PENN FOREST ELEMENTARY SCHOOL

ARCHITECTURAL

Penn Forest Elementary School was originally built in 1971-1972. Each portion of the building loosely complies with the accessibility requirements of the time in which the work was performed; however, most spaces do not comply with current standards. The building is generally one story, with a mechanical room located next to the cafeteria and a mechanical room at each classroom quadrant. The main entrance is under the mansard and porch soffit. The main entrance was renovated in 2014 by the RCPS. The renovation consisted of building out the vestibule under the porch soffit with aluminum storefront. The porch soffit becomes the ceiling of the new secure vestibule. The renovation was provided to allow for building accessibility and security controlled by the Administration Office. Total facility square footage is 65,047 SF.

Exterior Finishes

Exterior Cladding:

Exterior wall material is brick, and metal mansard.

Other exterior materials include metal gravel stops and flashings.

Roof:

The building roof may have been re-roofed during the past several years. The building has a flat black EPDM membrane roof that has minimal slope and roof drains. Several roof drains have had strainer baskets removed. These should be replaced as quickly as possible to avoid accumulation of debris in leader piping. Sealants along roof edges should be regularly monitored and replaced as needed. Several joints have experience sealant degradation and cracking and should be resealed.

Windows:

Windows are hollow metal frame with single pane glazing, likely original to the building. Original glazing is not energy efficient and it allows significant air infiltration. The Main Entrance Vestibule is constructed with aluminum storefront with insulated glazing utilizing the existing entrance porch.

Exterior Doors:

Exterior doors in the original building are hollow metal doors and frames, likely original to the building. Exterior doors at the main entrance consist of Aluminum door and frame. The hollow metal Doors and frame are in good-poor condition. Door hardware is in good-poor condition, and has mostly been replaced since the buildings were built.

Doors and door hardware replacement is recommended during renovations since a large amount of the existing hardware do not meet the latest handicap accessible code requirements.

Interior Finishes, Fixtures & Equipment

(See assessment tabulations for interior finish conditions).

Vinyl Composition Tile, Quarry Tile (Kitchen) and Terrazzo are the predominant floor finishes at Penn Forest Elementary. Other floor finishes include carpet, painted and unpainted concrete, and wood flooring. Carpet is present in limited locations. (Main Office, Library/Media Center and the Interior amphitheatre style space)

Interior wall finishes are generally painted concrete block, and brick veneer. Walls would be patched and painted during renovations.

Window treatments are typically vinyl roller shades. Most are in poor-good condition and should be replaced during renovations.

Ceilings are generally 2'x4' suspended acoustical tile (lay-in) with some gypsum wall board ceilings. The gymnasium ceiling consists of painted exposed structure and deck. New suspended acoustical tile ceilings are recommended as part of renovations. The acoustical tile ceilings help reduce noise and hide new HVAC, electrical, and data work.

Most interior doors are wood and are original to their respective construction periods. Most doors exhibit wear and do not have handicap accessible door hardware. All interior doors and door hardware would be replaced during a substantial renovation. Some door frames would be replaced to achieve handicap accessibility, or because of reconfigured spaces. Other door frames may be salvaged, patched, and painted. All existing Wire glass would be replaced with safety glazing during substantial renovation.

Marker boards, chalk boards and tack boards are present in classrooms. Most are in poor condition. All would be replaced during renovations.

Built-in wooden storage units are present in the original building. All are in poor-good condition and many would be displaced during renovations because of the need to enlarge and reconfigure spaces.

Casework (cabinets) is generally in good-poor condition. Most casework is not handicap accessible. Student storage is accomplished by hooks on the classroom walls. This provides no separation of belongings. General casework storage is not sufficient in most classrooms. Classrooms would benefit from new casework with individual student cubbies, sink with bubbler, and storage to accommodate large format paper, books, manipulatives, etc. All casework should be replaced during any substantial renovation.

Loose furnishings are a mixture of tables and desks of varying ages. The flexibility required of 21st Century classrooms is enabled by flexible, movable furnishings. All furniture and equipment should be replaced during a substantial renovation to provide a uniform appearance, enhance student comfort, and to provide flexibility. Furnishings, fixtures, and equipment design should occur in tandem with building design to achieve proper coordination between building utilities and furniture types and locations. This includes library shelving and furnishings.

Kitchen (food service) equipment is a mixture of equipment original to the building and equipment purchased as the building aged. To ensure maximum efficiency in terms of function and energy, new food service equipment should be provided during a substantial renovation. Significant energy savings can be achieved through more efficient kitchen hoods with energy recovery capabilities, and other equipment. The kitchen should be enlarged and rearranged to increase efficiency of function and serving capacity.

Custodial storage shelving is mostly original to the building. Custodial storage is scattered throughout the building. Consolidated, larger custodial storage is important for efficiency and proper space utilization. Smaller custodial closets throughout the building are also important to efficient custodial function. New metal shelving would be provided in consolidated custodial storage spaces during renovations. Proper floor sink size and locations would be provided during renovations to sufficiently accommodate modern floor machines.

General school storage is scattered throughout the building and consumes spaces intended for other functions. The addition of casework in classrooms will alleviate some of this. But, as part of renovation plans, general school storage should be planned in several strategic areas serving administration, faculty, and staff. Metal shelving units would be provided in dedicated general storage rooms.

Accessibility

At several exterior doors, there are steps up into the building, which are not handicap accessible. Paved play areas, play fields, and play equipment are not handicap accessible. As part of any substantial renovation, all elements of the site and building entrances would be renovated to be handicap accessible. Obtaining handicap accessibility to areas behind the school will be difficult because of the grade that must be negotiated by ramps and walks. Handicap accessible play areas would be required as part of any substantial renovation and addition project.

Within the building, few components are handicap accessible simply because of their age. All restrooms are not handicap accessible to the latest ADA standard and will require substantial renovations to achieve full handicap accessibility. The stage is currently not handicap accessible without special accommodation. Some doors lack clearances required to be handicap accessible. Room signage would need to be upgraded to meet the latest handicap accessible code requirements. Handicap

accessibility throughout the building would be achieved during any substantial renovation.

Safety and Security

This section addresses passive security measures, such as how entrances function, visibility within the building, etc.

Recent renovation work, undertaken by RCPS in 2014, involved the installation of secure entry vestibule at all schools. The vestibule at Penn Forest Elementary School provides visibility from the office and control over the main entry. Door position sensors and locks are provided at all other exterior doors. Entry at these points is limited to staff members with appropriate keys/cards. Due to the nature of the school, the building is reasonably compartmentalized. Sight lines and distance are reasonably long in most areas of the building.

The administration area is the first line of defense in passive school security. Visibility to the exterior and interior of the building are critical to early threat identification and intervention. The administration area at Penn Forest Elementary School has almost no visibility to the interior and exterior of the building. A more transparent administration area should be considered as part of renovations and additions.

End of Penn Forest Elementary School Architectural Narrative

PLUMBING/FIRE PROTECTION

Plumbing Fixtures:

Water Closets: Water closets observed were floor mounted vitreous china with manual type flush valves. There were no water closets that would meet today's ADA requirements. The condition of the water closets ranged from fair to good.

Urinals: Urinals observed were wall mounted vitreous china with manual type flush valves. There were no ADA compliant urinals observed. The condition of the urinals and flush valves ranged from fair to good.

Lavatories: Lavatories observed were pedestal type or wall hung vitreous china with manual type faucets. There were a couple of lavatories that were mounted to be ADA compliant. Most lavatories observed did have hot water supply and ASSE 1970 mixing valves that are required by today's codes. The condition of lavatories and faucets ranged from fair to good.

Sinks: Classroom sinks observed were porcelain with gooseneck faucets and bubblers. The condition of the sinks and fittings was fair.

Showers: No showers were observed.

Laboratory Fixtures: No laboratory fixtures observed.

Emergency Fixtures: No emergency fixtures observed.

Electric Water Coolers: There were several wall hung water coolers noted, there were some ADA compliant high/low models. The condition of the water coolers ranged from good to very good.

Water Heaters: Domestic hot water is generated through two 120 gallon Rudd/Rheem model ES120-18-G electric-30 KW storage type water heaters. Hot water is mixed through a mixing valve for school use, kitchen hot water is not mixed. System has a recirculation system with return pump near the water heaters.

Piping:

Water: Copper
Sanitary Piping: Cast iron
Storm Piping: Cast iron
Gas Piping: Black steel

Pipe Insulation:

Hot water, cold water, hot water return and horizontal storm drain piping is insulated with fiberglass insulation.

Water Entrance:

The building is served by a 2 1/2" cold water line that is assumed to be from a municipal system. There is no RPZ type backflow preventer on the incoming service. Pressure fluctuates between 30 and 50 psi.

Kitchen:

The Kitchen is the old type with direct connection waste and no floor sinks. No grease interceptor could be found, and kitchen personal did not know of one. Kitchen is total electric with no gas cooking equipment.

Sprinklers:

Building is not sprinkled.

Recommendations:

This school appears to be in good working order considering its age; however, it may require some renovations and ADA updates in the future to bring it up to code.

End of Penn Forest Elementary School Plumbing/Fire Protection Narrative

MECHANICAL (HVAC)

Heating:

There were five condensing gas fired boilers that provide heat to the building through a hot water circulation system. Hot water is circulated to the building's heating coils with one base mounted pump. Coils are located in air handler units. The boilers and pumps were installed sometime in 2015 and seemed to be in good, working condition. The boilers and pumps are 1-year-old and are expected to have useful life expectancies of 15 years and 20 years respectively. The air handlers were manufactured in 1996 per serial numbers. They have a useful life expectancy of 20 years.

Ventilation:

Ventilation is provided to the building by the rooftop air handler unit and rooftop louvered penthouse ventilators. The dishwasher hood and large kitchen hood have dedicated exhaust fans on the roof.

Air Conditioning:

There is one air-cooled chiller that provides cooling to the building through a chilled water circulation system. Chilled water is circulated to the buildings cooling coils with two base mounted pumps. The chiller and pumps are believed to be manufactured in 1984 per its serial number. The chiller and pumps are 32 years old. Coils are located in the air handler units. These air handler units were manufactured in 1996 per their serial numbers and have an expected useful life expectancy of 20 years. The lone rooftop unit was manufactured in 1971.

Piping:

There is chilled water and hot water piping, black steel, insulated. The piping ranges in age. In the mechanical room the majority of the piping needs new insulation because the current insulation is torn and in bad condition.

Controls:

The controls were a combination of pneumatic and the digital type (DDC) by Johnson Controls.

Recommendations:

Maintenance has done a good job. However, more attention needs to be on the shed containing the new boilers. Although the boilers are in great condition, the piping in that room was not insulated; and therefore, the condensation is puddling in the floor and causing rust to form on the hot water pump. The flange connecting to the hot water pump is leaking very badly. The room needs immediate attention before permanent and

costly damage occurs. Based on conversations with the school staff, there seems to be temperature control problems with the building. Sporadic temperature swings have been reported. It is recommended that zoning and controls be examined when the air handler units are replaced.

End of Penn Forest Elementary School Mechanical Narrative

ELECTRICAL

Main Switch Gear:

Main Switchboard: The main switchboard is a 1200 Amp, 3 phase, 4 wire, 480Y/277 volt GE AV-Line, service entrance rated switchboard. The existing switchboard is original to the building from 1971.

Recommendation: In the event of a substantial renovation or addition, replace existing switchboard and expand as necessary.

Transformers:

Transformers: The majority of the transformers are original Sorgel 480/277V to 208/120V. Various brands of 480V to 208V transformers have been added throughout the building's lifespan. They are currently all in good working condition; however, over time transformers become less energy efficient and some have exceeded their expected useful life.

Recommendation: If renovations and additions are pursued, maintain the existing transformers, if possible.

Panelboards:

Distribution and Branch Circuit Panelboards: The majority of panelboards are original GE. Various brands of panels have been added as well for mechanical updates throughout the building's lifespan. Most of the panels have no space or spares available and have exceeded their expected useful life. The remaining panels are nearing their expected useful life.

Recommendation: If renovations and additions occur, replace the panelboards and locate them in areas to minimize student access and to meet National Electrical Code working clearances. Expand as necessary to accommodate new or modified spaces.

Cabling:

Cabling: Most of the building wiring is original. Some new wiring in raceway has been added for the addition of receptacles. Most of the wiring is past its rated useful life and should be replaced.

Recommendation: During a renovation some new wiring may be salvageable, but because of the tedious process of identifying and preserving this wire, it is recommended that all wiring be replaced during renovations.

Conduit/Raceway:

Conduit/Raceway: The conduit and raceway above ceiling is still in good condition. Surface raceway and conduit has been used throughout the building for any new receptacles, fire alarm, and all data to classrooms.

Recommendation: All surface raceway should be evaluated regularly and securely reattached to the wall if it becomes loose. All raceway would be replaced if the building were renovated. Conduit would be salvaged where practical.

Light Fixtures:

Light Fixtures: The light fixtures consist of primarily 2x4 flat lens fixtures with T8 lamps, various 1x4 fixtures with T8 lamps, fluorescent can lighting, and some decorative fluorescent pendants. The T8 lamps are current technology, and meet the current needs of the school. Various emergency wall pack light fixtures are also utilized, many of which have exceeded their expected useful life. Lamps are likely changed as lamps burn out; however, many of the ballasts and optics have likely not been changed and have exceeded their useful life.

Recommendation: To accommodate a new addition or renovation, provide a new lighting design. Consider LED fixtures where practical.

Lighting Controls:

Lighting Controls: Lighting controls throughout the building consist of toggle switches controlling fixtures within an area, most classrooms have zoned switching. Corridor lighting is controlled through visual pushbutton switchbank in front office.

Recommendation: In the event of a renovation or addition, add automatic lighting controls to each room to comply with building energy codes.

Public Address System:

Public Address System: The public address system is a Valcom headend system with speakers located throughout the school. Each classroom has a PA speaker, clock, and an emergency push-to-talk switch or button. Teachers and staff use the Cisco phone system to call in to the PA for most communications and announcements. The current PA system has reached the end of its expected life and is in need of replacement.

Recommendation: The system headend is in need of replacement to utilize newer technology as typical for other schools in the county. The entire PA system would be replaced if the building were renovated. Speakers could possibly be reused if a similar building layout is utilized.

Security System:

Security System: Security system consists of electronic locks and motion sensors at exterior doors, keypads, and AI phone/Lobbyguard system at entrance. The current system meets the needs of the school and utilizes current technology.

Recommendation: Upgrade, expand, and reconfigure zones of the system as necessary if renovations and additions are pursued.

Camera System:

Camera System: A building wide IP based camera system is installed. It is current technology that meets the current needs of the school.

Recommendation: In renovations and additions, provide additional cameras and Digital video recorders as required for additional areas with desired coverage.

Data System:

Data System: The Data system consists of newer Category 6 and 5e cable. The building is equipped with wireless internet through Cisco access points throughout. Teacher and student computers are provided with access to a local area network.

Recommendation: The current system meets the needs of the building and switches and patch panels could be reused in any renovation or new construction

Fire Alarm System:

Fire Alarm System: The fire alarm control panel is a Simplex 4010 fire alarm system that was updated to the building with the front entrance renovation. The current system consists of limited area manual pull stations, smoke detectors, and horn/strobe alarms. However, there are no alarm devices located in classrooms. Devices throughout the building consist of various manufacturers and have been added or replaced during the buildings lifespan; most have reached or exceeded their expected useful life.

Recommendation: If renovations and additions are pursued, reuse fire alarm control panel and replace devices. Expand existing fire alarm system with audible and visual notification devices throughout the school and in classrooms. Reconfigure the existing system as necessary for renovations.

Generator:

Generator: No generator is installed to serve this building. Emergency lighting is provided by emergency battery units in the corridors, large rooms, and at exits.

Recommendation: For any renovations or addition, a new generator should be considered, sized to provide power for life safety features and other equipment that the school would like to operate.

Site Lighting:

Site Lighting: The site lighting consists of wooden pole mounted flood lights for parking areas, wall packs around the building, short pole sidewalk light fixtures, and canopy lighting at exterior doors. The fixtures appear to be original to the building. Lamps are likely changed as lamps burn out; however, many of the ballasts and optics have likely not been changed and have exceeded their expected useful life. The site appears to be well covered with fixtures.

Recommendation: To accommodate a new addition or renovations, replace existing lighting fixtures around exit doors and areas of egress. Connect these lights to an emergency circuit. Provide new general site lighting to maximize energy efficiency and minimize light contamination on neighboring properties and to the sky.

Classroom Media (TV, Projector, ETC):

Classroom Media: Classroom media typically consists of an Activeboard with attached projector, a teacher computer, printer, and a wall mounted phone. Laptop and iPad carts are also in use.

Recommendation: Periodic upgrade of equipment will maintain a strong inventory of new equipment and keep students aware of current technology.

Phone System:

Phone System: The phone system consists of a new Cisco IP phone system. Phones are provided in all offices and classrooms as required to access outside lines. Push-to-talk buttons with the PA system are included in all classrooms, but the phone system is used for communication with the front office. The system is operational and meets the current needs of the school.

Recommendation: It is possible to retain and expand the existing phone system through additions and renovations.

End of Penn Forest Elementary School Electrical Narrative

CIVIL

Traffic Circulation

Buses: School is served by 9 regular buses, 4 special needs buses, and daycare vans. There is an area at the front of the school that is considered the "bus area", but it is open on both ends to parking lots and has parking along the west edge.

Morning: Buses enter and line up to drop off at the front of the school.

Afternoon: Buses enter the bus lanes and park in a diagonal fashion to load students. Once students are loaded, all buses leave simultaneously.

Cars: Adjacent roundabout works well to manage incoming and outgoing movements.

Morning: Cars enter the site from the roundabout and drop students off at the north parking lot area. There is some conflict between buses exiting the bus drop off area and cars entering the site. Occasionally cars will back up into roundabout, but it is rare.

Afternoon: Cars enter the site from the entrance south of the roundabout and stack up in the south parking lot near the service area and wait while buses load students. After the buses have left, cars enter the bus lanes, and proceed around to the north parking lot to pick up their students.

Parking: 119 striped parking spaces are provided with 9 designated ADA spaces. Day to day parking is adequate for faculty / staff / visitors. Parking quantities meet Roanoke County requirements and State recommendations. Event parking is an issue with parents parking wherever possible. The library on the other side of the roundabout is occasionally used as overflow parking.

Service: The service area on the south side of the school has adequate maneuvering area for all deliveries.

Fire Access: Fire apparatus have adequate access around the building.

Separation: Separation is poor with the bus loop located in the middle of two parking areas. Although poor, staff indicates that there are minimal issues.

Adjacent Roadways: Merriman Road is a heavily traveled roadway, but the adjacent roundabout which is utilized for many entering and exiting movements works well and keeps traffic flowing. Sight distance is good.

Pedestrian: Generally there are not many pedestrians who access the school.

ADA Accessibility

Parking: There are 5 spaces at the front parking lot and 4 spaces at the north parking lot designated as ADA parking with 1 designated as van accessible.

Signage: Signage is faded and some is non-compliant. There are no signs in the north parking lot.

Recommendation: Replace existing signage with ADA compliant, including van accessible and fine indications. Provide signage where there is none.

Ramps: Curb ramps are located well, but in poor condition.

Recommendation: Replace curb ramps.

Access to all areas: There is ADA access to all areas and activities on site.

Parking Areas, Driveways, and Sidewalks

Asphalt Pavement: Asphalt is in poor condition.

Recommendation: Replace all asphalt pavement.

Concrete Walks: Older concrete around building is poor with cracking and spalling. Newer concrete at play area is in good condition.

Recommendation: Replace sections as necessary when cracking and deterioration become hazardous.

Stairs, Ramps, and Railings: Curb ramps are deteriorated and in poor condition. Paint on railing at loading dock is faded. Railings do not meet current code.

Recommendation: Remove and replace curb ramps. Replace existing railings with code compliant railings.

Concrete Curb and Gutter: Concrete is old and in poor condition with cracking and deterioration.

Recommendation: Replace sections as necessary when cracking and deterioration become hazardous.

Concrete / Brick Pavers: Small commemorative paver area is in good condition.

Guardrail, Parking Bumpers, and Miscellaneous: Some parking bumpers are deteriorated and cracked.

Recommendation: Replace deteriorated parking bumpers.

Fire Lane: Paint on curbs and asphalt is faded. Some fire lane signs are faded and illegible. Fire lane signs are not turned toward oncoming traffic.

Recommendation: Re-paint curbs and asphalt at fire lanes. Replace fire lane signs. Ensure that fire lane signs are turned toward oncoming traffic.

Utilities

Fire Lines and Hydrants: Poor fire hydrant coverage with no spacing. The closest fire hydrant is across the street. No paved fire lane around building, but fire truck access is present.

Recommendation: Consider planning for adding a hydrant for fire protection coverage.

Domestic Water System: The water system is in fair condition. Staff indicated no pressure or water discoloration issues. Water is provided to school via tap into public water main. The water meter is located on the loading dock service area of the building.

Sewer System: The sanitary sewer system consists of concrete manholes and pipes in fair condition. System is functional with proper invert shaping. Staff indicated no issues with stoppages, but observations show signs of stagnant waste.

Recommendation: Sewer system should be flushed to clear and prevent blockages.

Natural Gas System: Gas meter is located at the loading dock service area of the school and not located in a vehicular traffic area. The meter is in fair condition and functional, but shows signs of rust and deterioration.

Recommendation: Contact gas company to inspect condition of meter.

Electric: Electric service provided via overhead poles to school property. Service is taken underground to a transformer at the loading dock service area of the school and then into the building. The meter is mounted on the building and the transformer is safe from vehicular traffic.

Site Lighting: Large lights illuminate the parking lots and building mounted lights illuminate sidewalks and entrances. Lighting is minimal for safety and security.

Grading and Drainage

Storm Water System: Roof drains and downspouts are piped underground into the storm water network and carried off site. Majority of runoff is sheet flow to ditches and conveyed offsite. Storm water inlets, manholes and pipes are in fair condition, but full of sediment.

Recommendation: Underground piping system should be flushed and pipe outlets should be cleaned out and inspected for sediment.

Slopes, Ponding, and other Drainage Issues: Minor erosion due to sheet flow on parking lot becoming concentrated before reaching ditches.

Site Features

Vegetative Landscaping: Vegetation, including trees and shrubs, are healthy.

Recommendation: Planter beds need cleaning and mulch. Continue general maintenance of pruning and mulching.

Lawns: Excellent condition with no bare areas noted.

Fencing and Gates: Limited site fencing. 8' chain link fencing to delineate playground from Roanoke County Parks and Recreation facilities is in excellent condition.

Signage: ADA signage is not code compliant. Many signs are fading and damaged. No directional signage provided. Posts are aging and leaning due to lack of foundations.

Recommendation: Repair or replace damaged or leaning signs. Future signs should utilize 2"x2" square posts in sleeves with concrete foundations. Provide directional signage.

Flagpoles: Poles are in fair condition. Age is showing.

Recommendation: Monitor condition to replace flag poles in future.

Site Furnishings: New metal benches in front of school. Benches at play areas are in fair condition.

Recommendation: Monitor condition of benches at play areas and plan for replacement.

Accessory Structures: Picnic shelter by playground in fair condition. Two storage structures with wood framing and vinyl siding in fair condition.

Recommendation: Monitor condition of buildings. Repair or replace as necessary.

Play Areas and Physical Education

Play / PE Areas (General):

Playgrounds / Stationary Play Equipment: Very large play ground with several pieces of equipment. Equipment is in good condition. Mulch is in fair to good condition dependent upon area.

Recommendation: Due to heavy use of the playground, mulch should be monitored for frequent replacement. In addition, consideration should be given to place a border around the large equipment play area to help keep mulch in the play area. Currently, mulch is not contained and creates additional maintenance issues by spreading onto the adjacent sidewalk and lawn areas.

Paved Play Areas: Two paved play areas are provided and are generally in fair condition. The concrete play area shows significant aging. The second area is asphalt with minor cracking. Basketball goals at the second play area are damaged.

Recommendation: Repair or replace basketball goals.

Play / PE Fields: No dedicated play area on school property. However, immediately adjacent are Roanoke County Parks and Recreation facilities for use by the school.

Recommendation: None. There is no room on the property to provide exclusive school use.

End of Penn Forest Elementary School Civil Narrative

OWPR
ARCHITECTS AND ENGINEERS

Notes

Project Name: RCPS Facilities Assessment	Comm. #: 1637

Subject: Penn Forest Elementary School	Total Pages:
Date: 9/22/2016	Location: Roanoke, Virginia
Copies To:	Report Prepared By: JFH

General:

The Facility was constructed between 1971 – 1972. The building is a single Level Brick, structure with a Metal Standing seam Mansard. The building has a flat roof with a 60 mil EPDM roof membrane. The roof appears to be in pretty good shape. The building is not sprinkled but is heated and air conditioned. The facility is separated into classroom pods and each pod has its own HVAC system. The building has been equipped with a new Aluminum Storefront entrance that provides better security and accessibility. The existing building toilet facility and signage do not meet today's handicap accessible code standards

Entry Vestibule:

VCT Flooring
Building Gypsum Wallboard soffit
Aluminum Storefront Entrance under existing soffit

Main Office:

Carpeted Flooring
The walls are painted Gypsum Wallboard (GWB).
The ceiling is 24x24 SATC.
The Windows are Aluminum Frames w/insulated glazing
Exterior Door is Aluminum with Insulated Glazing
Interior Doors is Wood with Aluminum Frames

Corridor:

Terrazzo Floor at Corridor Entrance and Pick up with VCT, Vinyl Base
The Walls are Painted CMU and Painted Gypsum Wallboard (GWB).
The ceiling Suspended Acoustic Tile Ceiling (SATC) need replacing

Mechanical Room:

CMU Walls
Concrete floors
Exposed Ceiling Structure

Roof:

EPDM (60 mil) Membrane (Roof looks good)
Access off corridor new Mechanical Room

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Notes

Kitchen:
- Quarry Tile flooring
- Painted CMU Walls
- Glazed Tile
- Perforated Ceiling

Kitchen Locker Room:
- Ceramic Tile Flooring
- Floor Mounted Flush Valve Water Closet
- Wall Mounted Lavatory
- CMU walls

Kitchen Janitor:
- Concrete Floor
- CMU Walls
- Exposed Ceiling Structure
- Washer and Dryer and Janitor Sink

Cafeteria:
- Terrazzo flooring (Cracked)
- Painted CMU Walls
- Suspended Acoustic Tile Ceiling
- Wood Stage Floor with Folding Partition at Stage (Music Room)
- HM Frames, Windows and Doors
- High/Low drinking fountain

Library:
- Painted CMU Walls and Painted GWB Walls
- Carpeted Flooring
- 24x48 SATC
- Wood Furniture
- HM Frame

Data:
- Painted CMU walls
- VCT Flooring
- 24x48 SATC

Gymnasium:
- Parquet Wood Flooring
- Painted CMU walls
- Exposed Ceiling Structure
- Wood Doors and HM Frames
- No Gym Window

Boys Toilet Room Outside of Gymnasium:
- Floor Mounted Water Closet with Flush Valve
- Ceramic Tile Flooring
- Painted CMU Walls
- Suspended Acoustic Tile Ceiling

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Notes

Corridor Toilet:

Floor Mounted Water Closet with flush Valve
Pedestal sink
SATC
Painted CMU Walls
Ceramic tile Flooring

Classroom:

VCT Flooring and Vinyl Base
Painted CMU Walls and GWB
HM Doors and Frames
Chalk Board, Smart Board, Bulletin Board

Conclusion:

The building is in very good shape and the finishes appear to be in good shape as well. The toilet rooms do not meet handicap accessibility and must be updated to the present code requirements. The existing Hollow Metal Frame Windows, Doors and Door frames need fresh paint. All wood doors need to be refinished and new hardware upgraded to Handicap Accessibility standards. All spaces need signage throughout the existing building. The new signage must meet handicap accessibility requirements.
All existing windows and exterior doors need new seals and caulk.

Penn Forest Elementary School Architectural Condition Assessment

Reference Building Owners and Managers Association International (BOMA)

Preventative Maintenance Guidebook

System/Components	Condition Category	Expected Useful Life	Current Age	Expected Life Remaining	Notes
Architectural					
Brick	5	Life	44 years	Life	
Metal	2	30 years	44 years	0 years	
CMU walls	5	Life	44 years	Life	
Wood trim	3	15 years	44 years	0 years	
Interior doors	2	20 years	44 years	0 years	
Exterior doors	3	50 years	44 years	6 years	
Door hardware	2	7 years	44 years	0 years	
Electronic door hardware, Security Entrance	5	5 years	2 years	3 years	Security Entrance completed 2014
Terrazzo	4	50 years	44 years	6 years	
Carpet	5	5 years	2 years	3 years	
Vinyl floor tile	2	12 years	44 years	0 years	
Ceramic/Porcelain floor tile	3	50 years	44 years	6 years	
Quarry floor tile	3	50 years	44 years	6 years	
Wood gym floor	2	10 years	44 years	0 years	Repair, Refinish or replace the floor
Other wood floors	2	10 years	44 years	0 years	Repair, Refinish or replace the floor
Exposed concrete floors	5	50 years	44 years	6 years	
Exterior windows	2	30 years	44 years	0 years	
Interior windows	2	30 years	44 years	0 years	
Roof (Including flashings, coping, etc.)	4	20 years	N/A	N/A	in good shape, needs maintenance
Suspended acoustical tile ceilings (lay-in)	2	25 years	44 years	0 years	
Plaster/GWB ceilings	2	30 years	44 years	0 years	
Sound control panels (wall and ceiling)	4	N/A	N/A	N/A	
Ceiling/exposed structure finish (paint)	2	5 years	44 years	0 years	Need painting
Interior wall finishes (paint)	2	5 years	44 years	0 years	Need painting
Marker boards, chalk boards, tack boards, projection screens	5	N/A	N/A	N/A	
Casework	3	N/A	N/A	N/A	
Window treatments	5	N/A	N/A	N/A	
Toilet partitions	2	20 years	44 years	0 years	
Toilet accessories	2	N/A	44 years	N/A	Replace and required
Exterior railing, Interior railings	3	30 years	44 years	0 years	
School signage	2	25 years	44 years	N/A	Need to renovate to meet ICC Ansi A117.1-2009
ADA code Compliant	2	N/A	N/A	N/A	Need to renovate to meet ICC Ansi A117.1-2009
Condition Categories					
1 Immediate replacement required, life saftey concern					
2 System has reached it's useful life					
3 Major repair or modifications required, useful life remaining					
4 Minor repair required					
5 General maintenance required					

Penn Forest Elementary School Mechanical Plumbing Condition Assessment

Reference Building Owners and Managers Association International (BOMA)

Preventative Maintenance Guidebook

System/Components	Condition Category	Expected Useful Life	Current Age	Expected Life Remaining	Notes
Mechanical					
Boiler	5	15 years	1 year	14 years	
Chiller	2	30 years	32 years	2 years	
Mechanical piping	4	30 years	19 years	11 years	
Refrigerant piping	N/A				
Duct	4	30 years	19 years	11 years	
Outdoor air units	N/A				
Terminal units	4	30 years	19 years	11 years	
Package units	2	20 years	19 years	1 year	
Controls	2	20 years	19 years	1 year	
Exhaust fans	4	25 years	19 years	6 years	
Plumbing					
Plumbing fixtures and controls	2	30 years	44 years	0 years	
Floor drains	2	30 years	44 years	0 years	
Water heaters	5	15 years	11 years	4 years	
Pumps	5	15 years	11 years	4 years	
Potable water piping & valves	3	30 years	44 years	0 years	
Sprinkler system	N/A				
Back-flow preventer	N/A				
Service line & meter (size appropriate)	3	30 years	44 years	0 years	
Wall and yard hydrants	2	15 years	44 years	0 years	
Eye wash stations	N/A				
Emergency showers	N/A				
Condition Categories					
1 Immediate replacement required, life saftey concern					
2 System has reached it's useful life					
3 Major repair or modifications required, useful life remaining					
4 Minor repair required					
5 General maintenance required					

Penn Forest Elementary School Electrical Condition Assessment

Reference Building Owners and Managers Association International (BOMA)
Preventative Maintenance Guidebook

System/Components	Average Useful Life	Current Age	Expected Life Remaining	Condition Category	Notes
Electrical					
Main switch gear	40	45	-5	2	
Transformers	30	45	-15	2	
Panelboards	30	45	-15	2	
Panelboards - 1996	30	20	10	5	
Cabling	40	45	-5	2	
Conduit/raceway	40	45	-5	2	
Light fixtures	20	45	-25	2	
Lighting controls	30	45	-15	2	
Public address system	30	45	-15	2	
Security system	10	2	8	5	
Camera system	10	5	5	5	
Data system	15	5	10	5	
Fire alarm system - Control panel	30	2	28	5	
Fire alarm system - Devices	30	45	-15	2	
Site lighting	20	45	-25	2	
Classroom media systems (TV, projector, etc.)	10	5	5	5	
Phone system	10	5	5	5	

Condition Categories

1 Immediate replacement required, life safety concern
2 System has reached it's useful life
3 Major repair or modifications required, useful life remaining
4 Minor repair required
5 General maintenance required

Penn Forest Elementary School Civil Condition Assessment

Reference Building Owners and Managers Association International (BOMA)

Preventative Maintenance Guidebook

System/Components	Condition Category	Expected Useful Life	Current Age	Expected Life Remaining	Notes
Civil					
Asphalt pavement	2	15 years	Unknown	0 years	
Asphalt walks	N/A	N/A	N/A	N/A	
Concrete pavement	N/A	N/A	N/A	N/A	
Concrete walks	2/5	30 years	45 years	0 years	
Stairs	5	30 years	45 years	0 years	
Ramps	2	30 years	45 years	0 years	
Railings	4	15 years	45 years	0 years	
Concrete curb and gutter	2	30 years	45 years	0 years	
Concrete / Brick Pavers	5	30 years	Unknown	Unknown	
Guardrail, Parking Bumpers, Misc.	4	Varies	Unknown	0-5 years	
Fire lane	4	Varies by Material	Unknown	0 years	
Fire lines and hydrants	3	40 years	Unknown	0-5 years	
Domestic Water system	4	40 years	45 years	0 years	
Sewer system	4	40 years	45 years	0 years	
Natural Gas system	4	40 years	45 years	0 years	
Electrical System	5	25 years	45 years	0 years	
Exterior Lighting	3	25 years	45 years	0 years	
Storm water system	4	40 years	45 years	0 years	
Detention / Retention ponds	N/A	N/A	N/A	N/A	
Stormwater Management BMP's	N/A	N/A	N/A	N/A	
Surface drainage and grading	4	N/A	N/A	N/A	
Vegetative landsaping	5	Life	45 years	Varies	
Lawns	5	Life	45 years	Life	
Fencing and gates	5	20 years	Unknown	15+ years	
Signage	4	10 years	Unknown	2 years	
Flagpoles	4	50 years	45 years	5 years	
Site furnishings	5	15 years	Unknown	5+ years	
Awnings / Canopies	N/A	N/A	N/A	N/A	
Site retaining walls	N/A	N/A	N/A	N/A	
Accessory structures	5	50 years	Unknown	10+ years	
Playgrounds	5	10 years	Unknown	8+ years	
Paved play areas	5	20 years	Unknown	5+ years	
Play / PE fields	N/A	Life	Unknown	Life	
Condition Categories					
1 Immediate replacement required, life saftey concern					
2 System has reached it's useful life					
3 Major repair or modifications required, useful life remaining					
4 Minor repair required					
5 General maintenance required					

Budgetary Cost Estimate

Estimate Date 12/7/2016
Facility Name **Penn Forest Elementary School**
Client Name Roanoke County Schools

OWPR ARCHITECTS AND ENGINEERS

Quantity	Description	Unit	Cost / unit	Total w/ OH&P
	ARCHITECTURAL			
2	Renovate existing restrooms to provide ADA	EA	$40,000.00	$96,000.00
	accessible toilets			
130	Replace interior doors and hardware	EA	$1,500.00	$234,000.00
94	New interior signage-adhesive back /Braille	EA	$42.00	$4,737.60
	ADA compliant			
60,000	Replace Vinyl Floor Tile	SF	$2.50	$180,000.00
4,000	Refinish Wood Floors	SF	$11.00	$52,800.00
40	Replace Toilet Partitions	EA	$1,215.00	$58,320.00
65,047	Interior Paint	SF	$0.75	$58,542.30
1,000	Ceiling Exposed Structure Paint	SF	$1.15	$1,380.00
65,047	Suspended Acoustic Tile Ceiling	SF	$3.00	$234,169.20
1,100	Windows	SF	$45.00	$59,400.00
16	Replace toilet accessories-each restroom	EA	$800.00	$15,360.00
	CIVIL			
9	ADA signage	EA	$500.00	$5,400.00
5	Fire lane signage	EA	$500.00	$3,000.00
4	Directional signage	EA	$1,500.00	$7,200.00
4	Concrete curb ramps	EA	$1,000.00	$4,800.00
50,000	Mill and overlay asphalt pavement	SF	$1.00	$60,000.00
20	Parking bumpers	EA	$150.00	$3,600.00
500	Repaint curbs and fire lanes	LF	$0.10	$60.00
	MECHANICAL / PLUMBING			
1	Replace Chiller	EA	$150,000.00	$150,000.00
	ELECTRICAL			
2	Renovate existing restrooms to provide ADA	EA	$2,000.00	$4,800.00
65,047	New Electrical Distribution	SF	$7.00	$455,329.00
65,047	New Lighting	SF	$3.00	$135,141.00
65,047	New PA system	SF	$1.25	$81,308.75
65,047	New Fire Alarm	SF	$1.25	$81,308.75
	TOTAL Budgetary Cost			**$1,986,657**