



REPORT FOR

Building Assessment Churchill School Galesburg, IL

City of Galesburg – Galesburg, IL

14 December 2021

The following building assessment outlines the existing building conditions observed during a walk-through of the Churchill Junior High School facility that occurred on 2 November 2021. The areas of assessment include the entire one-story building spaces. Systems observed include Architectural, Mechanical, Electrical, and Plumbing.

BUILDING OVERVIEW

The building observed is located at 905 Maple Avenue, Galesburg, IL (see Plan A01 and Photo A02). It is a one-story building that presently serves as a junior high school for Galesburg Community Unit School District 205. While there are multiple points of egress throughout the building perimeter, the main entry is located on the west side of the facility. Some parking is included on the north side of the property, with the main parking is located east of the building in an unmarked lot. Major amenities include classrooms/offices, cafeteria, auditorium and stage, two-court gymnasium, wood shop, and interior courtyard. The total area of the building is approximately 87,000 square feet, with the interior courtyard at just under 19,000 square feet. A dedication plaque dated the original construction in 1956. A schematic floor plan of the building is provided at the end of this report for reference.

The building appears to be of Type IIB Construction Type: building materials were non-combustible, but no fire-rated assemblies were observed. The visible structural system consisted of open-webbed steel joists to masonry bearing walls throughout the lower-roof spaces. Structural steel joists to masonry bearing walls are utilized at the high-roof areas of the auditorium and gymnasium. The roof assembly is ballasted EPDM, and it appears that a portion of roof over the south side of the building was recently replaced. The building is not sprinklered.

ARCHITECTURE

EXISTING CONDITIONS

A cursory code review was performed for the existing building. The current use of the building may be defined as E (Educational) with an accessory A-1 and A-3 (Assembly) for the auditorium and gymnasium, per the City's current building code 2012 International Building Code (IBC). As previously stated, no fire barrier separations were detected during the walk through, so it appears to be originally designed as a non-separated mixed use. The allowable square footage of the facility in its present-day use appears to comply with current code, but the resulting area is very close to the maximum allowed.

The proposed main use of the facility would be that of a community center or A-3 (Assembly), in lieu of (E) Education. This revision is designated as a *Change of Use*. As such, the resultant building would need to be brought up to current code and allowable square footages. For example, the allowable area for a one-story unfactored E occupancy is 14,500 square feet, while an A-3 occupancy is 9,500. Even considering outlying factors that may slightly increase the allowable total, a facility that is mainly A-3 would not be allowed given the existing square footage of the building. Please note that this is not to say that the building is non-compliant in its current form. While the State of Illinois does require periodic implementation to standards as they relate to health/life/safety for schools, overall building compliance shall adhere to the governing building code at the time of construction (or addition as it may

apply). Viable options of correction regarding code compliance will be discussed in a later section of this report.

An additional factor is adherence to the International Energy Conservation Code (IECC). Architecturally, this mainly applies to the insulation requirements at the perimeter of the building (i.e., roof, walls, etc.). Based on the apparent age of the building, it is assumed that the minimum requirements stated in the IECC are not attained. Adherence to the IECC would need to be met if a building element is replaced or revised in some way. A good example of this would be the roof; if replaced, the insulation would need to be brought up to current energy standards. Likewise, if an exterior wall were to be revised from its original state (say to provide an additional point of entry), the new wall assembly at this location would need to comply with the current IECC.

Multiple points of egress were noted in the existing building, so overall egress lengths from the building does not seem to be an issue. However, one area of concern is the apparent lack of fire-rating at the main corridors throughout the entire building (see Photo 03). This was further evidenced by the lack of rated openings, including door grills (see Photo A04). Current use group standards withstanding, corridors would need to have a 1-hour fire-resistance rating due to the building being unsprinklered. While most doors appear to be solid core and may attain the required fire rating, those doors with large openings/grills would need to be replaced.

Another area of concern is the hallway adjacent to the east side of the gymnasium (see Photo A05). The north end of this corridor did not continue to an exit or exit access, and in its current state exhibits a dead-end corridor. The allowable distance for this condition is 20'-0" or less, while the actual distance is nearly 80'-0". It is recommended that the renovation provide exit access at this location in particular.

While minor issues regarding Illinois ADA were noted throughout the facility, most of them are related to the lack of compliant restrooms. There is a pair of fully compliant restrooms centrally located near the boiler room, but the rest of the restrooms do not adhere to current standards. These issues include existing door clearances, wheelchair turning clearances, and bathroom accessory mounting criteria (see Photos A06 and A07). These areas should be addressed upon renovation.

An additional issue regarding accessibility was the door handles typically found throughout the building. While the main egress doors exhibited lever operation, the typical door hardware at classrooms and offices utilized doorknobs (see Photo A08). Per Section 309.4 of 2018 Illinois Accessibility Code, "Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist". This hardware would need to be replaced as the renovation progresses.

Some evidence of past water intrusion was observed in the building, most notably in the library area (see Photo A09). While the ceiling panels have not been replaced, the damage does not appear to be recent, and it is assumed that the intrusion has been abated. It was also mentioned that there was a recent roof leak at the north side of the gym (see Photos A10 and A11). Upon discussion, this repair has already taken place, and there was not further issue at the time of this report.

Exterior finishes of the building are relatively good condition. The aluminum storefront strip windows predominately around the building do show some signs of wear, but most of the seals appear to be in fair condition. It appears that these windows would not require replacement for another 10 years, although some screens are torn and may necessitate replacement.

The brick veneer is also in good condition for a building of this age. Certain areas, however, require tuckpointing and minor repair in order to maintain the building envelope (see Photos A12 – A14). The boiler chimney in particular needs immediate repair (see Photo A15). Other areas indicating sealant in lieu of mortar should also be addressed in the various repair. Past repair and/or brick replacement was noted at the northwest corner of the building.

As previously mentioned, a portion of the ballasted EPDM roof system was recently replaced at the south side of the building (see Photo A16). The remainder of the roofing at the lower areas appears to be in fair condition, although a more in-depth analysis may be required (i.e., due to the ballast covering the membrane). The high roof of the gymnasium/auditorium seems to exhibit more wear and warrants replacing in the next 5 years (see Photo A17). The age of the older roof was not determined, although the lifetime of similar systems may be 20-25 years. Expansion joints separating the various wings of the building were found to be in good condition. A portion of the coping and roof edge appeared to have been recently repaired at the area of the roof leak at the gym. Please note that proposed roof work would also include coping repair/replacement and miscellaneous flashing.

Interior finishes vary greatly throughout the facility. Floor finishes include terrazzo, ceramic tile, vinyl tile, carpeting, exposed concrete, and apparent asbestos tile (see Photos A18 and A19). Wall finishes observed were painted plaster, ceramic wall tile, painted gyp. board, glazed block, brick, and painted CMU. Ceiling finishes consist of suspended acoustical ceiling panels, tectum panels (at the gym), plaster (at the auditorium), and apparent direct applied asbestos ceiling tile (see Photo A20).

Hazardous material is expected in some of the finishes found throughout the building. These include asbestos floor and ceiling tile, as well as potential lead paint (see Photo A21). While the tile may be left in place and covered over (as applicable to manufacturer's recommendations), the paint may need to be abated. It appears that at least some abatement will be required due to failing floor/ceiling tiles. It is highly recommended that these materials be tested for confirmation.

It should be noted that the kitchen equipment appears to be in good condition. While not tested for operation, no immediate comments regarding faulty operation were indicated by current staff.

RECOMMENDATIONS

The main issue regarding the Architectural building assessment concerns the *Change of Use*. As discussed, this affects compliance of this occupancy with IBC for allowable building area and rated assemblies at the corridors. If the building was fully sprinklered however, it would negate a lot of these issues. Overall allowable area is greatly increased with this inclusion, as is the requirement for fire separations. It should be noted however, that the Authority Having Jurisdiction (AHJ) may make an exception upon review.

Another issue concerning the *Change of Use* is compliance with the IECC. Areas of renovation would need to be brought up to current code, including but not limited to added insulation at the building enclosure (i.e., walls and roof). This also applied to Mechanical and Electrical requirements. Again, the Authority Having Jurisdiction (AHJ) may make an exception upon review.

In general, the facility is in good condition for a building of this age. Some tuckpointing and masonry repair would be required to mitigate intrusion, and it appears that a large portion of the roof (east side withstanding) would need to be replaced in the next 5-10 years. While most interior finishes are dated, many are in fairly good condition, with the exception of the apparent hazardous material. Some issues regarding ADA would also need to be addressed with the renovation.

An outlying factor is addressing the hazardous material as previously mentioned. It is recommended that, when possible, the floor/ceiling tile be left in place and covered with an appropriate finish. In this way the renovation may be economically provided without the need for full abatement.

OPINIONS OF PROBABLE COSTS [REQUIRED/RECOMMENDED]

▪ Fully Sprinklered Building (\$6 PSF)	\$522,000*
▪ Fire Rated Door Replacement (at Corridor)	\$70,000
▪ Egress to Exit (Dead End Corridor)	\$20,000
▪ ADA Compliant Restrooms/Locker Rooms	\$160,000
▪ Door Hardware Replacement	\$65,000
▪ Miscellaneous Tuckpointing	\$195,000
▪ Partial Re-Roof (not including South Wing)	\$810,000
▪ Hazardous Material Abatement (Required)	\$60,000**
 TOTAL:	 \$1,902,000

[* Cost does not include abatement of asbestos ceiling tile, as required for install.]

[** Cost does not include paint abatement.]

OPINIONS OF PROBABLE COSTS [OWNER DIRECTED]

▪ Full Demo of Auditorium Interior	\$75,000*
▪ Renovate the Main Entrance for Security	\$30,000
 TOTAL:	 \$105,000

[* Cost does not include proposed playground/climbing equipment as numbers greatly vary.]

[Note: Due to the fact that the extent of the renovation could not be determined at this time, no Opinions of Probable Cost are included for potential IECC upgrades, beyond that of the roof.]

MECHANICAL

EXISTING CONDITIONS

Heating for the facility consists primarily of steam-fed unit ventilators for the classrooms, steam radiators along most windows, and steam cabinet unit heaters at exterior doors. Steam-fed suspended unit heaters serve industrial arts classrooms. The gymnasium is served by a horizontal, suspended air handler with steam heat. The majority of the building does not have cooling with the exception of the

west administration offices and library. Roof-mounted exhaust fans provide exhaust for restrooms, kitchen, classrooms, gymnasium.

The existing mechanical systems are generally beyond their anticipated life expectancy. The library split system AC units were built in 2004 and although they still work properly, their anticipated lifespan is 15 years so they may soon require replacement if cooling is desired. The average lifespan of the window AC units in the admin offices is 10 years. The age of these units is unknown though they have been reported to work properly.

The steam radiators and classroom unit ventilators appear to be original (from 1956) and have exceeded their typical lifespan of 25 years, though all appear to be in working condition.

Cabinet unit heaters, and suspended unit heaters all appear to be original and have exceeded their typical lifespan of 20 years, though all appear to be in working condition.

The gymnasium air handlers appear to be original and have exceeded their typical lifespan of 20 years though they appear to be in working condition.

The steam boilers are original, with one burner being replaced in 2001. The other burner appears to be older, but its age is unknown. Both boilers have all code required safety devices. The typical lifespan of a steam boiler is 35 years but Kewanee boilers similar to these have been known to operate for 70 years or more with proper maintenance.

Steam supply and condensate return piping is made of carbon steel which typically has a lifespan of 75 years.

Most of the exhaust fans appear to be original and have exceeded their lifespan of 20 years. It is unknown if any are inoperable.

The temperature control system is pneumatic-type, which has a typical lifespan of 20 years. System components such as the air compressor and pressure gauges have been replaced. It is unknown if the system has air leaks which can be a common issue. The boy's locker room is missing a thermostat and the room is cold.

RECOMMENDATIONS

It is recommended to replace the library and administrative office AC units when they fail. The AC units utilize R-22 refrigerant which is not considered environmentally friendly and went out of production in the US starting in 2020, so if refrigerant loss is an issue, then it is recommended to replace the units before they fail.

The steam radiators, unit ventilators, cabinet unit heaters, suspended unit heaters, and gymnasium air handlers can be replaced/repared when they fail. The units serve single rooms so a failure would not proliferate throughout the building. Parts may still be available and replaceable for the unit ventilators, unit heaters, and air handlers such as fans and valves. The steam radiator valves are likely replaceable.

It is recommended to replace a boiler when it fails as there appears to be redundancy with the other boiler. Some benefits of replacing the boilers would include increased efficiency as boilers lose efficiency over time. Also, the boilers are insulated with asbestos which is hazardous and should be removed. Smaller modular boilers can be installed for ease of installation through existing doors and

provide system redundancy during maintenance. It should be noted that there would be some savings in replacing both boilers at the same time due to the cost of project setup and cleanup.

It is recommended to replace/repair the steam and condensate piping as leaks develop. Considering there is likely some lifespan left with the pipe and considering the disruption to overall building operation, it would not be advisable to replace the entire piping system at once.

The exhaust fans can be replaced/repared as they fail. Generally, these fans serve small areas of the building so widespread disruption should not be an issue. If the kitchen is planned to be used however it would be recommended to replace the cooking hood exhaust fan at a time which would not be disruptive to the kitchen operation.

It is recommended to replace the pneumatic temperature controls system with electric controls as thermostats, control dampers, and control valves fail. Pneumatic components are old technology which are generally difficult to obtain, and the system is more costly to operate and maintain. It is recommended to replace the missing boy's locker room thermostat and heating valve with an electric-type thermostat and valve.

OPINION OF PROBABLE COSTS [REQUIRED/RECOMMENDED]

▪ Replace classroom unit ventilators (\$7,500 each; Approx. 28 units)	\$210,000
▪ Replace steam convectors (\$200/ft; Approx. 320 ft)	\$64,000
▪ Replace AC window unit (\$1,500 each; 8 units)	\$12,000
▪ Replace ductless split AC unit for library (\$4,000 each; 3 units)	\$12,000
▪ Replace cabinet unit heater (\$3,500 each; Approx. 10 units)	\$35,000
▪ Replace gymnasium AHU (\$50,000 each; 2 units)	\$100,000
▪ Replace suspended unit heaters (\$2,000 each; 4 units)	\$8,000
▪ Replace both steam boilers including asbestos abatement	\$300,000
▪ Replace exhaust fans [\$2,500 to \$5,000 each (dependent on size); 24 units]	\$60,000 - \$120,000
▪ Temperature controls pneumatic to electric conversion/upgrade (roughly \$2,000 per room)	\$125,000 (Approx.)
TOTAL:	\$926,000 - \$986,000

OPINIONS OF PROBABLE COSTS [OWNER REQUESTED]

▪ Furnish/Install Air Conditioning System (Throughout Building)	\$1,125,000
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PLUMBING

EXISTING CONDITIONS

Most of the plumbing fixtures are original and are in good working condition. The china portion of lavatories, toilets are in good condition and can last for many more years. Also, some lavatories and toilets appear to have been replaced. China lavatory basins and toilets can last as long as 100 years. Toilet flush valves and lavatory faucets typically last 20 to 25 years. Flush valves have serviceable parts

which may need replacement every 5 to 10 years depending on water quality. Some flush valves and faucets appear to be newer than others.

Sinks in some classrooms and are in working condition. The sink faucet in classroom 56 is corroded and is in poor condition but functional.

There are two single-person restrooms near classroom 55 which are in nearly new condition. An electric water heater in the janitor's office supplies the two lavatories and a mop sink.

A high-efficiency gas-fired water heater was installed in 2016 in the boiler room. A hot water recirculation pump is newer (possibly installed in 2016 as well.) This water heater is believed to supply fixtures throughout the building and should have a lifespan of 10 to 15 years depending on the usage and water quality. The recirculation pump should have a lifespan of about 20 years.

Electric water coolers are located in corridors and are in good working condition with the exception of the bi-level water cooler outside of classroom 43. It is not operating and is covered in plastic.

A urinal in the boy's restroom near room 42 is broken and covered in plastic.

The wall drain cleanout in the boy's restroom near room 42 is missing a cover plate.

The domestic water service enters the building in the boiler room and is approximately 4" diameter and made of galvanized steel. Galvanized steel pipe of this age is known to be problematic for corrosion and leaks. There is no evidence currently of leaks in the system. It is unknown if portions of the domestic water distribution have been repaired or replaced. Copper pipe exists for the newer water heater in the boiler room. Copper pipe typically has a lifespan of 75 years, while galvanized pipe is 50 years.

The sanitary waste piping is assumed to be cast-iron and original. Cast iron pipe typically lasts 75 years or more.

The lavatories in boys and girl's restrooms near room 42 do not have code-required thermostatic mixing valves (TMVs). The lavatories in boys and girl's restrooms near room 70 do not have code-required thermostatic mixing valves (TMVs). The wash fountain in metals classroom 113 is not working.

RECOMMENDATIONS

Recommend repairing/replacing flush valves/lavatory faucets when they fail. China lavatory basins and toilets may last many more years without need for replacement. It is also recommended to repair/replace classroom sink faucets, shutoff valves, drains when they fail.

Plumbing code requires repairing or replacing the broken water cooler near classroom 43 (or removing the unit and capping the water and drain supplies). It also requires repairing or replacing the broken urinal in the boy's restroom near room 42 (or removing the unit and capping the water and drain supplies). Similarly, it requires repairing or replacing the broken wash fountain in the metal's classroom 113 (or removing the unit and capping the water and drain supplies).

Replace the missing wall drain cleanout cover.

Plumbing code requires providing TMVs in the boy's and girl's restrooms near room 42 (10 total). This same requirement also applies to the boy's and girl's restrooms near room 70 (10 total).

Recommend replacing the sink faucet in classroom 56 if desired.

It is recommended to replace the galvanized water pipe with copper or polypropylene (Aquatherm for example) pipe as required if/when leaks develop in the future.

It is recommended to replace sanitary waste pipe with cast-iron or PVC pipe as required if/when leaks develop in the future.

OPINION OF PROBABLE COSTS

▪ Repair/replace toilet flush valve (\$500 each; Approx. 30 units)	\$15,000
▪ Repair/replace faucet (\$400 each; Approx. 55 units)	\$22,000
▪ Repair/replace sink or lavatory drain (\$200 each; Approx. 55 units)	\$11,000
▪ Repair/replace bi-level water cooler or remove/cap supplies and drain	\$500 - \$3,000
▪ Repair/replace urinal or remove/cap supplies and drain	\$500 - \$1,500
▪ Replace wall cleanout cover	\$100
▪ Add TMV to lavatory (\$400 each; 24 units)	\$8,000
▪ Repair/replace wash fountain or remove and cap supplies and drain	\$500 - \$7,000
 TOTAL:	 \$57,600 - \$67,600

ELECTRICAL

EXISTING CONDITIONS

Existing record electrical drawings do not exist for the building. Since no complete electrical drawings exist, it is recommended that an electrician be hired to trace the facility and mark up a set of plans to facilitate future renovations.

Regarding Power, the existing service entrance equipment was replaced in recent years and includes a 1600-amp 120/208-volt 3 phase 4 wire service entrance switch located exterior and in the rear of the building. Ameren reports a peak demand on the service of 70 kVA (194 amps) Fed from a 300 kVA transformer. This allows for the 230 kVA (638 amps) spare capacity for future work. This switch is in great shape and has many years of service life available (see Photo E01).

The service entrance switch feeds a 1600-amp main distribution board (MDP) in the lower-level electrical room (within the boiler room). The MDP is of the same age as the service entrance switch and is also in great shape (see Photo E02).

There are several branch circuit panel boards throughout the facility, these however are part of the original building construction (circa 1975) and have met their expected service life. The manufacturer is

no longer in business and replacement parts are extremely hard to find, and if found are salvaged material and not reliable (see Photo E03 for typical panel).

The existing lighting system is operational; however, it utilizes fluorescent T8/T12 luminaries. Luminaries are typical of a circa 1975 school building. Any modifications to the lighting systems will require the systems and controls to be brought up to current Illinois Energy Code requirements. This will include upgrading the lighting systems utilizing LED luminaries and updated controls. In addition, emergency illumination and egress identification devices are insufficient for the facility.

The Auditorium has a 50+ year theatric dimming system that has met its end of useful life (see Photo E04).

Regarding special systems, the existing fire alarm system is a Simplex 4002 zoned and coded panel. This unit is circa 1990 and is not serviceable as spare parts are not available. It is recommended that the entire fire alarm system be replaced with one that meets current standards with adequate audible/visual and visual alarm devices.

Existing telephone/data systems were not reviewed, as it is assumed the School District will remove all equipment, save the wiring when they vacate the facility.

RECOMMENDATIONS

Replace all branch circuit boards in the facility.

It is recommended that proper emergency illumination and egress identification be installed for proposed renovation.

Replace the fire alarm system.

OPINIONS OF PROBABLE COSTS [REQUIRED/RECOMMENDED]

- | | |
|-------------------------------------|-----------|
| ▪ Replace All Branch Circuit Boards | \$300,000 |
| ▪ Replace Emergency/Egress Lighting | \$100,000 |
| ▪ Replace Fire Alarm System | \$348,000 |

TOTAL:	\$748,000
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OPINIONS OF PROBABLE COSTS [OWNER REQUESTED]

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|---|-----------|
| ▪ Electrical Work for Air Conditioning Installation | \$350,000 |
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OPINIONS OF PROBABLE COST SUMMARY [PER DISCIPLINE]

REQUIRED/RECOMMENDED

▪ ARCHITECTURE	\$1,902,000* **
▪ MECHANICAL	\$926,000 - \$986,000
▪ PLUMBING	\$57,600 - \$67,600
▪ ELECTRICAL	\$748,000
▪ TOTAL	\$3,633,600- \$3,703,600

[* Cost does not include abatement of asbestos ceiling tile, as required for install.]

[** Cost does not include paint abatement.]

OWNER REQUESTED

▪ ARCHITECTURE	\$105,000*
▪ MECHANICAL	\$1,125,000
▪ PLUMBING	-
▪ ELECTRICAL	\$350,000
▪ TOTAL	\$1,580,000

[* Cost does not include proposed playground/climbing equipment as numbers greatly vary.]

[Note: Opinions of Probable Cost are derived utilizing data from RS Means and engineering judgement from past experiences; Values may change over time and/or material availability.]

This concludes the assessment report. Please contact me if any further information, questions, clarifications, or photo documentation is required. Thank you.

Yours Sincerely,

FARNSWORTH GROUP, INC.



Bond S. Wagner, AIA, NCARB
Senior Project Architect

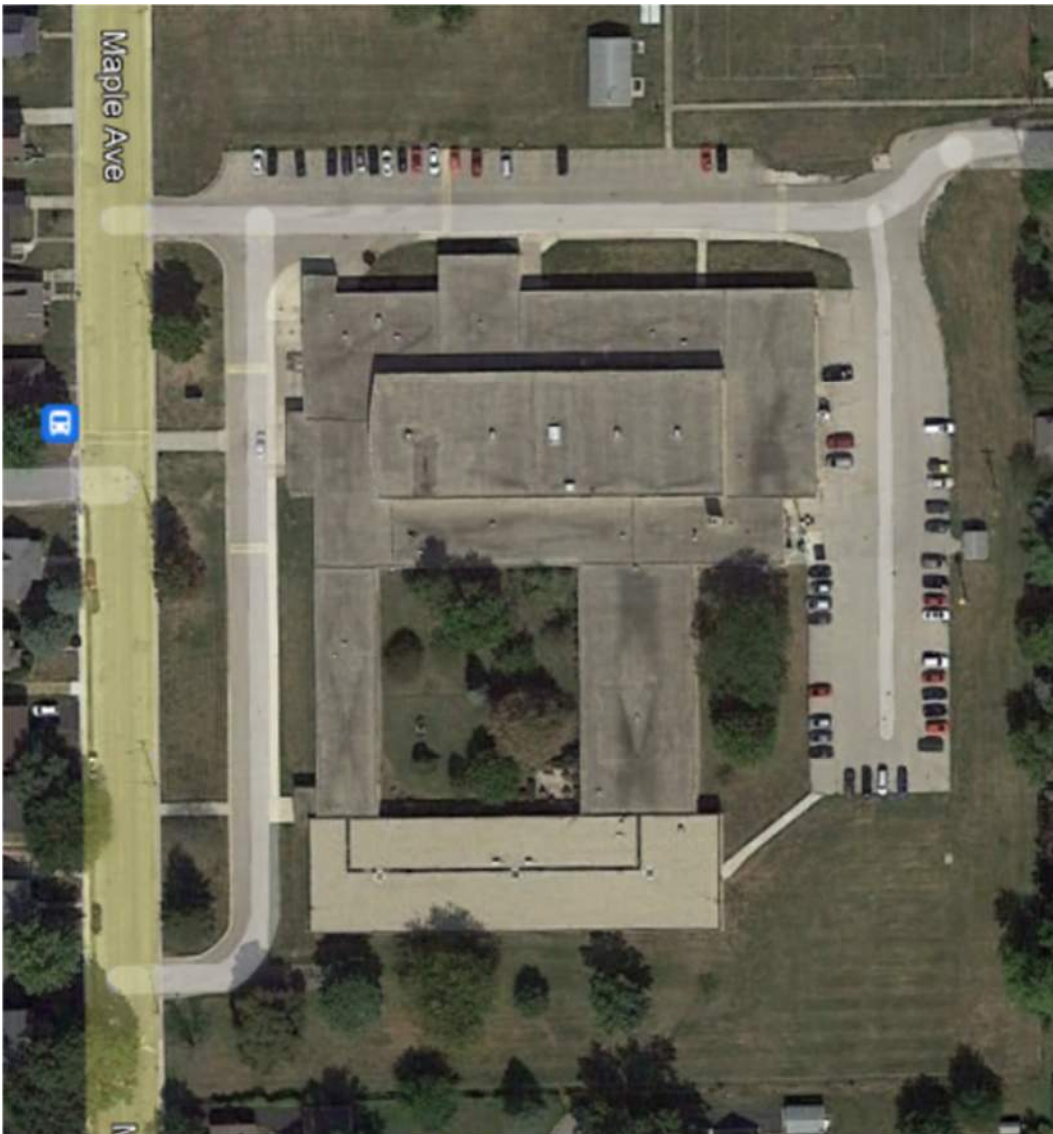


Photo A01 – Site Plan of Facility (Google Maps); North is top of the page.



Photo A02 – West Elevation



Photo A03 – Typical Corridor



Photo A04 – Corridor Door w/ Grill



Photo A05 – Dead End Corridor



Photo A06 – Typical Restroom



Photo A07 – Typical Restroom



Photo A08 – Non-compliant Door Handle



Photo A09 – Water Intrusion Damage



Photo A10 – Gymnasium

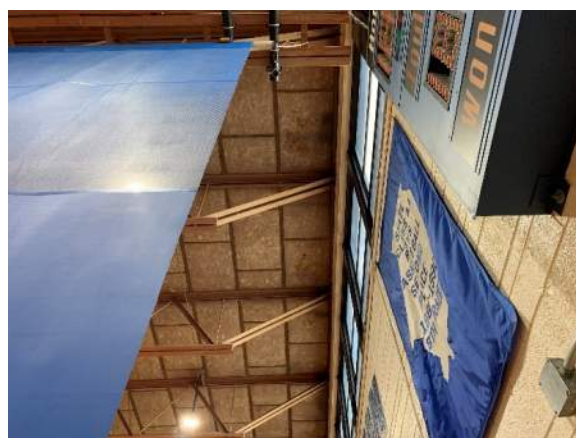


Photo A11 – Water Intrusion (Gym)



Photo A12 – Tuckpointing at West Elevation



Photo A13 – Tuckpointing, Typical



Photo A14 – Masonry Repair, East Elevation



Photo A15 – Masonry Repair, Chimney



Photo A16 – New/Old Roof (Lower)



Photo A17 – Gymnasium Roof (Upper)



Photo A18 – Terrazzo & Asbestos Floor Tile



Photo A19 – Asbestos Floor Tile



Photo A20 – Asbestos Ceiling Tile



Photo A21 – Painted Finish (at Corridor)



Photo A_A – Auditorium



Photo A_B – Cafeteria/Kitchen



Photo A_C – Main Entry (Exterior)



Photo A_D – Main Entry (Interior)



Photo E01 – Service Entry Switch



Photo E02 – Main Distribution Panel



Photo E03 – Branch Circuit Boards

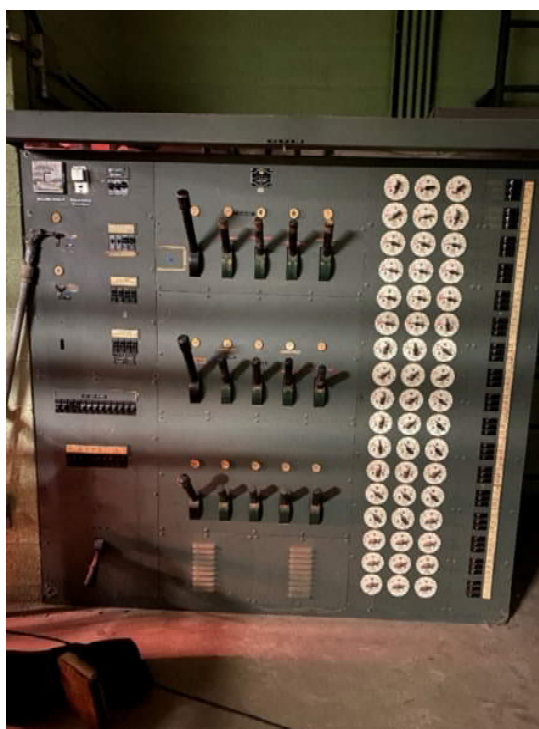


Photo E04 – Theatric Lighting System

