-12; 4 staff members; Am Govern, AP Psychology, Economics, H-Economics, His thru Sports, Law & Crim, Modern World, 19 <sup>th</sup> Century Wars, Practical Politics, Sociology, US History, US History 1940, Western Civ,
<b>Science</b>	Grades 9-12; 4 staff members; Adv Biology, Adv Genetics, AP Physics, Biology, Chemistry, Earth & Space, Enviro Sci, Honors Chem, Med Term, Oceanography, Sci Foundations
<b>Foreign Language</b>	Grades 9-12; 1.5 staff members; Spanish I, II, III, IV, V
<b>Business Education</b>	Grades 9-12; 1 staff member; Begin Acct/H Acct, Game Design, Intro to Business, Office 1, Office 2, Office 3, Web Design
<b>Family and Consumer Education</b>	Grades 9-12; 2 staff members; Aspiring Ed, Early Childhood, Ed for Parenting, Food Service I, Food Fam & Society, Food for Living, Practical Living

<b>Tech/Engineering</b>	9-12; 2 staff members; furniture, tech engineering, intro to architecture, production woods, metal tech I, metal tech II, advanced engine technology, Building Trades, Small Engines
<b>Agriculture</b>	Grades 9-12; Shares FCE lab; Animal Science, WBL, WBR, Farm to Table, Ag Survey, Horticulture; Desire more space for animals & lab space; updated finishes needed; Renovation of Greenhouse desired
<b>CTE</b>	Certified Nursing Assistant (CNA) Moraine Park Instructor on site 2 days per week; spring course offering only
<b>Art</b>	Grades 9-12; 2 staff members; Art I, Art II, World of Cloth, Adv Photo, Adaptive Art, House & Home, Media Production, Glass, Adv Digital Media, Sculpture/Metals, Ceramics I, II, and III, Drawing and Painting, Illustration & Design
<b>Physical Education</b>	Grades 9-12; 3 staff members; Adapt PE, Body Sculpting, Cardio, Health, Lifetime Act, Phy Ed 9, Phy Ed 10, Team Sports, Weight Train
<b>Study Hall</b>	Per student schedule and in assigned teacher classrooms
<b>Music – Band or Choir</b>	Grades 9-12; 2 staff members; Percussion Tech, Wind Tech, AP Music Theory, Band, Symphonic, Mixed, Concert; More storage desired, sound insulation needed, climate fluctuates, sound system in the auditorium has issues, the outside door of percussion room leaks in wet weather events
<b>Library</b>	Open use, school psych office located in the library; desire to update into flexible & collaborative learning environment
<b>Technology</b>	1:1 school; SMART TVs
<b>Speech &amp; Language</b>	District employee; Provides services per required minutes
<b>Special Education</b>	5.5 certified staff; significant spaces available to support programming
<b>English Language Learners</b>	Certified 6-12 shared position
<b>OT/PT</b>	Corporation contracted services
<b>Gifted/Talented Accelerated</b>	AP Courses in Physics, Psychology, Music Theory
<b>Student Project Work Areas</b>	Library
<b>At-Risk Program</b>	1.5 teachers and 2 non-certified, approximately 30 students; Need for large movement space
<b>Facility Status for Administration</b>	
<b>Administration</b>	Visitor space is tight; guidance, clinic and mailrooms are in separate locations not adjacent to the main office; difficult for students to navigate; Need for confidential workspace
<b>Guidance/Counseling</b>	Location is cumbersome to administration and outside agencies as it is not adjacent to the main office

<b>Technology</b>	Security/Monitoring software and system review desired
<b>Itinerant Office Space</b>	External county organizations
<b>Conference Room</b>	Space is used a lot by students for in-school suspension and therefore unavailable at times for meetings
<b>Work Room/Mail Room</b>	Location is away from main office
<b>Athletic Director</b>	Part-time AD/Part-Time PE
<b>Facility Status for Operations</b>	
<b>Food Services</b>	Desire more storage and freezer; Open Campus for students that qualify
<b>Athletic Facilities Indoor</b>	Locker rooms underutilized; fitness center difficult for community access and security
<b>Athletic Facilities Outdoor</b>	Drainage issues
<b>Performing Arts</b>	Shared spaces between MS and HS; sound insulation issues reported
<b>Service Areas/Bus</b>	Review of traffic flow is desired
<b>Service Areas/Parking</b>	Review of traffic flow is desired
<b>Visual Environment/ Lighting</b>	Concerns with auditorium front lights
<b>Audible Environment (noise level)</b>	Concerns around Fitness Center and Performing Arts classroom area noise into adjacent spaces; Auditorium sound system failing
<b>Thermal Environment (Heating/Cooling)</b>	Reported variation of temperatures; External door leaking in music dept.
<b>Communication</b>	Difficult for office staff as mailroom and guidance are located away from the main office area
<b>Accessibility</b>	No issues reported
<b>Security</b>	Entrances are secure; Entry awareness for visitors is unclear; the fob system is helpful in monitoring and controlling after-hours program entry to the building; SRO is in high school for a large portion of the day, and the camera system is poor and in need of remote access

### Berlin High School Academic Program Description

Berlin High School is one of three schools within the Berlin Area School Corporation. Berlin High School is located on the Berlin Area School Corporation campus, approximately 20 miles west of Oshkosh. The structure was originally built in 1995. The high school and middle school physically share one facility with strategic entrances and separations to divide students into “two schools” and support access to common programming needs. The high school portion of the building enrolls approximately 465 students in grades 9-12. Approximately 7.5% of the student population is from open enrollment, 14.9% receive special services, 45.3% are economically disadvantaged, and 3.6% are English Language Learners. Berlin High School received a 3-Star rating of “Meets Expectations” on the 2020-21 Report Card as calculated by the

Wisconsin Department of Public Instruction. Report Card priority areas include achievement, growth, target group outcomes, and on track to graduation.

The high school schedule provides a 7-period day, with each class being about 50-55 minutes. An Extended Learning Time (E.L.T.) period is scheduled every Wednesday to provide time for clubs and academic support within the school day schedule. Lunch periods separate middle and high school students, with the first two lunch periods being for all middle school students and the last lunch period accommodating students in grades 9-12. An open campus policy permits students that qualify the opportunity to leave campus for lunch daily.

**General Education Programming:** Berlin High School is a 1:1 technology environment with all students having access in grades 9-12. Teachers have access to SMART TVs, document cameras, and MacBook Air laptop computers. The general education program departments include Agriculture, Art, Business Education, English, F/CE, Foreign Language, Math, Music, Physical Education, Science, Social Studies, and Tech/Eng. Specific courses are listed in the above chart. In addition to traditional programming, an At-Risk program is available for students who are two or three years below grade level or one year behind in earning credits. This program is currently supported by two certified and two non-certified staff members. The program is currently housed in the high school. An online curriculum is available to a small number of students.

**Special Education Programming:** Special education programming is provided by both inclusionary and pullout resource room services as designed in each student's Individualized Education Plan (IEP). There are 5.5 certified teachers and five paraprofessionals supporting students requiring programming. Occupational and physical therapy services are supported through special education contracted services supplied by the local Wisconsin Education Agency. The school corporation supports speech-language pathologist positions and school psychologist staff positions with a district-created schedule to accommodate each student's required services.

**Sports Programming:** Football, Track, Cross Country, Baseball, Wrestling, Golf, Basketball, Swimming, Soccer, Volleyball, and Softball certified sports as well as cheerleading and stunts which are non-WIAA certified.

**Extra-curricular Programming:** Academic Decathlon, KIND Committee, Solo Ensemble, AcaVox, LINC, Crew Sources of Strength, Art Club, Manga Club, Spanish Club, Battle of the Books, Mascoutin (Yearbook), Spring Play, Beast Club, Math Team, STAR BHS, Grafix Club, Mock Trial, Student Council, Cheer and Stunt, Mosaic Club, Swing Choir, Dance Team, Musical Production, Trap Shooting, Drama Club, \*NHS National Honor Society, Trees for Tomorrow, ECCA Academic Bowl, Red 'n' Green Wordsmiths, "Encore," Robotics, Youth Alive, FCCLA, Rube Goldberg, FFA, School Grounds, Forensics, School Store, Game Club, Science Club, Jazz Ensemble, Ski /Snowboard Club, Key Club Skills.

**Supports for Administration:** Berlin High School has a full-time principal, assistant principal, and teacher/athletic director. The administrative team is supported by two secretaries, a school nurse or

nursing assistant, and two school counselors. The principal has access to school corporation partnerships with county organizations such as PSG Counseling Group, social workers, Upward Bound, and Youth Justice. Identified staff have access to a video monitoring system with cameras placed throughout the campus; however, the system needs to be upgraded and additional cameras added to identified spaces such as the second-floor auditorium foyer.

**Facility Status of Operations** Students have daily access to a school breakfast and lunch program. The systems in place for meal service at breakfast and lunch are adequate. An open campus system has been a traditional privilege for students, allowing the cafeteria space to operate at capacity. The traffic flow for student drop-off and pick-up system would benefit from a study to improve and ensure the optimal process is in place. The priority area is the entry/exit near the church during after-school pick-up due to the line of cars. Because student parking is in the rear of the building, the main entrance location creates security concerns when tardy students text others to prop open rear entry doors to deter the need to walk around to the main entrance. The intercom and communication system work but are outdated with sound level issues in parts of the building. The administrators/office have access to radios for daily communication during the student day.

**Facility Condition Input:** Via conversation with the building administrator and identified faculty, the following list of facility concerns was documented and compiled for further review.

### Principal

- Library in need of physical and functional facelift; need for collaborative learning spaces and supporting flexible furniture; 5-6 learning spaces for study project groups
- Second floor left of the auditorium has an unused space with the opportunity to create a purpose; it currently creates a supervision issue
- At risk program would benefit from a recreation space and a separate bell system; a separate location solution would be ideal
- Two entrances to restrooms create monitoring issue; single-use restrooms are desired
- Desire to continue building options for non-traditional programming within the alternative school or virtual school
- HS office could have a better flow with attendance/student access
- Increased need for mental health and corresponding spaces to serve in appropriate locations for family and student access
- Location of guidance area is difficult, especially for outside agencies as they navigate to the middle of the building for confidential meetings
- Traffic study needed for student cars and drop off/pick up; not need more space just more organization; pick-up line blocks in visitors; Priority look at traffic flow in NW corner near the church where traffic splits for left/right-hand turn at pick-up due to line of cars
- Lockers are only used by 10% of students
- The first floor around doors may be a concern with elements over the years
- Current empty rooms and offices provide opportunities for renovation to meet programming goals

- No full automotive lab, desire to develop feeder program/apprenticeship
- Converting FACS to CNA room with Moraine Park instructor; desire to continue expanding this partnership

### Office

- The reception desk area is small and not conducive for work requirements or for students to wait
- The reception area does not prevent confidential information from being shared
- The vestibule is small, lacks a seating area, and has a poor design
- Parking in the back for students and late arrivals is difficult for front entry and security
- The conference room is not confidential and is used for in-school suspension; it needs a separate ISS space
- The nurse's office is not adjacent to the administration area, which causes issues
- Wayfinding signage for visitors and internal student/staff is desired
- Mailboxes and postage meter are in student services
- The main office entry is confusing to visitors
- ISS students using the conference room
- Kids being held in hallway seating is difficult to supervise
- The idea of a drop box for collected funds after hours is desired
- Big projects are difficult to spread out due to a lack of counter space and depth of space; no privacy ledge
- Separated attendance/guidance/nurse/student services hinders communication

### Science

- Adjacent chem lab with lecture rooms function okay; however, lecture rooms are small, acid cabinet in chem stock room is corroded and needs to be replaced with flammable cabinet for alcohols
- Key programs: Environmental Science, Biology, DNA and Genetics
- Biology, Physics, Earth, Space, and Oceanography spaces all function well
- Minor flooring and wall issues in the physics classroom
- Attention to greenhouse needed

### Tech Ed

- Metal shop lacks good venting
- Milling machines are getting old and costly to replace
- Enrollment with welding numbers is strong
- Adjoining offices would help with supervision
- Woodshop in good shape
- A new dust collector is needed
- Metal shop equipment needs to be reviewed for age and condition/updates needed
- Desire to become a regional CTE Center with area communities

## AD/PE

- Locker rooms need updating; showers are used by athletic teams; Shower in coach/office area is not functional and is used as storage; toilet being kept would be a priority
- Girls' Locker Room has double locker occupancy; would like to see Boys' Locker Room do the same
- The multipurpose room is used for the wrestling room and spring baseball/softball batting cages
- Fitness Center location is challenging HS kids to walk through MS to access; Sound is a huge issue
- The Football Locker room design is not functional, so space is underutilized
- The football field was resodded in 2016
- The track is going to need foundation and surface redone; cracks and bumps are starting to appear "hump" near the drainage area
- Throw relocation is desired and location identified; closer to shot and spectators/athletes
- Bleachers were new when MS was built; two press boxes are nice to have; visitor bleachers are a concern
- The concession stand is good and has restrooms
- Gymnasium functioning as needed; no AC in the gym, and it is very hot at times
- Desire to have a softball field on campus
- Increase baseball fields from one to two to accommodate home game scheduling better and support/expand programming
- Tennis courts need to be resurfaced

## LMC

- Historically used for staff meetings
- Interest in updating look, including flexible seating
- Typically works with students in small groups vs. the whole group; kids like the physical copies of books, chrome book repair, and troubleshooting; does some push in
- At-risk program has moved into library classroom; teaching occurs in the main library; aide runs more like a guided/supported study hall
- District Psych is in the conference room
- Computer Lab has been transformed into a maker space
- Increased signage/professionally done vs. homemade
- Would like to survey people to get input on how to evolve the space
- Making connections and providing a safe space for students; relationships are important; feel of the space; space to eat together with students with appropriate furniture and flooring
- Book collection size exceeds the size of the school; storage cleanout is needed

## Art

- Department is spreading into other departments to keep staff full-time; perhaps taking on graphics; traveling from the classroom is becoming a challenge
- Enrollment in art fluctuates, as is overall school enrollment
- Ceramics 1,11, 111 – cramped space, north counter has cupboards collapsing likely from the weight of clay over the years; outlets on the floor where the wheels sit are an issue with a

preference to a drop from ceiling solution; 6 potter wheels would be better vertically by the sink; tables are actually oversized

- Sinks are constantly under maintenance, and the clay filter does work
- Coils have recently been replaced, and replacement parts for wheels have been ordered
- The ceiling grid for tiles is rusting
- The kiln is older/original to the school
- The 2D art room has windows, and lighting is sufficient; some collapsing in cabinetry
- Cabinetry and storage are sufficient

## Ag

- Farm to Table shared lab requiring joint scheduling between staff
- Remodel to meet current needs in equipment and finishes is desired
- Class size of 8 to 22 – impacts where lab might work; mostly used by food science class
- Animal sciences courses need space to have animals
- Greenhouse space design is poor; windows don't open, temperature regulation could do hydro or aquaponics if there were space to add
- Farm to Table, Animal Science, and Food Science need FACS lab
- Desires a TV monitor to utilize in conjunction with Smartboard
- Ag class now has tables, tons of cabinets, and storage is sufficient
- Lab space is the biggest concern; it doesn't serve best purpose and is underutilized; simple residential hood over the stove

## Music

- Sound and lack of insulation concerns
- Properly sized storage for instruments needed
- Practice room climate varies, and sound is an issue
- 2 practice rooms were not used much
- Dressing rooms are undersized
- Second-floor prop storage is difficult to manage
- Theatre/Auditorium sound system needs to be reviewed, and lighting, overhead mics not working well, stage curtain is ripping, ventilation in the stage area and temperature control needs reviewing
- Unable to move large equipment through double doors with a bar in the center
- External door in classroom leaks with the weather in the band room

## Family and Consumer Education

- 6 component kitchens; fire code 4 students per kitchen, cap enrollment at 24
- 1 of the kitchens is handicap accessible
- Not ideal to have 2 classes in the same space at once
- Ag teacher doesn't have a kitchen space
- The classroom is connected to the lab
- Art teacher using sewing lab currently
- Laminate counters and cupboards are in poor condition

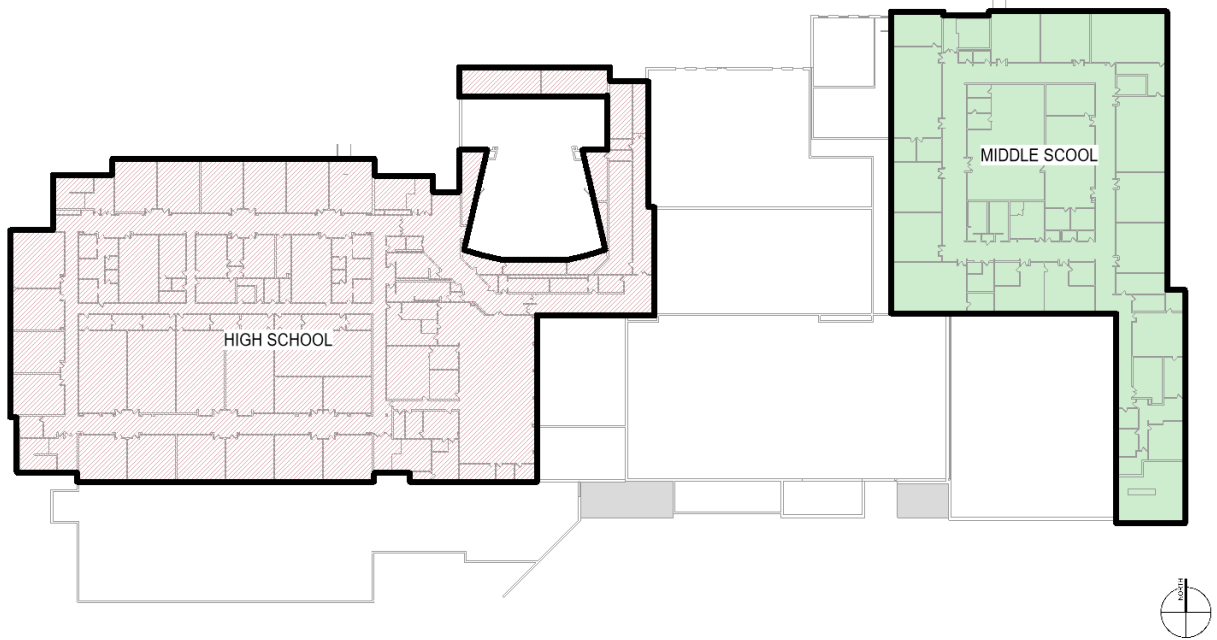
- Commercial items aging and considerable use and wear and tear showing
- Smartboard in classroom not functioning; still uses overhead projector; document camera is used

**General Comments:** This document provides a status profile of the educational programming for Berlin High School. To that end, conversations occurred with the administration and selected staff to achieve the goals of:

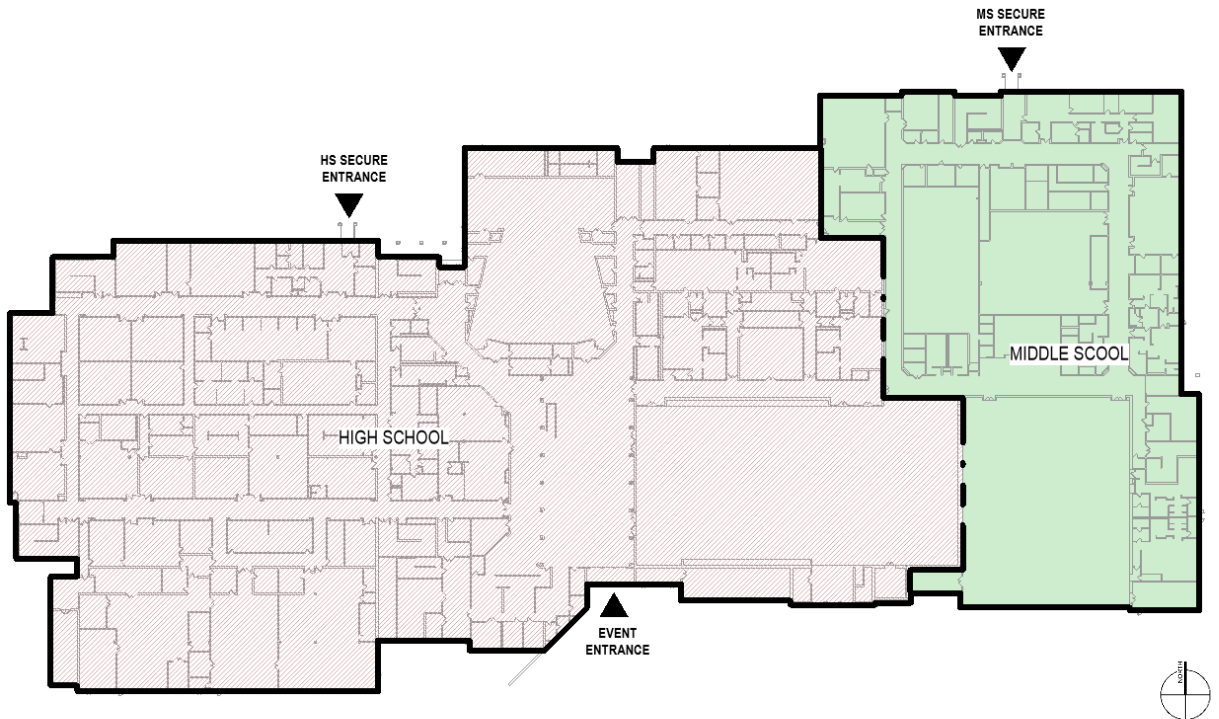
1. Obtaining an accurate status and perspective of educational programming from those interviewed, and
2. Gaining insights into how the facility impacts the quality of program delivery.

Information contained within may be instrumental in identifying and prioritizing future improvements for the program and facility. While many key stakeholders were interviewed in the process, it is advised to examine a list of all other potential stakeholders and determine if any additional input is needed prior to establishing a comprehensive list of improvements and/or priorities going forward.

## Berlin High School Program Floor Plan



**Second Floor Plan**



**First Floor Plan**

## Berlin High School Site Plan



Site Plan

