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# KELLY ELEMENTARY SCHOOL





## A. EXISTING BUILDING INVENTORY

Kelly Elementary School is located at 3000 Cherry Street and was originally built in 1966. Since then, the school has undergone three additions. The first addition was made to the south side of the school in 1973. This addition included restrooms, an office, mechanical room, and a central resource area with three open team classrooms around it. In 1982, a second addition was built. This new addition was added to the west side of the school and included various classrooms and special education rooms. The third addition was built in 1989 and expanded the school farther west. It included a new gym, music rooms, support spaces, and a remodel of the existing kitchen. Following the additions, the school underwent a remodel in 2004 and a reroof in 2010. The school is currently undergoing a small remodel to replace the multipurpose room near the office with two classrooms, intervention rooms, star rooms, and a sensory room.

Kelly Elementary School is accessible by an alleyway to the north, Cherry Street to the east, and 32nd Avenue S to the south. There is a small parking lot to the north of the building and a larger parking lot to the south of the building.

### FLOOR PLAN



### MAIN FLOOR



## B. ARCHITECTURAL FINISHES

### SUMMARY

Kelly Elementary School's original portion was completed in 1966. Additions were made in 1973, 1982, and 1989. In 2004 a remodel was done, and the building was reroofed in 2010. Another remodel is currently taking place. There are areas in both the exterior and interior of the building where signs of wear and tear are present. Certain finishes, hardware, and appliances in the building are outdated and/or damaged (001). There are accessibility issues throughout the school.

### SITE

The exterior sidewalks, curbs, and pavement show some cracking. Asphalt is pushed up against the building, burying weep holes (002). The playground was recently redone and meets accessibility requirements.

### MASONRY

The exterior brick is in overall good condition. Caulking is starting to deteriorate and should be redone.

### ADDITIONAL EXTERIOR MATERIALS

Metal paneling around the gym has numerous dents from balls hitting it (003). Wood paneling and pressed panels are in overall good condition.

### ROOF

The roof was recently redone 1 – 2 years ago.

### OPENINGS

Door openings within the school are in good condition. The east side of the school received new windows in the summer of 2022. Other windows are aged, and caulking is deteriorating (004, 005).

### CEILINGS

The ceilings within the school mostly consist of acoustical ceiling tile (ACT) and are in good condition.

### WALLS

The interior walls are either painted masonry, painted gypsum board, have vinyl wall covering, or are tiled. All walls appear to be in good condition and no visible issues were noted.

### FLOORING

The floors in the school are either carpet or various types of tiles. The carpet is dated, but tile is in overall good condition.

### 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

- There is no fire sprinkler system installed within the school. It is recommended that a fire sprinkler system be installed within the school, and would be required that sprinklers be installed throughout the entire building per NFPA standards.

### PLUMBING

- Most of the plumbing piping throughout the building is original to each section of the building. Piping was added to the remodeled gymnasium in 2004, as well as most of the plumbing fixtures being replaced at that time. Maintenance staff did not report any issues at the time of the walk through. During any new remodel area, the pipe hangers and associated piping should be considered being replaced as part of the long term planning.
- The restroom plumbing fixtures throughout the building are currently white vitreous china fixtures with the water closets being flush valve floor mounted toilets. The lavatory faucets are a combination of sensor type and manually operated. The school has been replacing the lavatory sensor faucets with manual faucets as mixing valves and/or sensors start to fail. The sink faucets in the classrooms and break rooms are manually operated.
- Domestic hot water is produced by one (1) 250 MBH gas fired water heater in the boiler room of the original building and (1) 4.5KW electric water heater in the mezzanine mechanical room of the 1989 addition. Both water heaters have integral storage tanks. Water heaters were installed in 1997 and 2010, respectively. The gas fired water heater is past its expected end-of-life and is showing its age. The electric water heater seems to be in good condition. The gas fired domestic water heater and associated circulating pump is being designed to be replaced as part of a 2022/2023 project.
- Kitchen plumbing fixtures and piping is relatively new and in good condition. There is no grease interceptor currently installed on the waste line for the three-compartment sink and other grease producing fixtures. It is recommended and a city requirement that a grease interceptor be installed to protect the waste piping system.
- ASSE 1070 thermostatic mixing valves should be added to public lavatories for scald protection in accordance with the uniform plumbing code.

### HEATING

- Heating for the entire building comes from two (2) non-condensing Weil McLain boilers. One Boiler was installed in 1989 and converted from steam to hot water in 2004. The other boiler and all of the associated pumps were installed in 2004. Primary/secondary circulation pumps and multiple loops are used to distribute hot water throughout the building. The converted boiler is past its expected end-of-life, but both still seem to be in fair condition. The boiler plant is being designed to be replaced as part of a 2022/2023 project.
- Existing piping throughout the building is concealed in the tunnels, walls, and above the ceilings in public areas. Piping that can be observed in mechanical spaces appears to be in good condition. During any new remodel area, the pipe hangers and associated piping should be considered being replaced as part of the long term planning.
- Hot water terminal reheat coils and electric terminal reheat coils are used only for the remodeled gym and office spaces in the 1982 addition for zoning. Perimeter hot water and electric finned tube radiation is installed in some exterior offices, restrooms, and corridors for supplemental heat. Hot water and electric cabinet unit heaters and suspended unit heaters provide heat for vestibules, mechanical rooms, and other similar spaces. These are all original to each section of the building and should be considered being replaced as part of the long term planning.





## MECHANICAL/ELECTRICAL ASSESSMENT CONTINUED



### VENTILATION AND EXHAUST

- The ventilation and exhaust systems in the school include various air handling units, unit ventilators, packaged rooftop units, and various exhaust fans. The indoor air handling units and exhaust fans throughout the building is original and past their useful life. Indoor Air Quality should be addressed throughout the building to meet ASHRAE 62.1 for controllable ventilation rates. Existing indoor air handling units and unit ventilators have inline starters for fan control and pneumatic controls. It should be considered that the indoor air handling units be replaced with new variable air volume units with VFDs for fan speed modulation, chilled water or DX cooling coils, heating water coils, and DDC controls. Indoor air handling unit for the remodeled gymnasium is currently suspended in a mechanical room. This space is limited and, due to serviceability and clearance requirements, may require new unit to be installed on the roof. Unit ventilators are designed to be replaced with induction displacement units with chilled water coils, hot water coils, and perimeter finned tube radiation to condition the classrooms and cafeteria as part of a 2022/2023 project. The induction displacement units will be paired with a rooftop dedicated outdoor air unit with VFDs for fan speed modulation, energy recovery wheel, chilled water coils, hot water coils, and DDC controls for the ventilation air.
- Ductwork throughout the older portions of the building is at the end of its useful life and will have excessive leakage. Any areas of the building where cooling is proposed will need to have all supply ductwork insulated to meet energy code and limit condensation formation.

### AIR CONDITIONING

- Air conditioning systems in the admin area, kitchen, 1973 addition, and 1982 addition classrooms consist of packaged DX cooling on the rooftop air handling units. These units were replaced in 2004 for the 1982 addition, kitchen and admin area, while the rooftop units for the 1973 addition were replaced in 2010. The indoor air handling unit serving 1989 addition classrooms has a remote split system DX condensing unit and is original to the building. As designed for a 2022/2023 project, an air cooled chiller plant with a variable speed base mounted circulation pump to be installed and chilled water piping will be ran to all units serving the classroom and kitchen area within the original building. It is recommended that a remote split system DX condensing unit with variable controls, DX cooling coils, and associated refrigerant piping be installed for the remaining indoor air handling units to meet the requirements of ASHRAE 62.1 for ventilation rates, and ASHRAE Standard 55 for cooling and dehumidification.

### AUTOMATIC TEMPERATURE CONTROLS

- Controls throughout the original building and 1989 addition are pneumatic controls and original to the building. These pneumatic controls offer limited control capability and no ability for monitoring and alarm. There are not 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. It is recommended that all existing pneumatic controls be replaced with Direct Digital Controls (DDC) systems. The DDC system should be integrated with the existing Grand Forks Public School's Building Automation System (BAS). The system would be integrated across the district to allow for single stop monitoring and controls of all buildings in the district.



## MECHANICAL/ELECTRICAL ASSESSMENT CONTINUED



### ELECTRICAL SERVICE

- Electrical service is delivered to the facility by Xcel Energy via 225KVA 208/120V padmount transformer located at north end of building.
- Power is routed from the transformer through a wall-mount CT cabinet mounted just to the south of the transformer. Power is then routed through the wall and into the main service entrance switchboard. Peak load on this transformer in the past 12 months was 239kW (664A), 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 electrical services is routed from the CT cabinet through the north exterior wall into the main service entrance switchboard within the main electrical space at the interior of the building. The service entrance switchboard is a 208/120V 1600A Siemens Series 6. Power is supplied to all areas of the building from this main switchboard. This includes various distribution panels, mechanical equipment, and branch panels.
- The service entrance switchboard does not currently utilize a single main service disconnect. The switchboard was seemingly installed as main lug only and all breakers within switchboard are currently operating as service disconnects. While this is very unorthodox, it is allowed by Code. However, Code only allows six separate service disconnects within a single facility. This will limit the amount of breakers that can be installed within this service entrance switchboard.
- A distribution panel located adjacent to the main switchboard was noted to be very old and in need of replacement. The distribution panel was updated a bit after the flood of 1997, but it is recommend that this panel be replaced in it's entirety.
- Branch panels throughout building were noted to be in fair condition. While some appear to be nearing the end of their useful life, they are still in work order. These panels are recommended to be replaced with any renovation project.

### LIGHTING

- The large majority of the building interior consists of fluorescent and incandescent lighting. Areas such as the gym have been updated to LED lighting.
- School is currently scheduled to undergo a lighting upgrade project that will replace all non-LED lighting within school with energy-efficient LED lighting. This should 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.



## MECHANICAL/ELECTRICAL ASSESSMENT CONTINUED



### LIGHTING CONTROL SYSTEMS

- Lighting within large majority of school was noted to be controlled via manual toggle switch. 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 controlled via three separate timeclocks that have been installed over time.
- All exterior lighting control is suggested to be tied into digital lighting management, as outlined in interior lighting portion above.

### COMMUNICATIONS SYSTEMS

- Majority of data cabling within school consists of Category 5 and 5e cabling, with all newly-installed cabling being Category 6. Several wireless access points were noted 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. Recessed speakers were noted to be located all throughout circulation areas. Intercom speakers not located within classrooms.
- IP phones are located in all classrooms for room-to-room communication.
- Centrally-controlled clock system is manufactured by Simplex with clocks located all throughout school. All communication between clocks and central system is done via hardwiring. Clocks consist of primarily analog devices.
- 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 digital displays and classroom sound reinforcement.

### SAFETY & SECURITY SYSTEMS

- A select few 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 school's main entrance.
- System appears to be adequate and can be easily added to by school's IT department, as necessary.
- Fire alarm control panel is Simplex 4010. 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 and locations appeared to be adequate.
- 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 Kelly Elementary School has been broken down into three categories: code compliance/Americans with Disabilities Act (ADA) compliance, educational adequacy, and capital maintenance. The facility has been assessed for deficiencies as defined below:

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

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

- The building is not sprinklered.
- Traditional wire glass throughout the building is no longer to code as an acceptable type of safety glass. (006)
- Restrooms in classrooms are not accessible. (007)
- Sinks in classrooms are not accessible. (008)
- Pipes throughout the building under sinks are not protected. (009)
- Drinking fountains throughout the building do not meet the required ratio of wheelchair accessible fountains to standing person accessible fountains. (010, 011)
- Many doors throughout the building have hardware that is not accessible. (012)
- Faculty restroom and gym office restrooms are not accessible. (013, 014)
- Sinks in library workroom and faculty lounge are not accessible. (015)
- Interior windows in the library computer lab do not have required tempered glass for safety.
- All public restrooms are not accessible. (016, 017)
- The mop sink in the custodial room requires a splash guard.
- Door 2 entrance is not wide enough for entry clearance. (018)





## INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



Certain finishes, hardware, and appliances in the building are outdated and/or damaged.



Asphalt is pushed up against the building burying weep holes.





## INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



KEL-ES 003

Metal paneling around the gym has numerous dents from balls hitting it.



KEL-ES 004

Other windows are aged, and caulking is deteriorating.





**INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS**



**KEL-ES 005**

Other windows are aged, and caulking is deteriorating.



**KEL-ES 006**

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



**KEL-ES 007**

Restrooms in classrooms are not accessible.



**KEL-ES 008**

Sinks in classrooms are not accessible.



## INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



KEL-ES 009

Pipes throughout the building under sinks are not protected.



KEL-ES 010

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



KEL-ES 011

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



KEL-ES 012

Many doors throughout the building have hardware that is not accessible.





## INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



**KEL-ES 013**

Faculty restroom and gym office restrooms are not accessible.



**KEL-ES 014**

Faculty restroom and gym office restrooms are not accessible.



**KEL-ES 015**

Sinks in library workroom and faculty lounge are not accessible.





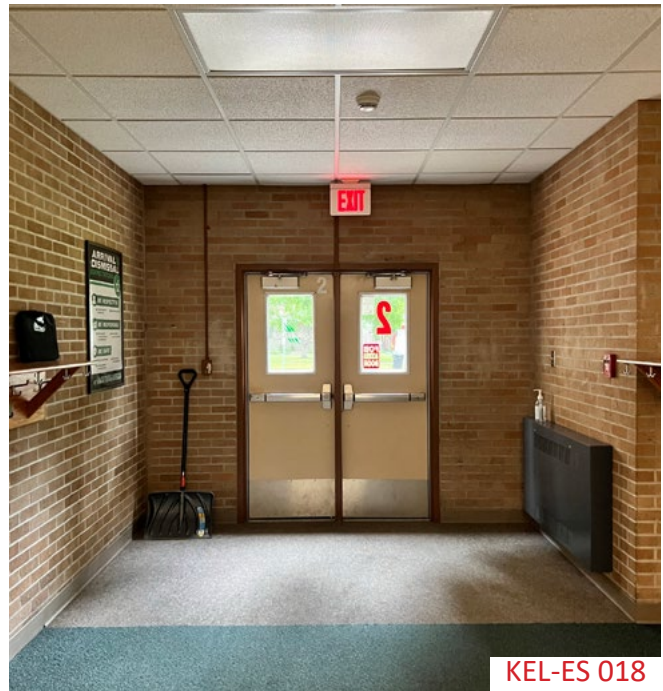
## INTERIOR AND EXTERIOR EXISTING DEFICIENCIES PHOTOS



All public restrooms are not accessible.



All public restrooms are not accessible.



Door 2 entrance is not wide enough for entry clearance.



## 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	2,773 SF	4,000 SF	-1,227
Athletics	8,135 SF	3,000 SF	5,135
Circulation	10,112 SF	9,060 SF	1,052
Classrooms	21,300 SF	22,650 SF	-1,350
Food Service/Cafeteria	3,019 SF	6,798 SF	-3,779
Library/Media Center	3,983 SF	2,291 SF	1,692
Mechanical/Electrical	3,129 SF	4,515 SF	-1,386
Music	1,751 SF	2,000 SF	-249
Restrooms	1,619 SF	1,505 SF	114
Special Education	2,068 SF	3,850 SF	-1,782
Technology Education	711 SF	1,000 SF	-289

<b>Total Missing Square Footage</b>	<b>-2,069</b>
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## EXISTING DEFICIENCIES CONTINUED

### ADMINISTRATION/PTO COMMENTS AND FEEDBACK

#### AIR QUALITY/CONTROL

- There is not air conditioning in the kindergarten, 1st and 2nd grade classrooms.

#### ADA ACCESSIBILITY

#### SECURITY ISSUES

#### LACK LEARNING/SUPPORT SPACES

- The cafeteria is too small.
- The school is currently adding more special education space, but there still will not be enough room to accommodate.

#### OVERALL ENVIRONMENT DOES NOT SUPPORT 21ST CENTURY LEARNING

- There are not enough outlets in schools.
- There is a lack of natural light throughout the school.

#### PARKING ISSUES

#### TOP PRIORITIES

1. Safety/Security/ADA Accessibility
2. Common Gathering/Collaboration Spaces
3. Band/Orchestra Rooms

# E. COST ANALYSIS

Kelly 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
<b>ADA and Building Code Compliance</b>									
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
Remodel restrooms in classrooms to make them ADA accessible.	2	11 Ea.	\$37,497.11 /Ea.	\$412,468					\$412,468
Replace casework (20lf of base, top, and upper) per classroom and sinks in classrooms are not accessible	3	25 Ea.	\$26,939.88 /Ea.	\$673,497					\$673,497
Protect exposed pipes under sinks in restrooms	4	1 Ea.	\$16,384.74 /Ea.	\$16,385				X	\$16,385
Add ADA accessible lower water fountains throughout the building	5	10 Ea.	\$21,944.54 /Ea.	\$219,445					\$219,445
Replace doorknobs with ADA accessible hardware	6	50 Ea.	\$983.61 /Ea.	\$49,180					\$49,180
Remodel faculty restroom and gym office restroom to meet accessibility requirements.	7	2 Ea.	\$37,497.11 /Ea.	\$74,994					\$74,994
Replace sinks in library workroom and faculty lounge to be ADA accessible by replacing 20 lf of base and top	8	2 Ea.	\$26,939.88 /Ea.	\$53,880					\$53,880
Replace interior windows in the library computer lab with tempered glass	9	40 SF	\$64.32 /SF	\$2,573					\$2,573
Remodel all public restrooms to make them ADA accessible.	10	6 Ea.	\$74,892.86 /Ea.	\$449,357					\$449,357
Add splash guard to mop sink in the custodial room to meet code.	11	1 Ea.	\$365.15 /Ea.	\$365					\$365
Widen the opening and replace the Door 2 entrance to make ADA accessible.	12	1 Ea.	\$14,962.26 /Ea.	\$14,962					\$14,962
<b>Total Code Compliance</b>		<b>67,383 SF</b>	<b>\$29.99 /SF</b>	<b>\$2,020,947</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>		<b>\$2,020,947</b>
<b>Security</b>									
Secure entrance, administration office and special education relocation remodel	13	2,800 SF	\$266.94 /SF				\$747,432		\$747,432
<b>Total Security</b>		<b>2,800 SF</b>	<b>\$266.94 /SF</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$747,432</b>		<b>\$747,432</b>
<b>Addition/Remodel (Educational Adequacy)</b>									
Administration	14	1,227 SF	\$339.20 /SF				\$416,198		\$416,198
Art	15	SF	\$351.74 /SF				\$0		\$0
Athletics	16	SF	\$360.52 /SF				\$0		\$0
Auditorium	17	SF	\$485.35 /SF				\$0		\$0
Business Education	18	SF	\$376.82 /SF				\$0		\$0
Circulation	19	SF	\$376.83 /SF				\$0		\$0
Classrooms	20	1,350 SF	\$376.82 /SF				\$508,706		\$508,706
Common Spaces	21	SF	\$393.12 /SF				\$0		\$0
FACS	22	SF	\$393.12 /SF				\$0		\$0
Food Service/Cafeteria	23	3,779 SF	\$458.33 /SF				\$1,732,019		\$1,732,019
Library/Media Center	24	SF	\$395.63 /SF				\$0		\$0
Mechanical/Electrical	25	1,386 SF	\$307.85 /SF				\$426,685		\$426,685
Music	26	249 SF	\$401.90 /SF				\$100,073		\$100,073
Restrooms	27	SF	\$464.61 /SF				\$0		\$0
Science	28	SF	\$431.99 /SF				\$0		\$0
Special Education	29	1,782 SF	\$340.28 /SF				\$606,372		\$606,372
Technical Education	30	SF	\$381.83 /SF				\$0		\$0
Technology Education	31	289 SF	\$394.37 /SF				\$113,974		\$113,974
<b>Total Adequacy</b>		<b>10,062 SF</b>	<b>\$388.00 /SF</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$3,904,027</b>		<b>\$3,904,027</b>

**Kelly 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
<b>Capital Maintenance</b>									
<b>Interior Upgrades</b>									
Update certain finishes, hardware, and appliances in the building that are outdated and/or damaged	32	67,383 SF	\$1.02 / SF		\$68,731				\$68,731
Replace the carpet that dated	33	45,000 SF	\$10.89 / SF			\$490,050			\$490,050
<b>Interior Upgrades Subtotal</b>		<b>67,383 SF</b>	<b>\$8.29 / SF</b>						<b>\$558,781</b>
<b>Exterior Upgrades</b>									
Repair the exterior sidewalks, curbs, and pavement that are cracking.	34	800 SF	\$17.56 / SF	\$14,048					\$14,048
Replace asphalt that is pushed up against the building burying weep holes	35	1 Ea.	\$65,142.14 / Ea.	\$65,142					\$65,142
Touch up caulking at exterior brick	36	1 Ea.	\$24,157.14 / Ea.		\$24,157				\$24,157
Replace metal paneling around the gym since it has numerous dents from balls hitting it	37	5,685 SF	\$34.25 / SF		\$194,711				\$194,711
Replace the roof when it nears the end of its useable lifetime	38	66,268 SF	\$32.46 / SF	\$2,151,059					\$2,151,059
Replace windows that are aged except for the recently replaced windows on the East side	39	44 Ea.	\$3,469.32 / Ea.		\$152,650				\$152,650
<b>Exterior Upgrades Subtotal</b>		<b>67,383 SF</b>	<b>\$38.61 / SF</b>						<b>\$2,601,768</b>
<b>Electrical Upgrades</b>									
The service entrance switchboard does not currently utilize a single main service disconnect. The switchboard was seemingly installed as main lug only and all breakers within switchboard are currently operating as service disconnects. While this is very unorthodox, it is allowed by Code. However, Code only allows six separate service disconnects within a single facility. This will limit the amount of breakers that can be installed within this service entrance switchboard.	40	67,383 SF	\$4.25 / SF		\$286,378				\$286,378
A distribution panel located adjacent to the main switchboard was noted to be very old and in need of replacement. The distribution panel was updated a bit after the flood of 1997, but it is recommended that this panel be replaced in it's entirety.	41	67,383 SF	\$0.87 / SF		\$58,623				\$58,623
Branch panels throughout building were noted to be in fair condition. While some appear to be nearing the end of their useful life, they are still in work order. These panels are recommended to be replaced with any renovation project.	42	67,383 SF	\$3.45 / SF		\$232,471				\$232,471
Add egress lighting to doors to exterior as is required by Building Code	43	67,383 SF	\$0.75 / SF	\$50,537					\$50,537
Upgrade of all interior lighting controls throughout to digital lighting management	44	67,383 SF	\$2.51 / SF		\$169,131				\$169,131
Upgrade of all exterior lighting controls throughout to digital lighting management	45	67,383 SF	\$0.25 / SF		\$16,846				\$16,846
Update the existing intercom system with a new IP system throughout entire school.	46	67,383 SF	\$3.76 / SF		\$253,360				\$253,360
Add additional door security all exterior doors with access control and monitoring	47	67,383 SF	\$0.85 / SF	\$57,276					\$57,276
Upgrade the fire alarm system to a voice-capable system as is currently required by the North Dakota Building Code	48	67,383 SF	\$0.69 / SF	\$46,494					\$46,494
<b>Electrical Upgrades Subtotal</b>		<b>67,383 SF</b>	<b>\$17.38 / SF</b>						<b>\$1,171,117</b>



**Kelly 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
<b>Mechanical Upgrades</b>									
Add sprinklers to the building by adding a new water service line	49	67,383 SF	\$13.05 / SF	\$879,348					\$879,348
During any new remodel area, the pipe hangers and associated piping should be considered being replaced as part of the long term planning.	50	67,383 SF	\$2.68 / SF		\$180,586			X	\$180,586
It is recommended and a city requirement that a grease interceptor be installed to protect the waste piping system.	51	67,383 SF	\$0.57 / SF	\$38,408					\$38,408
ASSE 1070 thermostatic mixing valves should be added to public lavatories for scald protection in accordance with the uniform plumbing code.	52	67,383 SF	\$0.32 / SF		\$21,563			X	\$21,563
Hot water terminal reheater coils and electric terminal reheater coils are used only for the remodeled gym and office spaces in the 1982 addition for zoning. Perimeter hot water and electric finned tube radiation is installed in some exterior offices, restrooms, and corridors for supplemental heat. Hot water and electric cabinet unit heaters and suspended unit heaters provide heat for vestibules, mechanical rooms, and other similar spaces. These are all original to each section of the building and should be considered being replaced as part of the long term planning.	53	67,383 SF	\$2.35 / SF	\$158,350					\$158,350
The ventilation and exhaust systems in the school include various air handling units, unit ventilators, packaged rooftop units, and various exhaust fans. The indoor air handling units and exhaust fans throughout the building is original and past their useful life. Indoor Air Quality should be addressed throughout the building to meet ASHRAE 62.1 for controllable ventilation rates. Existing indoor air handling units and unit ventilators have inline starters for fan control and pneumatic controls. It should be considered that the indoor air handling units be replaced with new variable air volume units with VFDs for fan speed modulation, chilled water or DX cooling coils, heating water coils, and DDC controls. Indoor air handling unit for the remodeled gymnasium is currently suspended in a mechanical room. This space is limited and, due to serviceability and clearance requirements, may require new unit to be installed on the roof. Unit ventilators are designed to be replaced with induction displacement units with chilled water coils, hot water coils, and perimeter finned tube radiation to condition the classrooms and cafeteria. The induction displacement units will be paired with a rooftop dedicated outdoor air unit with VFDs for fan speed modulation, energy recovery wheel, chilled water coils, hot water coils, and DDC controls for the ventilation air	54	67,383 SF	\$41.21 / SF	\$2,776,853					\$2,776,853
Ductwork throughout the older portions of the building is at the end of its useful life and will have excessive leakage. Any areas of the building where cooling is proposed will need to have all supply ductwork insulated to meet energy code and limit condensation formation.	55	67,383 SF	\$8.56 / SF			\$576,798			\$576,798
It is recommended that all existing pneumatic controls be replaced with Direct Digital Controls (DDC) systems.	56	67,383 SF	\$12.01 / SF		\$809,270				\$809,270
<b>Mechanical Upgrades Subtotal</b>									
		67,383 SF	\$80.75 / SF						\$5,441,177
<b>Total Capital Maintenance</b>									
		67,383 SF	\$145.03 / SF	\$6,079,166	\$2,626,827	\$1,066,848	\$0		\$9,772,842

COST ANALYSIS CONTINUED

Kelly 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
<b>Total Construction Cost</b>		<b>80,245 SF</b>	<b>\$204.94 /SF</b>	<b>\$8,100,114</b>	<b>\$2,626,827</b>	<b>\$1,066,848</b>	<b>\$4,651,459</b>		<b>\$16,445,248</b>
*** All above estimated costs are total construction costs. These include general conditions, CM fees, permits, insurances, bonds, taxes									
<b>Contingencies &amp; Soft Costs</b>									
Design Contingency	57	5.0%		\$405,005.68	\$131,341.37	\$53,342.42	\$232,572.94		\$822,262
Construction Contingency	58	5.0%		\$405,005.68	\$131,341.37	\$53,342.42	\$232,572.94		\$822,262
Escalation	59	0.0%		\$0.00	\$0.00	\$0.00	\$0.00		\$0
A & E Fees	60	7.0%		\$567,007.95	\$183,877.92	\$74,679.39	\$325,602.12		\$1,151,167
FF & E	61	2.0%		\$162,002.27	\$52,536.55	\$21,336.97	\$93,029.18		\$328,905
Owner Contingency	62	1.5%		\$121,501.70	\$39,402.41	\$16,002.73	\$69,771.88		\$246,679
<b>Total Contingencies &amp; Soft Costs</b>				<b>\$1,660,523</b>	<b>\$538,500</b>	<b>\$218,704</b>	<b>\$953,549</b>		<b>\$3,371,276</b>
<b>Total Facility Assessment Cost Estimate</b>		<b>80,245 SF</b>	<b>\$246.95 /SF</b>	<b>\$9,760,637</b>	<b>\$3,165,327</b>	<b>\$1,285,552</b>	<b>\$5,605,008</b>		<b>\$19,816,524</b>
<b>Total Critical &amp; Educational Adequacy</b>		<b>80,245 SF</b>	<b>\$191.48 /SF</b>						<b>\$15,365,645</b>