

ELECTRICAL SYSTEMS ASSESSMENT

Salmond School

ELECTRICAL DISTRIBUTION SYSTEM:

- ?? The existing electrical service consists of an overhead primary service originating at a utility pole on Broadway and Washington Street. The primary service enters the building overhead.
- ?? The secondary service consists of a 400A, 120/240V, 1 ϕ , 3 w switch. The 400A switch feeds (2) disconnects. The disconnects were manufactured by Cutler/Hammer and are new.
- ?? The facility is master metered on the secondary side. The meter is located on the building exterior.
- ?? The remote panelboards are generally fed from the (2) disconnects. Most panels are located in storage closets, offices and classrooms. The panel in electric room is new and Cutler Hammer type. Other panels located throughout the building are old and reached the end of their life expectancy.

GENERAL WIRING:

- ?? General building wiring consists of mainly pipe and wire for power, lighting and fire alarm. Security wiring and other low tension wiring is not installed in conduit. Above ceiling wiring ranges from Romex, armored cable a/c, low tension and pipe and wire.

EXTERIOR LIGHTING:

- ?? Exterior lighting is minimal and consists of mainly floods mounted on utility poles.
- ?? There are no building mounted security lights with the exception of an occasional fixture at entrance doors.

INTERIOR LIGHTING:

- ?? Interior lighting consists mainly of continuous rows of 1' x 4' (2) lamp fluorescent lensed wraparound fixtures in corridors and classrooms. Fixtures are generally locally switched. These are retro fitted with T8 lamps some of the lenses are cracked and yellowed..
- ?? Bare lamp strip fixtures are used in the kitchen.
- ?? Incandescent lamps are still in use in the electric room, kitchen storage and closets.

EMERGENCY LIGHTING SYSTEM:

- ?? The existing emergency lighting system is via an emergency battery packs and exit lights. These units are newly installed and are code compliant.

FIRE ALARM SYSTEM:

- ?? The fire alarm system is a Gamewell Zans 400 system. This system is new.
- ?? Manual pull stations and horn/strobes are new and up to code.
- ?? A knox box (key box) is located outside the main entrance.
- ?? Ceiling smoke and heat detectors were observed.
- ?? Fire alarm wiring in general appears to be in EMT (conduit).
- ?? Magnetic door holders were not observed.
- ?? Duct smoke detectors were not observed.

SECURITY SYSTEM:

- ?? The security system consists mainly of motion detectors in corridors
- ?? Magnetic door contacts exist at frequently used exterior doors.
- ?? The security control panel is located in the electric room lower level.

GENERAL POWER:

- ?? Receptacles are minimally located throughout the facility and generally flush mounted and surface mounted in pipe.
- ?? A typical classroom consists of (2) duplex receptacles, (1) at the teaching wall and (1) at the opposite wall and surface mounted.

GENERAL ASSESSMENT:

- ?? Except for the service and fire alarm, most of the electrical systems are older and are generally in fair to poor condition. These systems, although generally functioning, have run their course and range from obsolete to approximating the end of their useful life span. We recommend the replacement of all systems.

RECOMMENDATIONS

ELECTRICAL DISTRIBUTION SYSTEM:

- ?? The existing service is rated at 400 amperes at 120/208 V, 3 ϕ , 4 wire or 96 kva total. Based on 61,000 s.f., 6.0 watts per s.f. are available.
- ?? Today's school, with heavy computer usage and depending on how much space becomes air conditioned, generally would be sized for 10 watts/s.f. demand.
- ?? This school would probably benefit from a 277/480 V, 3 ϕ , 4 wire service.

GENERAL WIRING:

- ?? The existing wiring although generally in pipe would not be suitable for reuse.
- ?? We recommend all new wiring and conduits and complete removal of the existing system wiring. The new wiring method would be pipe and wire with metal clad, MC cable, where concealed. A system of surface raceways equal to wiremold is recommended when exposed in finished spaces.

INTERIOR LIGHTING SYSTEM:

- ?? The existing lighting is in general at the end of its life.
- ?? We recommend suspended predominantly indirect luminaires in classrooms with electronic ballasts and Octron T8 fluorescent lamps.
- ?? 2' x 4' prismatic lensed fixtures in corridors and other utility spaces.
- ?? 2' x 4' parabolic fixtures with low glare louvers in offices.
- ?? Suspended Metal Halide high bays with prismatic acrylic reflectors for the Gym with quartz restrike as required.
- ?? Suspended Metal Halide luminaires equal to Holophane for the Cafetorium. Also a supplemental layer of incandescent suspended dimmable cylinders during performances and also theatrical fixtures for the platform/stage.

EXTERIOR LIGHTING SYSTEM:

- ?? New pole mounted cut-off luminaires of the Metal Halide source are recommended for parking areas and roadways/walkways. Building mounted perimeter fixtures should also be installed for security and illuminating entrances, etc..

EMERGENCY SYSTEM AND EXIT SIGNS:

- ?? The existing generator and emergency systems are in compliance with today's codes. No upgrade is required.

FIRE ALARM SYSTEM:

- ?? The existing system is new and in compliance with today's codes.

SECURITY SYSTEM:

- ?? An addressable perimeter security system with a control panel with dialer and battery backup and keypads strategically located throughout the facility should be provided. All exterior doors should be monitored. All grade level rooms with windows and corridors would have motion sensors. System should interface with lighting system to automatically turn on corridor lights upon alarm.

SOUND/PAGING, TELEPHONE/DATA, CLOCK AND CATV:

- ?? Refer to technology consultants report.

CLOSED CIRCUIT TV (CCTV) SYSTEM:

- ?? The closed circuit TV system should consist of a matrix switcher with inputs as required. Cameras should be provided on interior at main entrances and exterior as required within weatherproof enclosures. The head end equipment should consist of monitors and digital video recorders.

GENERAL POWER:

- ?? A system of computer grade panelboards with surge attenuators should be provided for the technology and other sensitive systems.
- ?? Receptacles will be provided to adequately support a modern day school facility.