



**FACILITY ASSESSMENT REPORT**

**HARVEY PUBLIC SCHOOL DISTRICT 38**

**HARVEY, NORTH DAKOTA**

**AUGUST 2019**

## I. Background

### A. Introduction to the Project

This document represents a review of the facility conditions of Harvey High School in Harvey, North Dakota and options for resolution of facility issues. ICON Architectural Group (ICON) teamed with Prairie Engineering and Consolidated Construction Company to prepare the information contained within this report. The facility assessments were conducted because of changing educational requirements and aging facilities within the School District.

The scope of this report is to identify deficiencies within the current facility and apply costs associated with upgrades required and deferred maintenance items identified within the current Elementary and High School. The purpose of this report is to assist the school board and administration in determining the best use of school funds and taxpayer dollars.

### B. Applicable Codes and Standards Used in this Assessment

- North Dakota State Building Code
- 2015 International Building Code (IBC)
- 2015 International Energy Conservation Code (IECC)
- 2017 National Fire Protection Association (NFPA) 70 – National Electric Code
- 2016 National Fire Protection Association (NFPA) 72 – National Fire Alarm and Signal Code
- 2015 National Fire Protection Association (NFPA) 101 – Life Safety Code
- Local Codes
- Uniform Plumbing Code
- International Mechanical Code (IMC)
- International Fuel Gas Code (IFC)
- National Fire Protection Association (NFPA)

## II. Facility Assessments

### Harvey High School

#### A. Existing Conditions

The analysis of the existing high school has been broken down into code compliance/Americans with Disabilities Act (ADA) compliance and capital maintenance. The facility has been assessed for deficiencies as defined below:

##### **A. Code Compliance/Americans With Disabilities Act (ADA) Compliance.**

This includes evaluation of the existing High School regarding the current building codes required by the City of Harvey and the State of North Dakota. Non-compliant items within the High School have been Identified below.

- Building is not sprinklered
  - Per fire code, buildings that are larger than 12,000 s.f. are required to be fully sprinklered

- The corridor walls are not 1 hour rated
  - Per fire code, when a sprinkler system is not installed, corridor walls are required to be 1 hour rated.
- The corridor doors, frames, and hardware are not fire rated
  - Per fire code, doors are required to be fire rated if the building is not sprinklered
- The corridor doors are not self-closing
  - Doors are required to be self-closing if the corridor is required to be fire rated
- The corridor door frames have transoms above doors and lack 1 hour rated glazing
- Multiple corridor doors and frames have grills
  - Per fire code, grills are no longer allowed in required fire rated doors & frames
- Multiple doors do not meet the 18" on pull side and 12" on push side handicap accessibility requirements
- Fire extinguisher cabinets throughout the facility do not meet allowable reach ranges for handicap accessibility
- Vestibule depth is insufficient to meet handicap accessibility requirements of 7 ft. clear
- Restrooms do not meet handicap accessibility for clearances
- Library checkout counter does not meet handicap accessible height requirements
- Concession stand counter does not meet handicap accessible height requirements
- Locker rooms do not meet handicap accessibility for clearances
- The stage does not meet handicap accessibility requirements
- When stage bleachers are used, guard rail for fall protection must be in place
  - Currently lacks a guard rail
- Stairs to the stage are required to have handrails on both sides
  - Missing handrail on one side
- Handrails are required to extend 1 foot 0 inches past top and bottom steps
- Kitchen does not have scrubbable ceiling tile

## **B. Capital Maintenance**

To be completed by Consolidated Construction Company before the September School Board Meeting.

### **B. Overview of Conditions and Systems**

#### ***Architectural***

The original 1968 building is comprised of masonry exterior walls with brick veneer, and interior steel studs & gypsum wall board walls. The interior is also comprised of concrete floors and a steel roof structure.

The existing rubber membrane roof (EPDM) looks to be in good condition and the exterior brick is in good condition.

Based on construction type and timeframe, the exterior wall assembly is assumed to contain minimal, if any insulation.

Exterior metal parapet caps and flashing along with scuppers and downspouts are all in good condition except for the front entrance, which has paint peeling from the parapet flashing.

The exterior windows are in good condition having recently been replaced.

Floor finishes, a majority of which are vinyl composition tile, are in fair condition with certain areas that need to be replaced.

Acoustical ceiling panels are dated but appear to be in fair condition.

Locker rooms are in fair condition with several areas of the floor that need touch up. Casework, lockers, wood trim, and general storage are in good condition and in many locations have been replaced.

The exterior asphalt paving is in fair condition with areas that are in need of repair. Concrete drive aisles and curbs are in fair condition with cracking and settlement. Many concrete curbs have been damaged by snow removal equipment. Sidewalks are in good condition with a few areas that need panels replaced.

The pre-engineered metal building addition used for weight training is in good condition.

### ***Mechanical***

#### *Fire Suppression*

There currently is no functional fire suppression in the facility.

#### *Plumbing*

The school features two major toilet rooms, one on the West side and one on the East side. The East toilet room features dated plumbing fixtures and galvanized piping in the plumbing chase. The West toilet room features updated plumbing fixtures with sensor operated toilets and urinals. The school should consider budgeting to upgrade the plumbing fixtures and piping in the East toilet room.

Water heating is provided by a 24KW water heater coupled with an estimated 250-gallon storage tank. The storage tank dates to 1968 but appears to be in good condition while the water heater appears to be approximately 10 years old.

Many of the drinking fountains throughout the school have been updated to provide bottle fillers and are in good condition.

The kitchen features stainless steel fixtures that are in good condition. No major plumbing deficiencies were noted.

The science classroom was in the middle of a renovation at the time of the site visit. All cabinetry and fixtures were being replaced. The FACS classroom had been recently renovated with all new sinks and counters. The fixtures in these two classrooms are in good condition.

#### *Central Plants*

The heating plant is a hot water system with two oil-fired boilers and one coal-fired boiler. The oil-fired boilers each have a rated output of 6 million British thermal units (BTU's). The coal boiler can handle the heating load for the entire school and operates as the primary source of heat.

Three base-mounted pumps circulate heating water throughout the facility. The pumps have been retrofitted with variable frequency drive to improve pumping efficiency.

Equipment in the boiler room is dated but has been well maintained. Continued regular maintenance will prolong the useful life of the equipment.

Currently, there is no central cooling plant. Cooling in office and central classroom portions of the school is provided by direct expansion compressors mounted on the roof. The compressors appear to be in good working condition.

#### Climate Control

The classrooms on the exterior walls feature hot-water fin-tube radiation as the primary source of heat. No air conditioning is provided to these classrooms.

Interior classrooms and office space are served by air handlers. The air handlers feature heating and cooling coils with dampers to divert heating or cooling air to each zone as required.

The heat in the shop, locker rooms, music room, kitchen, and lobby areas is provided by small air handlers sized for each respective zone.

The air handlers appear to be well maintained and should continue to function under continued maintenance.

#### Ventilation and Exhaust

Ventilation is delivered throughout the school via the air handlers. Classrooms on the exterior wall receive ventilation through the return system on the air handlers. Return air comes through the exterior classrooms. Ventilation is delivered to interior classrooms and migrates to the exterior classrooms along with the return air. This system creates a smoke migration hazard by allowing smoke to easily migrate from one section of the school to another. This system is not allowed under current code.

Exhaust systems in the locker rooms, vo-ag room, toilet rooms, and kitchen appear to be functioning and in good order. No deficiencies were noted during the site visit. The vo-ag room features exhaust systems for welding and general exhaust.

#### Temperature Controls

Nearly all the HVAC temperature controls have been converted to modern direct digital controls. This system is reported to function well.

### **Electrical**

#### Lighting

Light fixtures throughout the entire facility incorporate T8 fluorescent lamps with electronic ballasts. The general condition of light fixtures is noted as good. No broken or yellowing of lenses was observed. Although there are newer lighting technologies available today, such as LED, T8 lamps/electronic ballasts are still considered energy efficient and replacements are

readily available. There are no immediate recommended modifications to the lighting system; however, it is expected that the lighting will need to be upgraded in the next five years.

Emergency egress lighting is accomplished with battery backup type emergency fixtures. Coverage appears adequate throughout the building and nothing needs to be addressed at this time. Exit signs are a LED type which is adequate.

It should be noted that if/when the lighting is upgraded, the controls for each space will also need to be brought into compliance with energy codes (i.e. occupancy sensors with dimming or multi-level switching will need to be incorporated at all locations at that time). Although not required, it is recommended, that automatic lighting controls be installed in bathrooms, locker rooms, storage/janitor closets, and similar areas soon. Occupancy sensors in these spaces prolong lamp life and do conserve a significant amount of energy.

Currently, the gymnasium lights are controlled by turning their associated circuit breakers on/off in the electrical panel on the stage. Although circuit breakers can be listed for this purpose, it will eventually weaken their internal components, causing them to fail. It is recommended that a relay switching system, or a bank of actual light switches be installed to control the gymnasium lights.

Exterior lighting consists of HID type wall mounted lights at the exterior doorways. Current applicable codes require the landing areas at exit discharge doors to have emergency egress lighting. It is recommended that all the building's exterior lights be replaced with LED type wall mount fixtures that provide emergency backup.

#### Power

The building's electrical service is a 2000 Amp, 120/208 Volt, 3 Phase, system. The switchgear utilizes fused disconnects to provide power distribution throughout the building. There are a couple spare disconnects in this switchgear and a very limited amount of physical space to install additional disconnects. Replacement parts are readily available for this switchgear. The branch panels are Square D circuit breaker panels. Circuit breakers are readily available for these panels, and most of the panels have space to add circuits if required. Overall, the electrical distribution system is adequate and nothing more needs to be addressed at this time.

In most areas, the availability of convenience receptacles is adequate to supply power to devices; however, the standard receptacles in the kitchen and shop should be replaced with GFCI type.

#### Systems

**Fire Alarm:** The building incorporates a zone type fire alarm system as manufactured by Simplex. This panel has been discontinued, but replacement circuit boards are still available. Smoke detectors are installed in all the corridors and heat detectors are in mechanical rooms and storage areas. Pull Stations are installed at all building exits. This level of building occupancy does not require automatic smoke detection; however, since the building is not fire sprinklered, the additional level of personal and property protection is warranted. Alarm notification is

accomplished by horn speakers. The building lacks visual notification devices which are required per ADA code.

Any air handling equipment that supplies over 2000 cfm is required to have duct smoke detectors that automatically shut the equipment down upon smoke detection. These duct detectors could not be located during inspection, so it is assumed they are not currently installed in the building. The existing fire alarm system will support these devices, and it is recommended they be installed as soon as possible.

If the Fire Alarm system is upgraded, the current governing code will require the system to include Voice Evacuation functionality. The existing fire alarm panel cannot support this requirement; therefore, the control panel would need to be replaced and additional wiring would need to be installed to bring the system up to code compliance.

**Network Cabling:** Wired and wireless network cabling is available in all areas of the building. If the current system supports the required bandwidth of the users, there does not appear to be anything further to address at this time.

**Surveillance:** There is a surveillance camera system for the building as interior and exterior cameras are located throughout the building. It is up to the Owner to decide whether the existing level of coverage is adequate or if additional cameras need to be added.

**Security:** A two-way intercom station with an integral video camera and door control between the front door and the office provides controlled access to the building during occupied hours, assuming all the other doors are locked. Currently, there is no system in place to monitor the door status of the other building entrances. Although not required by any applicable codes, a full card access system with door monitoring is recommended to facilitate a more secure environment.

**Intercom:** The existing Dukane intercom system provides two-way communication to all classrooms and other select areas. Replacement parts are readily available for this equipment. There is nothing more to address at this time.

**Clock and Program:** The existing corrected clock system and bell system are fully functional. Replacement parts are readily available for this equipment. There is nothing more to address at this time.

Existing Facility Conditions



Concrete drive and curb are damaged/cracked

Vestibule doors missing – vestibules are not deep enough



Front entrance canopy paint peeling



Corridors are not fire rated – cannot have glazing at corridor walls without sprinkler system





Cannot have louvers in doors or glazing in doors without a sprinkler system



Concession stand counter is not handicap accessible



Restroom fixtures and finishes past their life expectancy



VCT flooring needs to be replaced in various locations



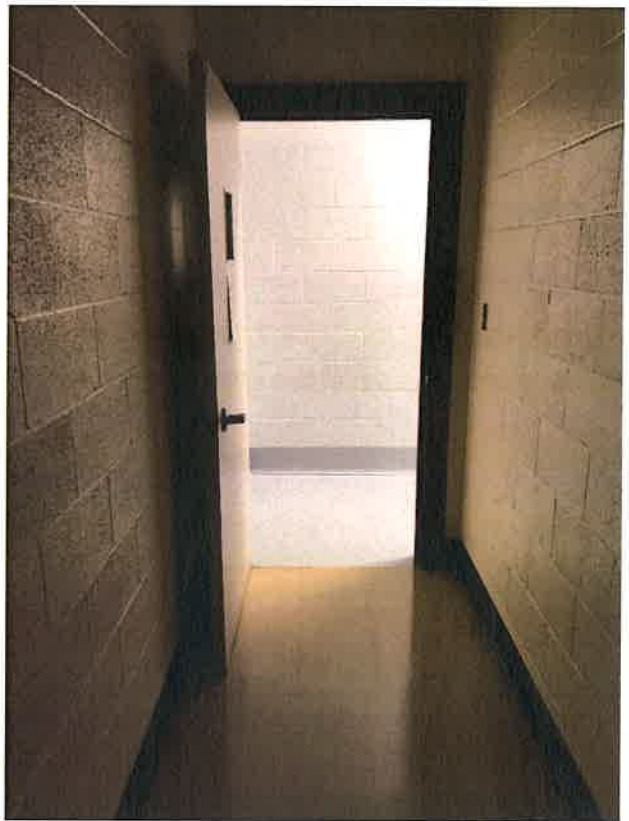
Kitchen is required to have cleanable/scrubbable acoustic ceiling tile



Missing fall protection (guard railing) at stage front when bleachers are used



Stage is not handicap accessible – missing a handrail



Many doors do not meet push/pull handicap accessibility clearance requirements



In the locker room the toilet stall does not meet handicap accessibility and floor paint needs to be repaired



Pavement/sidewalk is cracked and heaved



Downspouts do not extend down to the ground



FACS area lacking accessible casework and fixtures

## Harvey Elementary School

### A. Existing Conditions

The analysis of the existing Harvey Elementary School has been broken down into code compliance/Americans with Disabilities Act (ADA) compliance and capital maintenance. The elementary school has been assessed for deficiencies as defined below:

#### **A. Code Compliance/Americans With Disabilities Act (ADA) Compliance.**

This includes evaluation of the existing elementary school regarding the current building codes required by the City of Harvey and the State of North Dakota. Non-compliant items within the elementary school have been Identified below.

- Building is not sprinklered
  - Per fire code, buildings larger than 12,000 s.f. are required to be fully sprinklered
- The corridor walls are not 1 hour rated
  - Per fire code, when a sprinkler system is not installed, corridor walls are required to be 1 hour rated.
- Corridor doors, frames, and hardware lack fire rating
  - Per fire code, doors are required to be if the building is not sprinklered
- Corridor doors are not self-closing
  - Doors are required to be self-closing if the corridor is required to be fire rated
- Corridor door frames have transoms above doors and lack 1 hour rated glazing
- Some of the corridor doors and frames have grills
  - Per fire code, these are no longer allowed in required fire rated doors & frames
- Doors within the building lack levers that don't require tight grasping, tight pinching, or twisting of the wrist to operate which is required by code
  - Most doors have the correct hardware, but some still do not comply
  - Round doorknobs do not meet ADA code requirements
- Multiple doors do not meet the 18" on pull side and 12" on push side handicap accessibility requirements
- Entrance vestibules lack interior doors required to meet current energy conservation code requirements
- Second and third floors as well as lower level areas within the 1922 building are not handicap accessible and do not meet ADA code because they lack elevator access
- Stair guard railing height is too short throughout the building
  - Minimum height is 42"
- Handrails on stairwells do not extend past bottom stair or past top stair
  - Handrails must extend past the bottom stair at least 11" and past the top stair at least 12"
- There are no stairwells in the building that are enclosed and lead directly outside
  - Per code, half of the stairwells must be enclosed and lead directly outside
- The corridor within the 1922 building on the first floor does not meet the width requirement as it narrows when bypassing the stairs
  - Corridors are not allowed to narrow along an egress path

- The exit doors leading to the exterior on the east side of 1961 gymnasium/ lunchroom do not meet the minimum required width
- Restrooms within the 1961 classrooms on the first floor do not meet handicap accessibility requirements and are not ADA code compliant
- Kitchen and dish room are not ADA code compliant as they do not meet handicap accessibility requirements for maneuverability and reach ranges
- Restrooms in the 1939 building are not handicap accessible as the toilets are in the wrong position in relation to stall doors
- The Life Skills room in the 1939 addition does not meet fire code as a room of its square footage is required to have two egress doors
- The 1939 gymnasium is not ADA code compliant as it is missing handrails on the stage egress stairs
- The 1939 gymnasium guard rails are too low and do not meet ADA code compliance
- 1939 gymnasium bleachers are not ADA code compliant as they do not have handrails at the bleacher stairs and the stairs are too narrow and the steps are too high
- The 1939 gymnasium main egress stairs from the bleachers are too narrow for the gym's maximum occupancy
- The 1939 gymnasium locker rooms do not meet handicap accessibility as the corridor is too narrow and it does not meet minimum height and ramp down requirements
- The NW exit door out of the 1939 gymnasium is too narrow and does not meet ADA code compliance
- 1939 gymnasium stairs from 2<sup>nd</sup> floor to gym guard railings do not meet code and are missing required hand railings
- The 1939 stage is not handicap accessible and does not meet ADA code compliance
- The second floor 1922 choir and music rooms do not meet fire code as they do not have two egress doors which are required for rooms of their square footage maximum occupancy
- The second floor 1922 music room has carpet on walls which does not meet flammability requirements per fire code
- The second floor 1961 addition SW classroom, NW classroom, and south-central classrooms do not have two egress doors which is required for rooms of their square footage and maximum occupancy
- 1922 East classrooms do not have two egress doors which is required for rooms of their square footage and maximum occupancy
- Upper cabinets at different locations within the entire facility do not meet reach ranges for handicap accessibility and are not ADA code compliant
- Fire extinguisher cabinets at different locations within the entire facility do not meet reach ranges for handicap accessibility and are not ADA code compliant
- The South entrance into the 1939 addition is not handicap accessible as there is one step up into the building
- Sinks with bubblers are not allowed within classrooms per North Dakota Health Inspection Department
- Corridor fire doors between the 1961 and 1922 additions on the first floor are not on magnetic hold-opens which is required per fire rating requirements
- The movable accordion style gates at the stairwells impede egress and do not meet code requirements

- Urinals within the restrooms extend to the floor which does not meet North Dakota Health Inspection Department requirements
- Several doors have manual latching devices at the top and bottom which are not allowed per code for emergency egress
- The exterior playground equipment is not handicap accessible and is not ADA code compliant

#### **B. Capital Maintenance**

To be completed by Consolidated Construction Company before the September School Board Meeting.

#### **B. Overview of Conditions and Systems**

##### ***Architectural***

The original 1922 building and the 1939 and 1961 additions are comprised of brick walls, concrete floors and an assumed wood roof structure except for the 1961 addition which has a steel roof.

The exterior brick is in acceptable condition but needs tuckpointing, particularly around the lower portions of the building.

Areas around the 1922 building's concrete base are eroding due to water infiltration and freezing/thawing. The exterior wall and roof assemblies are assumed to contain minimal, if any insulation.

The roof is a built-up tar roof and will need to be replaced in the next 10 years. Inside the building there's evidence of previous roof leaks, but none were noted currently.

Exterior downspouts are missing or damaged allowing water infiltration into the exterior brick causing spalling.

The exterior lean-to at the coal loading area is constructed of wood and metal roof panels and is in poor condition and needs to be replaced.

The exterior windows are in good condition having been recently replaced. There are several existing exterior openings that are covered with plywood where window and HVAC systems were previously located.

The floor is finished primarily in vinyl composition tile, which show sign of reaching the end of their useful life and need to be replaced. The Terrazzo floors are experiencing cracking but are in good condition for their age.

Acoustical ceiling panels, casework, lockers, wood trim, and general storage are past their life expectancy and need to be replaced.

Multiple doors, frames, and hardware throughout the facility are past their expected useful life and need replacement.

Exterior asphalt paving is in poor condition and in need of replacement. The courtyard between the 1939 and 1961 additions is sunken and does not drain well. This has led to water infiltration

into the basement area below the stage. The lower level is very damp and possibly contains mold in inaccessible areas.

The playground area is in good condition but lacks handicap accessibility and site sidewalks are in fair to good condition.

### ***Mechanical***

#### *Fire Suppression*

There is currently no fire suppression in the elementary school.

#### *Plumbing*

Toilet room plumbing fixtures in the 1922 and 1939 portions of the building are dated and are not suitable for re-use under a renovation project. Fixtures are not suitable for re-use and will need to be replaced if toilet rooms are renovated.

Some of the urinals in the 1939 addition are of the floor set type. These fixtures are no longer allowed per applicable plumbing codes.

An unused toilet was discovered in the computer lab in the 1961 addition. There was no water in the bowl and the room smelled heavily of sewer gas. The fixture should be removed, and the waste piping plugged.

Plumbing fixtures in the 1961 addition are in fair condition and could endure additional years of service.

The second-floor corridor had just been waxed so we were unable to examine the second level toilet rooms.

The 1922 and 1939 portions of the facility featured galvanized piping for water supply. No attempt was made to uncover concealed water piping during the visit but given the age of the visible piping, all the water supply piping should be replaced under any significant renovation project.

Water supply piping in the 1961 addition is primarily copper. Some valves show evidence of corrosion, indicating leaky stems. The piping is dated and will require regular maintenance and repair as components fail.

The original water heater serving the 1922 building and the 1939 addition is a steam-to-hot-water heat exchanger. The shell of the heat exchanger shows signs of severe corrosion. The heat exchanger has been disconnected and abandoned. Currently, hot water is provided by a fuel oil-fired water heater. The water heater has a 68-gallon tank and is supported by a 120-gallon storage tank. The water heater was installed in 2017. The water heater and storage tank appear to be in good condition and could be re-used.

The 1961 addition is served by a light-commercial, propane-fired, water heater with an integral 80-gallon tank. The heater appeared to be in good condition. The original shell-and-tube steam-water heat exchanger has been disconnected. The hot water recirculation pump is functional but will require maintenance as components fail.

### Central Plants

The heating plant consists of two steam boilers. The older boiler is a coal-fired Kewanee boiler. The age of the boiler is unknown. The boiler has been well-maintained but is beyond its expected useful life. The newer boiler is a fuel-oil-fired Burnham boiler. The boiler was installed in 2004 and has been well-maintained. The boiler has fifteen additional years of expected useful life but may last longer if it continues to be well maintained.

The condensate collection tank and pump have been maintained and/or replaced as needed.

Steam and condensate piping above the floor appeared to be in fair condition. No evidence of leaks was noted; however, steam and condensate piping in the tunnels showed evidence of leaking in the past. Piping in the tunnels will continue to require regular maintenance due to ageing.

Steam traps were replaced in 2017/2018 and should be in good condition.

### Climate Control

The 1922 and 1939 portions of the school feature vintage steam radiators to supply heating. The 1939 portion of the school included unit ventilators in each classroom for heating and ventilation. The heaters provide adequate heat and, in some cases, excessive heat due to lack of precise control. Any updates to these portions of the building should include replacement of the vintage heaters.

The 1961 addition features vintage unit ventilators and fin-tube radiation for heating and ventilation in classrooms. Entry ways feature cabinet unit heaters. All heaters are operating beyond their expected useful life and will experience increasing maintenance requirements.

### Ventilation and Exhaust

Mechanical code requires ventilation for occupied spaces at specified rates and exhaust for certain types of spaces. Ventilation can be delivered through mechanical systems or through natural ventilation systems. Exhaust must be accomplished through mechanical systems.

Ventilation in the 1922 portion of the school is generally accomplished through operable windows. In the winter, windows are cracked open to counter overheating from poorly controlled steam heaters.

Ventilation in the 1939 addition is provided via unit ventilators in each classroom. Effectiveness of the ventilation depends on the operation of dampers within the unit ventilators. It is not uncommon for dampers to fail in ventilators of this age and it is reported that several the units are not providing ventilation as designed.

Ventilation in the 1961 addition was intended to be delivered through the unit ventilators in the classrooms; however, nearly all louvers have been blocked off preventing any outside air ventilation in the classrooms.



Exhaust for the boy's and girl's toilet rooms in the 1939 addition was designed with roof exhaust fans. No exhaust grilles were noted in the toilet rooms. The exhaust system should be repaired to meet code requirements.

The exhaust for the boy's and girl's toilet rooms in the 1961 addition was inaccessible due to freshly waxed floors.

The kitchen exhaust hood is dated and does not meet current standards. The grease capture system does not feature the effectiveness of modern hoods. The hood is not properly sized to efficiently capture the contaminants from the appliances. Any renovation in the kitchen should include a full replacement of the kitchen exhaust and make-up air system.

The locker room exhaust control consists of an exhaust fan at one end of each locker room. The operational status of the exhaust is unknown. The school should consider revamping the locker rooms exhaust system.

#### Temperature Controls

Most of the existing temperature controls are the pneumatic type. Electronic thermostats have been added in various locations as pneumatic controls have failed. The pneumatic controls will require continual maintenance as components fail. The school should consider upgrading to digital controls for improved reliability.

#### **Electrical**

##### Lighting

Light fixtures in the 1922 wing generally incorporate T12 fluorescent lamps with magnetic ballasts. T12 lamps are no longer being manufactured as per national energy code mandates. Light fixtures in the 1939 and 1961 wing incorporate T8 fluorescent lamps with electronic ballasts. Many areas have lamp retrofits into original luminaires. The gymnasium and cafeteria light fixtures have been replaced with a high output LED fixture type that does not include any type of glare control. These fixtures create a very harsh lighting environment in these areas. The general condition of light fixtures in the entire building is noted as poor. It was observed in many areas that the fixtures are missing lenses.

Emergency egress lighting is accomplished with battery backup type emergency fixtures. Coverage appears adequate throughout the building and nothing needs to be addressed at this time. Exit signs are a mixture of newer LED type and some older incandescent type. Some incandescent exit signs were observed to be burned out. All the exit signs should be upgraded to LED type to realize energy savings and ensure reliable illumination.

It should be noted that when the lighting is upgraded, the controls for each space will also need to be brought into compliance with current energy codes (i.e. occupancy sensors with dimming or multi-level switching will need to be incorporated at all locations at that time).

Exterior lighting consists of different types of incandescent lights above the exterior doorways. Retrofit fluorescent lamps have been installed in the screw in type lamp sockets. Some fixtures are missing lenses, leaving the lamps exposed to the elements. Current applicable codes require

that the landing areas at exit discharge doors have emergency egress lighting. It is recommended that all the building's exterior lights be replaced with LED type wall mount fixtures that provide emergency backup.

### Power

When the 1961 wing was built, a 1200 Amp, 120/240 Volt, 3 Phase, Delta High Leg service was installed. This service was back fed to the original 400 Amp 1922 service in the boiler room which supports the 1922 and 1939 wings. The 1200 Amp service switchgear utilizes fused disconnects to provide power distribution throughout the building. There are no spare disconnects in this switchgear, nor is there any physical space available to add disconnects. The branch panels in the 1961 wing are Square D circuit breaker panels. Circuit breakers are still readily available for these panels, and these panels have space to add circuits if required.

The 1922 main distribution panel utilizes pull out type fused plugs. This equipment is no longer available, should any of these plugs break. It is also not in compliance with required dedicated working space clearances. The feeder conductors, from this distribution panel to the 1922 and 1939 branch panels, have a rubber type insulation that has a history of drying out and eventually falling off the conductors, leaving them exposed. Inspection of the conductor insulation at this facility did not show significant signs of insulation failure yet, but this is a documented hazard that can lead to short circuiting and electrical system failures. These feeder conductors should be replaced with new conductors that include modern insulation material.

The branch panels in the 1939 wing along with the gymnasium utilize screw in type fuses. These fuse panels represent a significant electrical shock risk because live electrical parts are exposed when a fuse is removed. These panels are in publicly accessible spaces, and do not have lockable front covers. They should immediately be replaced with circuit breaker panels.

The availability of convenience receptacles varies throughout the building. In some spaces, receptacles are sparse and extension cords are being used to provide adequate power to devices. In other spaces, additional receptacles have been installed via surface mount wiring methods. There are no codes that govern the quantity of receptacles required in this type of building; however, it is likely that the quantity of receptacles and the number of circuits supporting these receptacles is insufficient in many areas.

### Systems

**Fire Alarm:** The building incorporates a zone type fire alarm system as manufactured by Simplex. This panel has been discontinued, but replacement circuit boards are still available. Smoke detectors are installed in all the corridors. Heat detectors are in mechanical rooms and storage areas. Pull Stations are installed at all building exits; however, in many instances, they are mounted higher than the maximum ADA reach height of 54". The pull stations should be lowered as soon as possible. This level of building occupancy does not require automatic smoke detection; however, since the building is not fire sprinklered, this additional level of personal and property protection is warranted. Alarm notification is accomplished by horn speakers. There are no visual notification devices which are required by ADA. If the Fire Alarm system is upgraded, the current governing code will require the system to include Voice Evacuation

functionality. The existing fire alarm panel cannot support this requirement; therefore, the control panel would need to be replaced and additional wiring would need to be installed to bring the system up to code compliance.

**Network Cabling:** Wired and wireless network cabling is available in all areas of the building. If the system supports the required bandwidth of the users, there does not appear to be anything further that needs to be addressed.

**Surveillance:** There is a surveillance camera system for the building. Interior and exterior cameras are located throughout the building. It is up to the Owner to decide whether the existing level of coverage is adequate or if additional cameras should be added.

**Security:** A two-way intercom station with an integral video camera and door control between the front door and the office provides controlled access to the building during occupied hours, assuming all other doors are locked. Currently, there is no system in place to monitor the door status of the other building entrances.

**Intercom:** The existing Dukane intercom system provides two-way communication to the 1961 classrooms and one-way (general paging) to the 1922 and 1939 wings. Teachers in the 1922 and 1939 areas cannot contact the front office through this system.

**Clock and Program:** The existing bell system and the existing corrected clock system are no longer functioning. Various clocks are installed and plugged in where the original clocks are located. Some of these are reported to be of Atomic Correction type.

Existing Facility Conditions



Corridors are not fire rated - cannot have glazing at corridor walls and doors cannot have louvers if the building isn't sprinklered



Toilets do not meet ADA clearance requirements



Corridor narrows next to stairs and stair handrails do not extend 1' 0" past the bottom tread



Custodial office is not handicap accessible



Vestibule doors missing



Stadia stairs are too narrow, are missing handrails, and the guard railing is too low



Restrooms do not meet ADA clearances



Stadia stairs are missing intermediate handrails and are too narrow



The stage is not handicap accessible – the stair handrail is not ADA compliant



Storage under the stage has water infiltration and potential mold



Makeshift wooden ramp into the locker rooms is not ADA compliant



Corridor to the locker rooms is too narrow and it lacks head clearance



Stairs do not lead directly outside and cannot be blocked with movable gate



Flooring and wood trim are past their expected useful life



Carpet on upper levels is past its expected useful life



Choir area is not handicap accessible



The stairs are not enclosed/don't lead directly outside and the guard rails are too low



Urinals cannot drain at floor level – restrooms are not handicap accessible



Doors do not have accessible hardware and cannot have top and bottom locks



Coal boiler is outdated





Playground equipment is not handicap accessible



Many windows are removed and have a plywood infill



The entrance is not handicap accessible



Downspouts are damaged



Coal shed is in poor/unstable condition



Drainage freezing and thawing damage throughout the site



Sidewalk and brick deterioration



Back courtyard between the building additions is sinking and causing storm sewer collapse