Jordan Acres Elementary School

Overview

Jordan Acres
Elementary School

The existing Jordan Acres Elementary School was opened in 1972 as a K-5 school. It is located on a 9± acre site on the east side of Town. It was closed at the end of the 2010-11 school year mainly for budgetary reasons with the staff and students being relocated to the Coffin Elementary School (grades K-1) and the new Harriet Beecher Stowe Elementary School (grades 2-5).

The school is a single-story masonry building of approximately 39,960 sf. It was designed as an "Open Concept" school with limited separations between spaces. The open library is at the core of the building and is surrounded by six pods. Five of the pods, for grades 1 through 5 are open to the library. Each of these pods housed three teaching spaces and a separate stepped amphitheater, two of which are shared between two different grades. The two Kindergarten classrooms in the primary pod, located to the right of the main entrance, are separated from the other areas by full-height walls. To the left of the main entrance and in front of the building, there is a multi-purpose room that served as a combination gym, cafeteria and assembly space. The administration offices are located in the interior core of the building between the multi-purpose space and the library. Refer to Tab 7 for a plan of the existing building.

In addition to the main building, there was an eight classroom portable of about 8,840± sf that was added in 1989. Between the main building and the portable, the population at Jordan Acres reportedly grew to about 650± students. As a result of shrinking student enrollments, primarily due to the closure of the Brunswick Naval Air Station, the decision was made by the school board to close the Jordan Acres School in June 2011.

Jordan Acres Elementary School

Part of the goal of this analysis is to assist the Brunswick School Department in determining whether Jordan Acres should be reopened or be closed permanently. And if the school is reopened, determine what the grade configuration and student population should be.

Architectural

Building Exterior

The exterior of the building consists primarily of scored, split-face concrete block, which is regarded as a highly absorbent material that is not recommended for use due to moisture problems. Some areas have smooth face concrete block, which is less absorbent. Many areas of the exterior walls that have the scored, split-faced block have turned black from moisture infiltration and in some instances moss is growing vertically up the walls. Some of the walls receive plenty of sun, while others receive limited sun.

Previous reports have indicated that runoff from the roof was a major cause of the moisture in the walls and that reroofing the building did little to help eliminate the problem. The exterior walls need to be opened up, inspected and tested to accurately determine the cause and the extent of the moisture problem. Depending on the results of the testing, the walls should be thoroughly cleaned with possibly other corrective action being taken to eliminate the problem from reoccurring. Corrective action may include extending the roof overhang, adding gutters and downspouts as well as possibly replacing the exterior masonry to a less absorbent material.

Moisture problems at the exterior walls

Southeast side with sun exposure

Northeast corner with no sun

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Moisture problem on scored, split-faced block

No moisture problems on smooth faced block

Water from roof runs down face of scored, split-faced block. Note overhang at windows and smooth block.

Northeast facing wall with no sun exposure

Exterior windows are aluminum framed with insulated glass. Exterior doors are hollow metal. Both appear to be in acceptable condition although there have been some reports of the windows leaking. Further evaluation of the windows should be done to verify the extent of the leaking and whether or not the windows need to be replaced.

The building has been reroofed since it was originally constructed. The current roof is EPDM and appears to be in relatively good condition, although there was a report of one area leaking in the library.

Water damaged ceiling in Library

Drainage from the roof and drainage around the building need to be improved to help eliminate the problems that have been continuing for many years. Issues related to water draining down the face of the building and moisture accumulating at the base of the exterior wall need to be corrected. Removing and replacing the affected concrete masonry may be necessary to eliminate mold issues around the exterior of the building.

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Building Interior

Most of the interior walls are painted concrete block and are in good condition. There is a limited amount of painted gypboard walls. Flooring is predominately carpeting in all the corridors, classroom pods, library, offices and amphitheaters. The carpet appears to be in fair condition but should be considered for replacement with either new carpet or other flooring material. Toilet rooms, kitchen and other wet areas have vinyl flooring. There appears to be limited asbestos tile as documented in the current hazardous material report included in the appendix of this report. Any asbestos tile should be removed and replaced with new vinyl composition tile.

Ceilings in the open areas are exposed wood fiber decking that also serves as the roof deck. Some of the interior office spaces have suspended acoustical tile. Ceilings appear to be in good condition.

Typical Open Classroom Pod

Site

The school is located on a 9± acre site that includes the building footprint, paved parking, playground and multi-purpose play fields. There is an 8 classroom portable to the west side of the school but it is in the process of being removed. The size of the site is appropriate for the size of the school without the portable.

According to the Brunswick Zoning Ordinance, the amount of off-street parking needed for the two schools would be what is "appropriate to the circumstances". A reasonable amount of parking would likely be one per teacher and staff person, plus a few visitor spaces. There are approximately 65 parking spaces available which appears to be adequate. There is one designated handicap space near the front entrance. At least two designated handicap spaces should be added.

There is a bus and parent drop off lane along the front of the building with an accessible ramp towards the west end near the handicap parking space.

Accessibility

The original building pre-dates the implementation of ADA. However, the law, originally passed in 1991, requires any public accommodation, such as a school, to make modifications to ensure reasonable adjustments have been made or implemented to accommodate those with disabilities. As of March 15, 2012, the 2010 edition of ADA is in effect in Maine.

Jordan Acres is a single-story building that is considered reasonably accessible with the main entrance being at grade level and fully accessible. The library, however, at the center of the building is at a lower elevation from the main floor by about 18" but can be accessed by a ramp albeit from one side of the building only. The library also includes a depressed reading area with stepped risers that start flush with the main floor of the library. Each of the amphitheaters is at the same elevation as the main floor of the classrooms but each has three stepped risers. The seating capacity of the amphitheaters does not require distribution of handicap seating among the different levels but access to the amphitheaters is restricted due to inadequate clearances at the doors.

Access to the library is limited to the right side of the building only, meaning a person in a wheelchair would have to travel from the left side of the building through the multi-purpose space to get to the right side of the building in order to use the ramp down into the library. If the building configuration is maintained, an additional ramp should be added to provide access from both sides of the building. General circulation from one side of the building to the other side of the building is also impeded because travel requires going through the multi-purpose space or through the library.

Library is at lower elevation than rest of building. Ramp is behind shelving in center of picture.

Stepped reading area in Library

With the exception of one or two toilet rooms, none of the staff or student toilet rooms are compliant with ADA requirements. Even the toilet rooms that have been partially modified are not be fully compliant. All toilet rooms would need to be completely renovated and enlarged to provide proper fixtures and adequate clearances. In lieu of fully renovating all toilet rooms, at least one accessible toilet room per gender should be provided in each wing. However, fully renovating the toilet rooms would also update the plumbing fixtures with water conserving fixtures as described in the mechanical section of this report.

Non-compliant single user toilet room

The majority of the doors throughout the building do not have proper hardware that can be operated without grasping or twisting. Installing lever type handles would resolve this issue in most instances. Where door closers are installed, they need to be checked for opening force to verify if they meet ADA requirements. There are also several locations where proper clearance on the pull side of the door is not provided. This includes all the amphitheaters and the toilet rooms.

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Educational Adequacy

Utilizing the state average of about 142 sf per student, the design capacity of the Jordan Acres School is estimated to be about 281 students based on a gross building area of 39,960 sf. Although the school is currently closed, it reportedly had as many as 650± students at its peak that included usage of the eight classroom portable of approximately 8,840 sf. At a total area of about 48,800± sf, the student capacity should have been no more that 343 students. However, without the portable, the existing building lacked sufficient area to accommodate all of the required programs.

The following are some of the program areas that need to be addressed:

- Space for art and music programs is lacking. Appropriate storage space needs to be included.
- Rooms for Special Services are generally inadequate and inappropriate. Properly sized and equipped space needs to be provided for programs such as Behavior, Functional Life Skills, Title 1, Reading Recovery, OT/PT, ESL, Speech, Resource, Tutoring, etc.
- The multi-purpose space accommodates gym, cafeteria and assembly functions into one room that is inadequate for any of the individual functions. One option would be to add a new space for either a separate gym or cafeteria.
- The "open concept" classrooms and the library should be enclosed to eliminate the distractions caused by noise between spaces.
- The kitchen is of adequate size but needs to be completely updated.
- General storage and appropriate Custodial space is lacking.

Should Jordan Acres reopen as a school, the extent of renovations and additions will be determined by its future use and enrollment. Converting the school to an all Kindergarten center will have one impact, while reopening it as a K-2 School would have a different impact. Whatever decision is made on Jordan Acres will then affect the configuration of the Coffin School.

If Jordan Acres reopens, then a decision needs to be made as to whether or not to close in the classrooms and the library area to eliminate the "open concept" plan. Doing so will present some challenges due to the configuration and shape of the building and the various program spaces. The results may not be ideal and could result in some inefficiencies in the plan.

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Existing Structural Systems

Structural Systems Description

Roof Framing

The existing roof framing in the majority of the building consists of glued laminated (glulam) wood purlins that frame to glulam wood girders. The roof decking consists of 2 ½" Tectum wood fiber planks and steel bulb tees that span approximately 7'-6". The outer bays of the roof have glulam purlins that are sloped at a 2:12 pitch, and the inner bays are flat. The glulam girders are supported by square steel tube columns which transfer the roof loads to the foundation. The glulam beams are attached to the girders with steel angles and through-bolted connections. There are various size glulam beams, but a common purlin size is 5 1/8" x 18" deep, and a common girder size is 7"x31 ½" deep. A typical framing bay measures 30'-8"x30'-8". For the most part, the glulam framing and Tectum decking are exposed in the school.

Typical Glulam Roof Framing

Detail at glulam beam connection

The roof framing in the gymnasium consists of the same 2 1/2" Tectum decking and steel bulb tees spanning approximately 6 feet to 40" deep open web steel bar joists. The joists span approximately 67 feet and bear on steel wide flange beams and steel tube columns at the perimeter. The gym roof framing is higher than the surrounding wood roofs.

Roof Framing at Gym

Jordan Acres Elementary School

Foundations

The building foundations consist of reinforced concrete walls and perimeter strip footings. The interior columns are supported by concrete spread footings.

Findings

Visual observations were performed and in general the structure appears to be sound, and no obvious deterioration or damage was visible. It is our understanding that one of the glulam purlins was noticeably split at the lower end of the sloped beam. This damaged beam has since been replaced with a similar glulam wood beam.

Analysis

Although no detailed analysis was performed, a previous engineering study has indicated that the glulam roof framing may not meet current code. The original 1971 drawings indicate a design snow load of 40 psf for the majority of the roof, and 60 psf in the areas surrounding the higher gym roof and the lower roof section in the rear of the building. This higher snow load was likely specified to account for drifting in these areas. As the previous report indicates, the method for determining required snow drifts is much more detailed in the current building code. Therefore, it is possible that the framing in these drift areas may not be capable of supporting the new loading.

Due to the some changes in design methodology and material uncertainty, it is not clear if the remaining glulam roof framing could meet current code requirements. Further detailed analysis would have to be performed once the intended use is established.

Based on the original drawings, there does not appear to be a designated "lateral system" for the building to resist wind and seismic loads. Although this practice was common in the early '70s, current codes require a load path that transfers these lateral forces into the foundation. Again, depending on what the intended use is, major work would have to be performed to update the structure's ability to resist current lateral loads.

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Existing Mechanical Systems

System Summary

The mechanical system currently serving Jordan Acres is a system that would typically be found in a school built in the early 1970s. Energy was not the primary concern that it is today. The system is quite simple in its approach to heating and ventilating the facility. Yet it is quite inefficient as illustrated by the budgeted oil energy numbers of 0.42 gallons of oil per square foot per year. Numbers in new schools that utilize oil typically range from 0.23 to 0.28 gallons per square foot per year depending on systems being implemented in the school design and the operational profile of the facility.

System Description

The existing school was built in 1972 and the original boiler is still in place. The main boiler plant consists of a Weil McLain, 16 section, cast-iron boiler. The boiler model is 1694 and has a net capacity of 3,385.1 mbh.

Figure 1 – Cast Iron Boiler

The boiler produces 180 degree heating hot water which is distributed throughout the entire facility via insulated schedule 40 steel piping. An induced draft fan that is located at the rear of the boiler is provided to assist with boiler draft control. The boiler is equipped with a Webster Cylcometic burner which burns No. 2 heating oil. The burners model number is JB2C-30-R77950. The burner is equipped to also burn natural gas; however, natural gas is not available at the site.

Figure 2 – Oil Burner

There is one existing steel underground fuel storage tank with an interstitial monitoring system in the tank and one in-ground monitoring well located just outside the boiler room. Underground suction and return piping runs from the tank into a pit in the corner of the boiler room. The oil piping connects to a duplex fuel oil transfer pump set located in the boiler room which brings the oil in from the tanks and circulates it through a pressurized distribution loop. The burner pulls oil off the distribution loop at a quantity matching the burners firing rate.

Figure 3 – Oil Transfer Pump Set

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The original hydronic heating loops consisted of a hot water supply and return loop and a hot water/glycol supply and return piping loop. Several years ago, the glycol loop and all of its accessorized components were essentially taken out of the system and abandoned in place. In 2007, a new set of Taco base mounted pumps were installed to handle the primary heating hot water supply and return for the entire facility. The pumps are rated for 226 gpm @ 65 ft of head. Each of these pumps is provided with individual variable speed drives. The VFD's are controlled by differential pressure sensors located in the piping distribution system.

Figure 4 – Base mounted pumps

Figure 5 – Base mounted pump variable speed drives

The primary heating and ventilating in each of the classrooms in the existing facility was originally handled by dedicated unit ventilators. The original unit ventilators were removed a couple years ago and replaced with new MagicAire unit ventilators. These replacement unit ventilators are not connected to outdoor louvers as the existing louvers were blanked off at the time of replacement. At the approximate time of the unit ventilator removal/replacement, new roof mounted energy recovery ventilators were installed. There is a significant amount of supply and return duct work located

on the roof. The ductwork for these several units drops through the roof and runs exposed in the open classroom spaces. Hot water heating coils are interior duct mounted for each of these units. This duct is not insulated.

Figure 6 – New unit ventilator in classroom - typical

Figure 7 – Typical new Energy Recovery ventilators

Common spaces like vestibules and entryways are being heated by convectors or cabinet unit heaters.

The Gym/Multipurpose area is served by a single Trane climate changer air handling unit that is ducted to several wall-mounted supply air grilles. This AHU has a hot water heating coil integral to the unit and is pneumatically controlled. Only one of the hot water lines feeding the unit is fully insulated. The other line is partially insulated.

Figure 8 – Gym/Multipurpose AHU

The only cooling in the facility is located in the administration area. There are five Mitsubishi, model MS09TW split system ductless AC units. The associated condensing units are all installed on the roof of the facility. A typical condensing unit may be seen in the Figure 7 photo adjacent to the energy recovery units.

The domestic hot water is provided by the main heating boiler. A shell and tube heat exchanger located on top of the boiler is sized to handle only a portion of the DHW load within the school. A Patterson-Kelley 72 kW electric water heater located adjacent to the Kitchen storage area handles the remaining DHW load. Although the name plate data on the heater shows it as being installed when the school was first constructed, it appears to be newer than approximately 40 years old.

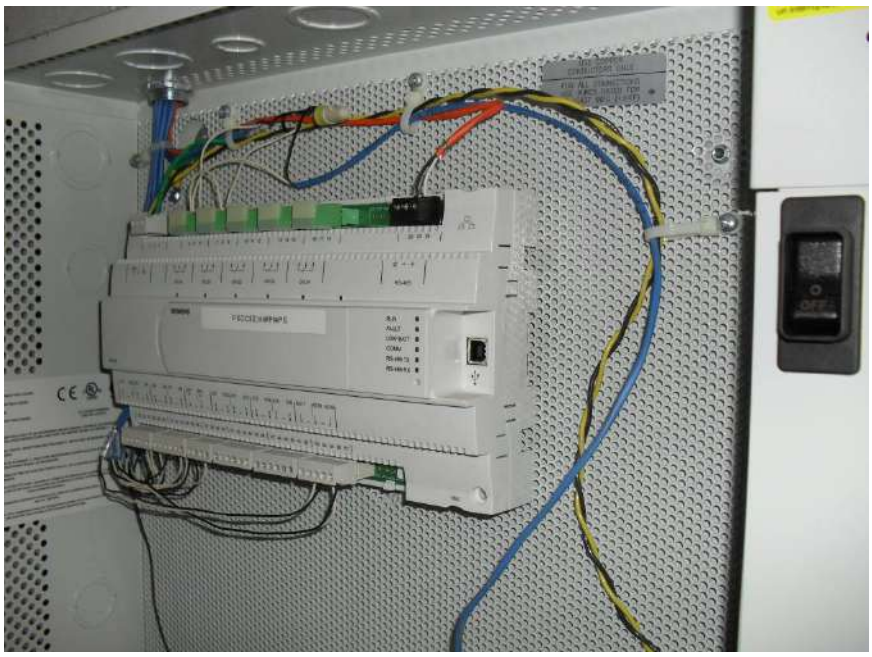
Figure 9 - DHW shell & tube heat exchanger

Figure 10 - 72 kw electric water heater

The temperature controls in the facility are primarily pneumatic with a bit of updated DDC control as well. It has been reported that this system has not provided consistent temperature control throughout the facility. Some areas are quite warm while others can be quite cool.

Figure 11 - Pneumatic control panel

Figure 12 - DDC Controller



The sprinkler system enters the building in the storage area adjacent to the kitchen. The line size coming in is 4". Based on conversations with staff, the only area that is served by this sprinkler system is the kitchen area. No other sprinkler heads were observed throughout the building.

Figure 13

Recommendations

Boiler room

Because the existing cast iron boiler and oil burner is almost 40 years old and clearly showing its age, we would recommend replacing the boiler with a high-efficiency boiler capable of dealing well with low return water temperatures. The removal of this boiler would include all connecting HWS & R piping, induced draft fan, breeching, five horizontal expansion tanks, and oil piping. This replacement type of boiler design would allow us to save significant energy on typical standby losses normally associated with "hot" boilers. New breechings, engineered combustion air system, insulated HWS & R piping, oil piping, expansion tanks and controls would also be included in this installation.

Remove existing abandoned glycol heat exchanger, its pumps, associated piping and accessories. The base mounted Taco pumps along with their associated VFD's that were installed in 2007 are still in excellent condition and should be reused.

The existing pneumatic control system in the facility is also clearly showing its age. Although a pneumatic control system was virtually the only viable control option available when the school was originally designed and constructed, these systems have proven over time to be quite inefficient and difficult to control and maintain. We recommend removing the complete pneumatic control system which includes all controllers, air compressor, dryers, tubing, actuators, sensors and all other associated accessories. A new direct digital control (DDC) will be provided for the entire facility. This control system would be provided by Siemens and would be tied back into the main head end in the Facility Directors office.

Ventilation system

The existing rooftop energy recovery ventilators that were installed several years ago are still in good condition. However, because each of these units largely serve open areas with exposed, un-insulated duct work and single dedicated hot water heating coils, the duct distribution system would need to be removed and re-distributed according to new space layouts. Quite a few new duct mounted hot water heating coils would also need to be provided. The coil placement and number of coils would be determined by any new layout of the spaces.

Heating terminal units

We would recommend removing the replacement unit ventilators that were installed a few years ago and replacing them with hot water baseboard radiation in active lengths that are appropriate for any new classroom layout.

Sprinkler

If the building is to be renovated and reused, we would recommend providing sprinklers throughout the entire facility.

Jordan Acres Elementary School

Existing Electrical Systems

Electrical Service & Distribution

Description

The Jordan Acres Elementary School is served by a 208V-3Ø-4W, 150kVA pad mounted transformer that is fed from an underground primary distribution system. Information from Central Maine Power indicates that the maximum demand to date has been 116 kW.

Pad Mounted Transformer

CMP Electric Meter

The electrical service entrance is a Square D 1600 amp, 120/208V, 3Ø, 4W bolted pressure contact switch. Our experience is and the Schneider/Square D website [http://ecatalog.squared.com/pubs/Electrical%20Distribution/Services/1910HO0804.pdf] confirms that periodic maintenance, cleaning and lubrication of a bolted

pressure contact switch is required to provide reliable operation. Failure to properly maintain the switch could result in downtime if operation of the switch is necessary. In many cases, bolted pressure contact switches have been installed without maintenance for many years, and fail to operate properly or re-engage after being de-energized or "shut-off".

Service Entrance Switchboard

The main switch and adjacent I-Line distribution section, both rated at 1600A, appear to be "original" equipment (1972 - 40 years), but are in good serviceable condition. The distribution section has a variety of breaker sizes serving the existing sub-panels and some limited space for future breakers.

Distribution Section

Sub-panels are evenly distributed throughout the school in a manner that limits the lengths of branch circuits to acceptable distances. All sub-panels appear relatively new and in very good condition.

Jordan Acres Elementary School

Typical Sub-Panels:
Boiler Room

Main Office

Kitchen

Jordan Acres Elementary School

Analysis

Although approximately forty years old, the service equipment is operational and appears to be in serviceable condition, and space is available for new breakers that could feed additional sub-panels. The capacity of the existing service is approximately 460kW (1600 x .80 x 360). This should be of sufficient size to accommodate any loads that might be added to a building of this size (40K sf +/-). The existing sub-panels are relatively new and in very good condition, most having a full complement of circuit breakers. With the school being closed and many loads "turned-off" it is difficult to determine how many spare breakers there are in each sub-panel. It was noted that some panels have spare breakers and many spaces for additional breakers.

Recommendations

The existing service entrance equipment should be inspected and tested by Square D service technicians to verify condition and proper operation. A shut-down of the service is required for this procedure. This inspection/test costs between $3,000 and $5,000. Parts found to be damaged or non-functional are charged separately in addition to the testing fee.

Lighting

Description

The Jordan Acres Elementary School is served by a variety of lighting fixtures (lens troffers, parabolic troffers, surface wraps, vapor-tight, bare strips, high-bay T8, bare strips), the majority are fluorescent and have recently been upgraded to T8 lamps and electronic ballasts. No automatic controls for interior lighting fixtures were observed.

Typical Lighting Fixtures

Lens Troffers

Jordan Acres Elementary School

Parabolic Troffers

Surface Wraps

High-bay T8

Vapor-Tight

Bare Strips

Analysis

Although the existing lighting fixtures are in relatively good condition and have recently been upgraded, there are no automatic controls and lighting densities in some areas are extremely high. Some areas appear to be twice what the current energy code allows.

Recommendations

Lighting densities should be evaluated and fixture layouts should be adjusted accordingly. Also, automatic controls should be added to provide manual ON and automatic OFF function. This is required by the current state energy code (2009 IECC). With the majority of the building square footage being Open Concept, it will most likely be necessary to adjust locations of many fixtures to

accommodate an alternate building layout. This will provide an opportunity to position fixtures in a more efficient manner.

Emergency Lighting

Description

The Jordan Acres Elementary School is served with exit signs and emergency life safety lighting throughout the building. The exit signs appear to have been upgraded with an LED field installable retro-fit kit. The emergency lighting consists of battery packs and remote emergency heads.

Typical internally illuminated exit sign

Non-illuminated exit sign

Typical Emergency Light

Analysis

Exit signs appear to have been upgraded with LED retro-fit kits but are not very evenly illuminated and some are in poor condition. This may be of concern to the local code officials. Also, some signs are not internally illuminated and do not have an emergency lighting fixture nearby to illuminate in case of a power outage. It is a code requirement that all non-internally illuminated signs be illuminated with emergency lighting during a power outage. No record of testing of the emergency units was observed. It is very possible that the emergency battery units will not function properly if a strict testing and maintenance policy is not being followed. Also, emergency lighting fixtures are spaced such that they will not provide an average of 1 fc throughout all paths of egress.

Recommendations

All battery units should be tested to verify proper operation. Internally illuminated exit signs should be added at all required egress doors and units that are in poor condition should be replaced. Emergency lighting units should be added so that all paths of egress are properly illuminated.

Power Outlets

Description

There are wall mounted grounded receptacles located throughout the school. In the "Open Concept" areas there are outlets on retractable cord reels mounted at the ceiling. These create an unsafe condition in an educational setting. Only one exterior outlet was observed in the site survey.

Exterior Outlet

Analysis

It appears that the Main Office could use additional receptacles to serve counter mounted equipment and other general uses. The "Open Concept" classroom areas will need additional receptacles if those spaces are reconfigured. Additional exterior receptacles may be needed to assist in maintenance functions.

Recommendations

Evaluate all spaces in detail to determine exactly where additional receptacles are required. Strategically located exterior receptacles should be added as required for maintenance. The retractable cord reels should be removed.

Fire Alarm

Description

The fire alarm control panel is a Simplex 2001 and is located in the Main Office, it appears to be original equipment (1972 – 40 years). This system communicates with Seacoast Security using a Silent Knight dialer (located near the Electrical Service Entrance). If/when an alarm condition is reported Seacoast contacts the Brunswick Fire Department. There are smoke detectors throughout the corridors and spaces that are open to corridors. Heat detectors are installed in private offices and other storage type spaces. There are pull stations located at all egress doors. Audio/visual devices are located throughout the school.

Jordan Acres Elementary School

Fire alarm control panel
In Main Office

FACP interior

Jordan Acres Elementary School

Fire Alarm System Dialer

Typical pull station, audio/visual device, and smoke detector

Typical heat detector

Jordan Acres Elementary School

Analysis

The fire alarm control panel is now obsolete and is no longer supported by the manufacturer. Although, additional audio/visual devices have been added since the school was built there are some locations that are not properly covered. This system is beyond its life expectancy and should be replaced.

Recommendations

A new addressable fire alarm system should be installed in this school. The distribution and exact locations of system components should be updated as required to properly cover all areas and to accommodate any renovations.

Voice/Data

Description

The phone system is by Avaya and is wall rack mounted adjacent to the electrical service entrance and appears to be "relatively" new and functional. Also, at this location was noted the school network fiber connection to the internet. Tel/data outlets throughout the school appear to have been added as needed. Possibly none were installed when the building was constructed.

Phone System (1)

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Phone System (2)

Phone System (3)

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Fiber Splice Box (1)

Fiber Splice Box (2)

Fiber Splice Box (3)

Data Rack at Open Concept Classrooms

Data Cabling run in DWV pipes

Typical Data Cabling routed in DWV pipe

Typical Tel/Data cabling run surface to point of use

Analysis

The existing phone system appears relatively new and functional, however the phone wiring is in worse condition. Most if not all cables are run in surface raceways, with many not extended completely to the point of use. Data cabling has been run through the "Open Concept" space in drain waste and vent pipe. This is not a proper use for this "piping system". Conduit rated for electrical cables should be used. Also, it appears that most spaces are lacking sufficient "drops" for telephone and data when compared to modern schools.

Recommendations

Data wiring in the "Open Concept" spaces should be removed from the DWV pipes and run in cable trays or electrical conduits. Reconfiguration of cabling will most likely be required if these spaces are renovated into more conventional classrooms. Connectivity should be upgraded to at least Cat 5e and to Cat 6 if budget allows.

Intrusion Detection System

Description

No intrusion detection system was noted at this school.

Analysis

N/A

Recommendations

Evaluate requirements for an intrusion detection system.

Jordan Acres Elementary School

Clock System

Description

An Electric Time Co. model #F2004 clock system is located in the main office. All of the following pictures were taken within one hour of each other. Some of these clocks are not keeping time.

Clock control panel in Main Office

Control panel interior

Jordan Acres Elementary School

10:10 – May be correct

4:40 – Not working

5:25 – Not working

Clocks throughout the school indicate a different time, some may be controlled by the central system whereas others are not.

Analysis

The existing clocks do not all indicate the same time. The existing system appears to be original (1972 – 40 years).

Recommendations

The existing system should be removed and replaced with a new system if it is deemed necessary to have a central clock system in the building.

Intercom System

Description

The existing intercom system is by Dukane and is located in the Main Office. This system was installed in 1989 by Canfield Systems and is thought to be operational. All classrooms have the ability to call-in to the main office and most classroom speakers are connected with surface wiring from the classroom stations.

Main Console

Jordan Acres Elementary School

Typical classroom speaker

Analysis

The existing Dukane Intercom system is beyond its useful life and much of the surface wiring to the speakers is susceptible to damage. Dukane no longer manufactures parts for switch-bank type systems, therefore, any repairs requiring parts could lead to lengthy down time. Spare parts come from "old stock" and salvaged parts from old consoles.

Recommendation

The existing intercom system should be upgraded with a new modern system. A new system will be more reliable and easier to expand and maintain. Possibly some of the existing wall speakers could be reused in a new system.

CCTV Surveillance System

Description

The existing camera system head end equipment is shelf mounted in an interior storage room and there are cameras located overhead at each exterior door.

Jordan Acres Elementary School

Head-End equipment

Cabling

Typical ceiling mounted camera

Jordan Acres Elementary School

Analysis

We were unable to determine if the camera system was functional and it was possibly not functioning at this time.

Recommendations

The system should be evaluated by a camera system vendor to determine operability and repair as required. Wiring for this system should be addressed to provide reliability and increase maintainability.

Door Lock Down System

Description

There is no door lock down system. Visitors are to report to the main office upon entering the building.

Analysis

Not applicable.

Recommendations

Add a door lock down system to the building if necessary.

Door Card Access System

Description

There is no door card access system.

Analysis

Not applicable.

Recommendations

Add a card access system to the building if necessary.