Coffin Elementary School

Overview

Coffin Elementary School

The existing Coffin Elementary School was opened in 1955 as a K-8 school. It is located on a site of approximately 29± acres that is shared with the Junior High School. The school is located on the west side of town. More recently it was one of several K-5 schools but through the closure of a couple of other elementary schools and the opening of a new elementary school in the fall of 2011, the Coffin School was reconfigured as a K and 1 school.

Coffin Site

Coffin Elementary School

The school is a single story masonry building of approximately 57,440 sf. There are two parallel classroom wings connected at the center by a multi-purpose space. To the rear of the building is the cafeteria and kitchen. Each wing is a double loaded corridor with classrooms on one side and support spaces on the other side. The multi-purpose room has an elevated stage at one end. Below the stage is a basement work room that was originally the boiler room. There was a small storage room addition for the nutrition program added around 1990 adjacent to the kitchen at the rear of the building. Refer to Tab 7 for a plan of the existing building.

In addition to the main building, there are six temporary classroom buildings. Four of the buildings, in place since 1969, are single classroom modulars located across the main driveway at the front of the school. The other two are leased double classroom portables located in the open space between the rear classroom wing and the kitchen/cafeteria wing. Refer to site plan on previous page.

Portables across main driveway at front of Coffin School

The school currently houses approximately 374± students. The student population has decreased significantly in recent years due primarily to the closure of the Brunswick Naval Air Station. Enrollment, however, is expected to slowly increase in future years as the site of the former Naval Air Station is redeveloped.

Architectural

Building Exterior

The exterior of the building is a combination of brick veneer and windowall construction. The brick veneer appears to be in sound condition. The windowall is located on the south face of all the classrooms as well as the south and west sides of the cafeteria. Below the windowall system is a concrete stem wall. The classrooms also have a clerestory band of windows on the north side of the rooms. However, some of these windows have been blocked as a result of the ventilation improvements, such as piping and ductwork that were done a few years ago. See photos below.

Coffin Elementary School

Most all of the administrative and support spaces have a band of higher windows on the north facing wall. See photo on previous page. The corridors connecting the front and rear classroom wings and the cafeteria are also glazed windowalls. The original windows were wood framed but many have been replaced with aluminum windows with insulating glass within the last 10 years. It does not appear that the clerestory windows have been replaced and should be considered for future replacement.

Typical Classroom Windowall System

Typical Classroom Clerestory Windows blocked by ductwork

The exterior walls of the gymnasium are masonry with translucent wall panels high on the east and west facing walls. These appear to be original to the building and appear to be in good condition.

Coffin Elementary School

Exterior of Gym
(Note infill storage with plywood siding)

The school has been reroofed at various times since the building was originally constructed. All of the current roofs are of EPDM membrane of various ages. Most of the roofs are in fair to good condition but need to be properly maintained and monitored for future replacement. The newest roof is over the kitchen and is still under warranty. All the others may be around 20 years old. Budgeting for the future replacement of the older roofs should be considered.

Building Interior

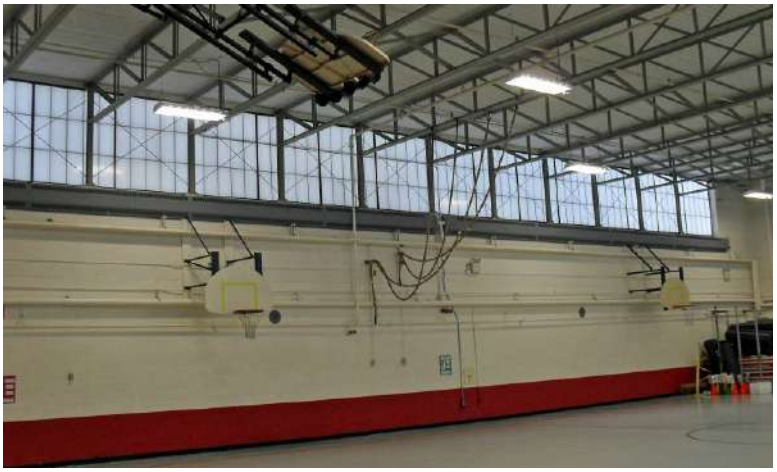
Considering the age of the facility, the interior of the building is generally in good condition. The corridor walls and the wet walls in toilet rooms are painted CMU. Walls between classrooms, offices, etc. are of stud construction with painted gypboard. Flooring is predominately vinyl tile in the corridors, classrooms, gym, cafeteria and kitchen. The vinyl tile is good condition. Floors in toilet rooms are ceramic tile that is in fair condition. Limited areas, such as offices, are carpeted, in fair condition and should be considered for replacement. Based on the hazardous materials report, the original vinyl asbestos tile remains in most of the rooms but has been "encapsulated" by installing new vinyl composition tile over the asbestos tile. Refer to the Appendix for a copy of the latest Hazardous Materials report.

Coffin Elementary School

Typical Classroom

Main Lobby
& Corridor

Translucent
Wall Panels at Gym



Coffin Elementary School

Windowall at Cafeteria

Most of the ceilings are either suspended acoustical tile or directly attached to the underside of the structure such as in the classrooms. The ceilings appear to be in reasonable shape. However, mechanical modifications done several years ago have impacted ceiling heights throughout the corridors. Interior doors are primarily wood and are in reasonable shape. A couple of spaces, such as the gym and the cafeteria have exposed structure and painted wood decking.

Site

As noted previously, the school shares a 29± acre site with the Brunswick Junior High School and the school department's bus garage. Both schools share driveways and parking.

There is one large parking lot shared by staff and visitors for both schools that accommodates approximately 109 vehicles. There is also some designated parking along the main driveway to the south of the Coffin School and adjacent to the boiler house. Between the two schools, there are a total of about 169 parking spaces including designated handicap spaces. It has been reported that the total number of spaces currently provided is inadequate during certain events.

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. This calculates to approximately 70 spaces for the needs of the Coffin School. This amount of parking would require 3 ADA accessible parking spaces. There are presently two accessible parking spaces at the south entry of the Coffin School, with an accessible ramp. There are also at least two accessible drop-off /parking spaces at the main entry at the east and west ends of the canopy, with accessible ramps on the walk. These four accessible spaces provide a sufficient ratio for up to 100 standard parking spaces.

Coffin Elementary School

The main entrance drive is the primary route for the buses to drop off and pick up students for the school. This also serves as a parent vehicle drop-off area, which adds to the traffic congestion twice each day. Separating parent vehicles from the bus drop-off area would improve traffic movement and greatly enhance safety.

Main driveway in front of Coffin School

Drainage around the perimeter of the building has been a frequent problem due primarily to the relatively flat site. Much of the area between the two classroom wings is paved and drainage away from the building is difficult to maintain. The drainage of rain and melting snow off of the sloped roofs contributes to the accumulation of water immediately adjacent to the building despite having gutters and downspouts that connect to an underground drain line. The closeness of the portables between the classroom wings contributes to the build-up of snow next to the exterior walls during clearing operations. Roof drainage off of the building and site drainage in general should be improved to eliminate the potential water problems adjacent to and against the exterior walls.

Double Portables Adjacent to Classrooms

Coffin Elementary School

Accessibility

The original building and any subsequent renovations pre-date 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.

Being all on one floor, the Coffin School is considered reasonably accessible. The elevated stage does have a vertical lift located within the gym that makes it accessible. The main entrance is accessible at grade level. The parent drop off is directly in front of the main entrance and there is a curb ramp at the driveway. ADA compliant signage is lacking throughout the building.

There are two major issues regarding accessibility that are considered critical and need to be addressed – door hardware and toilet rooms. 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.

None of the staff or student toilet rooms in the building are compliant with ADA requirements. 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.

While the portables have ramps to make them accessible, the fact that students must travel outside the building to get to the portables, limits the accessibility to those programs, particularly during inclement weather and more specifically the winter months.. Eliminating the portables and moving the programs into the main building would solve the accessibility issue.

Educational Adequacy

Utilizing the state average of about 142 sf per student, the design capacity of Coffin School is estimated to be about 405 students based on a gross building area of 57,440 sf. The current student enrollment is about 374± students. This would signify that the existing building is under capacity. However, having 8 classrooms in 6 portables indicates that the existing building is lacking sufficient area to accommodate all of the required programs.

Coffin Elementary School

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

- Eliminate all six portables and provide appropriate program space within the building for the programs that are currently located within the portables.
- With the exception of two classrooms, the Kindergarten classrooms are too small and overcrowded. Although the average class size is about 20-21 students and meets the school departments standards, it is preferable to have Kindergarten classes in the 16-18 size. None of the current Kindergarten classrooms have student toilets located within the classroom. Many teachers feel that the Coffin School is inappropriate for kindergarten students based on the current configuration and travel distances.
- Art and music programs are located in portables. The spaces are undersized and lack appropriate storage space.
- 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.
- Guidance office is located in an infill space off the main lobby that was formerly an exit corridor.
- Library is severely undersized for the size of school and should have a separate office/work space plus computer space. The library should be more than double its current size.
- Kitchen is of adequate size but needs to be completely updated. In addition to serving meals for Coffin students, the kitchen prepares meals for the adjacent Junior High School.
- Gym is small and noisy. The basketball court in undersized and there is no bleacher seating. The toilet rooms for the gym are inadequately sized by current code requirements.
- General storage and appropriate Custodial space is lacking throughout.

The extent of renovations and additions required at the Coffin School will be determined by its future use and enrollment. Currently Coffin is a K-1 school. With the opening of the Harriet Beecher Stowe School, Coffin was intended to be a K-2 school until the decision was made to close Jordan Acres. Closing the Jordan Acres School permanently will result in one solution for Coffin as opposed to a different solution should Jordan Acres reopen. Should Jordan Acres reopen; the grade configuration of that school will obviously affect the grade configuration and ultimately the amount of renovations or additions needed to accommodate the programs at Coffin.

Because the site shared with the Junior High school and the Bus Garage and is limited in size, consideration should be given to relocating the Bus Garage to another site. Gaining the area now occupied by the Bus Garage and the parking are for buses and staff would allow for improvements in the site circulation for the schools, as well as provide additional outdoor play area and needed space to expand the Coffin School.

Coffin Elementary School

Existing Structural Systems

Structural Systems Description

Roof Framing

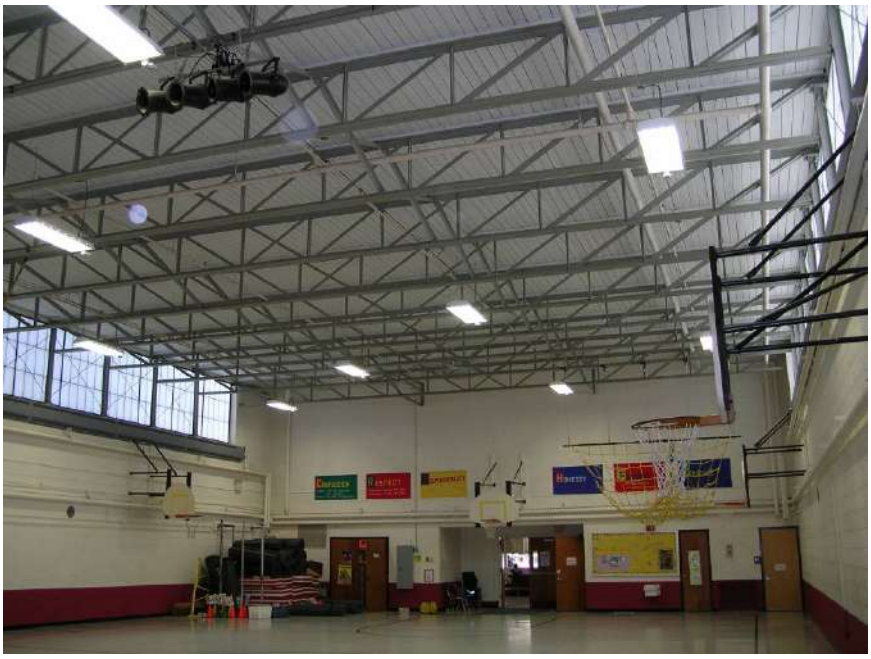
The existing roof framing consists of a combination of wood and steel members supported by interior steel columns and masonry bearing walls. The roof framing in the four classroom wings is identical. According to the original drawings, the members on the sloped surfaces consist of 4x10 wood beams spaced at approximately 6 feet on center. These beams span approximately 11 feet to 14" deep steel wide flange beams that frame to round steel pipe columns at both ends. The decking is indicated to be 2" thick tongue and groove planking spanning the 6 feet between beams. The roof framing in the flat roof areas consists of 2 x 12 joists spaced at 16" on center. These joists span 8 feet and 15 feet and are supported by masonry bearing walls.

Typical Classroom Wing

The roof framing in the gymnasium consists of the same 2" wood decking on 30" deep long-span open web steel joists. Although the spacing could not be verified, it appears that they are approximately 6 feet on center and span 54 feet. These joists are connected to steel wide flange columns which are supported by the masonry bearing walls on both sides of the gym.

Coffin Elementary School

Roof Framing at Gym



The roof framing in the cafeteria consists of 2" wood decking on 10" deep wide flange beams spaced at approximately 6 feet on center. These beams span approximately 19 feet to three 14" double cantilevered beams. The center span is 26 feet and the cantilevers are 12 feet on each side. These cantilevered beams were reinforced in 1992 during a re-roofing project. The interior columns are round steel pipe columns.

Roof Framing at Cafeteria

Coffin 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

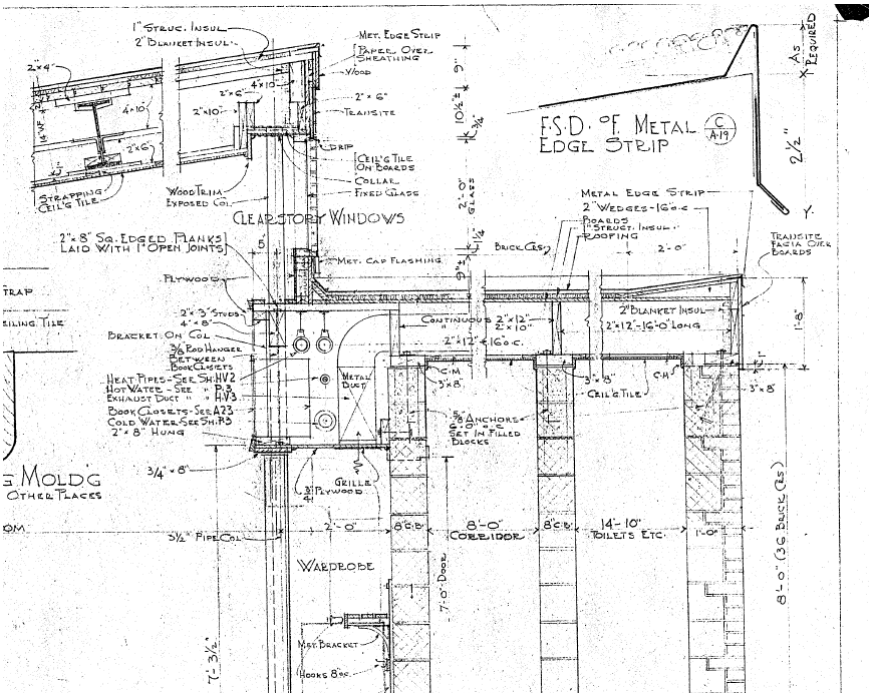
Due to the various ceiling materials, the majority of the roof framing was not visible during our site visit. No demolition was performed to expose any framing. Only the framing in the gymnasium and cafeteria was visible. In general the structure appears to be sound, and no obvious deterioration or damage was visible.

According to documents obtained, it appears that several roof areas were reinforced as a result of a re-roofing project completed in 1992. Additional wood framing was added in two low roof areas around the Gym. This was likely done to accommodate the additional snow drift loading that occurs at high/low roof areas. It is not clear why the steel beams above the cafeteria were reinforced with steel angles. A previous analysis may have indicated that it was necessary to sustain the current snow load.

Analysis

Some limited structural analysis was performed to determine the capacity of the existing roof framing. The original structural drawings were not available, but some information was shown on the architectural details.

Typical Section at Classroom Roof



Our limited analysis indicated that the wood and steel framing at the classroom wings is capable of supporting the current code required snow loads without reinforcement. This is based on the following assumptions:

- All framing sizes are as indicated on architectural sections
- No alterations have been done to any framing members
- No damage due to water infiltration has occurred
- The wood species used is equivalent to Spruce-Pine-Fir #1

Again, it should be noted that no structural framing plans were available, and no physical verification of sizes was performed. Analysis of the gymnasium and cafeteria roofs was not performed due to lack of information. Further investigation of these areas should be performed to verify their adequacy.

Coffin Elementary School

Existing Mechanical Systems

System Summary

The original Coffin Elementary School was constructed in 1954. The original building had an in-floor radiant heating system. For the most part, this system is not used other than to help trim areas of the school that may experience cold spots. The mechanical system currently in place at the Coffin School is a system upgrade that was designed by Harriman Associates back in 1980. In 2003 a new heat recovery ventilation system was installed to improve ventilation quality in the school. Around 2006, the dedicated Coffin boiler room was abandoned and replaced with a central plant that serves both Coffin and the Jr. High School. The centralized boiler plant was originally designed around No. 2 oil, with future plans to burn natural gas. Around 2008, natural gas was delivered to the site and the boilers were reset to burn natural gas.

System Description

The three boilers that were installed in 2006 are manufactured by Buderus. Each of the boilers is equipped with dual fuel Riello burners. Boiler number one has a gross rating of 1,951 mbh and a net rating of 1,697 mbh. The remaining two boilers have a gross rating of 2,822 mbh and a net rating of 2,454 mbh. When the boilers were converted to burn natural gas a couple years ago, the oil piping coming into the boiler room from a underground oil tank were cut, capped and abandoned in place.

Figure 1 – Cast Iron Boilers

Coffin Elementary School

The boilers produce a maximum of 180 degree heating hot water which is distributed throughout both Coffin and the Jr. High school. A three way valve located in the central boiler room is designed to reset the heating water temperature based on outdoor air temperatures. Each of the two schools is served by a pair of dedicated end suction base mounted pumps installed in October of 2008, which are also located in the central boiler room. The four 3 hp pumps are manufactured by Taco with model numbers FI3007. They are each rated for 285 gpm at 30 ft of head. Each of these pumps is also provided with a dedicated variable speed drive. A set of 5" steel HWS & R lines exit on the opposite side of the boiler room that run underground to each of the two schools.

Figure 2 - HWS&R mains exiting the boiler room feeding the JHS

Figure 3 - HWS&R mains exiting the boiler room feeding Coffin

The natural gas piping enters the boiler room at the side of the room facing Coffin. The 4" steel gas entrance enters into the back side of the boiler room then braches off to feed each of the boilers. The gas mains for each boiler are 3", with a 2" line connecting to the burners.

Figure 4 - Gas entrance into boiler room

Figure 5 - Three way boiler reset water control valve

The hot water supply and return piping enters Coffin School in the former sub-grade boiler room which is now serving as a maintenance work shop. From this room the HWS & R piping is distributed throughout the entire school feeding terminal heating devices such as fin tube radiation, cabinet unit heaters, duct mounted heating coils and unit heaters.

Figure 6 – Typical ceiling mounted cabinet unit heater

Coffin Elementary School

The primary heating source for each of the classrooms in the existing facility is currently being accomplished with fin tube radiation. Common spaces like corridors, vestibules and entryways are being heated by convectors or cabinet unit heaters.

In 2003, the primary ventilation system for the facility was upgraded with the installation of 8 rooftop energy recovery units. These units range in airflow capacity from 2,000 cfm down to 350 cfm. These units are all manufactured by Renewaire. Most of the ductwork associated with these units is exposed with exposed heating coils and associated piping. A three ton rooftop cooling only unit was also provided for the Administration area of the facility.

The domestic hot water for the kitchen is provided by a natural gas fired 35 gallon water heater. The water heater is manufactured by Rheem. The model number is G37-200-1. Its input capacity is 199.9 mbh. This water heater is relatively new and should last for several years to come.

The temperature controls in the facility are a combination of pneumatic and DDC controls. Reports are that this system has not provided consistent temperature control throughout the facility. Some areas are quite warm while others can be quite cool. The system as installed is Siemens and is also being serviced by Siemens.

Figure 7 - DDC Controller

Coffin Elementary School

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 and site observations, only the common areas are served by this sprinkler system such as the kitchen area, corridors and other sporadic areas around the school. Occupied spaces such as classrooms and offices are not sprinklered.

The plumbing fixtures appear to all be original. The water closets are approximately flushing at 3.5 gallons per minute and the urinals are flushing at 1.25 gallons per minute. No handicap fixtures were noted throughout the school.

Figure 8 - Typical closet

Figure 9 - Typical Urinal

Recommendations

Boiler room / Controls

Remove all of the pneumatic control system accessories.

There have been reports that the school has experienced areas where the temperature is not consistent. We believe that most of these issues can be resolved with modifications to the control strategies. We recommend removing any remaining pneumatic system control which includes all controllers, air compressor, dryers, tubing, actuators, sensors and all other associated accessories. The Siemens Apogee DDC system should be expanded to cover the entire facility. This control system will be expanded by Siemens and will all be mapped back to the main head end in the Facility Director's 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 areas with exposed, un-insulated duct work and zoned hot water heating coils, we would like to see this ductwork be hidden above new ceilings. When this duct distribution system becomes concealed, it will be required to be insulated.

Heating Terminal Units

If the school is renovated, we would recommend replacing the base board enclosure covers, as quite a few of them are damaged. We would also recommend that each of the areas that are reported to be under heated, be evaluated for terminal unit capacity versus actual load for the spaces.

Sprinkler

Because the building is not completely covered by the sprinkler system, we would recommend expanding coverage throughout the entire facility.

Plumbing

Since all of the plumbing fixtures appear to be original, we would recommend replacing them all with low flow fixtures. Handicap fixtures will also be required throughout the facility to bring it in compliance with ADA requirements. Additional modifications will be required to make all toilets accessible.

Coffin Elementary School

Existing Electrical Systems

Electrical Service & Distribution

Description

The Coffin Elementary School is served by three 50kVA (150kVA total) transformers located in a locked vault. This 208V-3Ø-4W service is fed from an underground primary distribution system. Information from Central Maine Power indicates that the maximum demand to date has been 86 kW.

Transformer Vault

The electrical service entrance is made up of a variety of equipment with multiple mains, Main #1, Main #2, Main #3 (mobiles), and Main #4 (mobiles). None of this equipment has the clearances required by NEC. Main #1 & #2 are circuit breakers and the rest are fused switches.

Main #1

Coffin Elementary School

Frank Adam Equipment, no longer manufactured

Interior cover missing

Conductors tapped off main lugs

Coffin Elementary School

Main #2

Main #3 (mobiles)

Coffin Elementary School

Main #4
(Mobiles M7,M8)

Typical Sub-Panels:
Corridor

Kitchen Storage

Coffin Elementary School

Kitchen

The main distribution panel is a very old fuse type panel, with some dead-front panels missing that expose live parts when the door is opened. Sub-panels are located in the corridors of each wing, multi-purpose space, boiler room, and kitchen. This is a good distribution that limits the lengths of branch circuits to acceptable distances. Most sub-panels appear to be in serviceable condition. The panels in the kitchen have been modified indicating the original panels do not provide the necessary circuitry.

Analysis

The equipment that comprises the service entrance is in violation of the National Electric Code because of lack of required clearances. Also, the configuration of multiple main breakers may be a safety concern as it is quite confusing as to which main controls which sub-panels. The capacity of the existing service is currently limited by the transformers located in the vault to 150kVA, but, the equipment when totaled (Main #1 - 400A @ 208V/3Ø), (Main #2 – 400A @ 208V/3Ø), (Main #3 – 200A @ 208V/1Ø), (Main #4 – 200A @ 208V/1Ø) is capable of approximately 297kW. This is very low for a building of this size (57k SF +/-). Most of the existing sub-panels are relatively new and in good condition, but, the panels in the Kitchen area are not in good condition and have been modified.

Recommendations

The existing service entrance equipment should be upgraded to combine distribution and eliminate mains, provide required clearances and additional capacity if deemed necessary. The main distribution panel is very old and unsafe and should be replaced as soon as possible. The electrical needs in the Kitchen should be evaluated and the panels upgraded accordingly. Replacing the existing service entrance equipment and getting the required clearances is going to be difficult as there is limited space available to work with.

Coffin Elementary School

Lighting

Description

The Coffin Elementary School is served by a variety of lensed, high-bay and bare strip fixtures; lens troffers in the corridors, surface wraps in the classrooms, pendant wraps in the Cafeteria and Kitchen, high-bay in the Gymnasium, and bare strips in storage rooms. The majority have recently been upgraded to T8 lamps and electronic ballasts. No automatic controls for interior lighting fixtures were observed except for the Gymnasium where there are sensors on each fixture.

Typical Lighting Fixtures

Lens Troffers (in Corridors)

Surface Wraps (in Classrooms)

Coffin Elementary School

Pendant Wraps
(Cafeteria)

High-bay
(Gymnasium)

Coffin Elementary School

Pendant Wraps
(Kitchen)

Bare Strips (w/reflector)
(In Kitchen Storage)

Analysis

The existing lighting fixtures throughout the facility have recently been upgraded, are in relatively good condition and appear to provide adequate illumination. However, most spaces do not have automatic controls. Adding occupancy sensor controls should lead to energy savings. Most day lighting opportunities have been eliminated by running ductwork in front of the high windows.

Recommendations

Automatic controls should be added to provide manual ON and automatic OFF function. This is required by the current state energy code (2009 IECC).

Coffin Elementary School

Emergency Lighting

Description

The Coffin Elementary School is served with self-contained (each unit has its own battery) exit signs and emergency life safety lighting throughout the building. Many of the exit signs do not appear to be working under normal conditions.

Typical self-contained exit sign (ON??)

Self-contained exit sign (appears to be ON)

Coffin Elementary School

Typical emergency light and non-illuminated exit sign

Analysis

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. Some areas of paths of egress are not properly marked (exit signs) and do not appear to be sufficiently covered with emergency fixtures to provide an average of 1 fc during a power outage.

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 and exit signs should be added so that all paths of egress are properly marked and illuminated.

Power Outlets

Description

There are wall mounted receptacles located throughout the school. It appears that in the 1980s an insulated ground wire was added to ground these receptacles to cold water pipes. Original outlets are located at the end walls of each classroom and additional outlets have been added, probably to serve specific loads. No exterior outlets were observed in the site survey.

Coffin Elementary School

Quad Receptacle added to serve projector

Surface receptacle with wiremold serving adjacent receptacle

Analysis

Additional receptacles are required throughout the school to provide service where needed. In many locations circuits have been extended with surface wiring to provide service for specific equipment. Exterior receptacles outlets should be added as needed to provide service for maintenance purposes. Receptacles should be added in locations as necessary to reduce or eliminate the need for extension cords.

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.

Coffin Elementary School

Fire Alarm

Description

The fire alarm control panel is a Simplex 4005 and is located in the Main Office; this system is still supported by the Manufacturer. The 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 (spacing - 60' +/- O.C.) and heat detectors are installed in all classrooms (sloping ceiling in center of rooms). There are pull stations located at all egress doors. Audio/visual devices are located in all corridors and toilets. There are no audio/visual devices in the classrooms.

Fire alarm control panel
In Main Office

Fire Alarm System
Dialer

Coffin Elementary School

Typical smoke detector (beyond fourth light)

Typical heat detector in classroom

Coffin Elementary School

Fire alarm cabling susceptible to damage

Analysis

The fire alarm control panel appears to be in good condition and is still supported by the Manufacturer. This system should provide adequate service until the entire system can be upgraded. It appears that audio/visual devices have been added to cover some areas but there are still many areas that are not properly covered.

Recommendations

A new addressable fire alarm system should be installed in this school; upgrading will provide years of reliable service. The distribution and exact locations of system components should be updated as required to properly cover all areas and to accommodate any renovations. The focus should be on properly covering all occupied spaces with audio/visual devices. For Educational occupancies it is not necessary to provide smoke and heat detectors throughout, only very specific areas require these devices.

Voice/Data

Description

The phone system is by Avaya and is rack mounted in the Electrical room between Main #3 and Main #4. This system is impeding on the required clear space in front of the electrical equipment. This system appears to be in service able condition. Also, the school network fiber connection to the internet was noted at this location. connection to the internet. There is also a data rack at the opposite end of the room that is floor mounted in front of the electrical main distribution panel, impeding the required clear space in front of that panel. Voice/data outlets appear to have been added throughout the school as needed, with cabling strung and run haphazardly. In locations where multiple PC's are located, wireless hubs have been installed.

Coffin Elementary School

Phone System

Telephone Backboard

Coffin Elementary School

Data Rack (1)

Data Rack (2)

Data Rack (3) – Fiber Optic Cable Service

Coffin Elementary School

Fiber Optic Cable entering building via 12 x 12 box

Wireless hub in computer room

Coffin Elementary School

Typical surface wiring for voice/data cabling. Note cables running through door frame

Voice/data cables run surface on block and through block unprotected

Coffin Elementary School

Voice/data cabling run surface on wall

Voice/data cabling unsupported

Analysis

The existing phone system appears functional, but, the space it occupies is needed for required clearance for electrical equipment. Voice/data cabling is in very poor condition in this building. All cables are run on building surfaces, many without raceways. These cables are very susceptible to damage. Also, it appears that most spaces are lacking sufficient "drops" for telephone and data when compared to modern schools.

Recommendations

A new space should be allocated for voice/data equipment to provide clear space in front of the electrical equipment. The existing cabling system should be replaced with new cables that are properly supported and protected. Connectivity should be upgraded to at least Cat 5e and to Cat 6 if budget allows.

Coffin Elementary School

Intrusion Detection System

Description

No intrusion detection system was noted at this school.

Analysis

N/A

Recommendations

Evaluate requirements for intrusion detection system.

Clock System

Description

The existing system is a Simplex #6351 Master Time Control Center and is located in the main office. This system is reported by Simplex to be functional at this time. A system upgrade to automatically adjust to Daylight Savings Time is available.

Clock control panel in Main Office

Coffin Elementary School

Typical clock (1)

Typical clock (2)

Analysis

The system is in serviceable condition and appears to be working properly at this time.

Recommendations

The existing system could be maintained as is or upgraded to automatically adjust to daylight savings time. (Simplex – Sam Martin $2500.00)

Coffin Elementary School

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. Most classroom speakers are connected with surface wiring from the classroom stations.

Main Console

Typical classroom speaker

Analysis

The existing Intercom system is beyond its useful life. 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 salvage from old consoles.

Coffin Elementary School

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. All system components should be upgraded.

CCTV Surveillance Sys.

Description

The existing camera system head end equipment is rack mounted in front of the electrical main distribution panel in the Electrical Room.

Head-End equipment

Analysis

We were unable to determine if the camera system was functional and it is 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.

Coffin Elementary School

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.