MONDAY– NOVEMBER 24, 2014

The School District of North Fond du Lac

North Fond du Lac, Wisconsin

District Feasibility Study – School Board Update

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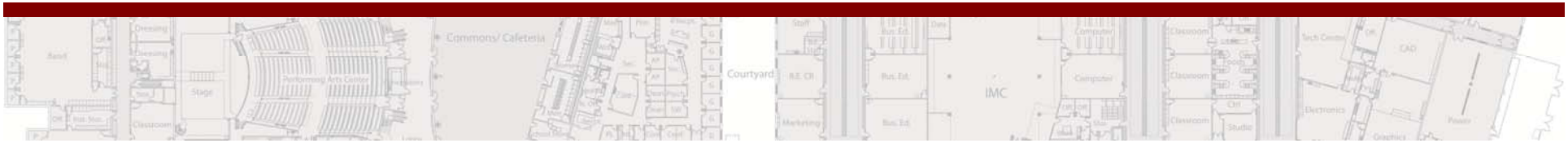

Early Learning Center | North Fond du Lac, WI

HVAC System Review / Analysis

- The building is served by the original boiler and piping installed in 1938. The district should plan for the replacement of the existing steam boiler with recommendation to convert the system to hot water for improved energy efficiencies.
- The classrooms are ventilated with unit ventilators mounted to the perimeter walls in each room. While some of these units have been replaced, most are still original units. It is recommended to replace remaining original unit ventilators and convert to hot water.
- The cafeteria is served by a constant volume air handling unit that is original to the construction of that part of the building. It is recommended to replace the constant volume air handling unit and convert to hot water.
- The existing building controls are pneumatic. These controls are inaccurate, becoming difficult to service, and result in comfort complaints. It is recommended to replace the pneumatic controls with a digital control system when any renovation/replacement projects are considered.

Early Learning Center | North Fond du Lac, WI

Electrical System Review / Analysis

- The main electrical panel has exceeded it's useful service life, it is recommended to replace with a new panel with circuit breakers and surge protection.
- The existing electrical service is adequate for the current building, however, if an addition or major renovation is considered a new service upgrade would be required.
- Existing distribution panelboards are at capacity and do not have room for additional circuits. It is recommended to replace (6) panelboards and associated feeders if work is considered in this building.
- The existing building does not have a generator. While they are not required by code, a generator with automatic transfer switch can power life safety loads (egress lighting, exits, fire alarm circuits, etc.). If a generator is not considered, add battery backup to corridor light fixtures, exit lighting, and egress lighting.
- Any remaining T12 lighting fixtures should be scheduled for replacement (2 classrooms).
- Installation of occupancy sensors in classroom and offices would result in energy savings.
- Replacement of all exterior metal halide fixtures to LED fixtures would result in energy savings.

Early Learning Center | North Fond du Lac, WI

Electrical System Review / Analysis

- The existing fire alarm is not compliant with current codes. It is recommended to replace the system with a new addressable fire alarm system.
- The current master time system is only used to control the classroom bell system. Consider replacement with a central wireless master clock with GPS receiver system.
- Phone, data, and public address systems are sufficient for the building. Data cabling could be updated to CAT6 to allow for a future VoIP phone system.
- The existing security system consists of (2) cameras within the building along with an Aiphone system to control entry into the main entrance. The system can be expanded to add additional cameras. Additionally, consider installation of an intrusion alarm system.

Plumbing System Review / Analysis

- The existing water distribution piping is original to the building, as renovations are considered plans should be made for the replacement of piping. New piping mains should be routed within the corridors.
- Existing water service is sufficient for the current use of the building. If a major renovation or new addition were considered, it is likely that a sprinkler system would be required. In this case, a new water service would be needed.
- The existing kitchen does not have a grease interceptor, if modifications are made to the kitchen a grease interceptor may be required.
- The existing boiler room has continual flooding issues. It is recommended to install a new Clearwater waste drainage system and sump. Exterior drain tile should also be considered. Additionally, the roof and enclosure of the boiler room is not sealed tight from the elements.
- The hot water system installed in 2011 is inefficient and oversized for the building usage. It is recommended that the system be replaced with a new sealed combustion, gas-fired system.
- The existing water softener is approximately 20 years old and should be scheduled for replacement.

Plumbing System Review / Analysis

- Toilet rooms are not ADA compliant and many of the fixtures are original to the building. If toilet rooms are renovated to provide handicap compliance, the remaining original fixtures should be scheduled for replacement.
- Classroom and art sinks are original to the building and are in poor condition. These fixtures should be scheduled for replacement with the installation of plaster traps in the art classroom.
- Electric water coolers are in good condition; however, they could be lowered to accommodate the young students in the building.

HVAC System Review / Analysis

- The building is served by two boiler plants with three boilers total. The single boiler plant system (1974) has exceeded it's life expectancy and it would be recommended for replacement with (2) boilers to allow for redundancy. The dual boiler plan system (1985) is nearing it's life expectancy and the district should plan for the replacement of these boilers.
- The piping serving the 1974 boiler plant is not insulated, and it is recommended that these pipes be insulated to improve energy efficiency.
- Building ventilation is provided with three systems
  - Some classrooms are ventilated with unit ventilators. These units have exceeded their life expectancy.
  - Some classrooms are ventilated using hot water booster coil reheat systems. These systems are original and nearing the end of their life expectancy.
  - The gym and cafeteria are served by constant volume air handling units. These systems are original and nearing the end of their life expectancy.
- Air conditioning is provided to the gymnasium and cafeteria. The air cooled compressor condensing units providing cooling to these spaces have exceeded their life expectancy.

HVAC System Review / Analysis

- The existing building controls are pneumatic. These controls are inaccurate, becoming difficult to service, and result in comfort complaints. It is recommended to replace the pneumatic controls with a digital control system when any renovation/replacement projects are considered.

Friendship Learning Center | North Fond du Lac, WI

Electrical System Review / Analysis

- The existing electrical service is adequate for the current building, however, if an addition or major renovation is considered, a new service upgrade would be required.
- Existing distribution panelboards are at capacity and do not have room for additional circuits. It is recommended to replace (4) panelboards in the 1970's portion of the building and associated feeders if work is considered.
- The existing building does not have a generator. While they are not required by code, a generator with automatic transfer switch can power life safety loads (egress lighting, exits, fire alarm circuits, etc.). If a generator is not considered, add battery backup to corridor light fixtures, exit lighting, and egress lighting.
- Installation of occupancy sensors in classroom and offices would result in energy savings.
- Replacement of all exterior metal halide fixtures to LED fixtures would result in energy savings.
- The building has an addressable fire alarm system and additional devices can be added. It is recommended to provide smoke detectors in the corridors with open lockers.
- The building does not have a master clock system. It is recommended to provide a central wireless master clock with GPS.

Electrical System Review / Analysis

- The existing public address system is antiquated. Provide new PA system and recessed ceiling mounted fixtures in classrooms.
- Staff indicated that the phone system is working properly. Data cabling could be updated to CAT6 to allow for a future VoIP phone system.
- The existing security system consists of (2) cameras within the building along with an Aiphone system to control entry into the main entrance. The system can be expanded to add additional cameras. Additionally, consider installation of an intrusion alarm system.

Plumbing System Review / Analysis

- The existing water distribution piping is original to the building, as renovations are considered plans should be made for the replacement of piping. Continually monitor the condition of the original water supply piping for pin holes or other indications of wear.
- Existing water service is sufficient for the current use of the building. If a major renovation or new addition were considered, it is likely that a sprinkler system would be required. In this case, a new water service would be needed.
- The existing kitchen does have a grease interceptor, if the dishwasher is replaced, a new grease interceptor may be required.
- The existing art classroom sinks do not have plaster traps, replace sinks and provide plaster traps.
- The existing hot water system includes a 300 gallon uninsulated storage tank. This system is nearing the end of it's life expectancy and oversized for the facility. It is recommended that the system be replaced with a new sealed combustion, instantaneous, gas-fired system. If the existing storage tank is maintained, we recommend insulation.

Plumbing System Review / Analysis

- Original toilet rooms are in poor condition and are not ADA compliant. Renovations should be considered to provide full accessibility compliance and replacement of inefficient fixtures.
- Some electrical water coolers are original to the building and not ADA compliant. These fixtures should be scheduled for replacement to accommodate accessibility, as well as heights for younger students.
- Art and classroom room sinks are in good condition; however, the faucets are in poor condition and should be replaced.

HVAC System Review / Analysis

- The building is served by one boiler plant consisting of three boilers. The boilers are original to the building and have exceeded their life expectancy. Plans should be made for the eventual replacement of boilers and in-line pumps.
- Pipe insulation should be monitored, and piping with insulation deterioration should be re-insulated.
- Building ventilation is provided with two systems:
  - Classrooms are ventilated with unit ventilators. These units are nearing their life expectancy and plans should be made for eventual replacement.
  - The Gym, Cafeteria, and District Offices are served by a hot water booster coil reheat system.
  - Tech. Ed. areas are served by individual constant volume air handling units.
  - The constant volume air handling units serving the Gym, Cafeteria, and Tech. Ed. areas are the original units and have exceeded their life expectancy.
- Except for the Gym, the entire building is cooled by a roof mounted air cooled chiller. The roof mounted chiller was installed in 2000 and is in good condition.

HVAC System Review / Analysis

- The cabinet heaters serving the entrance vestibules and locker rooms are original and have exceeded their life expectancy.
- The existing building controls are pneumatic. These controls are inaccurate, becoming difficult to service, and result in comfort complaints. It is recommended to replace the pneumatic controls with a digital control system when any renovation/replacement projects are considered.

Bessie Allen Middle School | North Fond du Lac, WI

Electrical System Review / Analysis

- The existing electrical service is located in the High School and it is adequately sized for the current facility, however, if an addition, or major renovation is considered, a new service upgrade would be required
- Older distribution panelboards are at capacity and do not have room for additional circuits. It is recommended to replace (5) older panelboards and associated feeders if work is considered.
- The existing building does have a generator that serves the High School and Middle School. It is in good working order and adequately provides emergency systems per code.
- Installation of occupancy sensors in classroom and offices would result in energy savings.
- Replacement of all exterior metal halide fixtures to LED fixtures would result in energy savings.
- The building has an addressable fire alarm system and additional devices can be added as needed.
- The master clock system controller is located in the Middle School office. The existing system can be added to / extended as needed.

Electrical System Review / Analysis

- Staff indicated that the phone system is working properly. Data cabling could be updated to CAT6 to allow for a future VoIP phone system.
- The existing security system consists of cameras within the building, along with an Aiphone system to control entry into the main entrance. The system can be expanded to add additional cameras. Additionally, consider installation of an intrusion alarm system.

Plumbing System Review / Analysis

- The existing water distribution piping is routed through existing tunnels. As renovations are considered or piping is replaced, it is recommended to re-route piping above ceilings.
- Existing water service is sufficient for the current use of the building. If a major renovation or new addition were considered, it is likely that a sprinkler system would be required. In this case, a new water service would be needed.
- The existing cast iron sanitary piping has settled in areas of the building. We recommend that these areas be repaired and the remaining areas continually monitored for problems.
- Science classrooms do not have an acid waste system, or an acid neutralization basin. While hazardous chemicals may not be used in a middle school setting, we recommend providing waste and venting as part of a neutralization basin if renovations are considered in the science classrooms.
- Cast iron storm water piping should be viewed with a camera to determine actual condition.
- The existing hot water system includes a 200 gallon storage tank. This system appears to be oversized for the facility and is inefficient. It is recommended that the system be replaced with a new sealed combustion, gas-fired system.

Plumbing System Review / Analysis

- The existing air compressor in the Tech. Ed. area does not appear to be operating properly. During our visit, it was running continuously, with little apparent usage. We recommend replacement of the compressor and evaluation of the piping for leaks.
- Existing toilet rooms are not ADA compliant. Plumbing fixtures should be considered for replacement to comply with accessibility and energy efficiency.
- Many Electrical water coolers are older/original fixtures and should be scheduled for replacement.
- Science classroom sinks are in poor condition and only have cold water faucets.
- Science and Tech. Ed. areas do not have emergency eye wash stations. Plans should include installation of eye wash stations in these areas.
- Locker room plumbing fixtures are in poor condition / under-utilized.
- A storm conductor in the woods shop has been replaced with corrugated piping. This piping should be replaced with new schedule 40 PVC to comply with plumbing codes.

HVAC System Review / Analysis

- The building is served by one boiler plant consisting of four boilers installed in 2000.
- Building ventilation is provided with three systems:
  - Classrooms are served by a variable air volume air handling system. This system is in good condition.
  - Large volume spaces such as the gym are served by individual constant volume air handling units. These units are in good condition.
- Except for the wrestling and weight rooms, the entire building is cooled by a roof mounted air cooled chiller.
- The main data room is served by an exhaust system. We recommend the installation of a split system cooling unit to prevent overheating in this room.
- The building systems are controlled with an Auto Matric digital temperature system. As we consider replacement of pneumatic systems in other buildings, we will want to make sure that the new digital system is compatible.

Electrical System Review / Analysis

- The existing electrical service is shared with the Middle School and it is adequately sized for the current facility. However, if an addition, or major renovation, is considered a new service upgrade would be required.
- Distribution panelboards have space for additional circuits.
- The existing building does have a generator that serves the High School and Middle School. It is in good working order and adequately provides emergency systems per code.
- Replacement of all exterior metal halide fixtures to LED fixtures would result in energy savings.
- The building has an addressable fire alarm system and additional devices can be added as needed.
- The master clock system controller is located in the Server Room. The existing system can be added to / extended as needed.

Electrical System Review / Analysis

- Staff indicated that the phone system is working properly. Data cabling could be updated to CAT6 to allow for a future VoIP phone system.
- The existing security system consists of (12) cameras within the High School and Middle School along with an Aiphone system to control entry into the main entrance. The system can be expanded to add additional cameras. Additionally, consider installation of an intrusion alarm system.
- The lighting in the auditorium is incandescent (house, stage, theatrical). The systems can remain as is; however, LED lighting has become a standard installation within auditoriums since 2000. The LED lighting offers improved energy efficiency, reduced maintenance, and improved safety for theatrical.

Plumbing System Review / Analysis

- Existing water service is sufficient for the current use of the building. If a major renovation or new addition were considered, it is likely that a sprinkler system would be required to be expanded from the current auditorium system.
- Provide emergency eye-wash stations/fixtures in all science rooms.