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PHOENIX ELEMENTARY SCHOOL

PHOENIX ELEMENTARY SCHOOL
351 4th Avenue South



A. EXISTING BUILDING INVENTORY

Phoenix Elementary School is located at 351 4th Avenue S in Grand Forks and was built to replace Belmont and Lincoln Elementary School after the building was destroyed in the flood of 1997. The school opened in Fall 1998. Phoenix Elementary School is in a neighborhood south of downtown Grand Forks.

Phoenix E.S. is accessible by Chestnut Street to the west, 4th Avenue S to the north, and Belmont Road to the east. There is a parking lot shared with United Lutheran Church north of the school for staff and a parent drop off area in an alleyway on the south side of the school.

FLOOR PLANS



FIRST FLOOR



EXISTING BUILDING INVENTORY CONTINUED



SECOND FLOOR



B. ARCHITECTURAL FINISHES

SUMMARY

Phoenix Elementary School opened in 1998. The school lacks adequate storage space as many of the restrooms, electrical closets, and mechanical rooms double as storage (001). Many individual learning spaces have had to move to spaces that are not optimal for learning. For example, there is a one-on-one learning space inside of an electrical closet (002) and a specialized learning space within the mechanical and janitorial area of the building (003). Overall, the building is in good condition minus a few areas of typical wear and tear.

SITE

Most of the concrete work and asphalt around the school are in good condition. Logistically, the site is constrained and congested. The building is surrounded by narrow streets and alleyways that are single direction (one-way). The alley to the south is very narrow and shared with neighboring residence. This alleyway is utilized for staff parking and parent drop off/pick up. The adjoining west boundary street (Chestnut Street) is a northbound one-way intersecting with the south alleyway, which is misaligned with a continuing road (5th Avenue South). This causes drivers to circumvent the one-way and cross over a crosswalk to connect to 5th Avenue South, creating concern for the safety of the children who utilize the crosswalk (004). The current bus drop off/pick up situation on the west boundary (Chestnut Street) is not optimal, as the roadway is constricted for two-lane travel. The playground directly outside the building is outdated, broken, and inaccessible and should be replaced (005, 006). The play manufacturer is no longer in business, so parts are not available. A new playground has been constructed to the west of the school at the SE corner of Fourth Avenue South and Walnut Street.

MASONRY

The exterior of the school is traditional brick, limestone brick, and limestone accents. The limestone needs cleaning in certain areas, but there are no structural concerns with it. A roof drain/overflow scupper on the north side of the building needs a concrete splash block beneath it and for the drain mesh to be repaired (007). Outside of the library where new asphalt was laid for drainage, the weepholes in the brick are potentially covered which can prevent moisture from leaving the brick (008). The expansions within the brick have been well maintained, as the caulk was redone less than three years ago (009).

ADDITIONAL EXTERIOR MATERIALS

The exterior of Phoenix Elementary School is primarily masonry with several larger areas of glazing, mainly near entrances. There are no additional exterior materials.

ROOF

The roof is overall in good shape, but it is nearing the time that it needs to get replaced. Grounds staff recommended adding PVC or vinyl covering to increase the duration of the roof's lifespan.

OPENINGS

The door openings within the school are in good condition. The caulking where the windows meet the walls is in good condition, but the sealant/gasketing within the windows is in poor shape and needs to be redone. Due to the age of the windows, the sealant/gasket has shrunk and no longer runs the entire width of the glass panels (010, 011).



ARCHITECTURAL FINISHES CONTINUED

CEILINGS

The ceilings within the school are mostly made of acoustical ceiling tile (ACT) and no visible issues were seen.

WALLS

The interior walls are either painted masonry, painted gypsum board, have vinyl wall coverings, or have tiling. There are several areas where the vinyl wall covering is releasing from the gypsum wall board substrate (012). Other areas have signs of wear and tear and could use wall and corner guards to protect from future damage (013). Large portions of exterior walls are covered with vinyl covering on the interior. It is recommended the vinyl wall covering be removed from the interior surface of exterior walls, as this could potentially create a double vapor barrier and trap moisture within the walls (014). Current code does not permit the use of vinyl wall covering on outside walls for this reason. There is cracking in a concrete masonry unit (CMU) wall adjacent to a steel column that can be seen from the mechanical room and the hallway (015).

FLOORING

All the classrooms have recently replaced carpet that is in good condition. The only area that does not have new carpet is the janitorial closet (016). There is an area in Room B235 where the precast concrete underneath the carpet has inconsistencies in its seams. Because of this, there is an uneven and sloped portion of the floor in the classroom (017). This could be followed in what would be perceived as the precast joint line and does not present itself as a structural deficiency.

SECURITY

Although security cameras are present at the doors, there is no direct visibility from the office to the main entrance. Ideally, all visitors should be directed into the office upon entry, before gaining access into the school.



C. MECHANICAL/ELECTRICAL ASSESSMENT

FIRE PROTECTION

Fire sprinkler systems are installed throughout the building. Depending on the level of work performed in the building, sprinkler systems may need to be modified.

PLUMBING

Plumbing piping throughout the building is concealed in the walls and above the ceilings in public areas. Piping that can be observed in exposed spaces appear to be in good condition. School maintenance staff reported that there have not been issues with the domestic water piping leaking or the piping deteriorating to the point of causing blockage. Some roof drain piping was reported as having leaks. This should be investigated, and existing piping replaced where deteriorated.

The restroom plumbing fixtures throughout the building are white vitreous china fixtures. Water closets and urinals have manual operated flush valves and lavatories have manual faucets. The sinks in the classrooms and break rooms are stainless steel with manually operated faucets. Classroom sinks also have bubblers for drinking water.

Domestic hot water is produced by two (2) 250 MBH gas fired water heaters with integral storage tanks. Water heaters were built in 2019 and are in good condition.

Thermostatic mixing valves meeting ASSE 1070 requirements should be added to public lavatories for scald protection.

HEATING

Heating for the building is provided by two (2) condensing Thermal Solutions 3000 MBH boilers. Boilers and building circulating pumps were installed in 2020. The building circulating pumps are constant volume. Boilers are provided with isolation control valve to eliminate flow through the boiler when it is not firing. The boiler heating system utilizes natural gas for the primary fuel source and propane is provided for backup. The propane comes from a propane tank buried on site.

Existing piping throughout the building is concealed in the walls and above the ceilings in public areas. Piping that can be observed in mechanical spaces appears to be in good condition. Staff has not reported issues of leaking with existing piping.

Variable air volume (VAV) boxes with hot water reheat coils are used throughout the building for zoning. Hot water cabinet unit heaters and suspended unit heaters provide heat for vestibules, stairwells, mechanical rooms, and other similar spaces. There is perimeter finned tube radiation installed in the media center but does not appear to be installed in any of the building's other exterior rooms.

VENTILATION AND EXHAUST

The ventilation and exhaust systems in the school include various indoor air handling units, and various exhaust fans. Air handling units are all installed in one central mechanical room. Air handling units have hot water heating coils and chilled water cooling coils but hot water coils are upstream of the cooling coils for all units. This coil configuration limits the potential for dehumidification at the unit. For units with reheat coils in the ductwork, dehumidification can still be achieved



MECHANICAL/ELECTRICAL ASSESSMENT CONTINUED



by overcooling at the unit and reheating as required at the zone level. Single zone air handling units are constant volume units. These units are original to the building and we recommend that unit replacements be considered as part of long term planning. Recommend that variable frequency drives (VFDs) be added along with controls for these units to be variable air volume for energy savings. Indoor Air Quality and outside airflow should be addressed at the air handling units to meet ASHRAE 62.1 for controllable ventilation rates.

AIR CONDITIONING

Air conditioning systems in the building is provided by an air-cooled chiller and chilled water distribution system. Chiller and associated circulating pump were installed in 2016 and are in good condition. Chilled water piping system is a variable primary system with a single circulating pump.

All air handling units were provided with chilled water cooling coils. These allow for control of cooling and dehumidification in the building. Existing piping throughout the building is concealed in the walls and above the ceilings in public areas. Piping that can be observed in mechanical spaces appears to be in good condition.

AUTOMATIC TEMPERATURE CONTROLS

Controls throughout the building are electronic and Direct Digital Controls (DDC) provide by Johnson Controls Inc. (JCI), original to the building. Some actuators, valves, and control components have been replaced as devices fail. There do not appear to be proper controls or air flow monitoring to control ventilation rates based on occupancies or to verify ASHRAE 62.1 requirements for recommended outdoor air are being met.



MECHANICAL/ELECTRICAL ASSESSMENT CONTINUED



ELECTRICAL SERVICE

- Electrical service is delivered to the facility by Xcel Energy via 500KVA 480/277V padmount transformer located at northwest corner of building.
- Power is routed from the transformer through a wall-mount CT cabinet that is sitting at the exterior just outside of main service entrance space. Power is then routed through the wall and into the main service entrance switchboard. Peak loads on this transformer in the past 12 months was 126kW (152A), as provided by Xcel Energy.
- Electrical service appears to be acceptable, as is. Capacity is more than adequate.

STANDBY POWER

- A generator is not currently located on-site.
- No improvements are suggested for generator power. While emergency generator power is useful, it is not required.

POWER DISTRIBUTION

- The building's main electrical services is delivered underground into a 480/277V 3-phase 1200A Siemens Type SB switchboard. Switchboard was updated in 1998 and is in fair condition. Power to all areas of the building, outside of the performance hall fire pump, is supplied from this main switchboard. This includes various distribution panels, mechanical equipment, and branch panels. Several pieces of the distribution system, including distribution and branch panels, were updated with the renovations over time.
- Several branch panels were noted to have been upgraded or added after the flood of 1997.
- With peak demand on the service within the past year being 152A, the capacity of the existing switchboard is more than adequate. At this time, there is no recommendation for improvements.

LIGHTING

- Outside of small areas, like the gym, cafeteria, and boiler room, that have been updated to LED lighting, the large majority of the building interior consists of fluorescent lighting. Lighting was noted to be less than adequate in several areas, according to Illuminating Engineering Society (IES) recommended lighting levels.
- An upgrade of all interior lighting to energy-efficient LED lighting is suggested. This would cut lighting energy usage by 50-75%.
- Lighting at exterior of building has been upgraded to energy-efficient LED lighting with either new light fixtures, or new LED bulbs within existing light fixtures.
- Emergency egress lighting provided via battery back lighting. Exit signage appeared to be adequate.
- The addition of building mounted exterior emergency egress lighting at each and every exit door is suggested.

LIGHTING CONTROL SYSTEMS

- Lighting within large majority of school was noted to be controlled via manual toggle switch with very few areas capable of dimming control.
- Upgrade of all lighting controls throughout to digital lighting management is suggested. This includes, but is not limited to, occupancy sensors, vacancy sensors, daylight sensors, dimming controls in majority of spaces, and digital monitoring of all controls via manufacturer provided software.
- All exterior lighting is currently being controlled via centrally located photocell.
- All exterior lighting control is suggested to be tied into digital lighting management, as outlined in interior lighting portion above.



MECHANICAL/ELECTRICAL ASSESSMENT CONTINUED



COMMUNICATIONS SYSTEMS

- Majority of data cabling within school consists of Category 5 and 5e cabling, with all newly-installed cabling being Category 6. Wireless access points were noted at regular intervals throughout building. Coverage seemed to be adequate for general use.
- Telecom service appears to be adequate and is being updated over time, internally.
- Intercom system consists of Simplex 5100 Series Building Communication System. System has the capability of paging specific zones, as desired. Recessed speakers were noted to be located all throughout circulation areas, in all classrooms, and in almost all “normally-occupied” spaces. Speakers also observed at exterior.
- IP phones are located in all classrooms for room-to-room communication.
- Centrally-controlled clock system has been upgrade within past few years and is manufactured by American Time with clocks located all throughout school. All communication between clocks and central system is done via hardwiring. Large majority are analog clocks.
- It is suggested that the existing intercom system be updated to new IP system throughout entire school. This would provide the functionality to adjust the utilization and grouping of each individual speaker, as desired. This system would also include an upgraded wireless clock system. The intercom system and clock system would communicate with manufacturer provided software to set schedules, announcements, bells, etc.
- Classroom technology varied between classrooms. Technology observed consisted of projectors, digital displays, and classroom sound reinforcement.

SAFETY & SECURITY SYSTEMS

- Three exterior entrance doors currently utilize electronic door hardware for entrance.
- It is suggested that additional door security is added to all exterior doors for the purposes of access control and monitoring.
- Security camera systems, at the interior and exterior, have been updated over time to IP-based cameras. A buzz-in system consisting of a 2-way speaker and camera is located at the north and south entrances.
- System appears to be adequate and can be easily added to by school’s IT department, as necessary.
- An intrusion detection system consisting of motion detection throughout hallways was installed several years back, but has since been disconnected entirely because of false alarms.
- Fire alarm control panel is Simplex 4020. Pull stations noted to be located at each exit of building. Fire detection noted to be adequate. Notification consists of strobes and horn/strobe devices. Several devices appeared to have been updated within the past several years, while others appeared very aged.
- It is suggested that the fire alarm system be upgraded to a voice-capable system as is currently required by the North Dakota Building Code. This system would emit voice messages instructing occupants what to do in an emergency situation. This would be in lieu of a horn sounding in an emergency, as the system currently does.



D. EXISTING DEFICIENCIES

The analysis of the existing Phoenix Elementary School has been broken down into three categories: code compliance/Americans with Disabilities Act (ADA) compliance, education adequacy, and capital maintenance. The facility has been assessed for deficiencies as defined below:

1. Code Compliance/Americans with Disabilities Act (ADA) Compliance

This portion of the assessment of the current building codes required by the City of Grand Forks and the State of North Dakota. Non-compliant items within the building are identified and listed below.

- Traditional wire glass throughout the building is no longer to code as an acceptable type of safety glass (018).
- Both stairwells are lacking a separate handrail from the guardrails and existing guardrails do not meet height requirements (019, 020).
- Numerous single restrooms throughout the school are accessible, but with all the extra items stored there, are no longer accessible (021).
- Double doors in the Title 1 classroom (Room 171) do not have required panic hardware (022).
- The door to the restroom within the main office does not have sufficient clearances when swung open for accessibility.
- Sinks in the staff lounge, main office, nurse's office, and library office (Rooms A136, A137, B145 and no corresponding room number) are not accessible (023, 024, 025, 026).
- Mop sink in the second-floor janitorial closet (Room A214) needs fiber-reinforced panels on the adjacent walls (027).
- All classrooms with interior windows facing the atrium are missing sprinklers 4"-12" from the windows for fire protection (028).
- The guardrail in the mechanical room does not meet height requirements and appropriate handrails are missing (029).
- Drinking fountains throughout the building do not meet the required ratio of wheelchair accessible fountains to standing person accessible fountains (030).
- Door hardware, on the door to the STAR room in Room 229, is not accessible (031).
- The fire extinguisher cabinet next to Room B229 is missing the glass pane in the door.
- Due to the incline of the southernmost exterior ramp outside of the cafeteria, handrails are required on both sides of the ramp (032).
- The playground is not accessible on all sides (033).
- Portions of exterior walls are covered with vinyl wall covering on the interior side, which is not to code.
-

INTERIOR AND EXTERIOR EXISTING CONDITION PHOTOS

A portion of the metal parapet cover is damaged near the loading docks on the north side of the school (034). Metal caging protecting the exterior speaker is damaged and should be replaced (035).



INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



PHX-ES 001

The school, in general, lacks storage space as many of the restrooms, electrical closets, and mechanical rooms double as storage.



PHX-ES 002

Many individual learning spaces have had to move to spaces that are not optimal for learning. For example, there is a one-on-one learning space inside of an electrical closet.



PHX-ES 003

Many individual learning spaces have had to move to spaces that are not optimal for learning. For example, there is a specialized learning space within the mechanical and janitorial area of the building.



PHX-ES 004

This causes drivers to circumvent the one-way and cross over a crosswalk to connect to 5th Avenue South, creating concern for the safety of the children who utilize the crosswalk.



INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



PHX-ES 005

The playground directly outside the building is outdated, broken, and inaccessible and should be replaced.



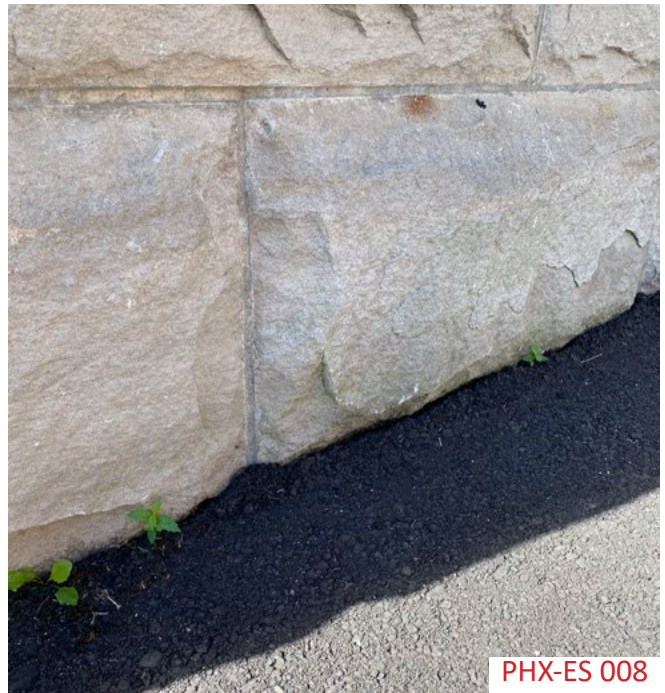
PHX-ES 006

The playground directly outside the building is outdated, broken, and inaccessible and should be replaced.



PHX-ES 007

A roof drain/overflow scupper on the north side of the building needs a concrete splash block beneath it and for the drain mesh to be repaired.

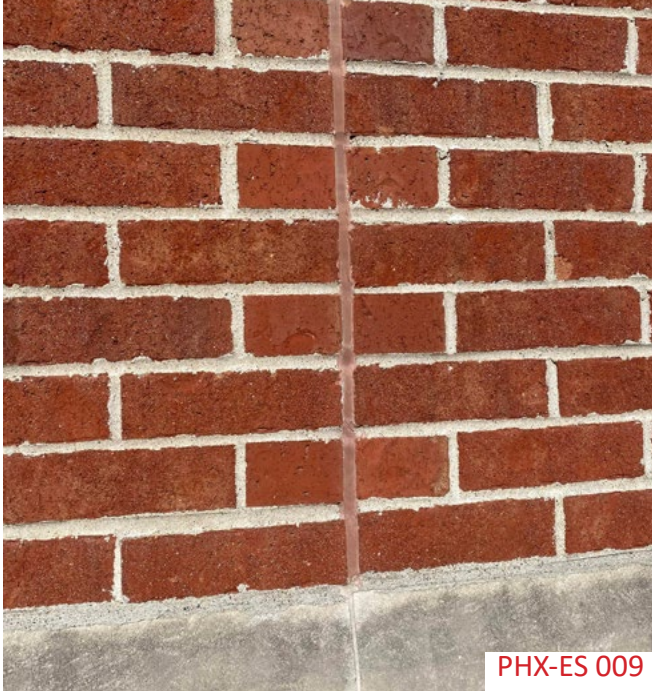


PHX-ES 008

Outside of the library where new asphalt was laid for drainage, the weepholes in the brick are potentially covered which can prevent moisture from leaving the brick.



INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



PHX-ES 009

The expansions within the brick have been well maintained, as the caulk was redone less than three years ago.



PHX-ES 010

Due to the age of the windows, the sealant/gasket has shrunk and no longer runs the entire width of the glass panels.



PHX-ES 011

Due to the age of the windows, the sealant/gasket has shrunk and no longer runs the entire width of the glass panels.



PHX-ES 012

There are several areas where the vinyl wall covering is releasing from the gypsum wall board substrate

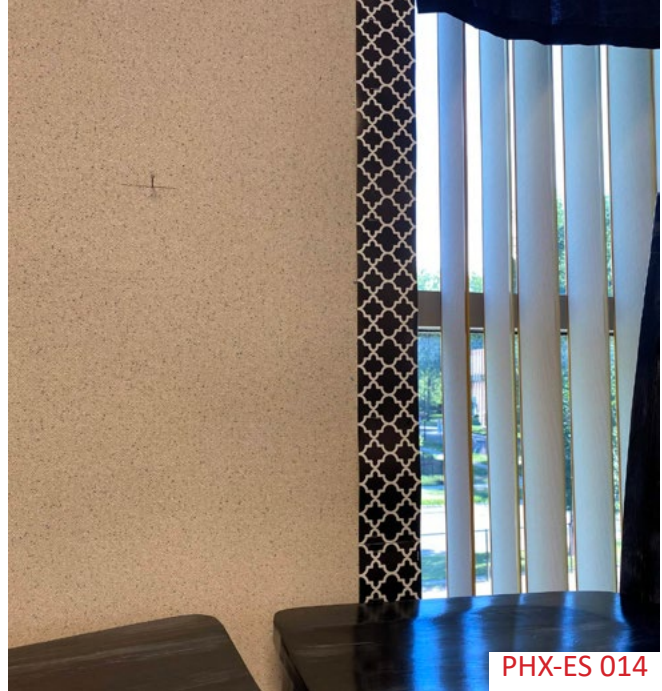


INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



PHX-ES 013

Other areas have signs of wear and tear and could use wall and corner guards to protect from future damage



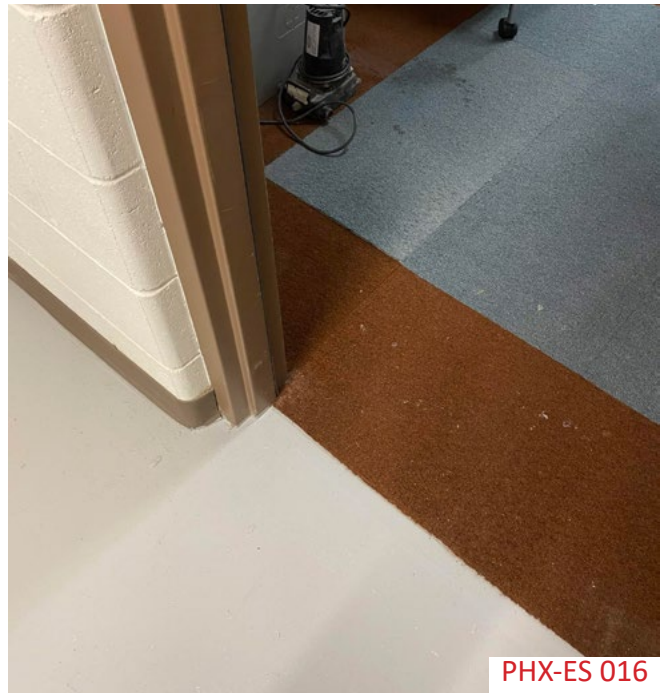
PHX-ES 014

It is recommended the vinyl wall covering be removed from the interior surface of exterior walls, as this could potentially create a double vapor barrier and trap moisture within the walls.



PHX-ES 015

There is cracking in a CMU wall adjacent to a steel column that can be seen from the mechanical room and the hallway.



PHX-ES 016

The only area that does not have new carpet is the janitorial closet.



INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



PHX-ES 017

There is an area in Room B235 where the precast concrete underneath the carpet has inconsistencies in its seams. Because of this, there is an uneven and sloped portion of the floor in the classroom.



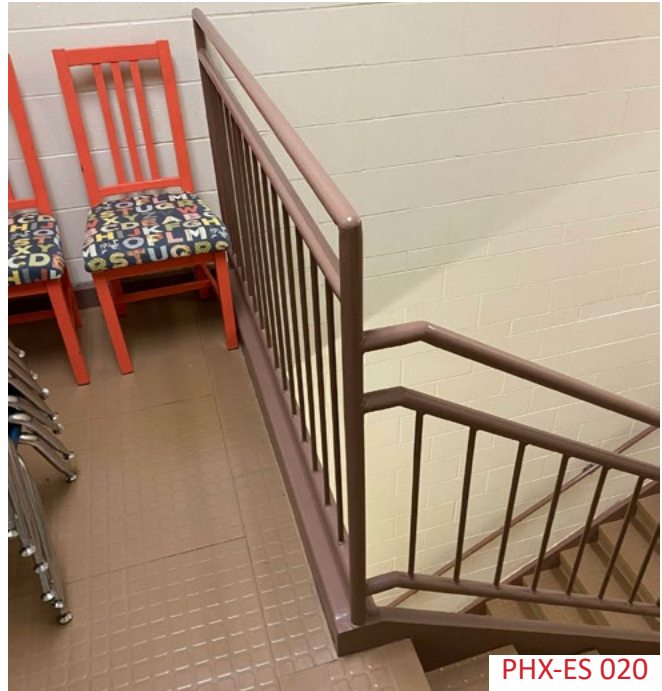
PHX-ES 018

Traditional wire glass throughout the building is no longer to code as an acceptable type of safety glass



PHX-ES 019

Both stairwells are lacking a separate handrail from the guardrails and existing guardrails do not meet height requirements



PHX-ES 020

Both stairwells are lacking a separate handrail from the guardrails and existing guardrails do not meet height requirements

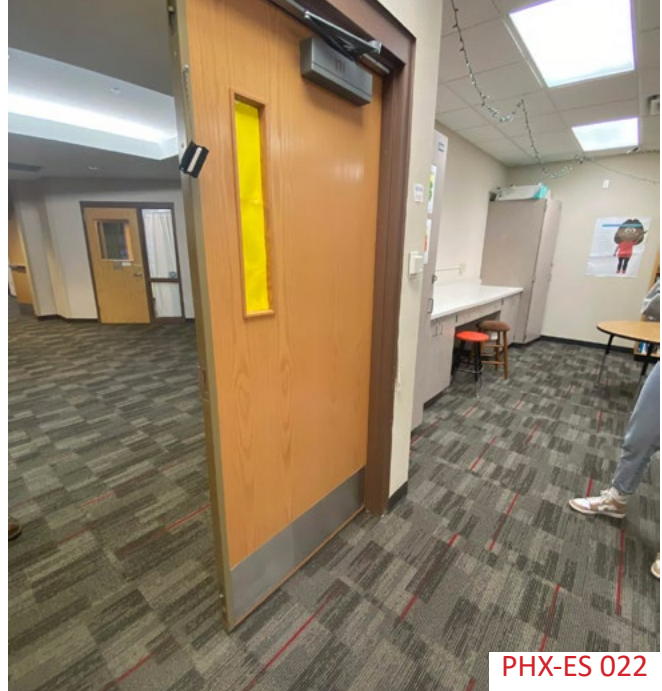


INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



PHX-ES 021

Numerous single restrooms throughout the school are accessible, but with all the extra items stored there, are no longer accessible



PHX-ES 022

Double doors in the Title 1 classroom (Room 171) do not have required panic hardware



PHX-ES 023

Sinks in the staff lounge, main office, nurse's office, and library office (Rooms A136, A137, B145 and no corresponding room number) are not accessible



PHX-ES 024

Sinks in the staff lounge, main office, nurse's office, and library office (Rooms A136, A137, B145 and no corresponding room number) are not accessible



INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



PHX-ES 025

Sinks in the staff lounge, main office, nurse's office, and library office (Rooms A136, A137, B145 and no corresponding room number) are not accessible



PHX-ES 026

Sinks in the staff lounge, main office, nurse's office, and library office (Rooms A136, A137, B145 and no corresponding room number) are not accessible



PHX-ES 027

Mop sink in the second-floor janitorial closet (Room A214) needs fiber-reinforced panels on the adjacent walls



PHX-ES 028

All classrooms with interior windows facing the atrium are missing sprinklers 4"-12" from the windows for fire protection



INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



PHX-ES 029

The guardrail in the mechanical room does not meet height requirements and appropriate handrails are missing



PHX-ES 030

Drinking fountains throughout the building do not meet the required ratio of wheelchair accessible fountains to standing person accessible fountains



PHX-ES 031

Door hardware, on the door to the STAR room in Room 229, is not accessible



PHX-ES 032

Due to the incline of the southernmost exterior ramp outside of the cafeteria, handrails are required on both sides of the ramp

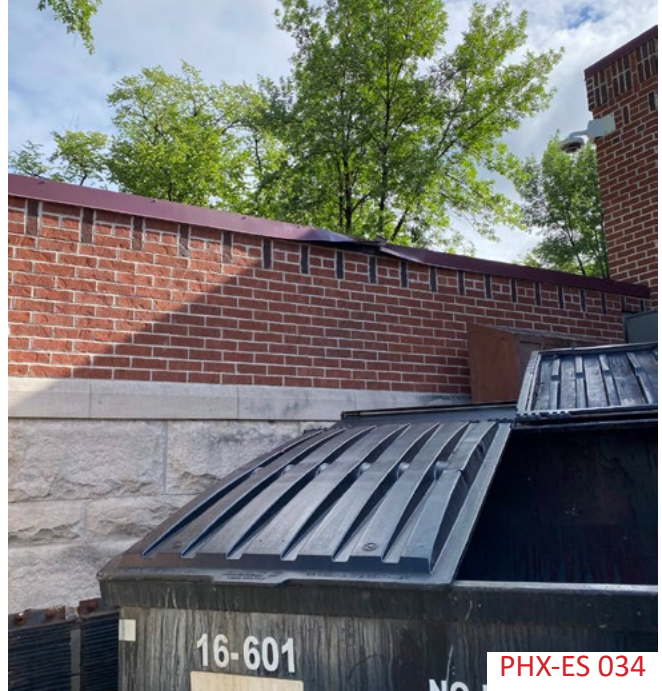


INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



PHX-ES 033

The playground is not accessible on all sides



PHX-ES 034

A portion of the metal parapet cover is damaged near the loading docks on the north side of the school.



PHX-ES 035

Metal caging protecting the exterior speaker is damaged and should be replaced.



EXISTING DEFICIENCIES CONTINUED

EDUCATIONAL ADEQUACY

This is a review of applicable Department of Public Instruction recommendations as they relate to Grand Forks Public Schools’ curriculum. To understand educational space deficiencies, we have evaluated educational models, curriculum configurations, and quantity and quality of existing spaces in comparison to the option of a modern, purpose-built educational facility.

Area	Current Square Footage	DPI Recommended Square Footage	Difference
Administration	2,520 SF	2,986 SF	-466
Athletics	5,089 SF	3,400 SF	1,689
Auditorium	956 SF	2,200 SF	-1,244
Circulation	9,307 SF	15,373 SF	-6,066
Classrooms	14,048 SF	13,750 SF	298
Common Spaces	170 SF	150 SF	20
Food Services/Cafeteria	5,329 SF	4,526 SF	803
Library/Media Center	2,796 SF	1,895 SF	901
Mechanical/Electrical	3,394 SF	3,843 SF	-449
Music	1,799 SF	3,700 SF	-1,901
Restrooms	1,285 SF	1,281 SF	4
Special Education	3,767 SF	5,800 SF	-2,033
Technology Education	676 SF	1,000 SF	-324

Total Missing Square Footage	-8,768
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EXISTING DEFICIENCIES CONTINUED

ADMINISTRATION/PTO COMMENTS AND FEEDBACK

SECURITY/ADA ACCESSIBILITY

- There are no secure entrances.
- There are no buttons to open doors.

LACKING LEARNING AND SUPPORT SPACE

- There are only two classrooms for the District-wide autism/special education program and there are no adequate bathrooms.
- There is only one staff restroom upstairs and downstairs.
- There are not enough common and collaborative learning spaces.
- There are not enough spaces for specialty teachers.
- There are no gender-neutral bathrooms.

PARKING AND STUDENT DROP-OFF AND PICK-UP

- There is not enough parking for visitors and parents.
- Pick-up and drop-off is not ideal.

TOP PRIORITIES

1. Safety/Security and Accessibility
2. Parking and Student Drop-Off and Pick-Up Improvements

E. COST ANALYSIS

Phoenix Elementary School
Grand Forks, ND
11/2/2022



Facility Assessment Estimate

Description	Item Number	Takeoff Qty	Total Cost/Unit	Critical	5 yrs Deferred Maint	10 yrs Deferred Maint	Educational Adequacy	Synergistic with other needs	Total Cost
ADA and Building Code Compliance									
Replace wire glass throughout the building that is no longer up to code (frame to remain)	1	1,600 SF	\$33.65 / SF	\$53,840					\$53,840
Replace guardrails (60lf) and handrail (120 lf) that are not up to code	2	180 LF	\$199.43 / LF	\$35,897					\$35,897
Add grab bars in boys' restroom near the gymnasium at accessible urinal.	3	2 Ea.	\$154.22 / Ea.	\$308					\$308
Add panic hardware to double doors in Title Room 171.	4	2 Ea.	\$1,264.24 / Ea.	\$2,528					\$2,528
Change swing on the door to the restroom from the main offices to meet required push/pull clearances	5	2 Ea.	\$3,561.29 / Ea.	\$7,123					\$7,123
Change swing and add panic hardware to room A132 to make accessible.	6	2 Ea.	\$3,561.29 / Ea.	\$7,123					\$7,123
Add ADA sinks in the staff lounge, main office, nurse's office, and library office by replacing 20 lf of base_top_upper.per room to make accessible.	7	4 Ea.	\$26,939.88 / Ea.	\$107,760				X	\$107,760
Add fiber-reinforced panels on adjacent walls at the mop sink in the second-floor janitorial closet (Room A214).	8	1 Ea.	\$365.15 / Ea.	\$365					\$365
Modify sprinklers in the classrooms with interior windows to the commons area for fire safety.	9	10 Ea.	\$1,085.94 / Ea.	\$10,859					\$10,859
Add guardrail/handrail in mechanical room.	10	22 LF	\$199.43 / LF	\$4,387					\$4,387
Add accessible water fountain outside the restrooms on the second floor.	11	1 Ea.	\$21,944.54 / Ea.	\$21,945					\$21,945
Replace hardware on door to STAR room in Room 229 to be accessible.	12	1 Ea.	\$983.61 / Ea.	\$984					\$984
Add glass panel in the fire extinguisher cabinet next to Room B229.	13	1 Ea.	\$351.75 / Ea.	\$352					\$352
Remove vinyl wall coverings from the inside of exterior walls that is creating a double vapor barrier, skim coat existing sheetrock and paint.	14	7,500 SF	\$7.16 / SF	\$53,700					\$53,700
Replace south exterior ramp outside cafeteria and add guardrail (66 lf) to make accessible. (036)	15	132 SF	\$206.86 / SF	\$27,306					\$27,306
Add accessibility to playground on all sides.	16	1 LS	\$45,327.24 / LS	\$45,327				X	\$45,327
Total Code Compliance		54,066 SF	\$7.02 / SF	\$379,804	\$0	\$0	\$0		\$379,804
Security									
Secure entrance, administration office and special education relocation remodel	17	3,635 SF	\$266.94 / SF	\$970,327			\$970,327		\$970,327
Total Security		3,635 SF	\$266.94 / SF	\$0	\$0	\$0	\$970,327		\$970,327
Addition/Remodel (Educational Adequacy)									
Administration	18	466 SF	\$339.20 / SF				\$158,067		\$158,067
Art	19	SF	\$351.74 / SF				\$0		\$0
Athletics	20	SF	\$360.52 / SF				\$0		\$0
Auditorium	21	1,244 SF	\$485.35 / SF				\$603,775		\$603,775
Business Education	22	SF	\$376.82 / SF				\$0		\$0
Circulation	23	6,066 SF	\$376.83 / SF				\$2,285,869		\$2,285,869
Classrooms	24	SF	\$376.82 / SF				\$0		\$0
Common Spaces	25	SF	\$393.12 / SF				\$0		\$0
FACS	26	SF	\$393.12 / SF				\$0		\$0
Food Service/Cafeteria	27	SF	\$458.33 / SF				\$0		\$0
Library/Media Center	28	SF	\$395.63 / SF				\$0		\$0
Mechanical/Electrical	29	449 SF	\$307.85 / SF				\$138,226		\$138,226
Music	30	1,901 SF	\$401.90 / SF				\$764,009		\$764,009

**Phoenix Elementary School
Grand Forks, ND
11/2/2022**



Facility Assessment Estimate

Description	Item Number	Takeoff Qty	Total Cost/Unit	Critical	5 yrs Deferred Maint	10 yrs Deferred Maint	Educational Adequacy	Synergistic with other needs	Total Cost
Restrooms	31	SF	\$464.61 / SF				\$0		\$0
Science	32	SF	\$431.99 / SF				\$0		\$0
Special Education	33	2,033 SF	\$340.28 / SF				\$691,782		\$691,782
Technical Education	34	SF	\$381.83 / SF				\$0		\$0
Technology Education	35	\$324 SF	\$394.37 / SF				\$127,777		\$127,777
Total Adequacy		12,483 SF	\$382.08 / SF	\$0	\$0	\$0	\$4,769,505		\$4,769,505
Capital Maintenance									
Interior Upgrades									
Patch vinyl wall coverings where it is peeling up in several areas	36	54,066 SF	\$0.25 / SF		\$13,517				\$13,517
Add wall guards and corner guards through out the school to protect the areas from future damage	37	54,066 SF	\$1.10 / SF		\$59,473				\$59,473
Repair the cracking in a CMU wall adjacent to a steel column that can be seen from the mechanical room and the hallway	38	1 Ea.	\$1,423.45 / Ea.	\$1,423					\$1,423
Remove flooring, add floor fill, and install new flooring in Room B235 where the precast concrete underneath the carpet had inconsistency in its seams	39	1,008 SF	\$13.89 / SF		\$14,001				\$14,001
Interior Upgrades Subtotal		54,066 SF	\$1.64 / SF						\$88,414
Exterior Upgrades									
Repair the west curb in the drop-off alleyway that is damaged	40	1 Ea.	\$2,635.12 / Ea.		\$2,635				\$2,635
Replace the outdated playground	41	1 Ea.	\$264,142.24 / Ea.		\$264,142				\$264,142
Clean the exterior limestone	42	1 Ea.	\$10,248.24 / Ea.		\$10,248				\$10,248
Fix the drain mesh in a fire drain on the north side of the building and add a concrete splash block beneath it	43	1 Ea.	\$741.24 / Ea.	\$741					\$741
Outside of the library where new asphalt was laid for drainage, the weepholes in the brick have been covered which can prevent moisture from leaving the brick	44		/ 0						\$0
Replace the roof when it nears the end of its useable lifetime	45	35,134 SF	\$31.69 / SF	\$1,113,396					\$1,113,396
Replace caulking around windows	46	49 Ea.	\$501.42 / Ea.		\$24,570				\$24,570
Replaced the damaged metal parapet near the loading docks on the north side of the school	47	1 Ea.	\$4,124.21 / Ea.		\$4,124				\$4,124
Replace the metal caging protecting the exterior speaker that damaged	48	1 Ea.	\$2,412.24 / Ea.		\$2,412				\$2,412
Exterior Upgrades Subtotal		54,066 SF	\$26.31 / SF						\$1,422,269
Electrical Upgrades									
Add egress lighting to doors to exterior as is required by Building Code	49	54,066 SF	\$0.84 / SF	\$45,415					\$45,415
Upgrade of all interior lighting controls throughout to digital lighting management	50	54,066 SF	\$2.51 / SF		\$135,706				\$135,706
Upgrade of all exterior lighting controls throughout to digital lighting management	51	54,066 SF	\$0.25 / SF		\$13,517				\$13,517
Update the existing intercom system with a new IP system throughout entire school.	52	54,066 SF	\$3.76 / SF		\$203,288				\$203,288
It is suggested that additional door security is added to all exterior doors for the purposes of access control and monitoring.	53	54,066 SF	\$0.45 / SF	\$24,330					\$24,330

**Phoenix Elementary School
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Facility Assessment Estimate

Description	Item Number	Takeoff Qty	Total Cost/Unit	Critical	5 yrs Deferred Maint	10 yrs Deferred Maint	Educational Adequacy	Synergistic with other needs	Total Cost
It is suggested that the fire alarm system be upgraded to a voice-capable system as is currently required by the North Dakota Building Code	54	54,066 SF	\$0.69 / SF	\$37,306					\$37,306
Electrical Upgrades Subtotal		54,066 SF	\$8.50 / SF						\$459,561
Mechanical Upgrades									
Some roof drain piping was reported as having leaks. This should be investigated, and existing piping replaced where deteriorated.	55	54,066 SF	\$1.45 / SF	\$78,396					\$78,396
ASSE 1070 thermostatic mixing valves should be added to public lavatories for scald protection in accordance with the uniform plumbing code.	56	54,066 SF	\$0.32 / SF	\$17,301				X	\$17,301
Variable air volume (VAV) boxes with hot water reheat coils are used throughout the building for zoning. Hot water cabinet unit heaters and suspended unit heaters provide heat for vestibules, stairwells, mechanical rooms, and other similar spaces. There is perimeter finned tube radiation installed in the media center but does not appear to be installed in any of the building's other exterior rooms.	57	54,066 SF	\$2.14 / SF		\$115,701				\$115,701
The ventilation and exhaust systems in the school include various indoor air handling units, and various exhaust fans. Air handling units are all installed in one central mechanical room. Air handling units have hot water heating coils and chilled water cooling coils but hot water coils are upstream of the cooling coils for all units. This coil configuration limits the potential for dehumidification at the unit. For units with reheat coils in the ductwork, dehumidification can still be achieved by overcooling at the unit and reheating as required at the zone level. Single zone air handling units are constant volume units. These units are original to the building and we recommend that unit replacements be considered as part of long term planning. Recommend that variable frequency drives (VFDs) be added along with controls for these units to be variable air volume for energy savings. Indoor Air Quality and outside airflow should be addressed at the air handling units to meet ASHRAE 62.1 for controllable ventilation rates.	58	54,066 SF	\$3.45 / SF		\$186,528				\$186,528
Replace all existing pneumatic controls with a direct digital control system	59	54,066 SF	\$6.54 / SF		\$353,592				\$353,592
Mechanical Upgrades Subtotal		54,066 SF	\$13.90 / SF						\$751,517
Total Capital Maintenance		54,066 SF	\$50.34 / SF	\$1,318,309	\$1,389,452	\$14,001	\$0		\$2,721,761
Total Construction Cost		70,184 SF	\$125.97 / SF	\$1,698,112	\$1,389,452	\$14,001	\$5,739,832		\$8,841,397

*** All above estimated costs are total construction costs. These include general conditions, CM fees, permits, insurances, bonds, taxes

Contingencies & Soft Costs

Design Contingency	60	5.0%		\$84,905.62	\$69,472.58	\$700.06	\$286,991.61		\$442,070
Construction Contingency	61	5.0%		\$84,905.62	\$69,472.58	\$700.06	\$286,991.61		\$442,070
Escalation	62	0.0%		\$0.00	\$0.00	\$0.00	\$0.00		\$0
A & E Fees	63	7.0%		\$118,867.86	\$97,261.61	\$980.08	\$401,788.26		\$618,898
FF & E	64	2.0%		\$33,962.25	\$27,789.03	\$280.02	\$114,796.65		\$176,828
Owner Contingency	65	1.5%		\$25,471.68	\$20,841.77	\$210.02	\$86,097.48		\$132,621
Total Contingencies & Soft Costs				\$348,113	\$284,838	\$2,870	\$1,176,666		\$1,812,486
Total Facility Assessment Cost Estimate			\$151.80 / SF	\$2,046,225	\$1,674,289	\$16,871	\$6,916,498		\$10,653,884
Total Critical & Educational Adequacy			\$127.70 / SF						\$8,962,723