



**FACILITY ASSESSMENT REPORT
MAPLE VALLEY SCHOOL DISTRICT
BUFFALO SCHOOL
APRIL 2016**

ICON
ARCHITECTURAL GROUP



Karges-Faulconbridge, Inc.
Engineers



FACILITY SUMMARY

The school for the Maple Valley School District located in Buffalo, ND is currently occupied by Kindergarten through 3rd grade. The original 11,270 sf building was built in 1958. A 2,240 sf addition for the Technology, Special Education, Speech, Title 1 classrooms and Principals office was built in 1979. The school consists of seven classrooms, library, cafeteria/multi-purpose room, kitchen, one set of restrooms, and office.

The Buffalo School is located on approximately an 3.3 acre lot with 139th AVE SE to the west, agriculture land to the north, and approximately 11.6 additional acres of land for the Maple Valley School District football field to the south. The parking lot is gravel with concrete sidewalks surrounding a majority of the building.

The original building is concrete masonry walls with a steel roof structure. The multi-purpose room is concrete masonry exterior walls, steel bar joist structure and infill panel ceiling . A metal roof was installed after the addition at which time the skylights were covered and internal downspouts were abandoned. All windows would be required to be replaced, exterior metal panel would be replaced, exterior walls would be required to be furred out to add insulation, and insulation would be added to all roofs.

The existing central air handling system is original to the 1958 building with two additional zones added to the central system as part of the 1979 addition. The existing central system is a large gas furnace with electric reheats. Electric reheats are the primary heating source with the gas furnace operating as a backup system. The system is past its useful life and is in need of replacement. The gas burner was replaced in 2002. There is no air conditioning associated with the central air handling system. The central air handling system distributes air through ductwork via the tunnels to each space in the building. Return air is returned through the corridor ceiling via return grilles above the classroom doors. The original relief vents in each classroom have been capped off. Existing HVAC system does not meet current ventilation or energy code requirements.

Existing bathrooms and janitor's closet ventilation does not meet current codes. New exhaust fans and transfer grilles would need to be installed. Currently, transfer air is brought from the corridor through openings in the bathroom doors. Doors would need to be changed out, if fire rating corridor is required.

Existing kitchen ventilation system does not meet current codes and would need to be replaced. Makeup air unit would need to be installed.

Data room is not properly temperature controlled. Auxiliary cooling unit would need to be added. Cabling through existing ventilation system needs to be rerouted.

The building control system is an old pneumatic system that needs to be replaced with new DDC building automated control system.

The existing water service is a 2-inch service. Existing building is not protected with a fire suppression system. A new fire suppression system would need to be installed. The existing 2-inch water service would need to be increased to add a fire sprinkler system to the building, or a new 6-inch water service would need to be brought to the building.

The water heater is an electric water heater that has recently been replaced and could be reused.

Existing bathrooms do not meet ADA requirements. Converting bathrooms to ADA fixtures would be required, including replacement of existing water closets, urinals, and lavatories.

Janitor's closet mop sink does not meet current. Replacement of faucets is required and vacuum breaker needs to be added.

Drinking fountain is not ADA compliant and need to be replaced.

Given the age of the building, the domestic water piping should be replaced throughout.

Along with an upgraded fire suppression system, the fire alarm system would require upgrading and replacement with a modern addressable system compliant with the IFC and ADA requirements, including demolition and removal of all abandoned devices and cabling above ceilings.

Adequate and reliable illumination is required for all means of egress. Emergency and exit lighting systems should be evaluated for compliance with current Life Safety codes.

Renovations would require compliance with ADA regulations for new systems installed as well as for any architectural modifications; examples include ensuring accessibility for the building entry, parking, building signage and displays, water fountains and bathroom fixtures, adequate doorway widths, timing for automatic doors, doorknobs and playground equipment.

Retrofit of security system with visitor control is advised with locked or monitored doors. This could consist of a buzzer, intercom and camera allowing the main office to open the door. School lockdown function should be looked at to determine if there is a quicker and safer means to accomplish lockdown for the facility. Additional camera monitoring is typically required in corridors and exterior entrances for the facility.

Opening up the classrooms to more daylight by increasing the window area is recommended with window replacement. Daylighting and adequate area lighting has been shown to increase student achievement.

New lighting fixtures with LED lamps will reduce energy consumption and allow for greater flexibility in lighting levels. High efficiency lamps, multiple lighting levels, direct and indirect lighting, occupancy sensors and light monitoring sensor provide greater control and improved comfort in the classroom. Lighting controls are not saving energy the way that current lighting controls provide for spaces such as these with daylighting controls, dimming, and occupancy/vacancy sensor controls.

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Adequate provision and placement of general purpose receptacles meeting new tamper resistant requirements and data outlets should be installed in all areas to eliminate overuse of extension cords and multi plug strips. Tamper resistant receptacles to replace one-for-one all receptacles are recommended in public and classroom locations as that is required in current codes and designs.

Cabling that is currently run through return air grilles should be routed through proper raceways.

Electrical panelboards have not been properly maintained and are a potential fire hazard. The kitchen panelboard P1 that includes “dead” circuits should be replaced. Other panelboards appear to be loaded to maximum capacity.

The audio and video within the facility is not updated as a typical school for this age group and would recommend updating to current flat panel technology for student population.

Additional load to the electrical service may be required with the installation of new mechanical equipment and electrical systems.

A detailed engineering assessment and load study should be completed to evaluate the additional load requirements with existing service capacities.

Grounding connections to building structure and new fire suppression system and other systems should be evaluated and upgraded if necessary.

The exterior masonry needs tuck-pointing and repair, all exterior metal panel must be replaced , and other major envelope renovations must be completed to become energy efficient. In order to be capable of meeting building codes the replacement of the issues addressed above such as replacement of the mechanical system, providing air-conditioning throughout, installation of fire-suppression system, renovation to provide accessibility, and other life safety must be provided.



FACILITY ASSESSMENT

2012 IBC: SECTION 903.2.3 GROUP E

- An automatic sprinkler system shall be provided for Group E occupancies as follows:
 - Throughout all Group E fire areas greater than 12,000 square feet in area.

Corrective Action: Provide automatic sprinkler system throughout existing building. Provide smoke detection in multi-purpose room. Replace light fixtures with energy efficient fixtures.



FACILITY ASSESSMENT

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FACILITY ASSESSMENT

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FACILITY ASSESSMENT

Corrective Action: Opening up the classrooms to more daylight by increasing the window area is recommended with window replacement. Daylighting and adequate area lighting has been shown to increase student achievement.



FACILITY ASSESSMENT

Corrective Action: The existing central air handling system is original to the 1958 building with two additional zones added to the central system as part of the 1979 addition. The existing central system is a large gas furnace with electric reheats. Electric reheats are the primary heating source with the gas furnace operating as a backup system. The system is past its useful life and is in need of replacement. The gas burner was replaced in 2002. There is no air conditioning associated with the central air handling system.



FACILITY ASSESSMENT

Corrective Action: There is no air conditioning associated with the central air handling system. The central air handling system distributes air through ductwork via the tunnels to each space in the building. Return air is returned through the corridor ceiling via return grilles above the classroom doors. The original relief vents in each classroom have been capped off. Existing HVAC system does not meet current ventilation or energy code requirements.



FACILITY ASSESSMENT

Corrective Action: Existing kitchen ventilation system does not meet current codes and would need to be replaced. Makeup air unit would need to be installed.



FACILITY ASSESSMENT

Corrective Action: Data room is not properly temperature controlled. Auxiliary cooling unit would need to be added. Cabling through existing ventilation system needs to be rerouted.



FACILITY ASSESSMENT

2012 IBC: SECTION 716.5.3 DOOR ASSEMBLIES IN CORRIDORS AND SMOKE BARRIERS

- Fire door assemblies required to have a minimum fire protection rating of 20 minutes where located in corridor walls or smoke barrier walls

2012 IBC: SECTION 1008.1.9.1 HARDWARE

- Door handles, pulls, latches, locks and other operating devices on doors required to be accessible by Chapter 11 shall not require tight grasping, tight pinching or twisting of the wrist to operate.

Corrective Action: Replace all doors and frames in corridors with properly fire-rated doors and frames including fire-rated glass and louvers. Replace all door hardware with accessible hardware.



FACILITY ASSESSMENT

2012 IBC: SECTION 1109.2 TOILET AND BATHING FACILITIES

- Each toilet room and bathing room shall be accessible.

Corrective Action: Bathrooms will be required to be renovated to provide clearances to make restrooms accessible.



FACILITY ASSESSMENT

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Corrective Action: Provide accessible toilet compartments and add fixtures to meet required plumbing counts.



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FACILITY ASSESSMENT

Corrective Action: Janitor's closet mop sink does not meet current codes. Replacement of faucets is required and vacuum breaker needs to be added. Drinking fountain is not ADA compliant and need to be replaced. Given the age of the building, the domestic water piping should be replaced throughout.



FACILITY ASSESSMENT

2012 IBC: SECTION 1110.1 Signs

- Required accessible elements shall be identified by the International Symbol of Accessibility.

Corrective Action: Provide signage indicating accessibility provisions at all entrances, and rooms required to be accessible.



FACILITY ASSESSMENT

Corrective Action: Displacement and cracking of tile in kitchen suggests movement in wall and possible structural deficiency.



FACILITY ASSESSMENT

Corrective Action: Exterior walls, roof and windows of entire building provide poor insulation and should be corrected to provide a comfortable and efficient environment. All windows are single pane are in need of replacement.



FACILITY ASSESSMENT

Corrective Action: Exterior finishes are in need of replacement. Metal panels are deteriorated and sealants are susceptible to leakage and air infiltration. All windows are single pane are in need of replacement.



FACILITY ASSESSMENT

Corrective Action: Replace exterior doors with updated hardware.



FACILITY ASSESSMENT

2012 IBC: SECTION 1104.1 SITE ARRIVAL POINTS

- Accessible routes within the site shall be provided from public transportation stops; accessible parking; accessible passenger loading zones; and public streets or sidewalks to the accessible building entrance served.

Corrective Action: Provide paved parking for designated accessible parking.



FACILITY ASSESSMENT

Corrective Action: The building control system is an old pneumatic system that needs to be replaced with new DDC building automated control system.



FACILITY ASSESSMENT

Corrective Action: Provide school resource officer office with direct line of sight of new vestibule entrance. Provide intrusion detection system for all entrances. Provide panic / alert devices in all classrooms.



FACILITY ASSESSMENT

Corrective Action: The flooring, most plaster walls, pipe insulation and other components of the building contain asbestos and would require abatement prior to any new construction or renovation.